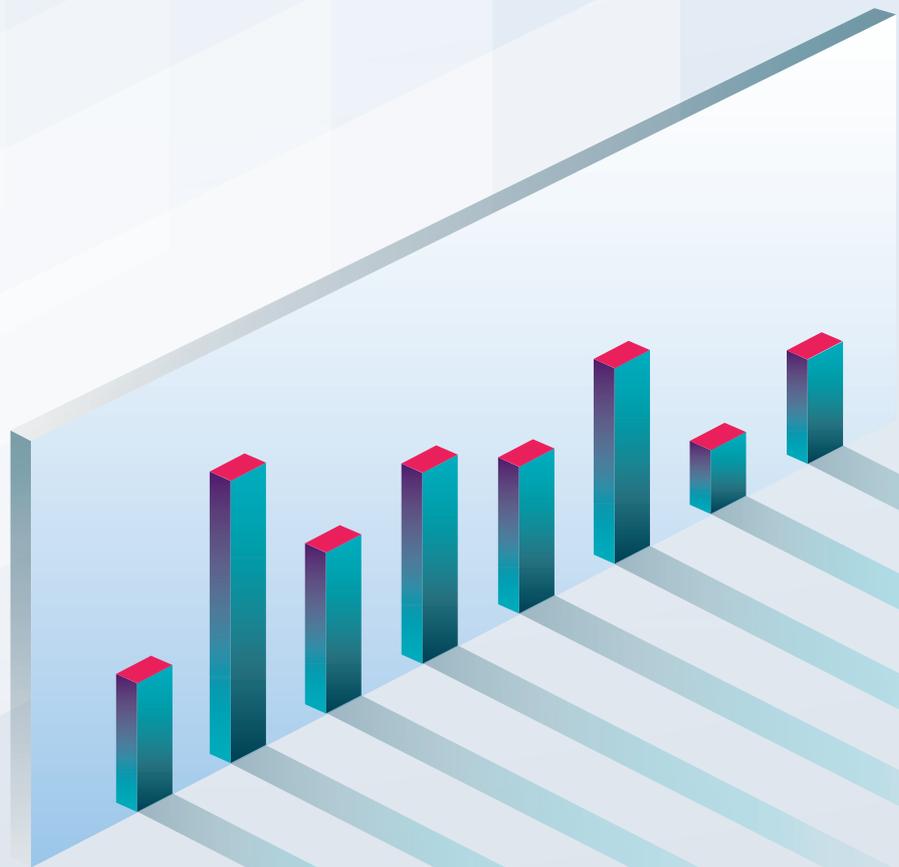




Victorian
Agency for
**Health
Information**

Health system performance: how does Victoria fare nationally and internationally?



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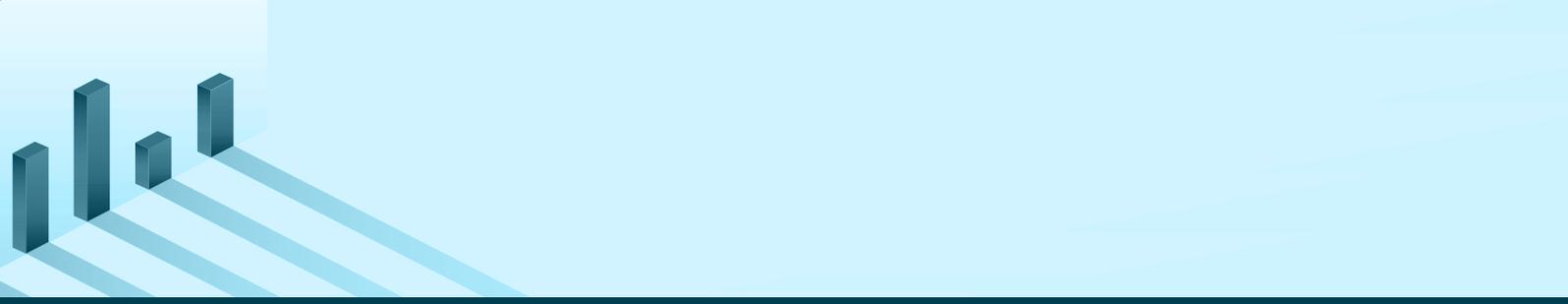
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Contents

List of Figures.....	5
List of Tables.....	7
Acknowledgements.....	8
Summary of findings.....	9
1. Introduction.....	17
2. Health status.....	19
Life expectancy.....	20
Infant mortality.....	22
Self-reported health status.....	23
Satisfaction with life.....	25
Psychological distress.....	26
Diagnosed chronic disease.....	27
Health limiting daily activities.....	28
3. Accessibility.....	31
Have a regular doctor or a medical home.....	32
Out-of-pocket expenditure.....	35
Timely access to primary care.....	39
Access to mental health care.....	41
Accessibility of specialists and elective surgery.....	42
Cost-related barriers to care.....	45
4. Appropriateness.....	47
Health professionals and chronic disease management.....	49
Medication management.....	51
Medical error.....	53
Engagement between patients and health professionals.....	55
Patient–professional communication.....	57
Continuity of care.....	59
Care coordination.....	61

5. Effectiveness.....	63
Patients' views of the health system	64
Self-management of chronic disease.....	66
Hospitalisation for postoperative pulmonary embolism and deep vein thrombosis.....	68
Potentially preventable hospitalisations.....	69
Avoidable mortality.....	70
Long-term effectiveness – cancer survival	71
6. Efficiency	73
Right care, right place	74
Waste in the system	77
Day surgery	79
Length of stay in hospital	81
Expenditure on health administration	85
7. Equity.....	87
Socioeconomic disparities in health.....	88
Disparities in health by private medical insurance status	91
Disparities in health by rural and metropolitan area.....	94
8. Sustainability.....	95
Increasing demand for health care	96
Private medical insurance	98
Average health expenditure per person	101
Medical practitioner full-time equivalent positions	102
Hospital beds.....	105
Appendix: Methods	107
Data sources	107
Data considerations.....	109
Issues with data comparisons and interpretation.....	110
References.....	111

List of Figures

Figure 1.1: The performance framework	18
Figure 2.1: Life expectancy at birth, by sex, 2014 (or nearest year).....	21
Figure 2.2: Infant mortality rate (per 1,000 live births), 2014 (or nearest year)	22
Figure 2.3: Self-reported health status.....	23
Figure 2.4: Excellent or very good self-reported health by metropolitan and rural area.....	24
Figure 2.5: Satisfaction with life, 2015	25
Figure 2.6: High or very high levels of psychological distress, by state and territory, 2014–15	26
Figure 2.7: Diagnosed with one of a range of selected chronic diseases.....	27
Figure 2.8: Health limiting daily activities	28
Figure 2.9: Health limiting daily activities by metropolitan and rural area.....	29
Figure 3.1: Have a regular doctor or place of care where usually go for medical care	33
Figure 3.2: Have a regular doctor or place of care where usually go for medical care, by number of chronic diseases, Victoria.....	34
Figure 3.3: Have a regular doctor or place of care where usually go for medical care, by sex and age group, Victoria.....	34
Figure 3.4: Out-of-pocket expenses for medical treatments or services in the previous 12 months	36
Figure 3.5: Out-of-pocket expenses for medical treatments or services, by number of chronic diseases, Victoria	37
Figure 3.6: Had serious problems paying, or were unable to pay medical bills in the previous 12 months.....	38
Figure 3.7: Got same day or next day appointment to see a doctor last time was sick or needed medical attention.....	39
Figure 3.8: Very easy or somewhat easy to get medical care in the evenings, on weekends or on holidays without going to a hospital emergency department.....	40
Figure 3.9: Experienced emotional distress such as anxiety or great sadness in the previous two years and was unable to get help from a health professional when needed	41
Figure 3.10: Waited less than a month for an appointment to see a specialist doctor or consultant	42
Figure 3.11: Waited less than a month for non-emergency surgery	43
Figure 3.12: Median waiting times for admissions from public hospital elective surgery waiting lists, for selected surgical procedures, Australia, Victoria and lowest waiting time of all states and territories, 2015–16.....	44
Figure 3.13: Skipped dental care or dental check-ups because of the cost in the previous 12 months	46
Figure 4.1: Health care professional had discussed main goals, treatment options or written management plan for chronic disease care.....	50
Figure 4.2: Doctor or pharmacist had reviewed all medications taken.....	51
Figure 4.3: Someone discussed the purpose of taking each medication when leaving hospital	52
Figure 4.4: General practitioner always or often spends enough time with patient or involves them in decisions about their care, when they need care or treatment.....	56

Figure 4.5: General practitioner or medical staff always or often explain things in a way that is easy to understand.....	57
Figure 4.6: Received written information on what to do and what symptoms to watch for when returned home from hospital.....	58
Figure 4.7: Regular doctor or someone in regular doctor’s practice always or often helps coordinate or arrange care received from other doctors and places.....	59
Figure 4.8: Received conflicting information from different doctors or healthcare professionals when receiving care for a medical problem.....	61
Figure 4.9: Test results or medical records were not available at the time of a scheduled medical appointment.....	62
Figure 5.1: Statement that best expresses overall view of the health system.....	64
Figure 5.2: Overall rating for medical care received from regular doctor’s practice or clinic in the previous 12 months.....	65
Figure 5.3: Feel confident can manage own health if have a chronic disease.....	66
Figure 5.4: Modifiable risk factors for chronic disease, Victoria, 2003–2014 (or nearest year).....	67
Figure 5.5: Hospitalisation for postoperative pulmonary embolism and deep vein thrombosis, per 100,000 surgical separations, 2013 (or nearest year).....	68
Figure 5.6: Potentially preventable hospitalisation rates, per 1,000 population, by state and territory, 2014–15.....	69
Figure 5.7: Avoidable mortality rates, per 100,000 population, by state and territory, 2014.....	70
Figure 5.8: Breast cancer five-year relative survival, 2008–2013 (or nearest period).....	71
Figure 6.1: Presented to a hospital emergency department for a condition that could have been treated by regular doctor at the place where usually get medical attention.....	75
Figure 6.2: Percentage of public acute hospital patient days that were Hospital in the Home days, by state and territory, 2014–15.....	76
Figure 6.3: Number of knee arthroscopy procedures for patients 50 years of age or older, public and private hospitals, Victoria, 2006–07 to 2015–16.....	77
Figure 6.4: Experienced a time in the previous two years when doctors ordered a medical test that was unnecessary because the test had already been done.....	78
Figure 6.5: Day surgery as a percentage of all surgery, by public and private hospital, Victoria, 2006–07 to 2015–16.....	79
Figure 6.6: Percentage of cataract surgery performed as day surgery, 2014 (or nearest year).....	80
Figure 6.7: Average length of stay by private and public hospital, Victoria, 2006–07 to 2015–16.....	81
Figure 6.8: Average length of stay for acute myocardial infarction, congestive heart failure and cerebrovascular disease, 2014 (or nearest year).....	83
Figure 6.9: Relative stay index by state and territory, 2014–15.....	84
Figure 6.10: Percentage of recurrent health expenditure spent on administration, 2014–15.....	85

Figure 7.1: Got an appointment to see a doctor or nurse on the same day or the next day, by level of household income.....	88
Figure 7.2: Have a chronic disease and confident or very confident can control and manage own health problems, by level of household income.....	89
Figure 7.3: Spent \$1,000 or more in out-of-pocket costs for medical treatments or services that were not covered by public or private insurance, by level of household income.....	90
Figure 7.4: Waited less than a month for elective surgery after being advised needed surgery, by private medical insurance status.....	91
Figure 7.5: Got an appointment to see a doctor or nurse on the same day or the next day, by private medical insurance status.....	92
Figure 7.6: Spent \$1,000 or more in out-of-pocket costs for medical treatments or services that were not covered by public or private insurance, by private medical insurance status.....	93
Figure 7.7: Skipped recommended medical care in the previous 12 months, by rural and metropolitan area.....	94
Figure 8.1: Separations for public and private hospitals, Victoria, 2010–11 to 2014–15.....	96
Figure 8.2: Overnight public hospital acute separations per 1,000 population, by state and territory, 2014–15.....	97
Figure 8.3: Percentage of population insured for hospital treatment, Victoria and Australia, June 1971 to June 2016.....	99
Figure 8.4: Percentage of population insured for general treatment, Victoria and Australia, June 1989 to June 2016.....	100
Figure 8.5: Average health expenditure (recurrent) per person, public and private (2013–14 prices), by state and territory, 2003–04 to 2013–14.....	101
Figure 8.6: Registered medical practitioner full-time equivalents, per 100,000 population, by state and territory, 2014.....	103
Figure 8.7: Registered general practitioner full-time equivalents, per 100,000 population, by Primary Healthcare Network, Victoria, 2014.....	104
Figure 8.8: Hospital beds per 1,000 population, 2013 (or nearest year).....	106

List of Tables

Table 1.1: Summary of results.....	12
Table 3.1: Skipped specified care recommended by a doctor for a medical problem because of cost in the previous 12 months.....	45
Table 4.1: Experienced a medical error in the previous two years.....	54
Table 4.2: Continuity of care between regular doctor, specialists and hospitals.....	60

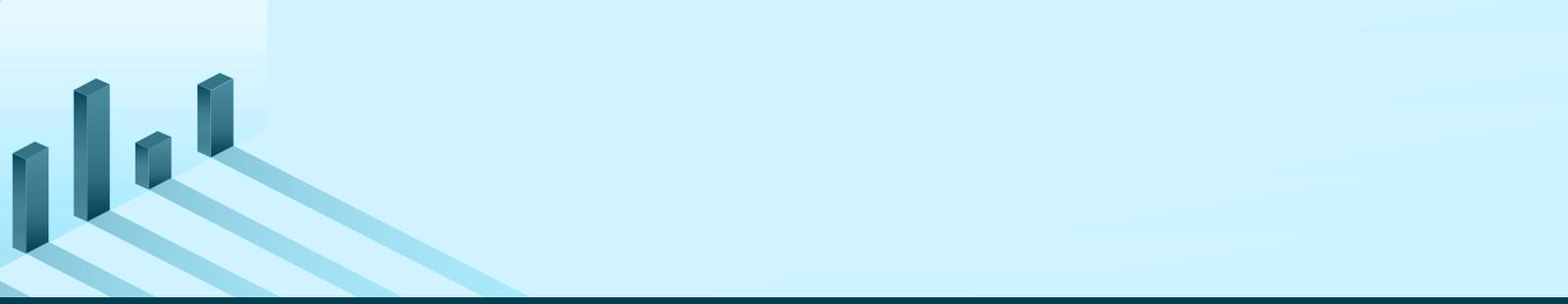
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We also acknowledge the OECD for their work in collating international health statistics and making these data available online.

Finally, thanks are due to staff from the Victorian Department of Health and Human Services who provided advice and reviewed drafts of the report during preparation.



Summary of findings

In 2016 The Commonwealth Fund was commissioned to oversample Victoria, for the first time, in the annual International Health Policy Survey. This report provides insights into health system performance in Victoria. It draws largely on results from The Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries, comparing performance measures from the survey for Victoria with Australia and 10 other countries (Canada, France, Germany, New Zealand, Norway, the Netherlands, Sweden, Switzerland, United Kingdom and the United States). The report also contains information from the Organisation for Economic Cooperation and Development online health statistics data library, the Victorian Admitted Episodes Data collection, the Victorian Population Health Survey and various data reports and tables from the Victorian Department of Health and Human Services, Australian Bureau of Statistics, Australian Institute of Health and Welfare and the Cancer Council Victoria.

The performance measures presented are organised within a performance framework that separates measures into six core performance areas (Figure 1.1). The framework in this report is based on the framework presented by the Bureau of Health Information (BHI) in New South Wales in the report *Healthcare in focus 2015: how does NSW compare?*¹

This report also contains a section on population health status, which is not included in the New South Wales report. This section provides a brief summary of health status in Victoria, with national and international comparisons.

Overall, the measures in this report suggest Victorians enjoy a high level of health status and the health system performs well, when compared nationally and internationally (Table 1.1). There are areas where Victoria is an international leader in terms of performance, but there are also areas where there is scope for improvement.



Health status

Population health status measures suggest that, by international standards, health status is high in Victoria. Life expectancy is a key measure of population health status. In Victoria, life expectancy has increased over the past three decades, largely due to decreases in infant mortality and all-cause mortality. For the period 2012–2014, life expectancy at birth in Victoria was very high at 81.1 years for males and 84.7 years for females, while the infant mortality rate for Victoria was low when compared internationally. Victorians also experience high prevalence of self-reported excellent or very good health, low prevalence of diagnosed chronic disease and low prevalence of health issues limiting daily activities, when compared internationally.



Accessibility

Accessibility refers to the ability of people to obtain health care at the right place and right time, irrespective of income, cultural background or physical location. This report shows that Victoria consistently performs in the mid-range internationally when it comes to access, so there is room for improvement.

Survey data shows that cost is a significant barrier to care. Seventeen per cent of adults skipped dental care and one in 10 skipped care recommended by a doctor for a medical problem because of cost in the previous 12 months. Further, 9% of adults couldn't get help or couldn't afford to see a professional for emotional distress when required in the previous 2 years.

Access also varies across the population. Although one in 10 Victorian adults pay \$1,000* or more each year in out-of-pocket healthcare costs, this figure rises to one in five among Victorians with more than one chronic condition (multimorbidity).



Appropriateness

Measures of appropriateness measure how well care is delivered to meet patients' needs. Appropriateness is concerned with providing the right health care in the right way. Survey data show that Victoria compares favourably against other countries in terms of appropriateness. There is a high level of information sharing and care coordination between health professionals in Victoria (when compared internationally), and medical, medication and lab error rates are low. There is good communication between patients and health professionals and, compared with many other countries, there is a high level of engagement in care by patients in Victoria.

* The out-of-pocket expenses shown here are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.



Effectiveness

Effectiveness considers the extent to which the sector makes a difference for patients. It is concerned with the extent to which services reduce the incidence, duration, intensity or consequences of health problems. The data in this report show that Victoria's system is effective by international standards, with a high survival rate for breast cancer and nine out of 10 adults with a chronic disease confident about managing their own health.



Efficiency

Efficiency is largely concerned with reducing waste and ensuring value for money in the health sector. The report shows that the health system in Victoria provides good value for money, with health care expenditure on administration in the low range nationally and the highest rate for Hospital in the Home days in Australia.



Equity

Equity is largely concerned with fairness and, in the context of health care, infers that care should be provided on the basis of clinical need, regardless of any other factor. It also infers that care should be provided to reduce disparities in health outcomes between different population groups. The data for this performance area were focused on access and show there are disparities in access to services and care by income level and health insurance status.



Sustainability

Sustainability is concerned with the future and ensuring the sector continues to perform well in the coming years. As a positive, the report shows that although average health expenditure increases each year in Victoria (similar to other states and territories), average expenditure per person in Victoria was 2.4% lower in 2013–14 than the national average. Also positive – although hospital separations continue to grow, up by 2.3% each year over the past 5 years, higher than current annual population growth (2.1%), the acute separation rate is in the low range for Australia. However, Victoria ranks at the lower end of the national scale in terms of medical practitioner full-time equivalents (FTEs), lower than Australia which is the benchmark for monitoring.

Table 11: Summary of results

Performance area	Indicator	How does Victoria compare?	Comparator
Health status 	Life expectancy at birth	★★★★	International
	Infant mortality rate	★★★★	International
	Excellent/very good self-reported health status	★★★★★	International
	Satisfaction with life (average score)	★★★★	International
	High or very high levels of psychological distress	★★	National
	Diagnosed chronic disease	★★★★★	International
	Health limiting daily activities	★★★★★	International
Accessibility 	Have a regular doctor or place of care	★★★	International
	Out-of-pocket expenditure of \$1,000 or more	★★★	International
	Serious problems paying medical bills	★★★★	International
	Got same/next day appointment to see doctor or nurse last time was sick	★★★★	International
	Easy to get medical care out-of-hours (non-emergency department)	★★★★	International
	Got help for emotional distress when needed	★★	International
	Waited less than a month to see a specialist	★★★	International
	Waited less than a month for elective surgery	★★★★★	International
	Skipped care recommended by doctor because of cost	★★★	International
	Skipped dental care because of the cost	★★	International

Table 1.1: Summary of results (continued)

Performance area	Indicator	How does Victoria compare?	Comparator
Appropriateness 	Chronic disease care	★★★★	International
	Medications reviewed by doctor or pharmacist	★★★	International
	Medications explained at discharge from hospital	★★★	International
	Experienced medical, medication or lab error in last two years	★★★★	International
	Involved in healthcare decisions with general practitioner/medical staff	★★★★★	International
	General practitioner/medical staff spend enough time with you	★★★★★	International
	General practitioner/medical staff explain things in a way that is easy to understand	★★★★★	International
	Given written information about care at home on discharge from hospital	★★★★	International
	Care coordination occurs between regular doctor, other doctors and services	★★★★	International
	Continuity of care and information sharing between regular doctor, other doctors and services	★★★★★	International
	Received conflicting information from different doctors or healthcare professionals	★★★★	International
	Test results or medical records not available at the time of appointment	★★★★★	International

Table 11: Summary of results (continued)

Performance area	Indicator	How does Victoria compare?	Comparator
Effectiveness 	Overall view of health system is positive	★★★	International
	Rating of medical care received	★★★★★	International
	Confidence in managing own health	★★★★★	International
	Hospitalisation for post-operative pulmonary embolism and deep vein thrombosis	★★★★★	International
	Potentially preventable hospitalisations	★★★	National
	Avoidable mortality	★★★★★	National
	Breast cancer five-year relative survival	★★★★★	International
Efficiency 	Inappropriate visit to emergency	★★★★★	International
	Hospital in the home days	★★★★★	National
	Experienced unnecessary repeat medical tests	★★★★★	International
	Percentage of all cataract surgery performed as day surgery	★★★	International
	Average length of stay for cardiovascular conditions	★★★	International
	Expenditure on administration	★★★★★	National

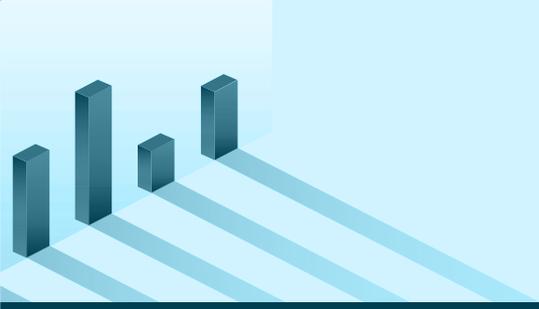
Table 1.1: Summary of results (continued)

Performance area	Indicator	How does Victoria compare?	Comparator
Equity 	Got same/next day appointment to see doctor or nurse, by level of household income	★	International
	Confidence in managing own health, by level of household income	★★	International
	Out-of-pocket expenditure of \$1,000 or more, by level of household income	★★	International
	Waited less than a month for elective surgery, by private medical insurance status	★★★★★	International
	Got same/next day appointment to see doctor or nurse, by private medical insurance status	★★	International
	Out-of-pocket expenditure of \$1,000 or more, by private medical insurance status	★★★★★	International
Sustainability 	Overnight public hospital acute separation rate	★★★★★	National
	Average health expenditure	★★★★★	National
	Registered medical practitioner full-time equivalents	★★	National
	Hospital beds	★★★	International

- ★★★★★ Excellent/Victoria ranks best or among the best of all comparators.
- ★★★★ Very good/Victoria ranks in the top performing third of comparators.
- ★★★ Good/Victoria ranks in the mid third of comparators.
- ★★ Poor/Victoria ranks in the poorest performing third of comparators.
- ★ Very poor/Victoria ranks worse or among the worst of all comparators.

The out-of-pocket expenses shown here are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

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1. Introduction

The health sector aims to optimise the health of the population it serves while ensuring value for money. Measures of health system performance consider the extent to which the sector achieves, or is progressing towards this objective. Although performance is largely determined by prevention and treatment activities, it is also influenced by a mix of positive and negative factors external to the sector.² Interactions between factors can complicate the assessment, so it is not always possible to separate the contribution of different forces on system performance. The results for each measure and for each country are the sum of all factors that influence that measure in that particular country. These factors and their level of influence will vary between health systems.

About this report

This report presents a snapshot of health and sector performance measures for Victoria, Australia and selected Organisation for Economic Cooperation and Development (OECD) countries. The first section of this report explores health status in Victoria with population health measures. The section that follows provides a snapshot of health system performance for Victoria, with comparison to states and territories, Australia, Canada, France, Germany, New Zealand, Norway, the Netherlands, Sweden, Switzerland, United Kingdom and

the United States. Measures are organised within a performance framework (Figure 1.1) comprising six core performance areas:*

- accessibility (health care, when and where needed)
- appropriateness (the right health care, the right way)
- effectiveness (making a difference for patients)
- efficiency (value for money)
- equity (health for all, health care that's fair)
- sustainability (caring for the future).

This report is largely based on the Bureau of Health Information (BHI) report *Healthcare in focus 2015: how does NSW compare?*¹

The BHI report compares measures that assess different dimensions of health and sector performance in New South Wales (NSW), Australia and selected countries.

Most of the data presented in this report were obtained from the 2016 International Health Policy (IHP) Survey of Adults in 11 Countries,[†] the OECD online health statistics data library[‡] and various reports

* The performance framework is largely based on the framework presented in the BHI report on performance in NSW in 2015.¹

† The survey is run annually and includes a sample of around 20,000 adults 18 years of age or older from 11 countries (see Appendix for further information).

‡ OECD health data is available online at <http://www.oecd.org/health/health-data.htm>.

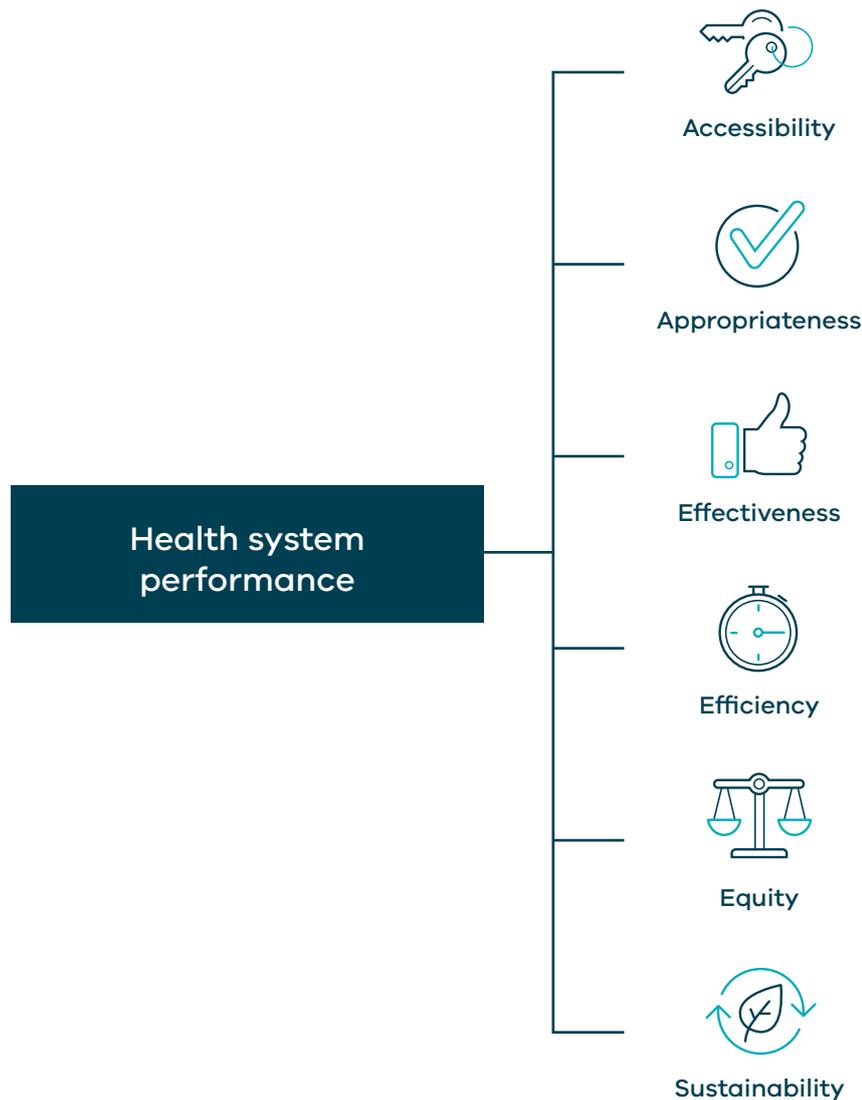
from the Australian Bureau of Statistics (ABS), Australian Institute of Health and Welfare (AIHW), Cancer Council Victoria and the Victorian Department of Health and Human Services. Performance measures for Victoria have also

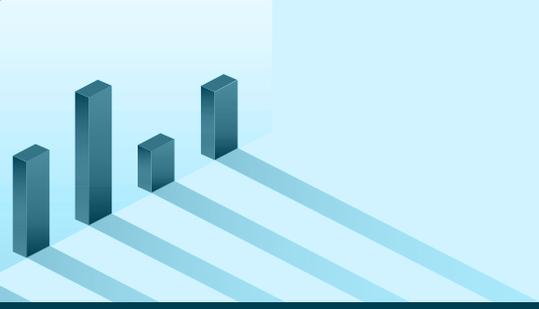
been derived from the Victorian Admitted Episodes Data (VAED) collection and the Victorian Population Health Survey.

Where possible, the methods used to produce measures for Victoria were the same as the methods

used to produce country-level or state and territory measures. This report notes instances where measures for relevant countries are not directly comparable with one another (see Appendix for further information).

Figure 11: The performance framework





2. Health status

How healthy are Victorians?

Health status is an all-inclusive concept that is determined by more than the presence or absence of disease and injury. It is often summarised by life expectancy estimates and self-reported health status but may also include measures of functioning, physical illness and mental wellbeing.

Key findings for Victoria:

- Victoria has one of the highest life expectancy rates in the OECD.
- Victoria has one of the lowest infant mortality rates in the OECD.
- Three out of four adults report very good or excellent health, which is similar for rural and metropolitan areas.
- Victorians have a high level of satisfaction with life compared with people in other countries.
- One in eight adults have high or very high levels of psychological distress.
- One in three adults have been diagnosed with at least one chronic disease during their lifetime, which is low when compared internationally.
- Overall, 7% of adults have health issues that limit daily activities, which is low internationally.



Life expectancy

Victoria has one of the highest life expectancy rates in the OECD

Life expectancy is a key summary measure of population health. Although it is not possible to quantify individual life expectancy with any certainty, it is possible to estimate *average* life expectancy for an age cohort within a population. The derived estimate is defined as the average number of years an individual of a given age could be expected to live, if current mortality rates were to continue.

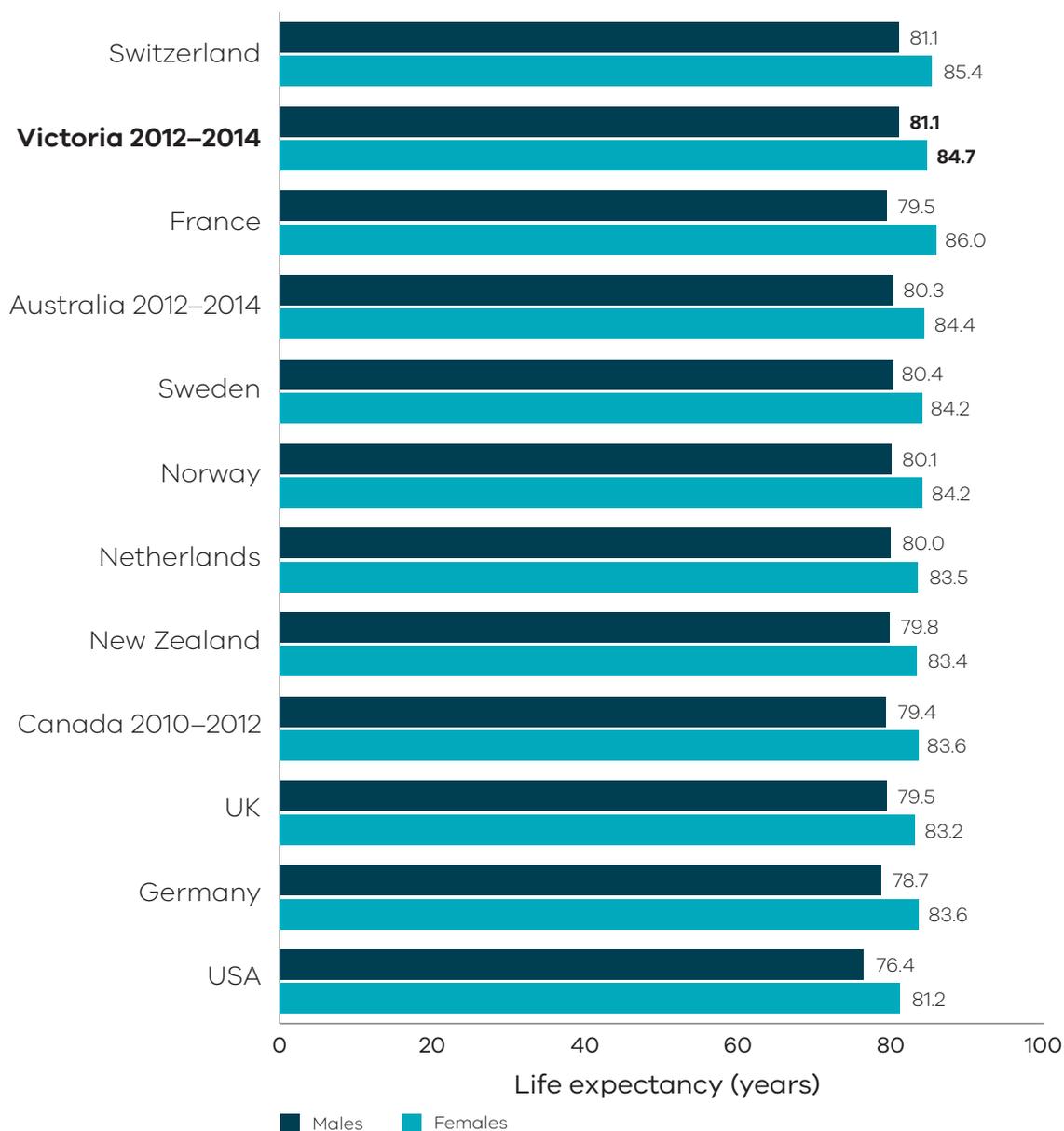
Figure 2.1 presents life expectancy at birth by sex in Victoria, Australia and other countries. Life expectancy at birth has increased steadily in most OECD countries since the early 1900s, and life expectancy in Australia is now among the highest in the world. The international data in the figure has been obtained from the online

OECD health statistics data library³ and the Australian data were obtained from the ABS.⁴ Period life tables were used to produce all life expectancies presented in the figure.⁵ Some of the mortality rates used in the calculations were smoothed for different jurisdictions, using different techniques, but the impact of these differences on methodology are likely to be minor in terms of comparing life expectancies in the figure.^{3,6,7}

Figure 2.1 shows high life expectancy at birth for Victorian males (81.1 years) and females (84.7 years) compared with most OECD countries. Switzerland ranked highest of all comparators, with life expectancy of 81.1 years for males and 85.4 years for females. The United States had the lowest life expectancy for males (76.4 years) and females (81.2 years) in the figure.



Figure 2.1: Life expectancy at birth, by sex, 2014 (or nearest year)



Data sources: ABS 2015;⁴ OECD 2016.³

Different methodologies were used to produce life expectancy estimates for different OECD countries, but these differences are likely to have a minor impact on comparisons.

Life expectancy estimates for Victoria and Australia are based on a 3-year average for the years 2012–2014.

Life expectancy estimates for Canada are based on a 3-year average for the years 2010–2012.



Infant mortality

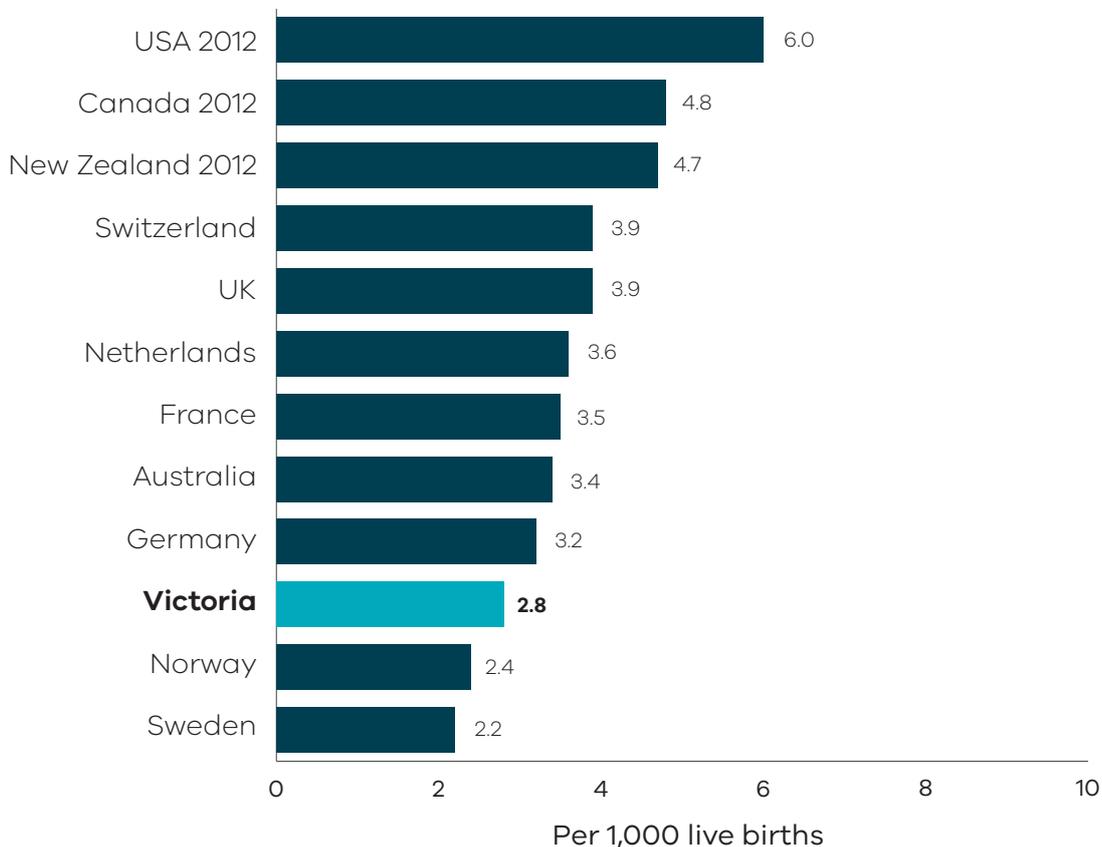
Victoria has one of the lowest infant mortality rates in the OECD

The infant mortality rate is a summary measure of health in a population that is particularly sensitive to differences in social conditions and health care interventions. Infant mortality rates declined markedly during the last century in Australia,⁸ largely due to advances in neonatal care, an improved understanding of disease aetiology and a greater emphasis on health promotion and disease prevention.

Figure 2.2 presents the infant mortality rate per 1,000 live births for Victoria, Australia and other countries. The infant mortality rate is derived from the number of deaths that occur in the first 12 months of life, divided by the number of live births in a calendar year. The international data for this measure have been obtained from the online OECD health statistics data library,³ and the Australian data were obtained from the ABS.⁹ The data are largely comparable between countries, although there are differences in international practice in terms of stillbirth and live birth registration.⁵

The figure shows that the infant mortality rate for Victoria (2.8 deaths per 1,000 live births) is low compared with most OECD countries. The highest rate was observed in the United States, with 6 deaths, and the lowest was Sweden with 2.2 deaths per 1,000 live births.

Figure 2.2: Infant mortality rate (per 1,000 live births), 2014 (or nearest year)



Data sources: ABS 2015;⁴ OECD 2016.³



Self-reported health status

Three out of four adults report very good or excellent health

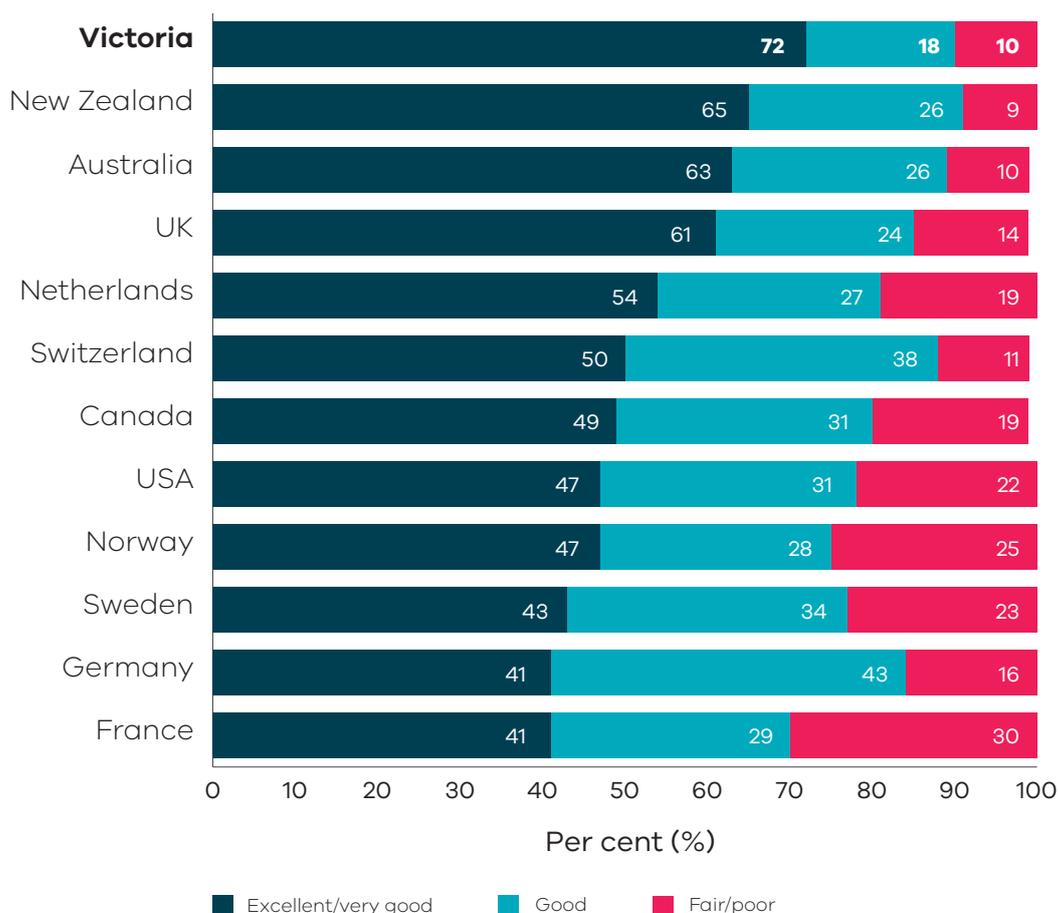
Self-reported health has been shown to be a reliable predictor of ill-health, future health care use and premature mortality, independent of other medical, behavioural or psychosocial risk factors.¹⁰⁻¹²

Figure 2.3 presents the percentage of adults who reported their health as fair or poor, good, very good or excellent in Victoria, Australia and other countries. The data were derived from the IHP survey undertaken in 2016. About three-quarters of adult Victorians (72%) included in the survey reported very good or excellent health.

Victoria ranked highest of all comparators, including Australia (63%).

Three out of four (73%) metropolitan Victorians reported very good or excellent health compared with 72% of rural Victorians (Figure 2.4).

Figure 2.3: Self-reported health status

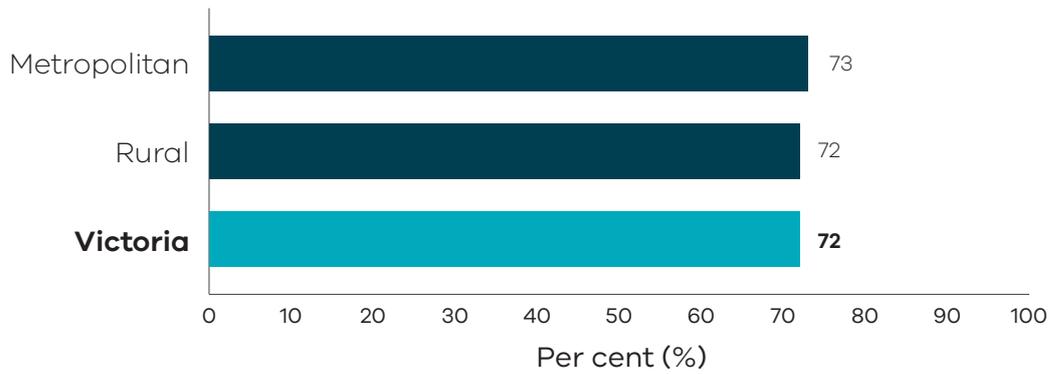


Data source: The Commonwealth Fund 2016.¹³

Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.



Figure 2.4: Excellent or very good self-reported health by metropolitan and rural area



Data source: The Commonwealth Fund 2016.¹³

Data for metropolitan and rural areas exclude unassigned postcodes (see the appendix for more information).



Satisfaction with life

Victorians have a high level of satisfaction with life

Subjective wellbeing is a complex concept that incorporates both affective and cognitive evaluations of life.¹⁴ The affective component refers to both the presence of positive emotions and feelings and the absence of negative emotions and feelings, while the cognitive component is an information-based appraisal of life for which people judge the extent

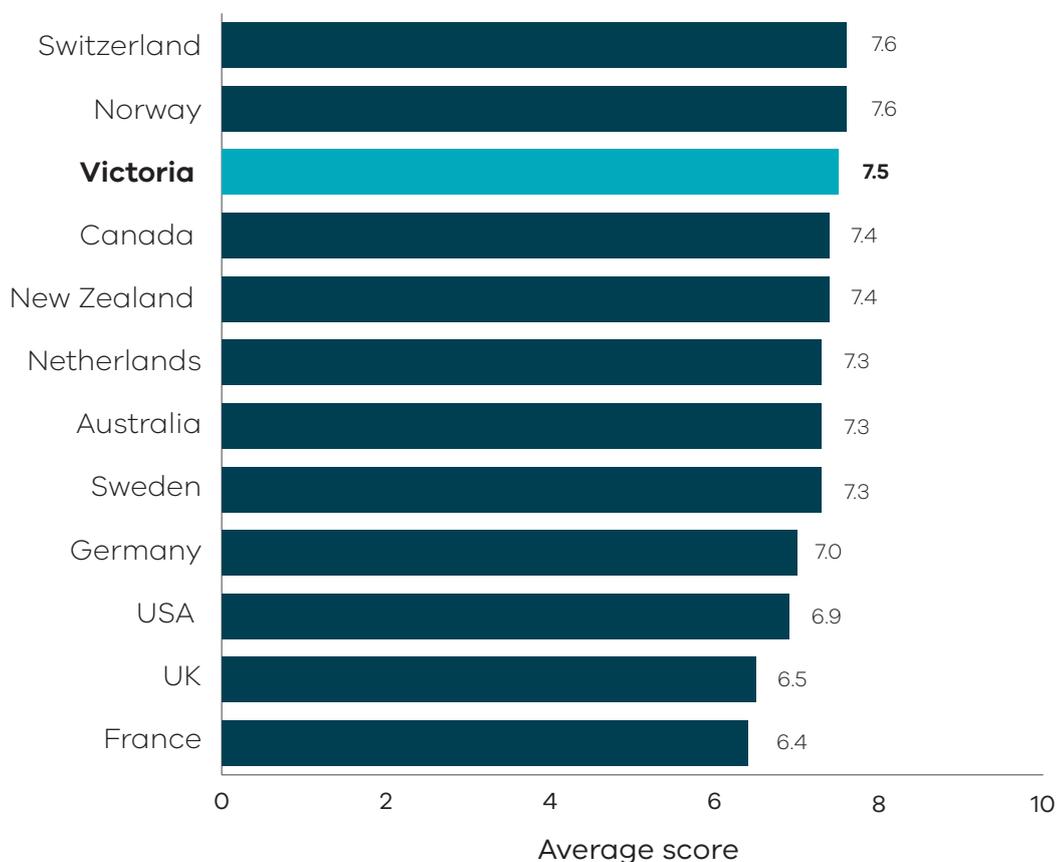
to which their life so far measures up to their expectations. While these measures are subjective, they complement more objective data on population health status, providing insights into personal wellbeing.

The Victorian Population Health Survey 2015 included a question about subjective wellbeing.¹⁵ Survey participants 18 years or older were asked to indicate how satisfied they were with their lives

on a scale from 0 to 10. Figure 2.5 compares the average score for Victoria with Australia and other countries. The Australian and international data for this measure are from the Gallup World Poll 2015 and have been obtained from the online OECD Better Life Index.¹⁶

The figure shows that Victoria was ranked third behind Switzerland (7.6) and Norway (7.6), with an average score of 7.5 in relation to satisfaction with life.

Figure 2.5: Satisfaction with life, 2015



Data sources: Department of Health and Human Services 2017,¹⁵ OECD 2016.¹⁶
Satisfaction with life score is based on a scale from 0 to 10.



Psychological distress

One in eight adults have high or very high levels of psychological distress

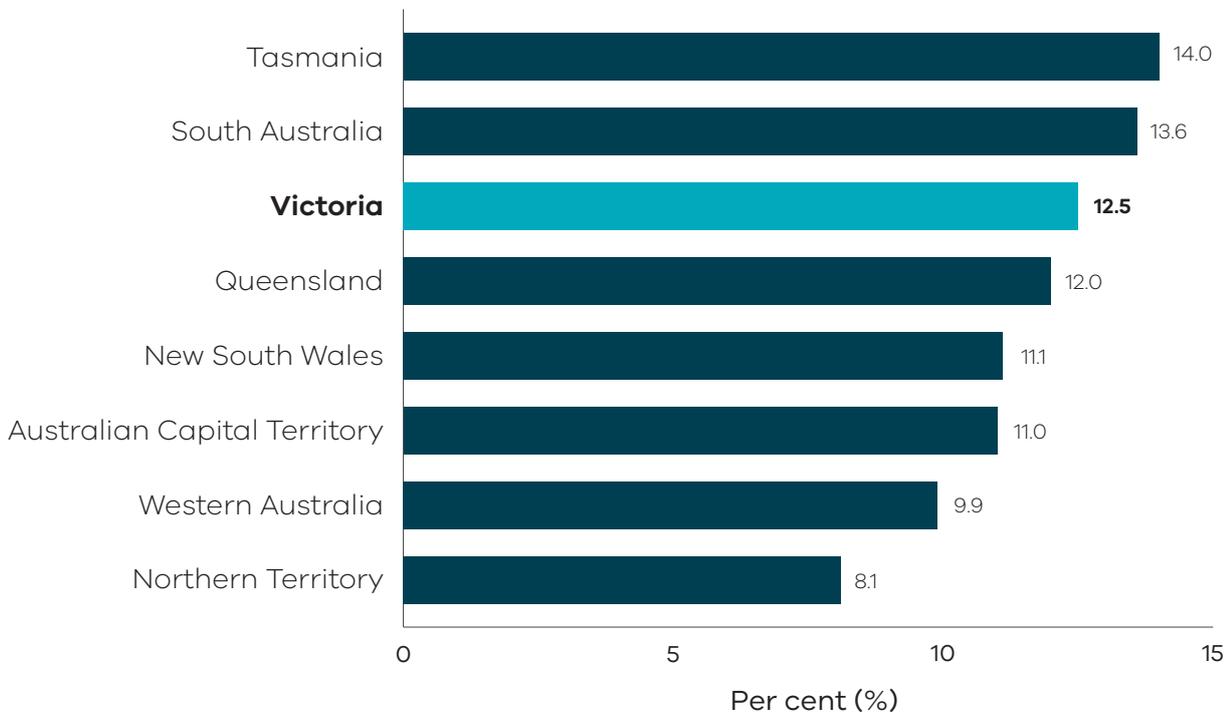
Psychological distress is an important risk factor for a number of conditions including fatigue, migraine, cardiovascular disease, chronic obstructive pulmonary disease, cerebrovascular disease, injury, obesity, depression and anxiety.^{17–19} It is also a significant risk factor for risky drinking, smoking and drug use.¹⁸

The Kessler 10 Psychological Distress Scale (K10) is a set of 10 questions designed to measure

psychological distress. The K10 has been validated as a screening tool for detecting affective disorders such as depression and anxiety and is currently in use in general practice in Australia.^{20–22} The K10 asks questions about experiences of nervousness, hopelessness, restlessness, sadness and worthlessness in the past 4 weeks. Responses to questions are scored and results are summed. Total scores are used to categorise to four levels of psychological distress: low (10–15), moderate (16–21), high (22–29) and very high (30–50).²⁰

Figure 2.6 presents high and very high levels of psychological distress, based on K10 scores, for states and territories of Australia. The data were obtained from the ABS National Health Survey 2014–15. International data were not available for comparison. The figure shows that 12.5% of Victorians 15 years of age or older had high or very high levels of psychological distress. The figure shows that Victoria was ranked third highest of all states and territories, after Tasmania and South Australia.

Figure 2.6: High or very high levels of psychological distress, by state and territory, 2014–15



Data source: ABS 2015.²³

Data are based on responses from Australians 15 years of age or older and are age standardised to the 2001 Australian population.



Diagnosed chronic disease

One in three adults have a diagnosed chronic disease, which is low when compared internationally

Chronic diseases are illnesses that are long-lasting and normally require long-term management. Collectively, they are the leading cause of illness, disability and death in Australia, accounting for an estimated 85% of the total disease burden.² Chronic diseases have a major impact on health

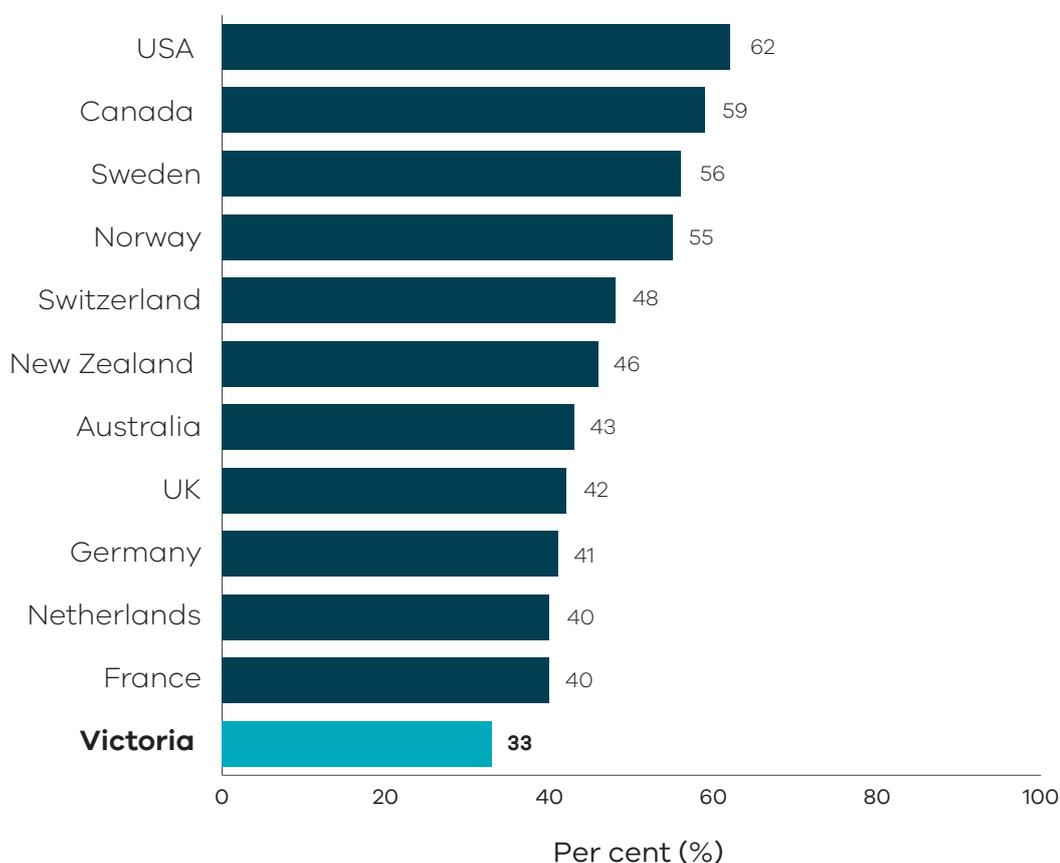
and welfare services and are responsible for a significant level of healthcare expenditure.²⁴

A third (33%) of Victorian adults 18 years of age or older have previously been diagnosed with at least one of the following conditions from the eight chronic disease groups included in the IHP survey in 2016: joint pain or arthritis; asthma or a chronic lung disease like chronic bronchitis, emphysema or chronic obstructive pulmonary disease (COPD); cancer;

depression, anxiety or other mental health problem; diabetes; heart disease – including heart attack, hypertension or high blood pressure; and stroke (Figure 2.7).

The figure shows that Victoria ranked lowest of all other comparators in the survey. The United States (62%) had the highest percentage of adults ever diagnosed with one of the eight chronic disease groups included in the survey, almost double the estimate for Victoria.

Figure 2.7: Diagnosed with one of a range of selected chronic diseases



Data source: The Commonwealth Fund 2016.¹³

Chronic diseases include: joint pain or arthritis; asthma or chronic lung disease; cancer; depression, anxiety or other mental health problem; diabetes; heart disease including heart attack and hypertension; and stroke.



Health limiting daily activities

Seven per cent of adults have health issues that limit daily activities, which is low when compared internationally

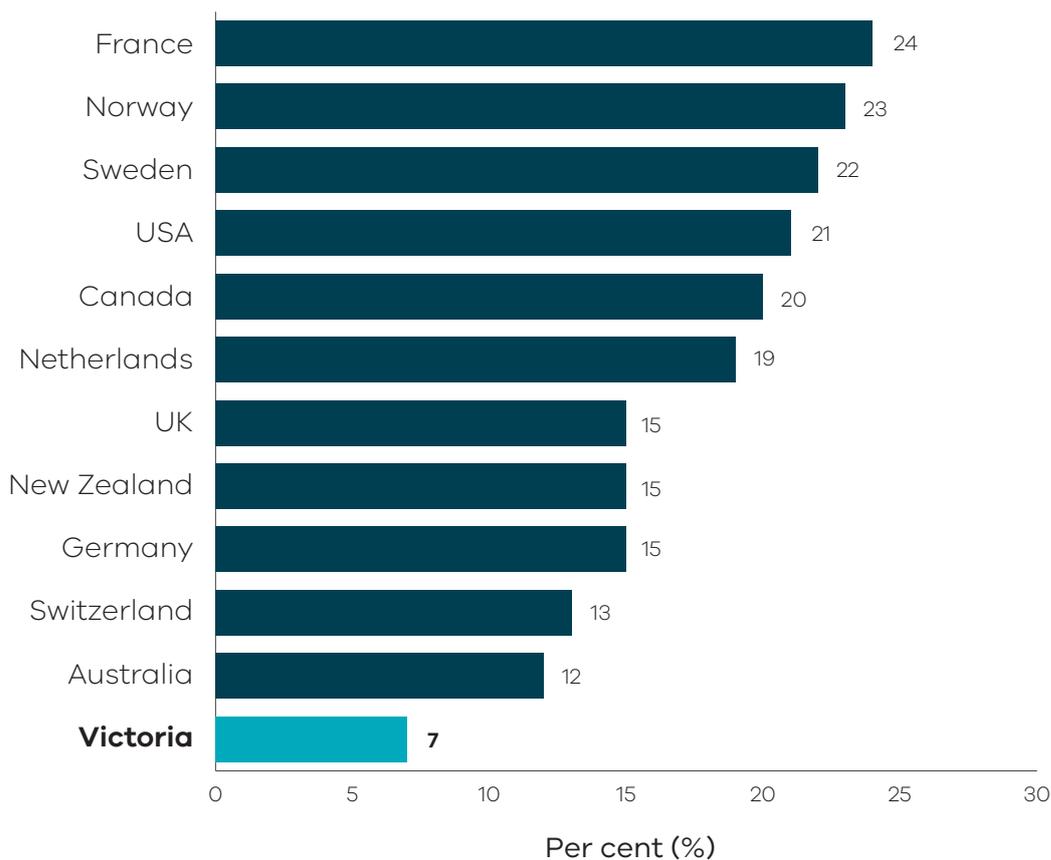
Many people experience difficulties in their daily lives because of chronic illness or health-related disability. These difficulties can limit their quality of life by

limiting their ability to perform everyday activities like working, doing housework and looking after themselves. They can also impact on families and the wider community in terms of the economic and disability burden.

Figure 2.8 shows that 7% of Victorian adults 18 years of age or older who responded to the

IHP 2016 had health issues limiting their daily activities. The figure shows that Victoria ranked lowest of all other comparators in the survey. France (24%) had the highest prevalence of adults with health issues limiting their daily activities – more than three times the estimate for Victoria.

Figure 2.8: Health limiting daily activities

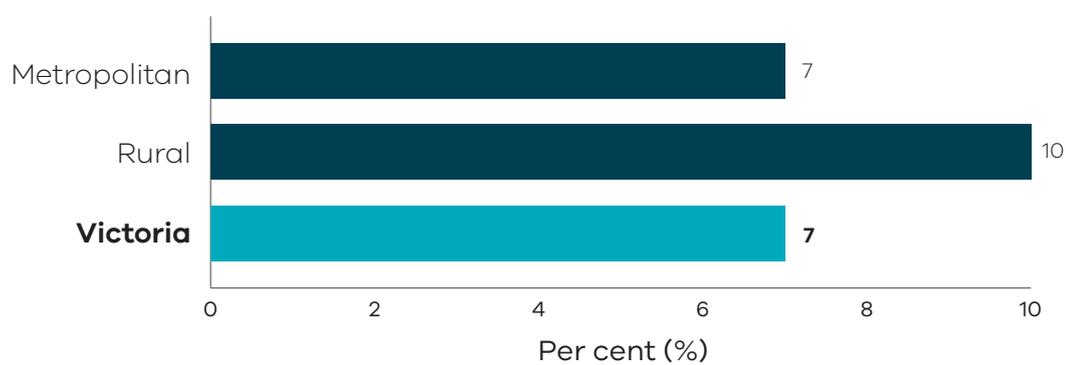


Data source: The Commonwealth Fund 2016.¹³



Ten per cent of rural Victorians have health issues limiting their daily activities compared with 7% of metropolitan Victorians (Figure 2.9).

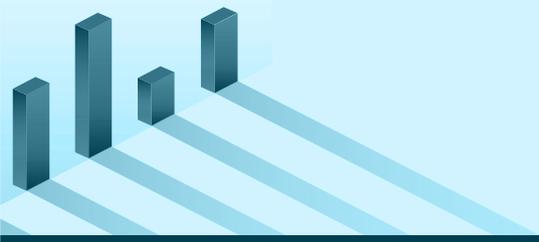
Figure 2.9: Health limiting daily activities by metropolitan and rural area



Data source: The Commonwealth Fund 2016.¹³

Data for metropolitan and rural areas exclude unassigned postcodes (see the appendix for more information).

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3. Accessibility

Health care, when and where needed

There is no clear consensus on the definition of, or how best to measure, accessibility,²⁵ although the World Health Organization (WHO) has defined access as the ‘continuing and organized supply of care that is geographically, financially, culturally and functionally within easy reach of the whole community’.²⁶ Accessibility has been defined in this report as the ability of people to obtain health care at the right place and right time, irrespective of income, cultural background or physical location. It is related to how readily people are able to access care without encountering barriers like distance, discrimination, affordability and restriction of service. The health system should be capable of adapting services to reduce access pressures for patients.

Key findings for Victoria:

- Almost all adults have a regular doctor or a medical home, but one in five young women do not.
- Although one in 10 adults pay \$1,000* or more each year for out-of-pocket healthcare costs, one in five with multiple chronic diseases pay \$1,000 or more.
- One in 20 adults have problems paying medical bills each year, which is low when compared internationally.
- Two out of five adults can get a same-day appointment to see a doctor when they need one, with more than half finding it easy to get medical care after hours when needed.
- One in 10 adults can't get help or can't afford help from a professional for emotional distress when required.
- More than half of all adults visiting a specialist wait less than one month for an appointment.
- Three out of four adults wait less than a month for elective surgery – good by international standards.
- Median waiting times for elective surgery in Victoria are generally shorter than waiting times for all Australia.
- One in 10 adults skip recommended medical care, including prescription collection and medical tests, because of cost concerns.
- One in six adults skip dental care because of cost concerns.

* The out-of-pocket expenses shown here are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.



Have a regular doctor or a medical home

Almost all adults have a regular doctor or a medical home

The ability to access services, should they be required, is at the heart of health system performance. Primary care offers frontline services for a wide range of health problems, helping prevent and treat illness and acting as an entry point to the wider healthcare system.

While having a relationship with a regular doctor or having a regular place of care is important, not all health centres or general practitioners (GPs) provide the same quality of service. Practices are better able to respond to patients' needs when they are easily accessible and provide continuity and coordination of care.

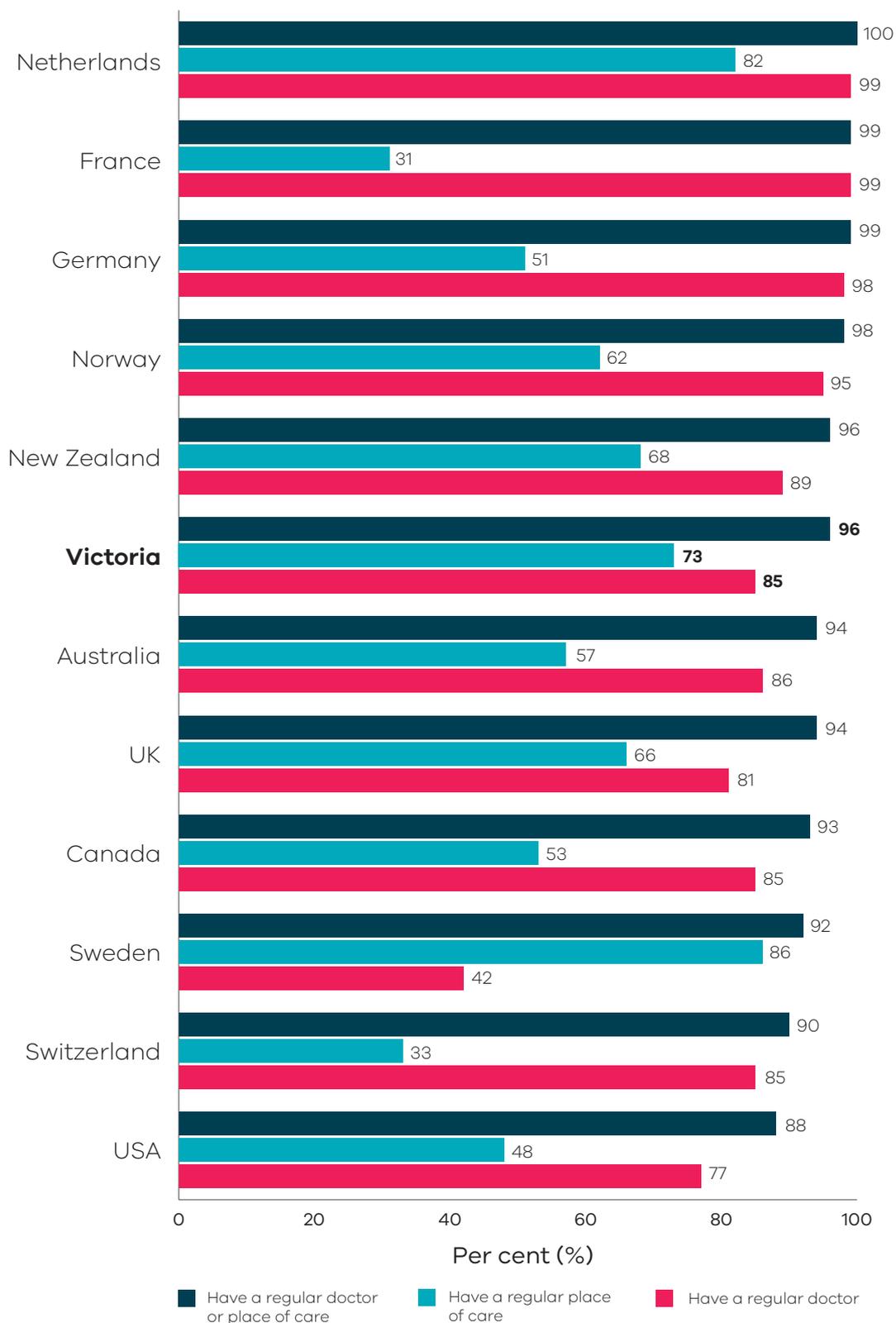
These are the characteristics of what is called a *medical home*.

Ninety-six per cent of Victorian adults who responded to the IHP survey in 2016 said they had either a regular doctor or place of care where they usually went for medical care (medical home) when required (Figure 3.1). Victoria ranked in the mid-range internationally, higher than the estimate for Australia (94%).

Almost all Victorian adults who responded to the IHP survey with a chronic disease said they had a regular doctor or place of care (Figure 3.2) and, although almost all respondents in older age groups said they had a regular doctor or place of care, about one in five females 18–24 years did not (Figure 3.3).



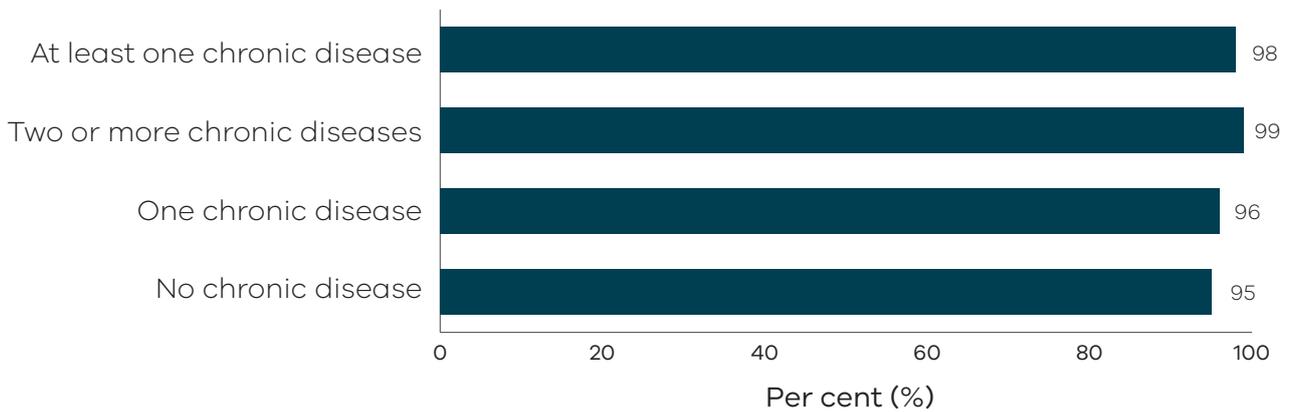
Figure 3.1: Have a regular doctor or place of care where usually go for medical care



Data source: The Commonwealth Fund 2016.¹³



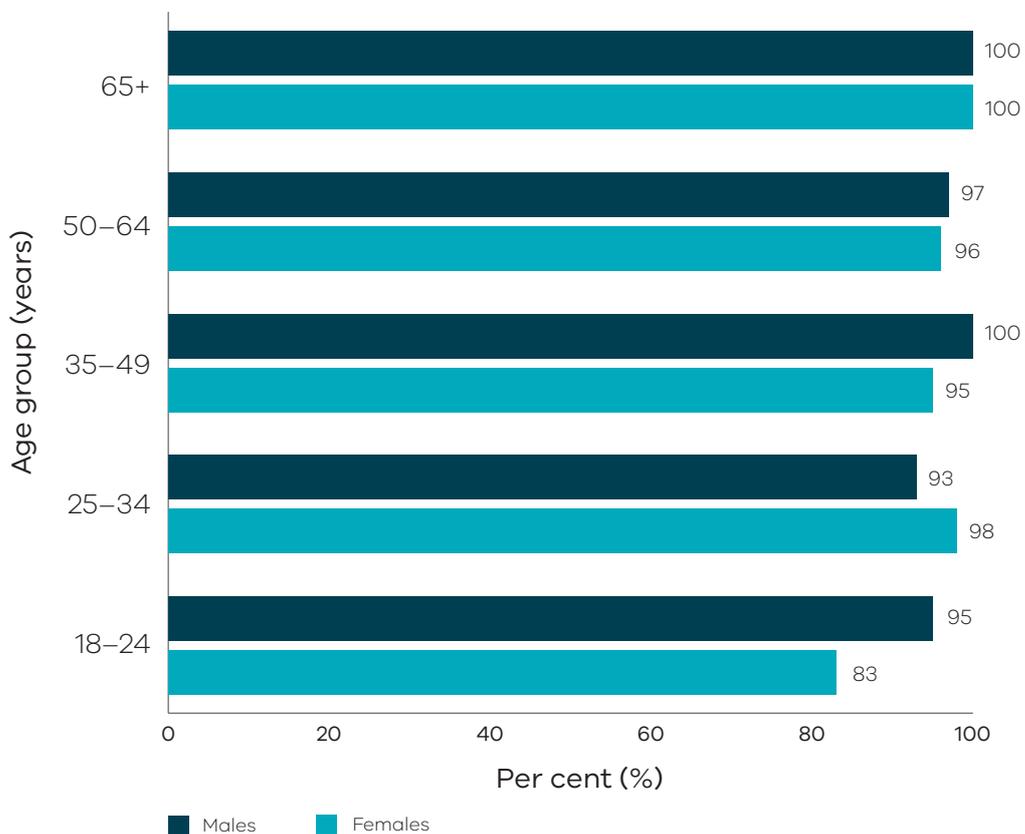
Figure 3.2: Have a regular doctor or place of care where usually go for medical care, by number of chronic diseases, Victoria



Data source: The Commonwealth Fund 2016.¹³

Chronic diseases include: joint pain or arthritis; asthma or chronic lung disease; cancer; depression, anxiety or other mental health problem; diabetes; heart disease including heart attack and hypertension; and stroke.

Figure 3.3: Have a regular doctor or place of care where usually go for medical care, by sex and age group, Victoria



Data source: The Commonwealth Fund 2016.¹³



Out-of-pocket expenditure

Although one in 10 adults pays \$1,000 or more each year for out-of-pocket healthcare costs, one in five with multiple chronic diseases pays \$1,000 or more

Healthcare funding is derived from a number of sources including private health insurance, public or government funding and payments made by patients. In Victoria, and Australia more broadly, patients are required to pay, or part-pay, directly for some services. This out-of-pocket expenditure on healthcare varies between countries and healthcare systems, with implications for service access.

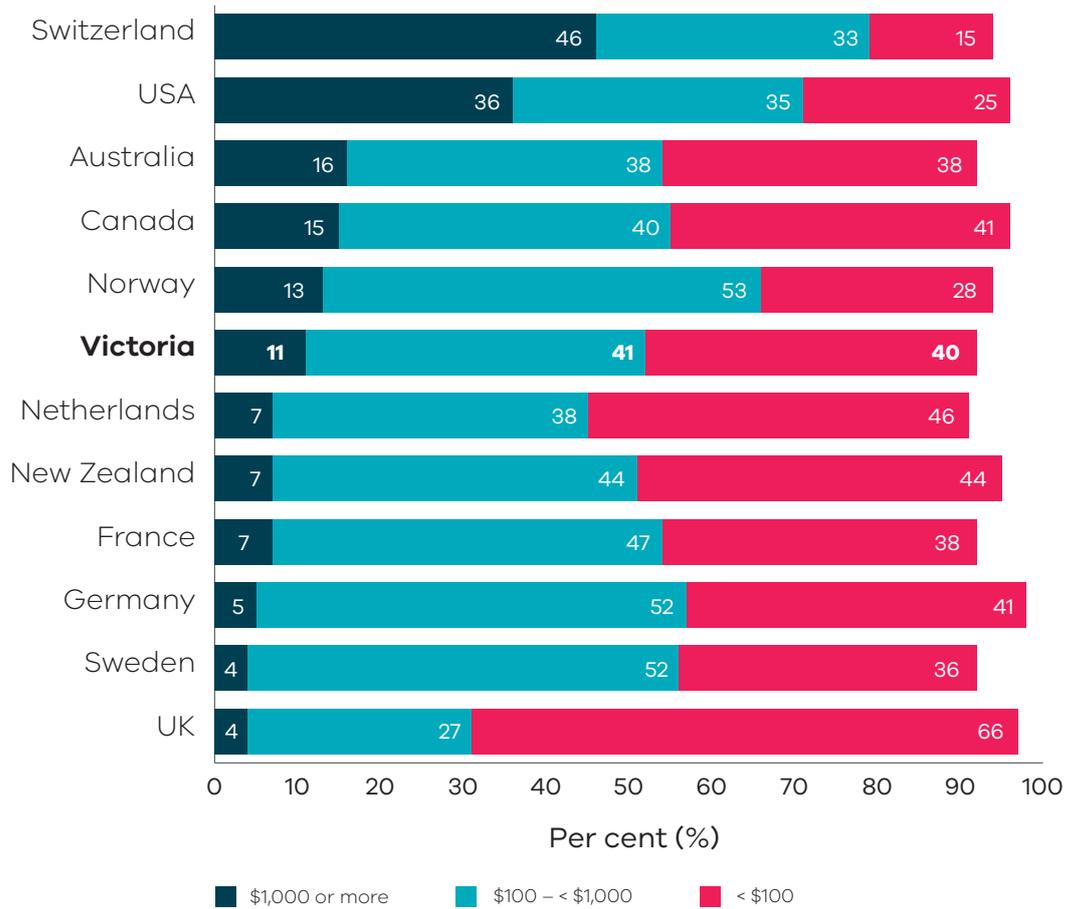
One in 10 (11%) Victorian adults who responded to the IHP survey in 2016 said that their household out-of-pocket medical expenses were \$1,000 or more in the previous 12 months (Figure 3.4).

The out-of-pocket expenses presented in this section are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

The figure shows there is considerable variation between different countries, with Victoria ranked in the mid-range internationally. Switzerland (46%) had the highest percentage of adults with out-of-pocket medical expenses of \$1,000 or more – more than four times the estimate for Victoria. The United Kingdom had the lowest percentage of respondents with high out-of-pocket medical expenses, with only 4% reporting out-of-pocket expenses of \$1,000 or more and 66% reporting expenses of less than \$100 in the previous 12 months.



Figure 3.4: Out-of-pocket expenses for medical treatments or services in the previous 12 months



Data source: The Commonwealth Fund 2016.¹³

Out-of-pocket expenses are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

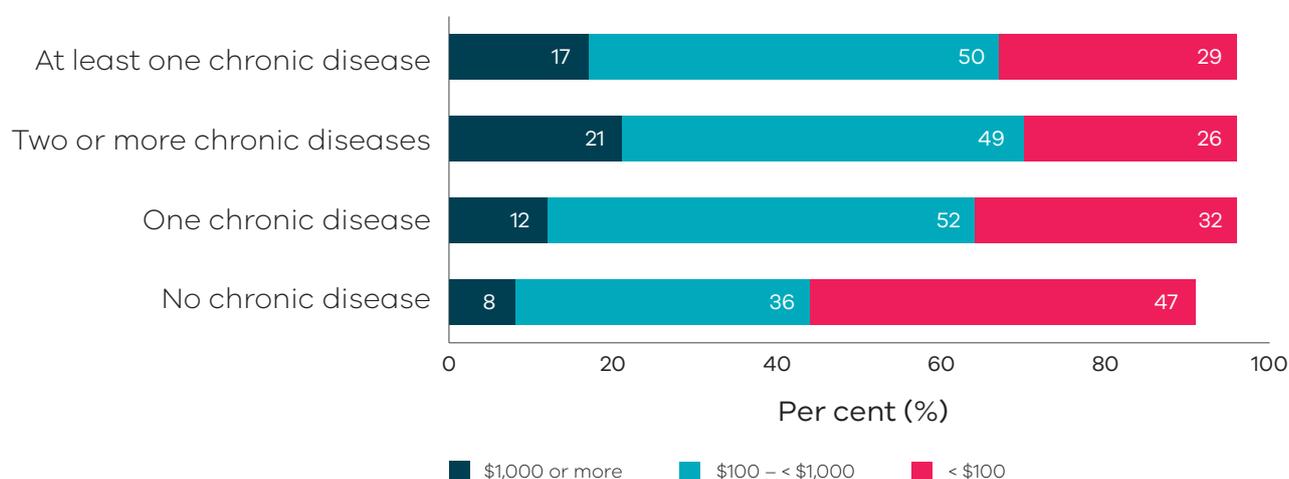
Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.



Seventeen per cent of adult Victorians with at least one chronic disease and one in five (21%) with more than one chronic disease (multimorbidity) reported paying

\$1,000 or more in out-of-pocket medical expenses – higher than the percentage with no chronic disease (8%) (Figure 3.5).

Figure 3.5: Out-of-pocket expenses for medical treatments or services, by number of chronic diseases, Victoria



Data source: The Commonwealth Fund 2016.¹³

Out-of-pocket expenses are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

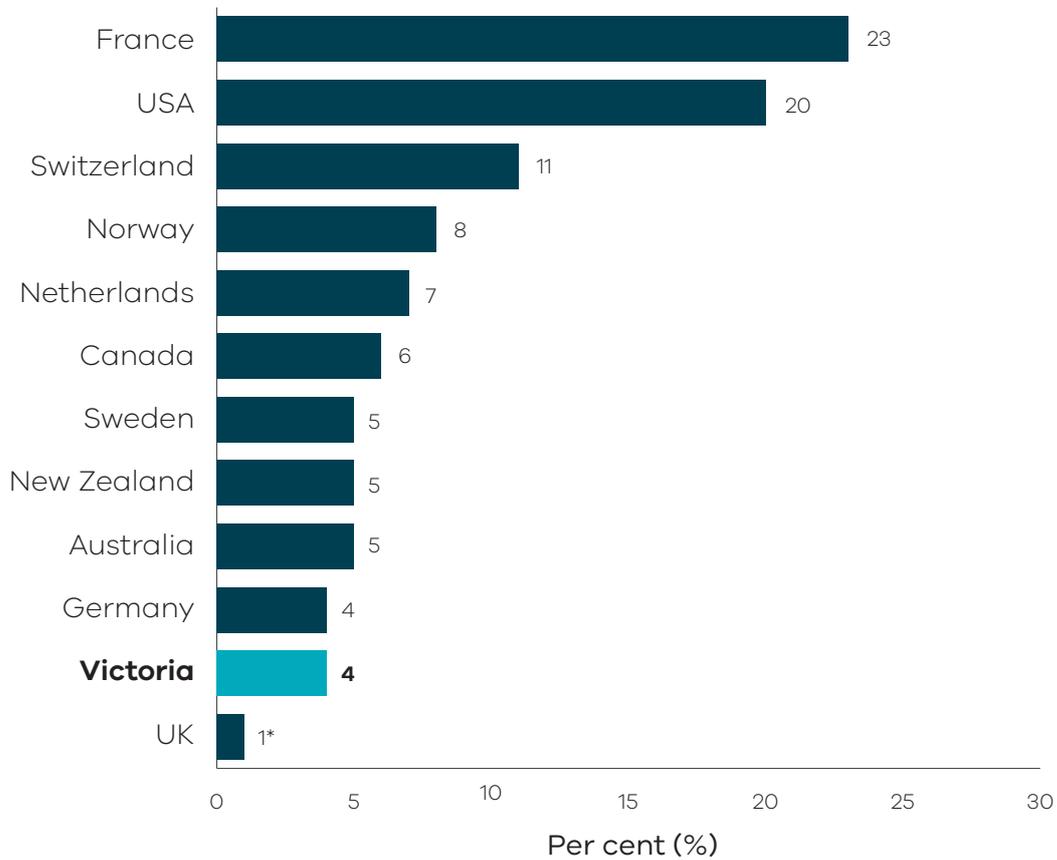
Chronic diseases include: joint pain or arthritis; asthma or chronic lung disease; cancer; depression, anxiety or other mental health problem; diabetes; heart disease including heart attack and hypertension; and stroke.

Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.



One in 20 adult Victorians (4%) who responded to the IHP survey in 2016 said there were times in the previous 12 months when they had serious problems paying, or were unable to pay medical bills (Figure 3.6). With the exception of the United Kingdom (1%), Victoria and Germany ranked lowest of all other comparators in the survey.

Figure 3.6: Had serious problems paying, or were unable to pay medical bills in the previous 12 months



Data source: The Commonwealth Fund 2016.¹³

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



Timely access to primary care

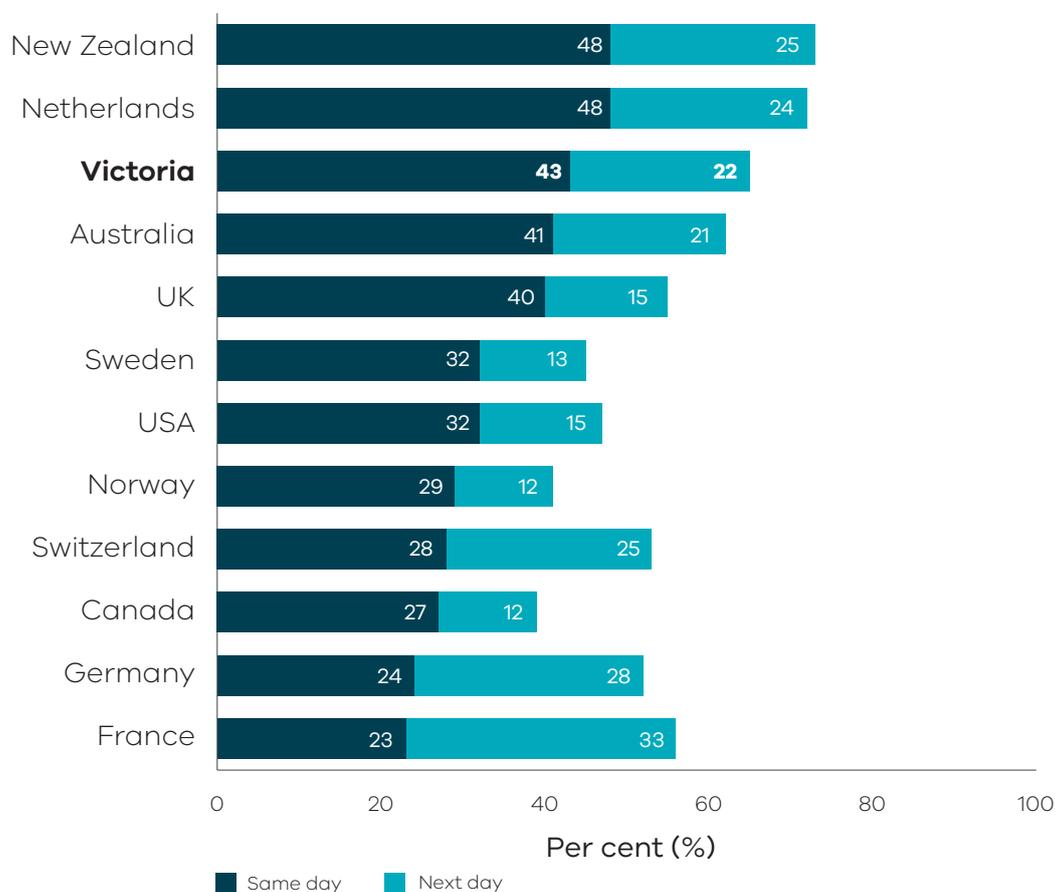
Two out of five adults can get a same-day appointment to see a doctor when they need one, and more than half of all adults find it relatively easy to get medical care after hours when needed

Primary care is usually the first point of contact with the health system for people with a health concern. Being able to get an appointment with frontline services when needed is important for

early diagnosis and treatment, addressing discomfort and preventing an injury or condition from worsening.

Two out of five Victorian adults (43%) who responded to the IHP survey in 2016 said the last time they were sick or needed medical attention they were able to get an appointment to see a doctor or nurse on the same day; only New Zealand (48%) and the Netherlands (48%) ranked higher than Victoria (Figure 3.7).

Figure 3.7: Got same day or next day appointment to see a doctor last time was sick or needed medical attention



Data source: The Commonwealth Fund 2016.¹³

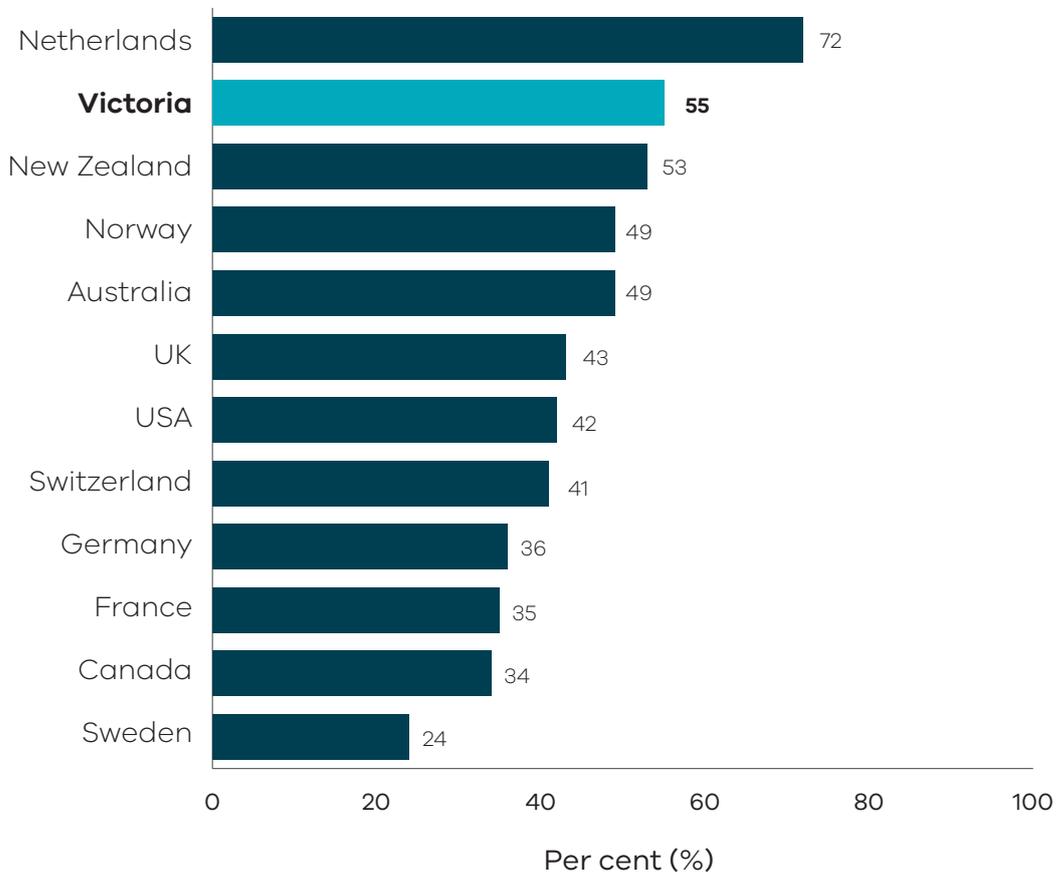
Estimates may not add to 100% due to a proportion of 'did not need to make an appointment', 'not sure' or 'declined to answer' responses not reported here.



More than half of all Victorian adults (55%) who responded to the IHP survey said it was easy to obtain medical care on evenings,

weekends or holidays (Figure 3.8); only the Netherlands (72%) had a higher percentage.

Figure 3.8: Very easy or somewhat easy to get medical care in the evenings, on weekends or on holidays without going to a hospital emergency department



Data source: The Commonwealth Fund 2016.¹³

Excludes respondents who never needed care in the evenings, weekends or holidays.

Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.



Access to mental health care

One in 10 adults can't get help or can't afford help from a professional for emotional distress when required

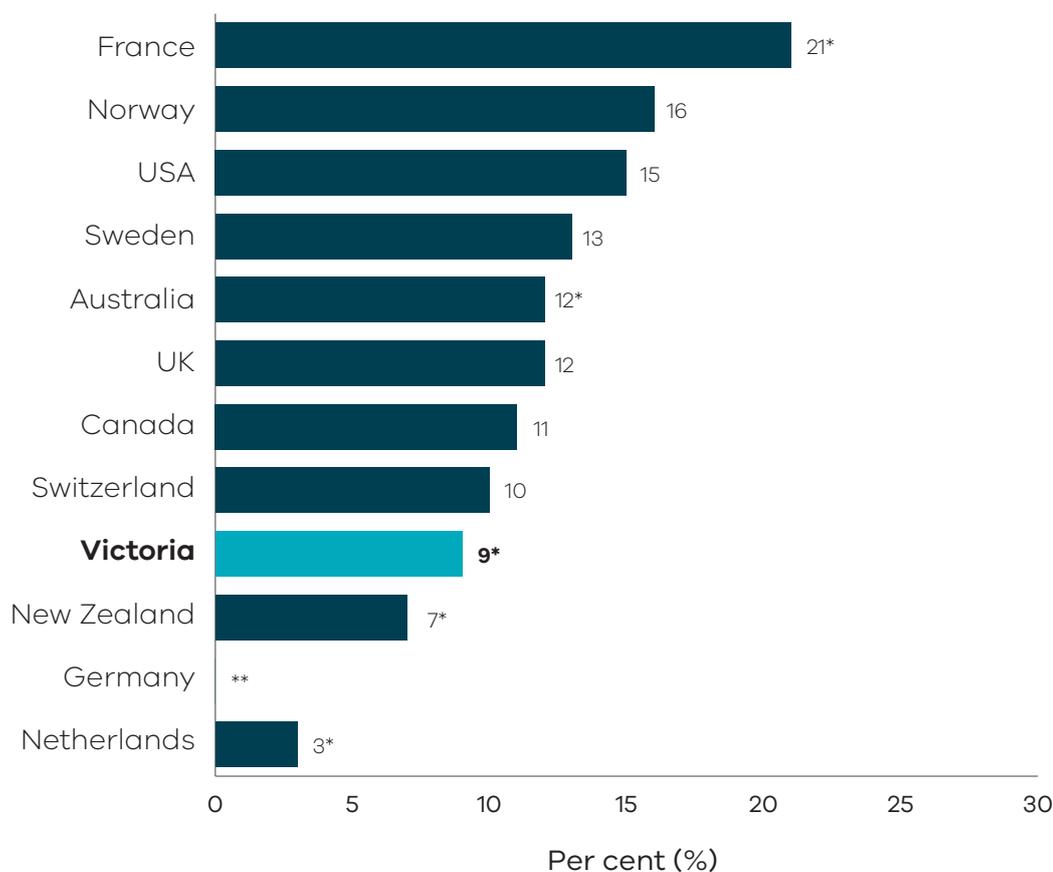
Mental illness can impact on individuals and their families and has far-reaching effects on society as a whole. Timely access to appropriate care is important because mental illness

can interfere significantly with a person's cognitive, emotional and social abilities.

In Australia, the government is focused on providing a wide range of support services for those experiencing mental health difficulties, with an emphasis on helping people to stay well rather than providing support only when they are in crisis.⁸

When asked if they had been able to get help from a professional when required for emotional distress in the previous 2 years, one in 10 Victorian adults (9%) who responded to the IHP survey in 2016 and reported experiencing emotional distress in the previous 2 years also said they either could not get help or could not afford to see a professional when required (Figure 3.9).

Figure 3.9: Experienced emotional distress such as anxiety or great sadness in the previous two years and was unable to get help from a health professional when needed



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported having experienced emotional distress in the previous 2 years. Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.

** Estimate has a relative standard error greater than or equal to 50% and is not reported as it is unreliable for general use.



Accessibility of specialists and elective surgery

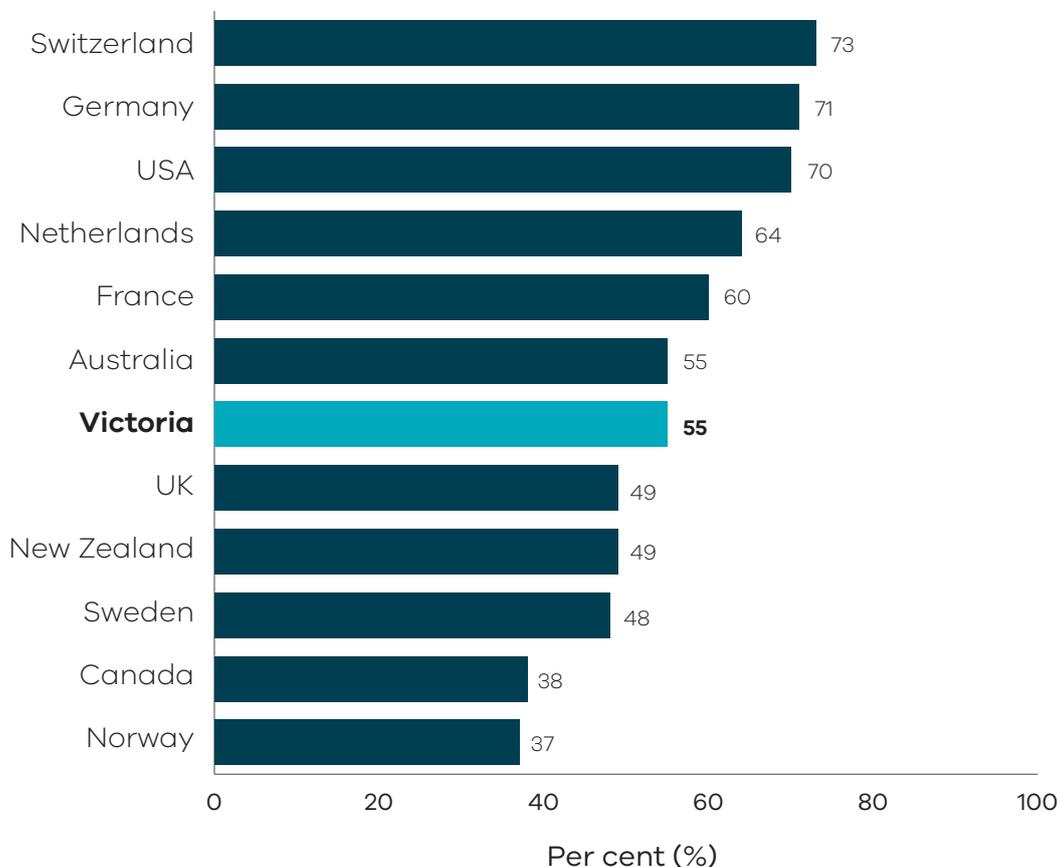
More than half of all adults visiting a specialist wait less than a month for an appointment

Medical specialists are doctors who have completed advanced training and education in a specific area of medicine, which becomes their specialty. Patients will visit a specialist for the specialist's expertise in diagnosing, treating, preventing or managing an illness or injury.

In 2016 the Department of Health and Human Services began reporting waiting times to consultation with a specialist, by specialty. The median waiting time in Victoria for an urgent first appointment to see a specialist (all specialties) was 17 days, for the period October to December 2018, and 55 days for a routine first appointment.²⁷

The 2016 IHP survey included a question about waiting times to see a specialist or consultant. More than half of all Victorian adults (55%) who responded to the survey and reported having been referred to a specialist in the previous 2 years said they waited less than a month for an appointment. This was the same for Australia as a whole and was in the mid-range for countries included in the survey (Figure 3.10).

Figure 3.10: Waited less than a month for an appointment to see a specialist doctor or consultant



Data source: The Commonwealth Fund 2016.¹³

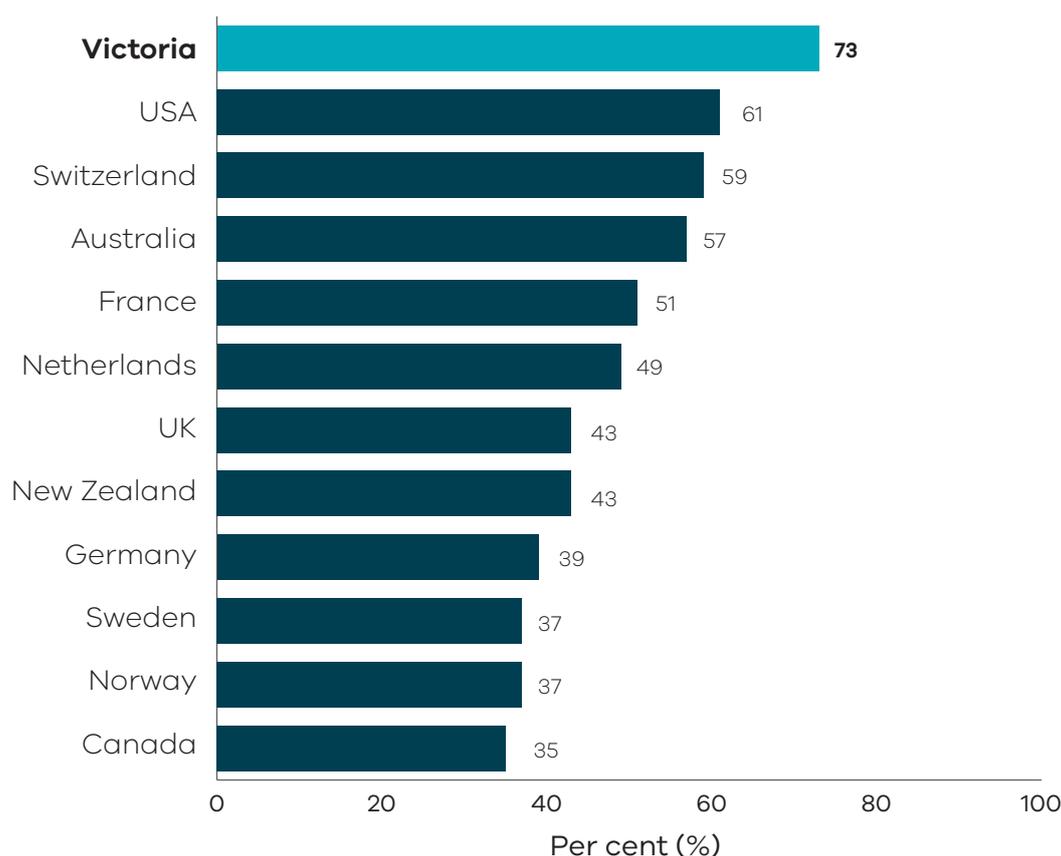
The estimates are based on responses from those who reported having seen or needed to see a specialist in the previous 2 years. Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.



Access to elective, or non-emergency surgery is an important indicator of accessible health care. Long waiting times for surgery can have a significant impact on the functional status and wellbeing of patients. Access is usually measured in terms of the length of time that a patient might expect to wait for a specific procedure.

Almost three-quarters of all Victorian adults (73%) who responded to the 2016 IHP survey and had received elective surgery in the previous 2 years reported waiting less than a month for their surgery (Figure 3.11). Victoria ranked highest of all other comparators in the survey with this result.

Figure 3.11: Waited less than a month for non-emergency surgery



Data source: The Commonwealth Fund 2016.¹³

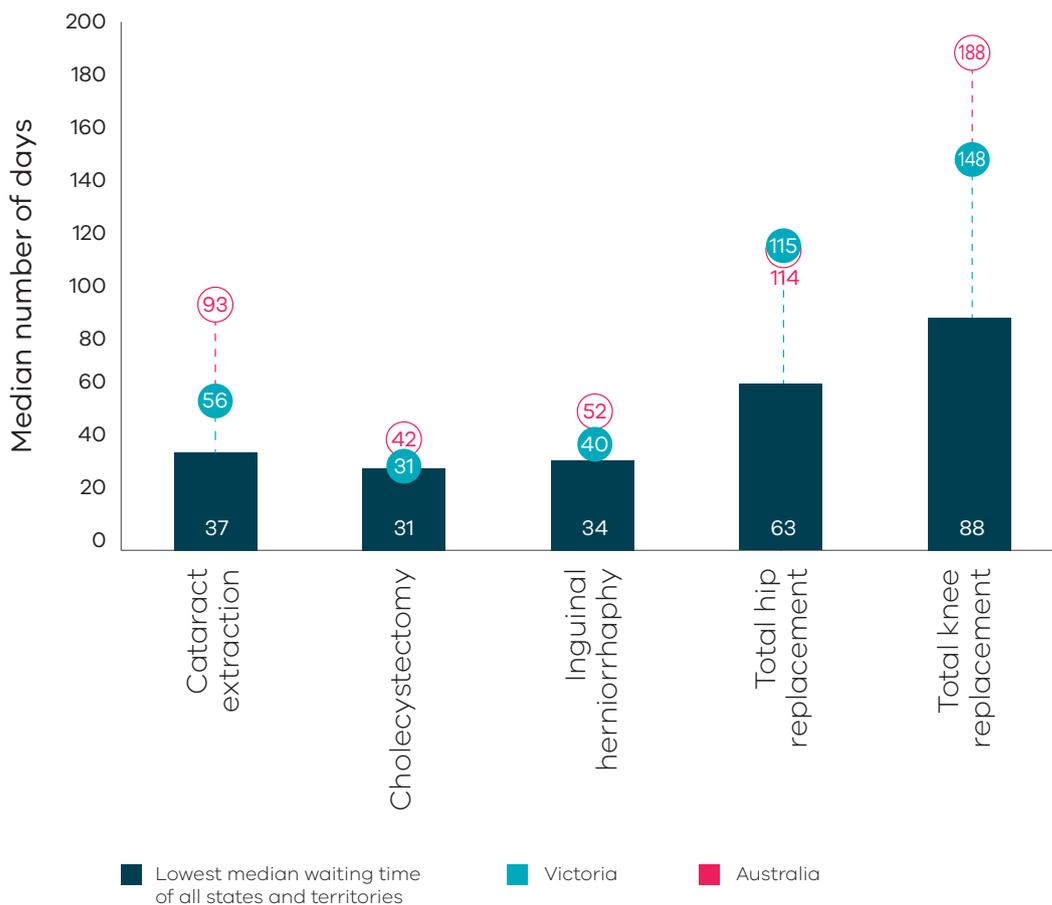
The estimates are based on responses from those who reported having required elective surgery in the previous 2 years. Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.



Figure 3.12 presents median waiting times for Victorians on waiting lists for selected elective surgical procedures in 2015–16. The figure also includes median waiting times for Australia overall and the lowest median waiting time of all other states and territories.

With the exception of total hip replacement procedures, the median waiting times for Victorians admitted from waiting lists to have elective procedures were lower than the median waiting times for all Australia.

Figure 3.12: Median waiting times for admissions from public hospital elective surgery waiting lists, for selected surgical procedures, Australia, Victoria and lowest waiting time of all states and territories, 2015–16



Data source: AIHW 2016.²⁸

Data for Australia excludes the Australian Capital Territory.



Cost-related barriers to care

One in 10 adults skip recommended medical care because of cost concerns

Cost is one of the most important barriers to accessing health care. Although most healthcare services in Australia are fully or at least partially funded by government, many patients still find cost to be a significant barrier to accessing care when it is required.

One in 10 (9%) Victorian adults who responded to the IHP survey in 2016 said they had skipped seeing a doctor, getting a medical test or filling a prescription in the previous 12 months because of cost. Victoria ranked worse than Germany (7%) and the United Kingdom (7%) but better than the United States (33%) (Table 3.1).

Table 3.1: Skipped specified care recommended by a doctor for a medical problem because of cost in the previous 12 months

	Skipped a medical test, treatment, or follow-up	Did not fill or collect a prescription for medicine, or skipped doses	Had a medical problem but did not consult/visit a doctor because of the cost	Skipped care due to at least one of the reasons listed
UK	3	2*	4	7
Germany	5	3	3	7
Netherlands	4	4	3	8
Sweden	3	6	3	8
Victoria	6	5	6	9
Norway	4	3	5	10
Australia	7	6	9	14
Canada	6	10	6	16
France	12	4	9	17
New Zealand	10	6	14	18
Switzerland	10	9	16	22
USA	19	18	22	33

Data source: The Commonwealth Fund 2016.¹³

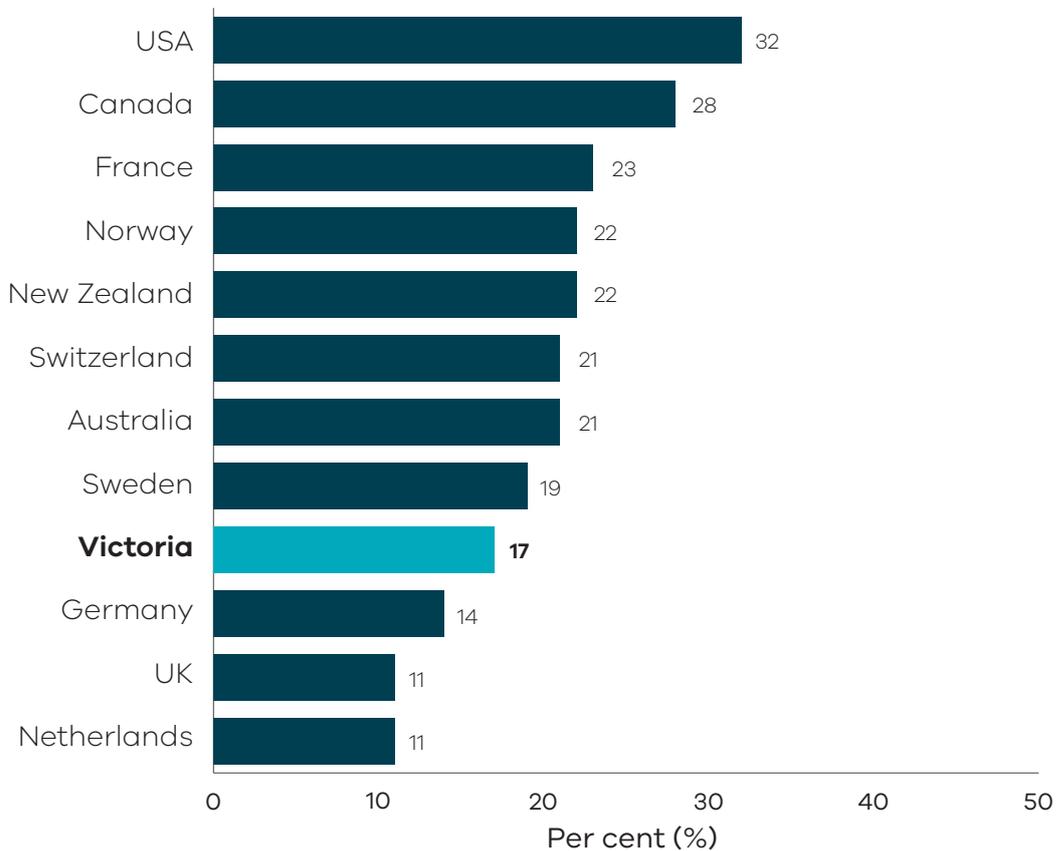
* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



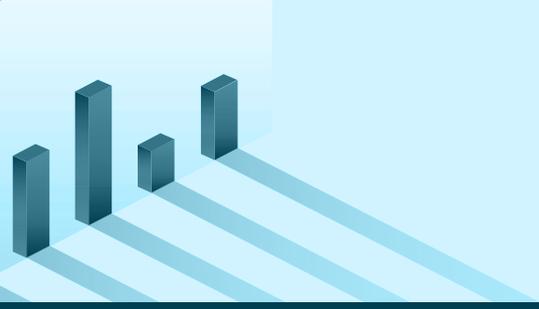
Seventeen per cent of adult Victorians who responded to the IHP survey reported not visiting the dentist because of cost in the previous 12 months (Figure 3.13). This was almost half

the percentage for the United States (32%), but higher than the percentages for Germany (14%), the United Kingdom (11%) and the Netherlands (11%).

Figure 3.13: Skipped dental care or dental check-ups because of the cost in the previous 12 months



Data source: The Commonwealth Fund 2016.¹³



4. Appropriateness

The right health care, the right way

Appropriateness relates to how well care is delivered to meet patients' needs. Measures of appropriateness may assist in identifying: where effective care is not provided despite being medically necessary, or of proven benefit to patients; where care is provided when it is not necessary; and where care is not provided correctly, or care is suboptimal because of a preventable problem such as medical error or misdiagnosis. Appropriateness encapsulates questions about whether the right services were provided in the right way to patients.

Measures of appropriateness include:

- consideration of whether services are evidence-based or reflect current best practice
- appraisals of the patient experience – how people are treated and how well services meet patients' needs and expectations (responsiveness)
- assessments of the continuity of care – whether care is uninterrupted, integrated and coordinated
- determining the degree to which patients are engaged and participate in their own care.



Key findings for Victoria:

- Two out of three adults with a chronic condition discuss their main goals and priorities or treatment options with a health professional each year.
- Three out of four adults have their medications reviewed each year.
- One in 12 adults experience a medical, medication or lab error over a 2-year period.
- Victoria ranks highly for communication and engagement between patients and their GPs and other primary care medical staff.
- Victoria ranks very high for patients receiving easy to understand medical information.
- Most adults experience information sharing and continuity of care between health professionals when they require care from more than one doctor or service.
- Victorian patients experience fewer care coordination issues than patients in many other countries.



Health professionals and chronic disease management

Two out of three adults with a chronic condition discuss their main goals and priorities, or treatment options, with a health professional each year

As discussed in section 2, chronic diseases are illnesses that are long-lasting and normally require long-term management. Collectively, they are the leading cause of illness, disability and death in Australia, accounting for an estimated 85% of the total disease burden.⁸ They have a major impact on health and welfare services and are responsible for a significant level of healthcare expenditure.²⁴

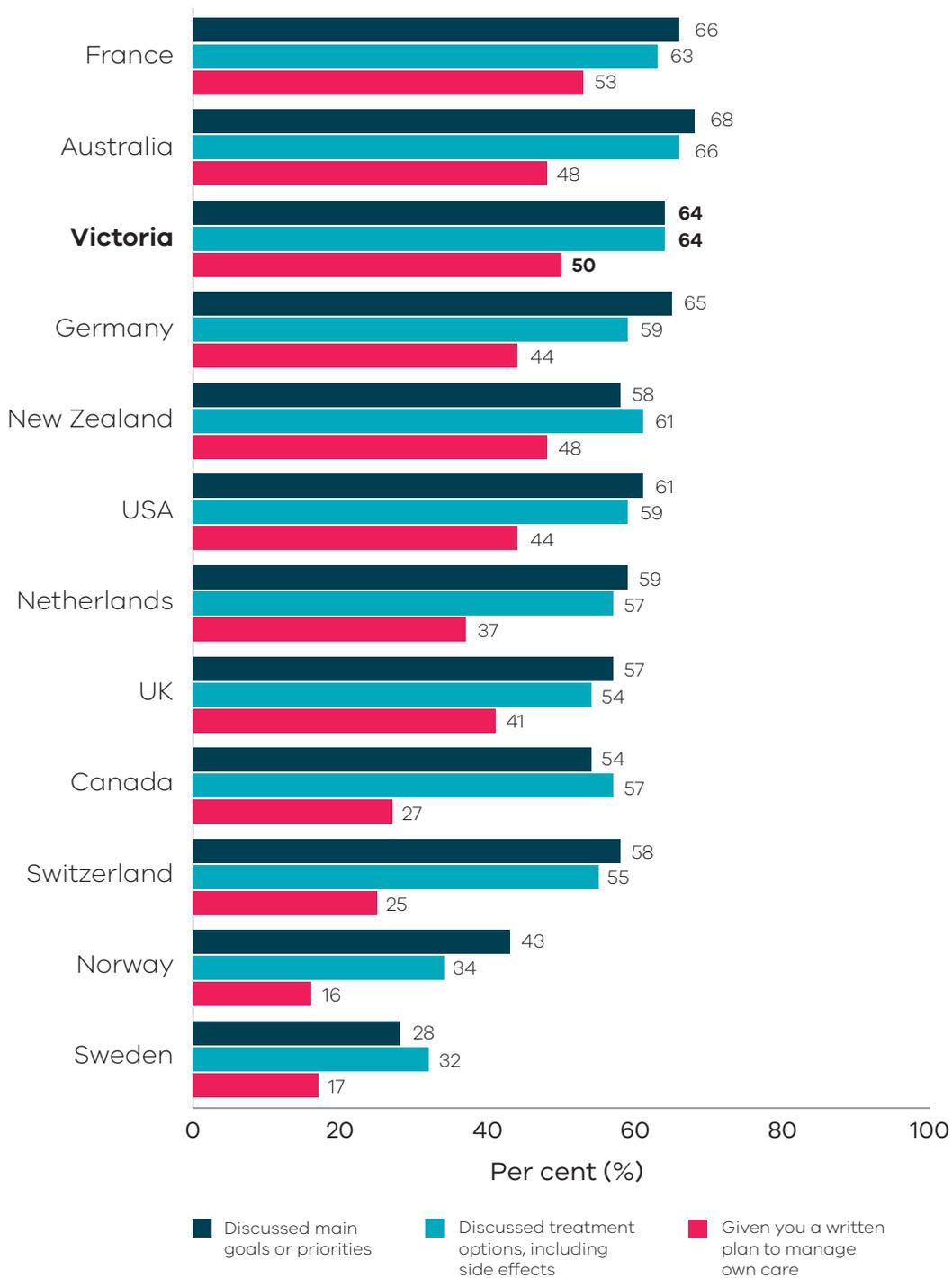
Many chronic diseases require constant monitoring and careful management to reduce the risk of complications and disease progression. Appropriate care can be complex and may require input from a variety of health

professionals including GPs, specialists and allied health professionals. In Victoria, the vision is for an integrated model of chronic disease management that is responsive, person-centred and effective to improve health outcomes and quality of life for those living with disease.

Two out of three (64%) Victorian adults who responded to the IHP survey in 2016, with one of the eight chronic diseases included in the survey, reported having discussed their main goals and priorities, as well as treatment options for a chronic condition, with a health professional in the 12 months prior to the survey (Figure 4.1). Half of all Victorian respondents with a chronic disease also reported being given a written plan to help manage their condition in the previous 12 months. Victoria ranked highly in terms of chronic disease care against most of the other comparators in the survey.



Figure 4.1: Health care professional had discussed main goals, treatment options or written management plan for chronic disease care



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported having a chronic disease.

Chronic diseases include: joint pain or arthritis; asthma or chronic lung disease; cancer; depression, anxiety or other mental health problem; diabetes; heart disease including heart attack and hypertension; and stroke.



Medication management

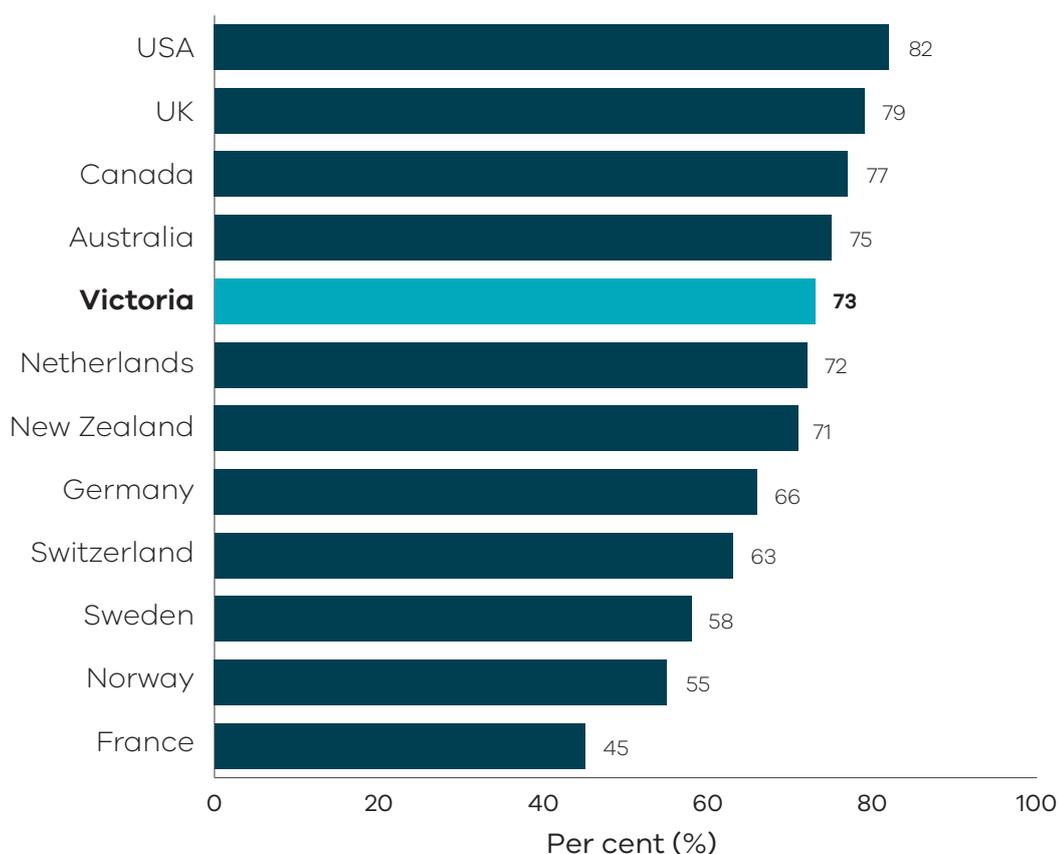
Three out of four adults have their medications reviewed each year

Adverse events are a significant issue in the care and management of patients. By monitoring, managing and reviewing adverse events it is possible to reduce the risk to patients. In the case of medication error, the risk can be reduced with regular medication reviews and the provision of

information about the medications prescribed and potential side effects to patients.

Three out of four (73%) adult Victorians who responded to the IHP survey reported having had their medication reviewed by a doctor or pharmacist in the previous 12 months (Figure 4.2). Victoria ranked in the mid-range against other comparators in the survey.

Figure 4.2: Doctor or pharmacist had reviewed all medications taken



Data source: The Commonwealth Fund 2016.¹³

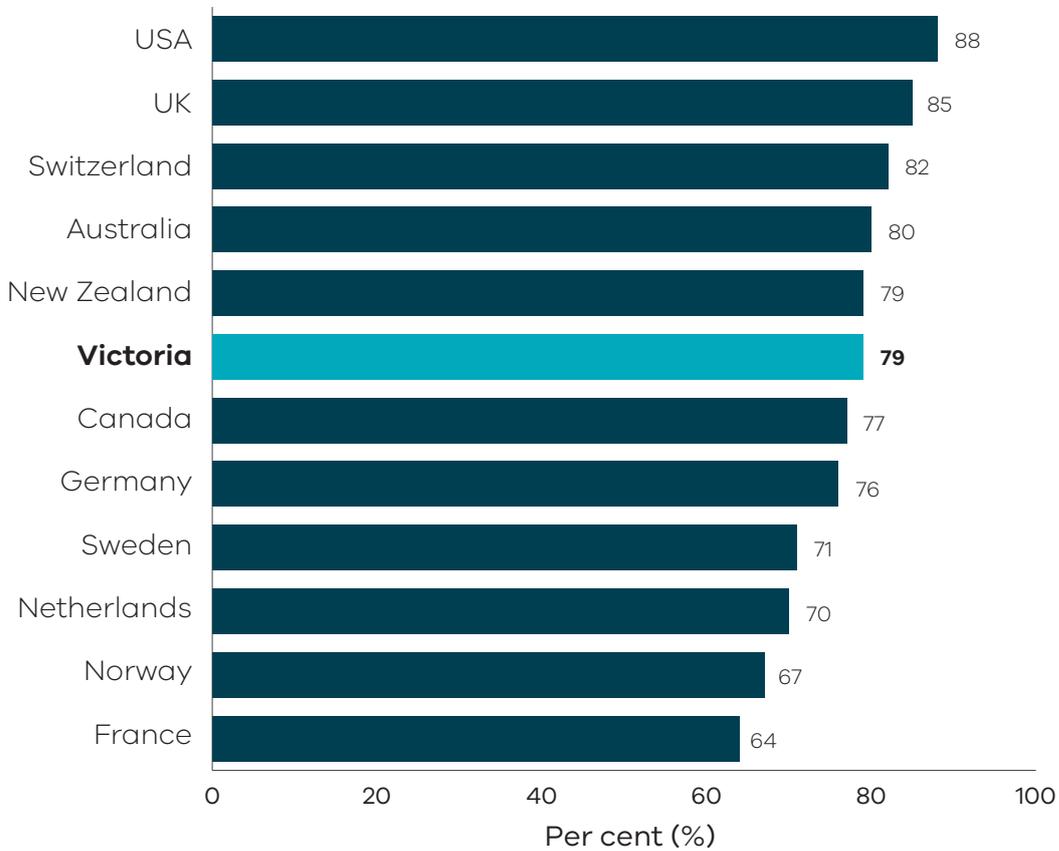
The estimates are based on responses from those who reported taking two or more prescription medications on an ongoing basis.



Seventy-nine per cent of adult Victorians who responded to the IHP survey and had been admitted to hospital in the previous 2 years reported having had a discussion with a health professional about

the purpose of taking each of their medications when they left hospital (Figure 4.3). Victoria ranked in the mid-range against other comparators in the survey.

Figure 4.3: Someone discussed the purpose of taking each medication when leaving hospital



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported having been admitted to a hospital in the previous 2 years.



Medical error

One in 12 adults experience a medical, medication or lab error over a 2-year period

Medical errors are preventable and are commonly associated with poor systems and processes, communication breakdowns, diagnostic errors, inexperience and inadequate skills.²⁹ It is widely acknowledged that medical error is underreported in official statistics, and the burden is thought to be significant, with one study in the United States suggesting that if it were a disease, medical error would rank as the third leading cause of death.³⁰

Medicines are the most common intervention provided by health professionals in Australia and are the most common source of medical error.³¹ This is concerning because the majority of errors that occur are preventable.

Table 4.1 shows the percentage of adult participants in the IHP survey in 2016 who reported having experienced either a medical, medication or lab error in the previous 2 years, by country. About one in 12 (8%) Victorian adults who responded to the IHP survey reported experiencing either a medical, medication or lab error in the previous 2 years. Victoria ranked in the low range internationally, along with France (8%) and Germany (7%).



Table 4.1: Experienced a medical error in the previous two years

	Been given incorrect results for diagnostic or lab test	Thought a medical mistake was made in your treatment or care	Been given the wrong medication or wrong dose	At least one of the errors listed
Germany	2*	3	4	7
France	6	4	4	8
Victoria	6	2*	2*	8
Netherlands	2*	4	5	10
Australia	5	4	3	11
UK	4	4	4	11
Switzerland	3	10	6	14
Canada	5	7	5	15
New Zealand	5	6	5	16
Sweden	3	9	6	17
USA	8	9	5	19
Norway	3	12	7	21

Data source: The Commonwealth Fund 2016.¹³

The estimates for incorrect results for diagnostic or lab tests are based on responses from those who reported having had a lab or medical test in the previous 2 years.

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



Engagement between patients and health professionals

Victoria ranks highly on engagement between patients and their general practitioners and other primary care medical staff

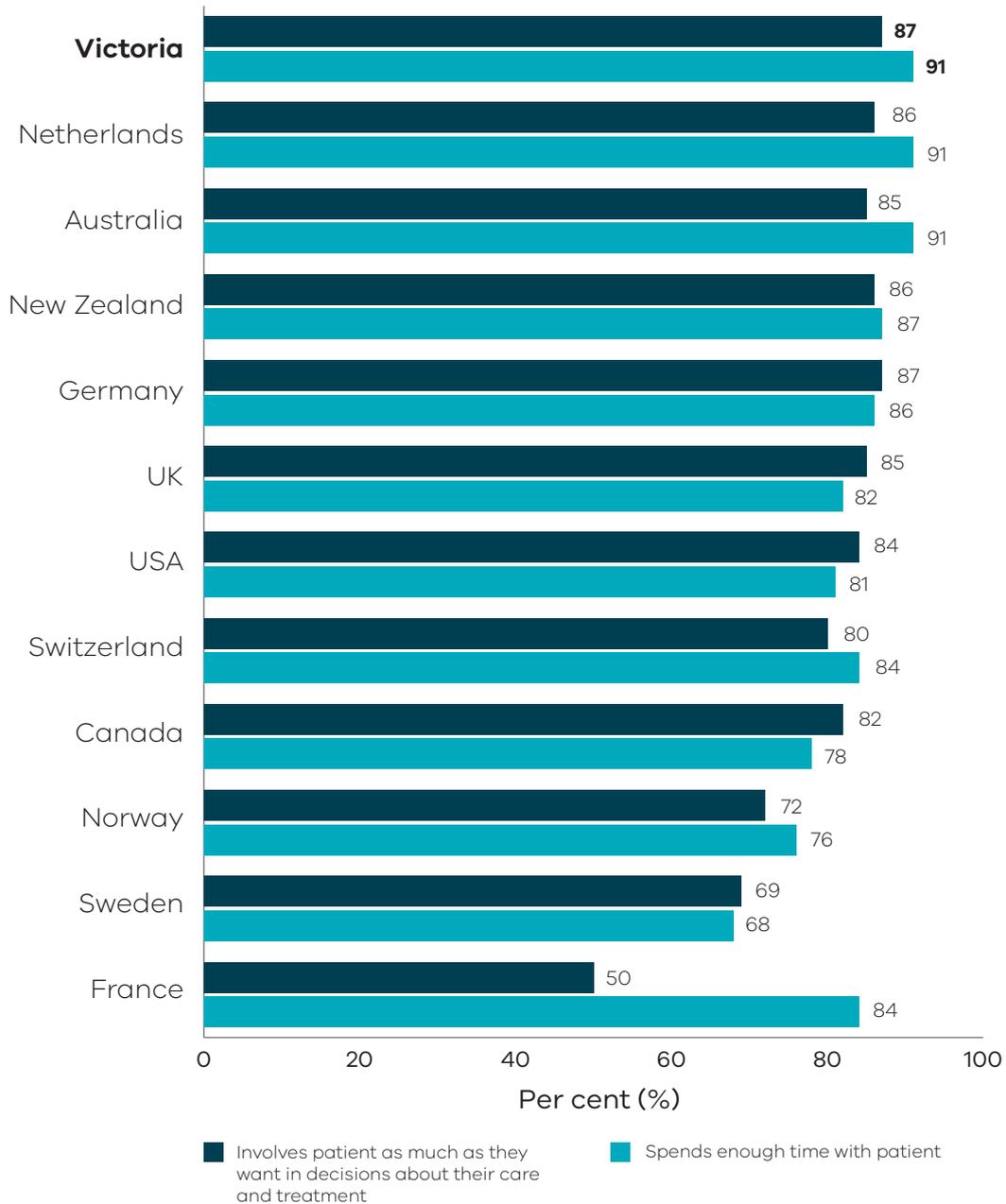
Patients who are engaged in their care are more likely to experience higher quality care and fewer errors, and have more positive views of the health system.^{32,33}

There is also a growing body of evidence to show that patient engagement improves health outcomes and may reduce healthcare costs.^{34,35}

A high proportion of Victorian adults who responded to the IHP survey in 2016 said their GP or medical staff always or often involved them in decisions about their care and spent enough time with them (Figure 4.4). Victoria ranked highest of all other comparators in the survey.



Figure 4.4: General practitioner always or often spends enough time with patient or involves them in decisions about their care, when they need care or treatment



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported having a regular place or doctor where they usually go for their medical care.



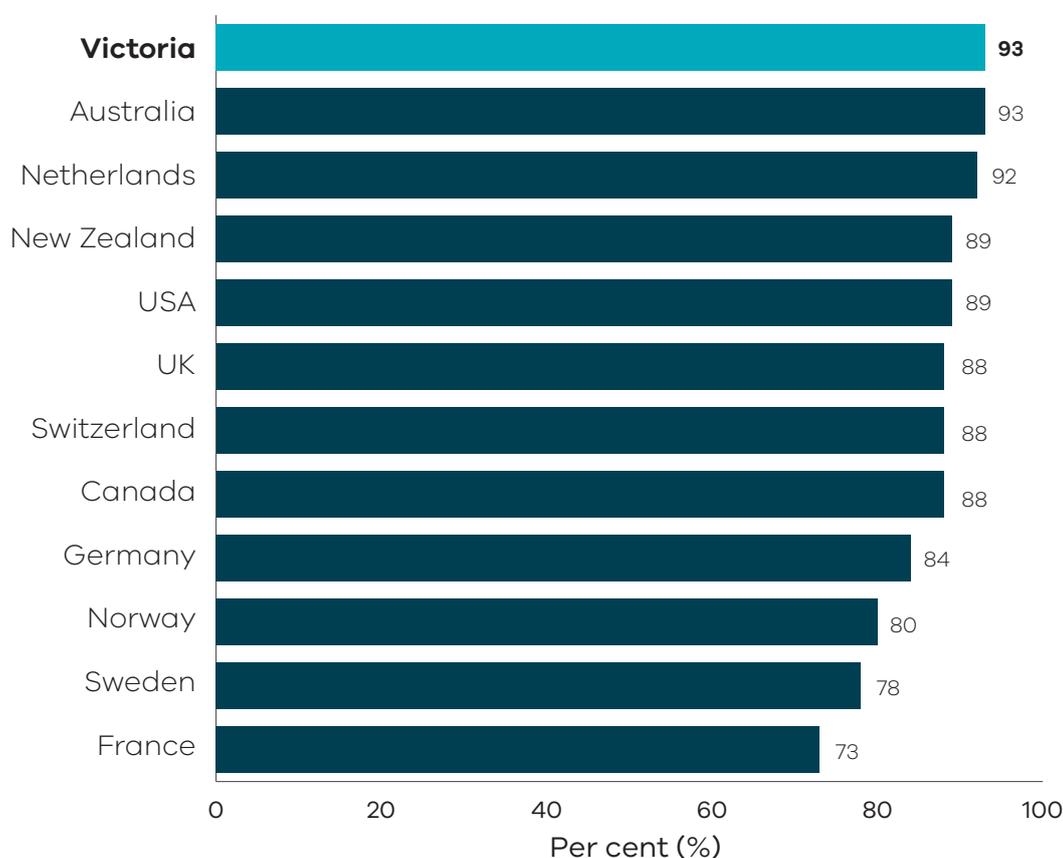
Patient–professional communication

Victoria ranks very high for patients receiving easy to understand medical information

Good communication between health professionals and their patients is important in building relationships and fostering trust so that patients are more likely to acknowledge health problems, understand treatment options, modify behaviour and follow medication schedules.³⁶

Nine out of 10 (93%) Victorian adults who responded to the IHP survey in 2016 said their GP or medical staff always or often explain things in a way that is easy to understand (Figure 4.5). Together with Australia, Victoria ranked highest of all other comparators in the survey.

Figure 4.5: General practitioner or medical staff always or often explain things in a way that is easy to understand



Data source: The Commonwealth Fund 2016.¹³

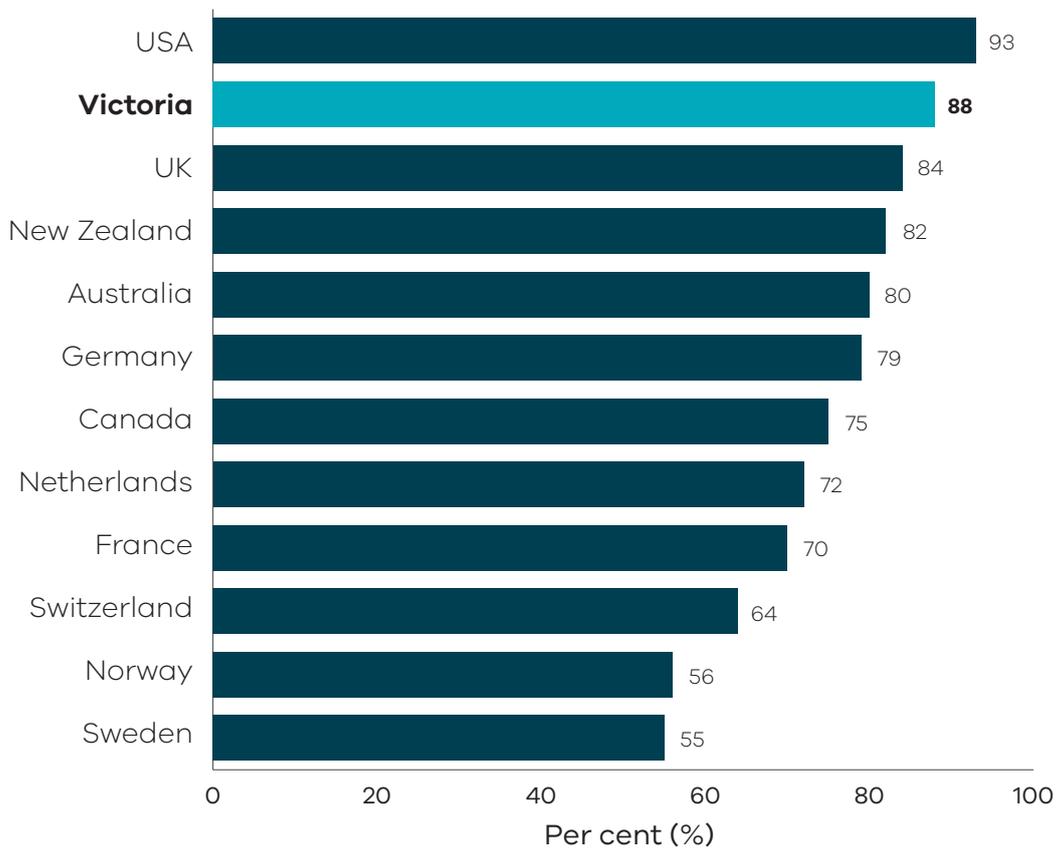
The estimates are based on responses from those who reported having a regular place or doctor where they usually go for their medical care.



Talking with patients and providing them with the information they need about their care following discharge from hospital is important to their recovery and reduces the risk of readmission. About nine out of 10 (88%) Victorian adults who responded to the IHP survey

and had been admitted to hospital in the previous 2 years reported having received written information on what to do when they returned home and what symptoms to watch for when they were discharged (Figure 4.6). Victoria ranked second to the United States (93%).

Figure 4.6: Received written information on what to do and what symptoms to watch for when returned home from hospital



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported being hospitalised in the previous 2 years.



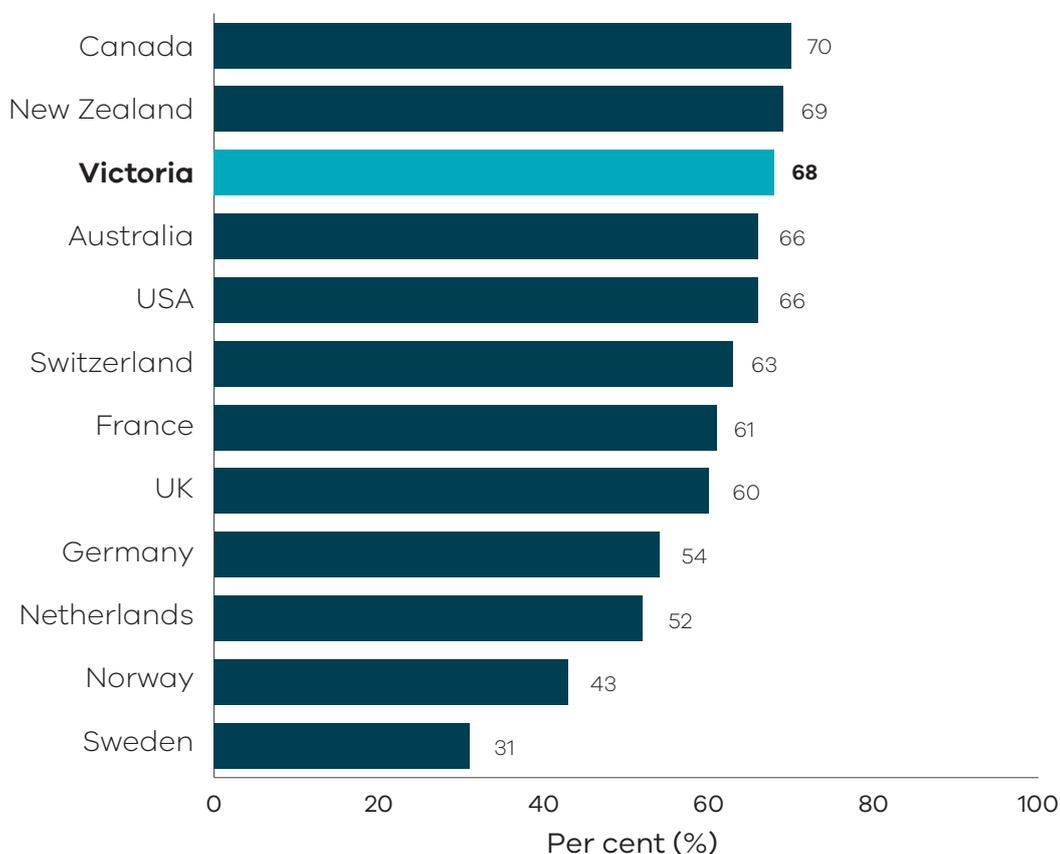
Continuity of care

Most adults experience information sharing between health professionals and continuity of care when they require care from more than one doctor or service

Patients often require care from more than one health professional or service in treating a health problem. Their continuity of care is dependent on good communication and the flow of information between health professionals and services.

Figure 4.7 and Table 4.2 present results from the IHP 2016 on continuity of care and information sharing between health professionals. The data suggest that information is shared between health professionals and services in Victoria and that most Victorians experience continuity of care when they require care from more than one health professional or service. Victoria ranked highly for continuity of care against other countries in the survey.

Figure 4.7: Regular doctor or someone in regular doctor's practice always or often helps coordinate or arrange care received from other doctors and places



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on those who reported having a regular place or doctor where they usually go for their medical care.



Table 4.2: Continuity of care between regular doctor, specialists and hospitals

	Hospital made arrangements for follow-up care	Regular doctor/ place of care informed about the care you received in hospital	Regular doctor/ place of care was informed after specialist visit	Specialist had your basic medical information
Victoria	89	75	86	87
New Zealand	79	81	84	92
UK	79	83	81	83
Germany	75	71	85	87
Australia	81	74	76	83
USA	82	82	70	80
Switzerland	77	76	78	77
Canada	73	76	72	84
France	63	74	79	76
Netherlands	67	68	70	79
Norway	61	63	59	80
Sweden	63	46	45	67

Data source: The Commonwealth Fund 2016.¹³

The estimates that refer to specialist care are based on responses from those who reported having seen a specialist in the previous 2 years and have a regular place or doctor where they usually go for their medical care.

The estimates that refer to hospital care are based on responses from those who reported having been hospitalised in the previous 2 years and have a regular place or doctor where they usually go for their medical care.



Care coordination

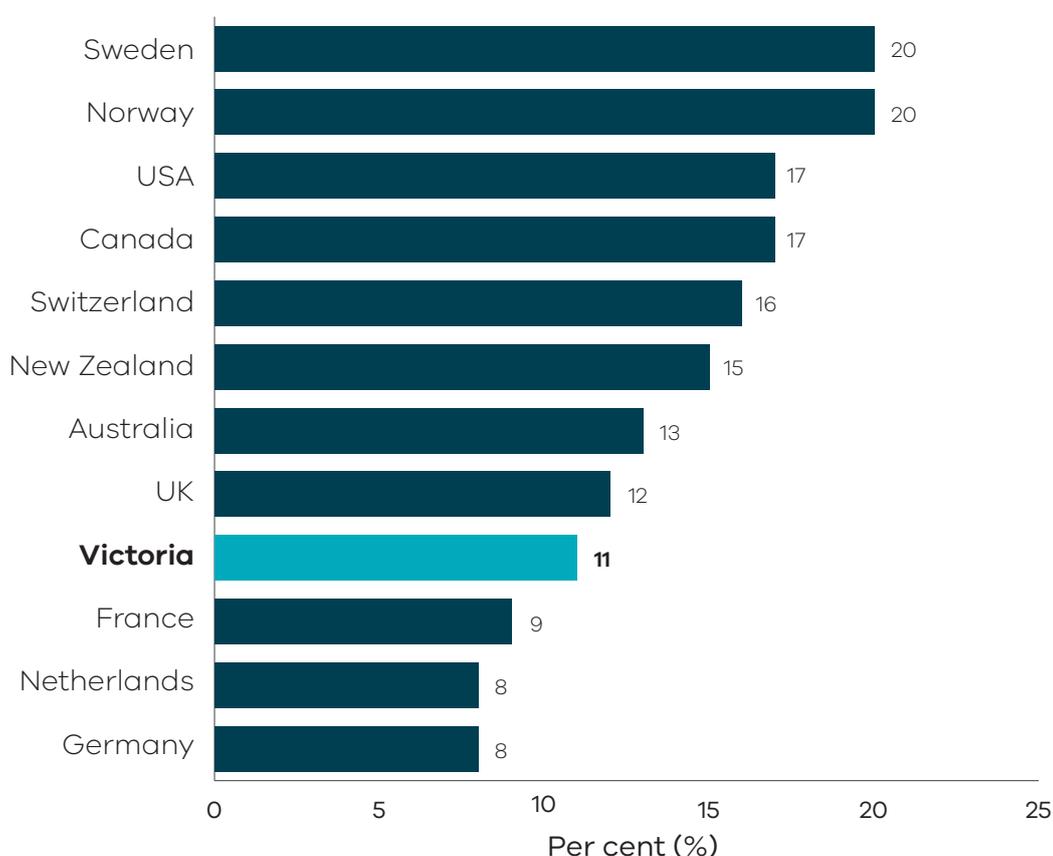
Victorian patients experience fewer care coordination issues than patients in many other countries

There is an expectation among patients that their health information will be shared reliably between health professionals involved in their care. Problems with coordination, such as when test results are not available,

or when patients are given conflicting advice, are indicators of discontinuity in the provision of health care.^{1,32,37}

Eleven per cent of Victorian adults who responded to the IHP survey in 2016 said they had received conflicting advice from different health professionals in the previous 2 years, which was about half the percentage for Sweden (20%) and Norway (20%) (Figure 4.8).

Figure 4.8: Received conflicting information from different doctors or healthcare professionals when receiving care for a medical problem



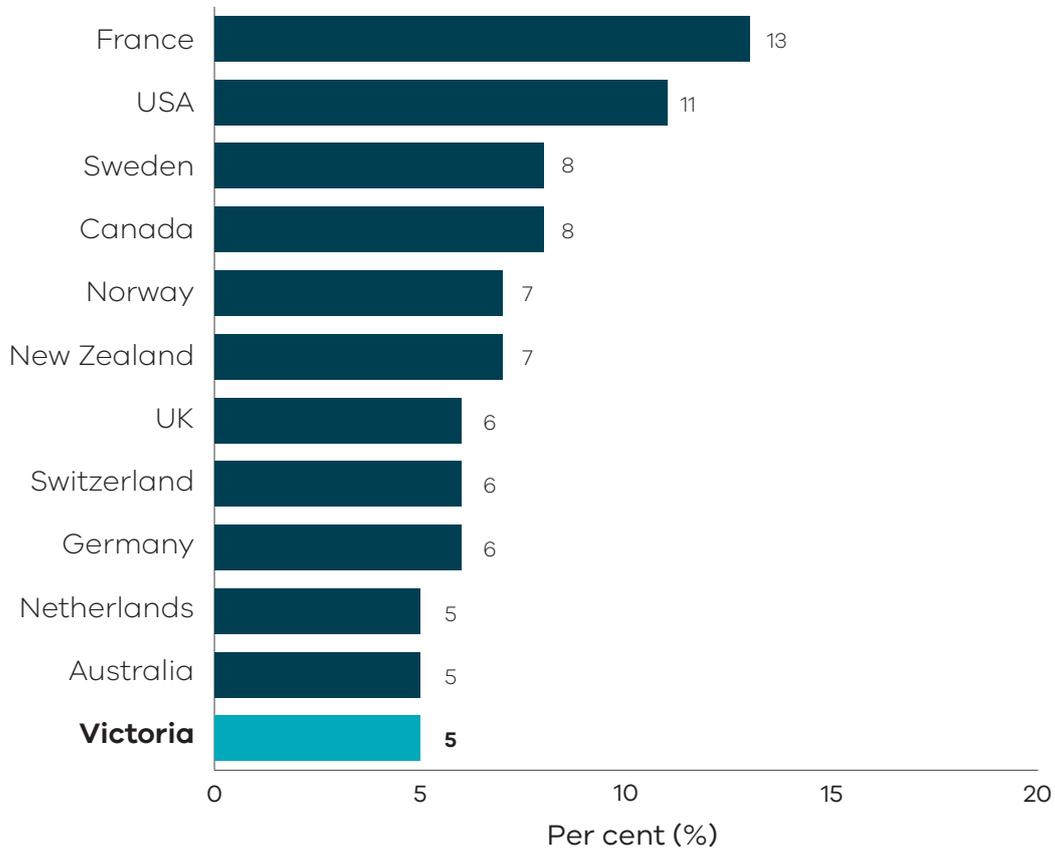
Data source: The Commonwealth Fund 2016.³³



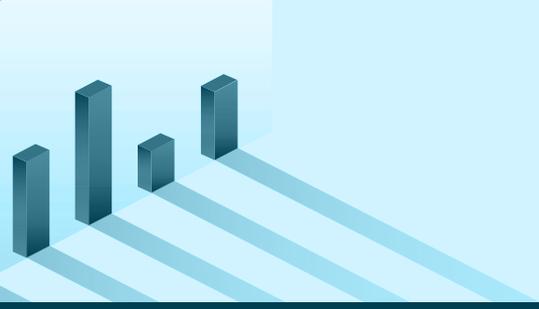
The results of the IHP survey show that Victoria, along with Australia and the Netherlands, had the lowest percentage of adults (5%) who said there was a time in the

previous 2 years when their test results or medical records were not available at the time they had scheduled a medical appointment (Figure 4.9).

Figure 4.9: Test results or medical records were not available at the time of a scheduled medical appointment



Data source: The Commonwealth Fund 2016.¹³



5. Effectiveness

Making a difference for patients

High-performance health systems improve health by providing care that is both effective and appropriate. Effective care encompasses medical treatments, services and preventive actions that are of proven value in improving health outcomes. Effectiveness reflects the extent to which services reduce the incidence, duration, intensity or consequences of health problems.¹

Key findings for Victoria:

- Half of all adults think the health system works well, with only minor changes required.
- Eighty-two per cent of adults rate the care they receive from their regular doctor as excellent or very good.
- Nine out of 10 adults with a chronic disease are confident about managing their own health.
- Internationally, Victoria ranks in the low range for postoperative hospitalisation for pulmonary embolism and deep vein thrombosis.
- Breast cancer survival in Victoria is high by international standards.



Patients' views of the health system

Eighty-two per cent of adults rate the care they receive from their regular doctor as excellent or very good

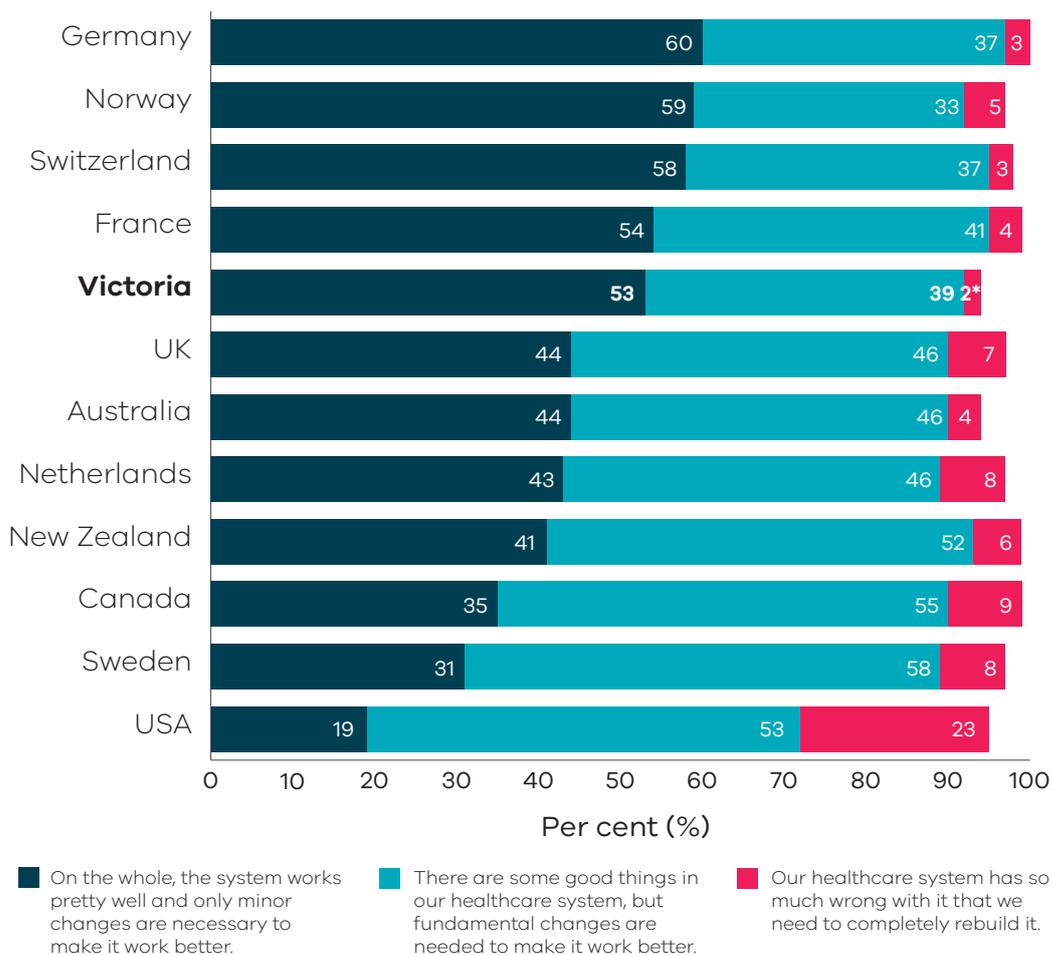
Effectiveness can be gauged using both objective and subjective measures that complement each other, capturing different perspectives and providing greater depth in assessment.

While objective measures may be neatly defined and quantified, subjective measures, such as patient views of the health system, are less discrete but provide insights into effectiveness that are not captured by objective measures.

Half (53%) of all Victorian adults who responded to the IHP survey in 2016 said the health system worked well and only minor

changes were required to improve it (Figure 5.1). This result was in the mid-range for countries included in the survey. Thirty-nine per cent of Victorians thought the health system required fundamental change, which was also in the mid-range internationally. Only 2% of adults thought the health system in Victoria needed to be completely rebuilt because there was so much wrong with it.

Figure 5.1: Statement that best expresses overall view of the health system



Data source: The Commonwealth Fund 2016.¹³

Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.

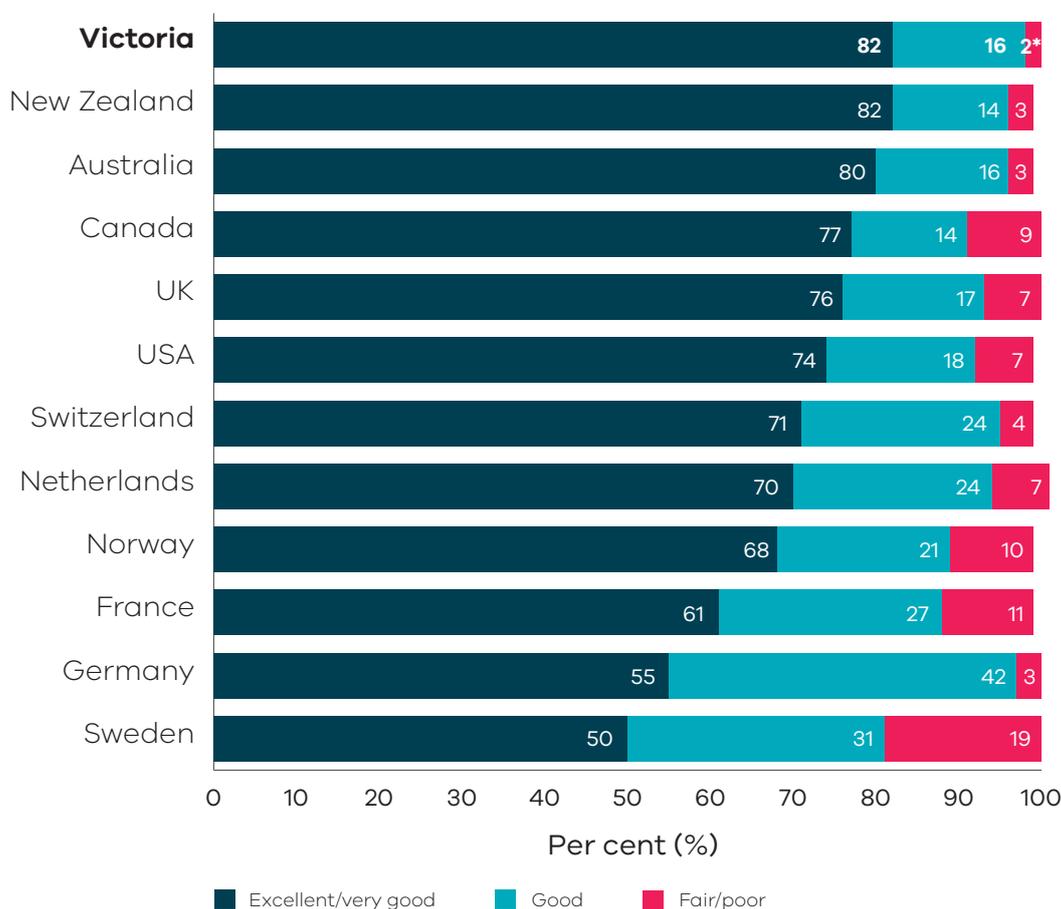
* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



Eighty-two per cent of Victorian adults who responded to the IHP survey rated the care from their regular doctor or clinic in the previous 12 months as 'excellent or very good' (Figure 5.2).

Together, Victoria and New Zealand were ranked highest of all comparators. Only 2% of Victorian adults rated their care as 'fair or poor'.

Figure 5.2: Overall rating for medical care received from regular doctor's practice or clinic in the previous 12 months



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported having a regular place or doctor where they usually go for their medical care and had seen their doctor in the previous 12 months.

Estimates may not add to 100% due to a proportion of 'not sure' or 'declined to answer' responses not reported here.

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



Self-management of chronic disease

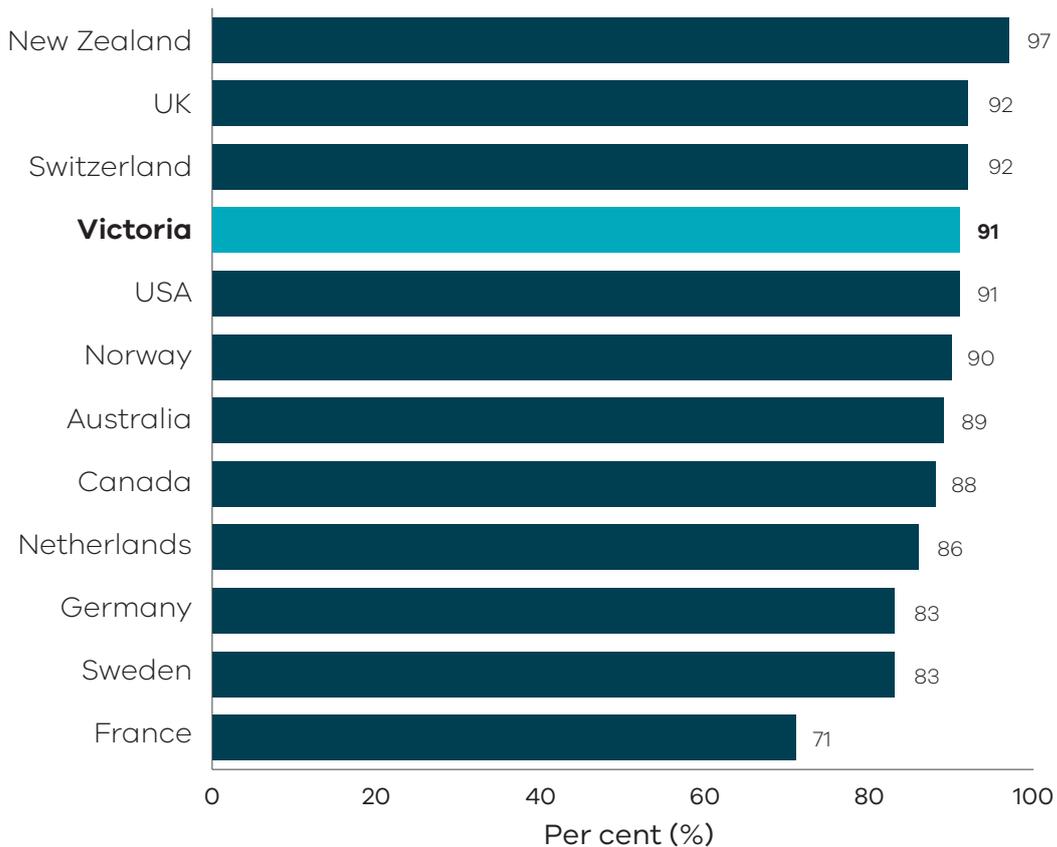
Nine out of 10 adults with a chronic disease are confident about managing their own health

Measuring effectiveness in the health system also involves assessing how well interventions impact on patient health outcomes. Measuring the effectiveness of self-management initiatives, for

example, involves assessing how confident patients feel managing their own health problems.

Nine out of 10 (91%) Victorian adults with a chronic disease who responded to the IHP survey in 2016 were confident of being able to control or manage their health (Figure 5.3).

Figure 5.3: Feel confident can manage own health if have a chronic disease



Data source: The Commonwealth Fund 2016.¹³

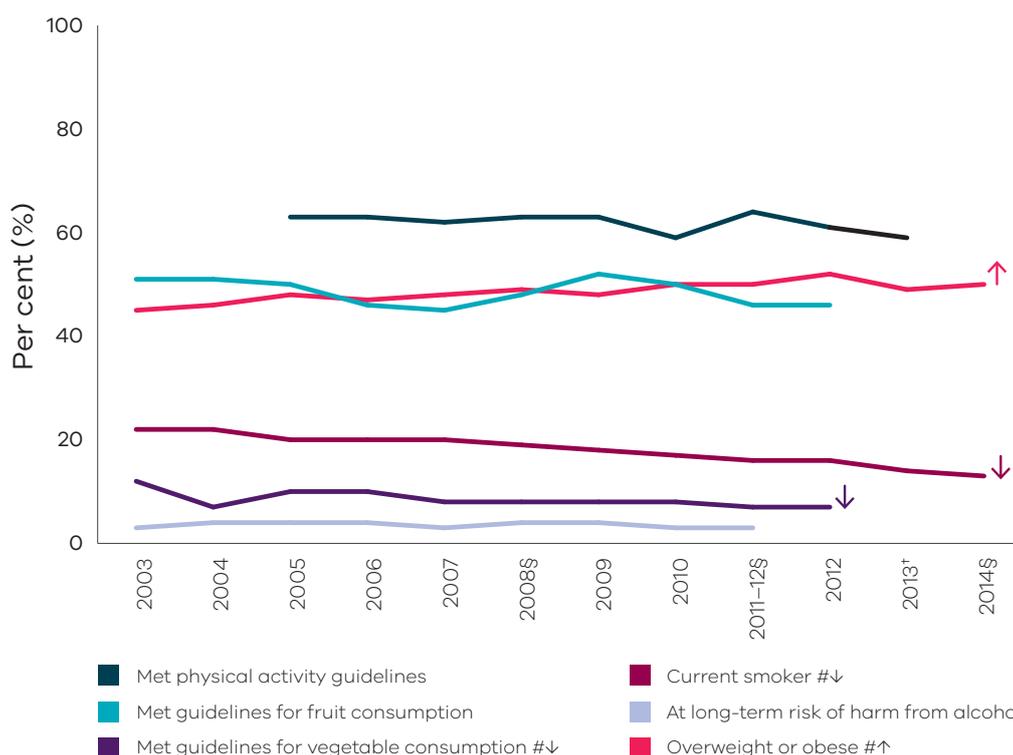
Chronic diseases include: joint pain or arthritis; asthma or chronic lung disease; cancer; depression, anxiety or other mental health problem; diabetes; heart disease including heart attack and hypertension; and stroke.



The effectiveness of chronic disease prevention strategies and activities in the health sector may be assessed in part by monitoring modifiable risk factors for chronic disease. Prevalence estimates for modifiable risk factors present a mixed picture for Victoria. While the self-reported prevalence of smoking has decreased over time, the prevalence of overweight and

obesity has increased and the percentage of adults meeting the dietary guidelines for vegetables has decreased. There has been no significant change over time in the prevalence of high blood pressure, long-term risk of harm from alcohol consumption, fruit consumption or physical activity levels that meet national guidelines (Figure 5.4).

Figure 5.4: Modifiable risk factors for chronic disease, Victoria, 2003–2014 (or nearest year)



Data source: Victorian Population Health Survey series 2003–2014.

Data are based on responses from adults 18 years of age or older and data were age-standardised to the 2011 Victorian population.

Survey sample size: § ~34,000; † ~3,600; remaining surveys ~7,500.

Ordinary least squares regression was used to test for trends over time.

#↑ #↓ Trend was statistically significant ($p < 0.05$).

Risk factors include having ever had a diagnosis of high blood pressure, being a current smoker, overweight or obese, at risk of long-term harm from alcohol consumption,³⁸ not having met the national guidelines for fruit consumption or vegetable consumption,^{39,40} or physical activity.⁴¹



Hospitalisation for postoperative pulmonary embolism and deep vein thrombosis

Internationally, Victoria has a low-range postoperative hospitalisation rate for pulmonary embolism and deep vein thrombosis

Adverse events occur when a person is unintentionally harmed as a result of their health care. Common adverse events include the onset of infection following contact with health services, experiencing a fall while receiving care and problems with medications. Postoperative

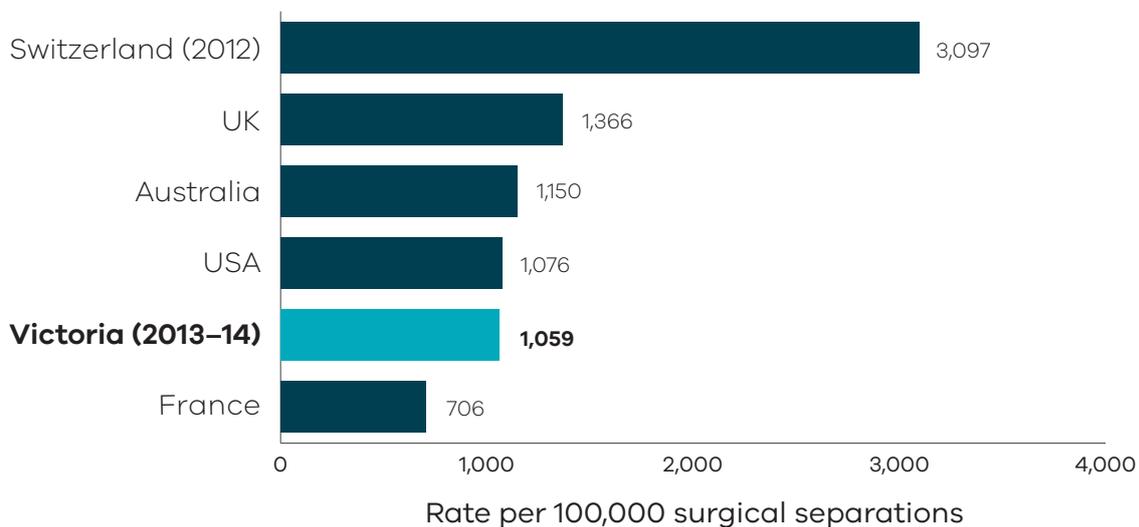
pulmonary embolism and deep vein thrombosis are most likely to occur following joint replacement surgery but may be avoided with the use of preventive measures such as taking anticoagulants.^{32,42}

Figure 5.5 shows crude postoperative separation rates for pulmonary embolism and deep vein thrombosis. The rates for Australia and other countries were obtained from the online OECD health statistics data library.³ The rate for Victoria was obtained from the VAED 2013–14.⁴³ The data

are not all directly comparable with one another because of differences in methodology, and this largely accounts for the large range in values.⁵

About one in 100 surgical separations in Victoria involved postoperative pulmonary embolism or deep vein thrombosis in 2013–14. The figure shows that when compared internationally, Victoria had a low-range postoperative separation rate for pulmonary embolism and deep vein thrombosis.

Figure 5.5: Hospitalisation for postoperative pulmonary embolism and deep vein thrombosis, per 100,000 surgical separations, 2013 (or nearest year)



Data sources: OECD 2016;³ Department of Health and Human Services 2017.⁴³

Data exclude episodes of care with a length of stay < 48 hours, pregnancy/childbirth and puerperium code, and episodes of care with a procedure code of 'interruption of vena cava'.



Potentially preventable hospitalisations

Victoria ranks in the mid-range nationally for potentially preventable hospitalisations

Potentially preventable hospitalisations, also known as ambulatory care sensitive conditions, are conditions for which hospitalisation is thought to be avoidable with the application of effective preventative care and

early disease management, usually delivered in primary care and community-based care settings (including GPs, medical specialists, dentists, nurses and allied health professionals). Potentially preventable hospitalisations provide an indirect reflection of problems associated with access to care and effective primary or secondary/specialist care.

Figure 5.6 presents potentially preventable hospitalisation separation rates per 1,000 population, by state and territory, for 2014–15. The figure shows that Victoria ranked lower than Australia and ranked in the mid-range when compared with other states and territories.

Figure 5.6: Potentially preventable hospitalisation rates, per 1,000 population, by state and territory, 2014–15



Data source: AIHW 2016,⁴⁴ Table 4.22.

Data in the figure for Australia includes other territories and excludes overseas residents and cases with an unknown state of residence. Rates were age standardised to the estimated resident population of Australia, as at 30 June 2001.



Avoidable mortality

Victoria ranks in the low range nationally for avoidable mortality

The concept of 'avoidable' deaths was first devised by Rutstein and colleagues in 1976.⁴⁵ Their initial proposal outlined a method of measuring the quality of medical care based on cases of unnecessary disease, disability and untimely deaths. Their original list included around 90 conditions that they considered as sentinel health events. Since its introduction, the conditions contributing to

avoidable mortality have been successively refined, but the original concept has survived. Avoidable mortality has been used to measure the contribution that health care makes to health and how this varies between population groups and over time. It offers a means of understanding the effectiveness of health systems in maintaining and improving population health as avoidable mortality reflects deaths from those conditions that should not occur with effective and timely health intervention.

Figure 5.7 presents avoidable mortality rates per 100,000 population, by state and territory, for 2014. The figure shows that Victoria ranked lower than Australia and ranked in the low range when compared with other states and territories.

Figure 5.7: Avoidable mortality rates, per 100,000 population, by state and territory, 2014



Data source: ABS 2016.⁴⁶

Rates for avoidable mortality were calculated using data for persons 75 years of age or younger.

Data in the figure for Australia includes other territories and Statistical Areas Level 4, which are migratory, offshore, shipping and special purpose (overseas usual residence, no usual address and unknown usual address).

Rates were age standardised to the estimated resident population of Australia, as at 30 June 2001.



Long-term effectiveness – cancer survival

Breast cancer survival in Victoria is high by international standards

Breast cancer survival has improved in most OECD countries in recent years. In Australia, this is usually attributed to a greater awareness of the disease, the successful national breast screening program, earlier diagnosis and ongoing advances in breast cancer treatment.⁴⁷

Breast cancer survival is measured in terms of relative survival, which

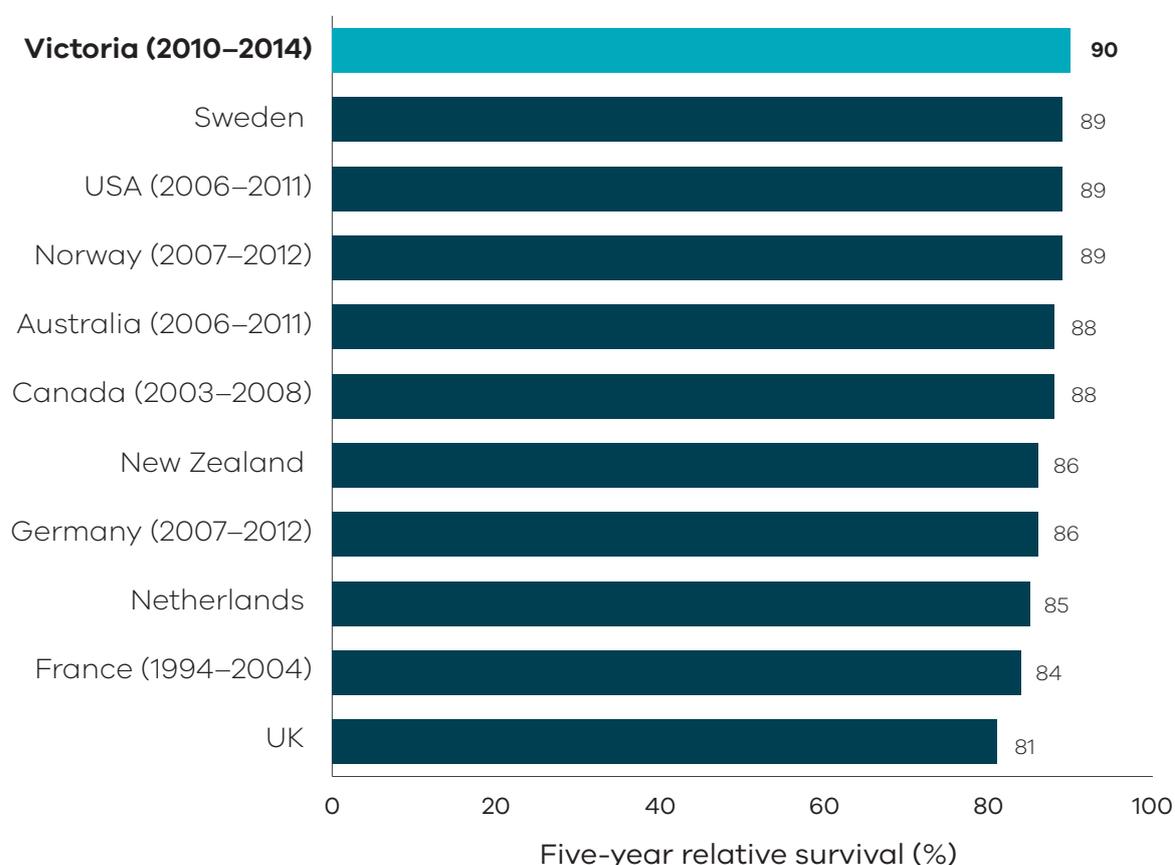
involves a comparison of survival for those diagnosed with the disease (observed) with survival for those in the wider population who are disease-free (expected). While mortality estimates provide information about the burden of breast cancer, survival estimates provide insights into breast cancer care.³²

Figure 5.8 shows the 5-year relative breast cancer survival rate for Victoria, Australia and selected OECD countries where data is

available. The ‘period method’ of analysis was used to calculate the rates in the figure, with the exception of the rate for Canada, which was based on the ‘cohort method’ of analysis and excludes data from the province of Quebec, so is not directly comparable.^{3,48}

The figure shows that Victoria (90%) ranked highest of all comparators in terms of breast cancer survival. The lowest survival rate was for the United Kingdom (81%).

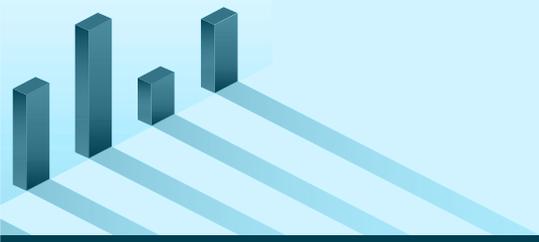
Figure 5.8: Breast cancer five-year relative survival, 2008–2013 (or nearest period)



Data sources: OECD 2016;³ Thursfield & Farrugia 2016.⁴⁸

Rates were based on the ‘period’ method, with the exception of the Canadian rate, which was based on the ‘cohort’ method.

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6. Efficiency

Value for money

Efficiency refers to the relationship between the resources invested in the health sector and the outcomes or products that are produced. Efforts to improve efficiency are usually focused on reducing waste and increasing value for money. Small increases in efficiency can lead to considerable savings in resources and the expansion of health services.

Efficiency, as a performance measure, is easier to assess or measure when the focus is on inefficiency and waste. For example, poor integration, unnecessary bureaucracy and service duplication may be easier to demonstrate than more positive measures of efficiency.^{1,32}

Key findings for Victoria:

- One in five emergency department visits are due to conditions adults feel are treatable by their regular doctor – low by international standards.
- Victoria has the highest rate of Hospital in the Home days in public acute hospitals in Australia.
- Knee arthroscopy is of limited benefit to older patients, and the number of these procedures performed in public hospitals has decreased over the past 10 years.
- One in 20 adults experiences duplication of medical testing over a 2-year period.
- Day surgery has increased as a percentage of all surgery undertaken in Victorian hospitals over the past 10 years.
- The average length of stay for patients admitted to Victorian hospitals has decreased over the past 10 years.
- Victoria ranks in the mid-range internationally for cardiovascular hospital stays.
- The relative stay index for Victoria is lower than the relative stay index for Australia.
- Victoria ranks in the low range for expenditure on health administration in Australia.



Right care, right place

One in five emergency department visits are for a condition that adults feel could be treated by their regular doctor – low by international standards

Efficiency in the health system is focused on pairing resources with needs while minimising waste to achieve value for money. Receiving the right care in the right place is an important feature of an efficient health system.

An avoidable emergency department presentation is a visit to emergency for a health problem that could have been addressed by a healthcare provider in the primary or community care setting. Hence, these visits are theoretically ‘avoidable’ from the perspective of the emergency department. They can contribute to long waiting room times, place unnecessary pressure on the system and could be considered an inappropriate and inefficient use of health system resources.

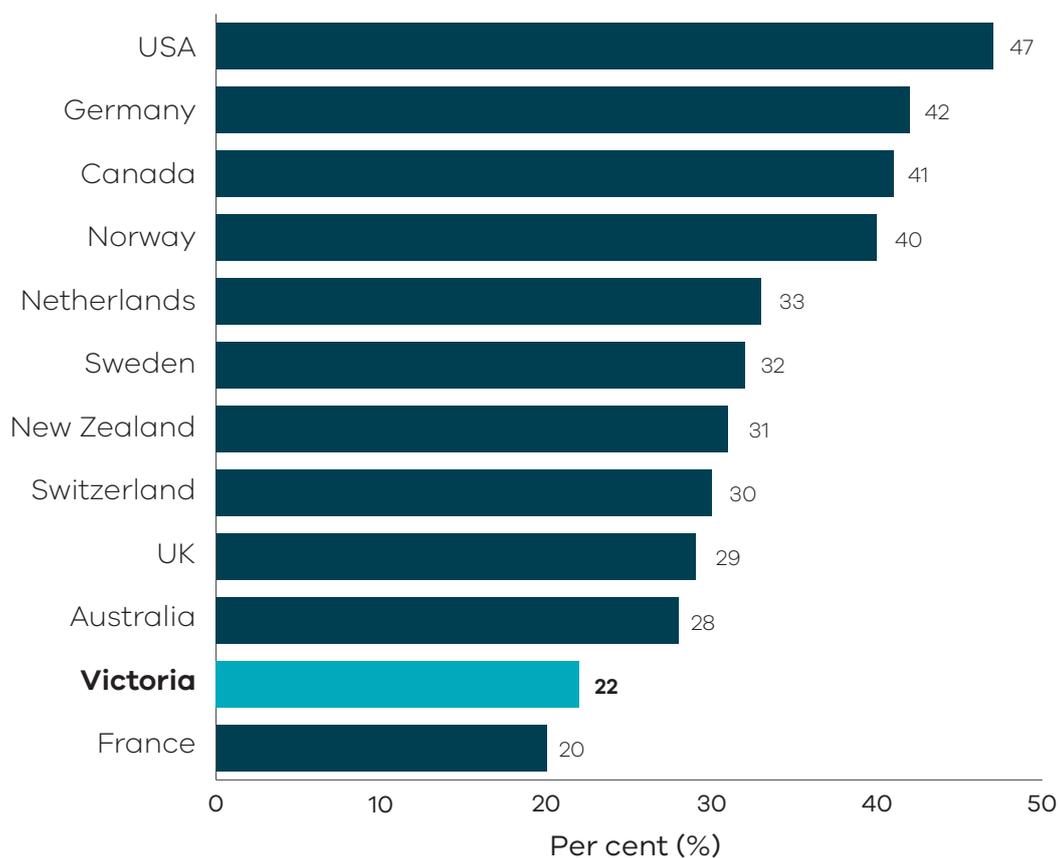
The ABS has conducted a patient experience survey each year since 2010–11. The results of the survey conducted in 2015–16 showed that 17.9% of adult Australians who visited an emergency department in the previous 12 months thought their care could have been provided by a GP.⁴⁹ When asked why they had visited an emergency department and not a GP, 44.3% reported having been taken by ambulance or that their condition was too serious for a GP, 22.5% reported that a GP was not available at the time and 11.6% reported a GP did not have the required equipment or facilities. A further 9.6% reported having been referred by a GP, 1.9% reported the waiting time to see a GP was too long and 0.6% reported visiting an emergency department because it cost less than a visit to a GP.

The results of the IHP survey in 2016 show that one in five (22%) Victorian adults who had visited an emergency department in

the previous 2 years said their last visit was for a condition that could have been treated by their regular doctor (Figure 6.1). With the exception of France (20%), the result for Victoria ranked lower than all other comparators in the survey.



Figure 6.1: Presented to a hospital emergency department for a condition that could have been treated by regular doctor at the place where usually get medical attention



Data source: The Commonwealth Fund 2016.¹³

The estimates are based on responses from those who reported having attended an emergency department in the previous 2 years and had a regular doctor or place they visited for medical care.



The Hospital in the Home (HITH) program provides clinical care to patients in their home or other suitable environment, rather than in a hospital. This arrangement seeks to reduce the length of time a patient is accommodated in hospital, or in some instances allows patients to avoid an admission altogether, in order to optimise the use of hospital

resources and achieve greater efficiency. It is a safe and efficient substitution for acute in-hospital care for a wide range of conditions.

Figure 6.2 shows the percentage of patient days that were recorded as HITH patient days in public acute hospitals, by state and territory, in 2014–15. Although most states and territories have HITH programs,

there is variation in the availability of the programs and reporting of information between jurisdictions.⁴⁴

The figure shows that Victoria (4.4%) had the highest percentage of public acute hospital days that were HITH days of any state and territory in 2014–15, with 210,372 HITH patient days out of 4,793,975 patient days.⁴⁴

Figure 6.2: Percentage of public acute hospital patient days that were Hospital in the Home days, by state and territory, 2014–15



Data sources: AIHW 2016,⁴⁴ Tables 2.13 and 5.36; BHI 2016.¹



Waste in the system

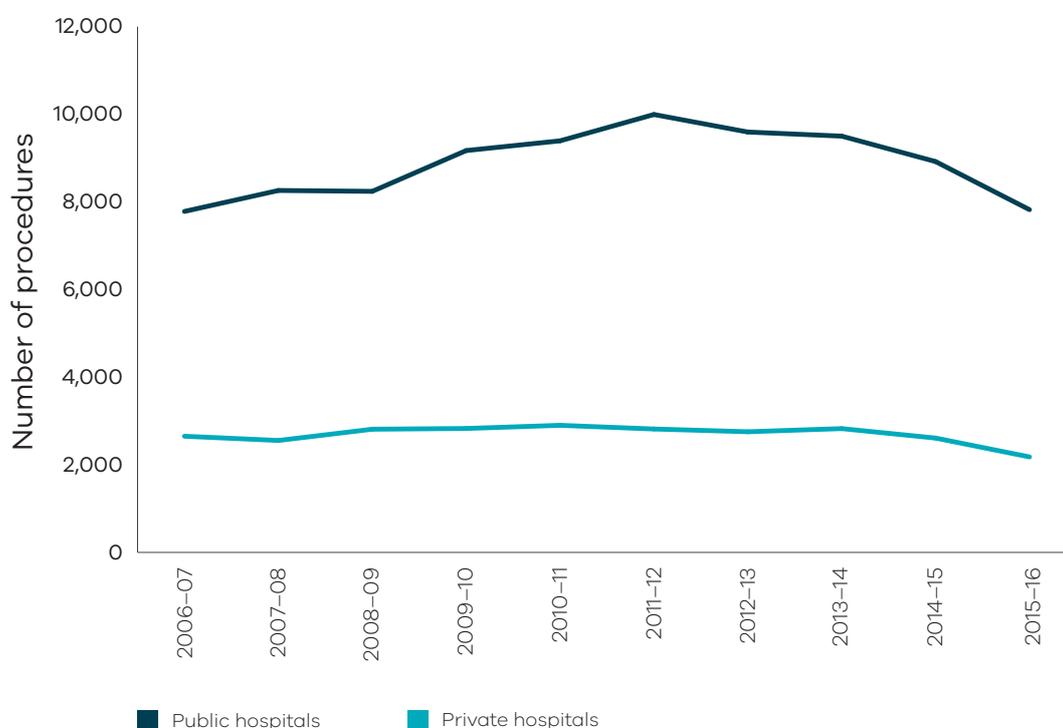
The number of knee arthroscopy procedures performed in public hospitals has decreased over time

Every year Victorians undergo a number of diagnostic tests, treatments and procedures that are unnecessary or of limited or no benefit to their health. These services represent poor value for money and are the focus of recent efforts to reduce waste in the health system.^{50–52}

The evidence does not support arthroscopic surgery for older patients as a treatment for either knee pain or arthritis of the knee.⁵³ A recent meta-analysis has shown that the procedure is of little benefit to these patients in the short term and of no benefit after 2 years.⁵⁴ Instead, non-surgical interventions, including weight loss, exercise and physiotherapy, are encouraged as firstline therapy.

In Victoria the number of knee arthroscopy procedures performed in public hospitals increased annually between 2006–07 and 2010–11 (Figure 6.3). In contrast, the number of procedures performed in public hospitals decreased between 2011–12 and 2015–16, reflecting changes in funding and practice.

Figure 6.3: Number of knee arthroscopy procedures for patients 50 years of age or older, public and private hospitals, Victoria, 2006–07 to 2015–16



Data source: Department of Health and Human Services 2017.⁴³



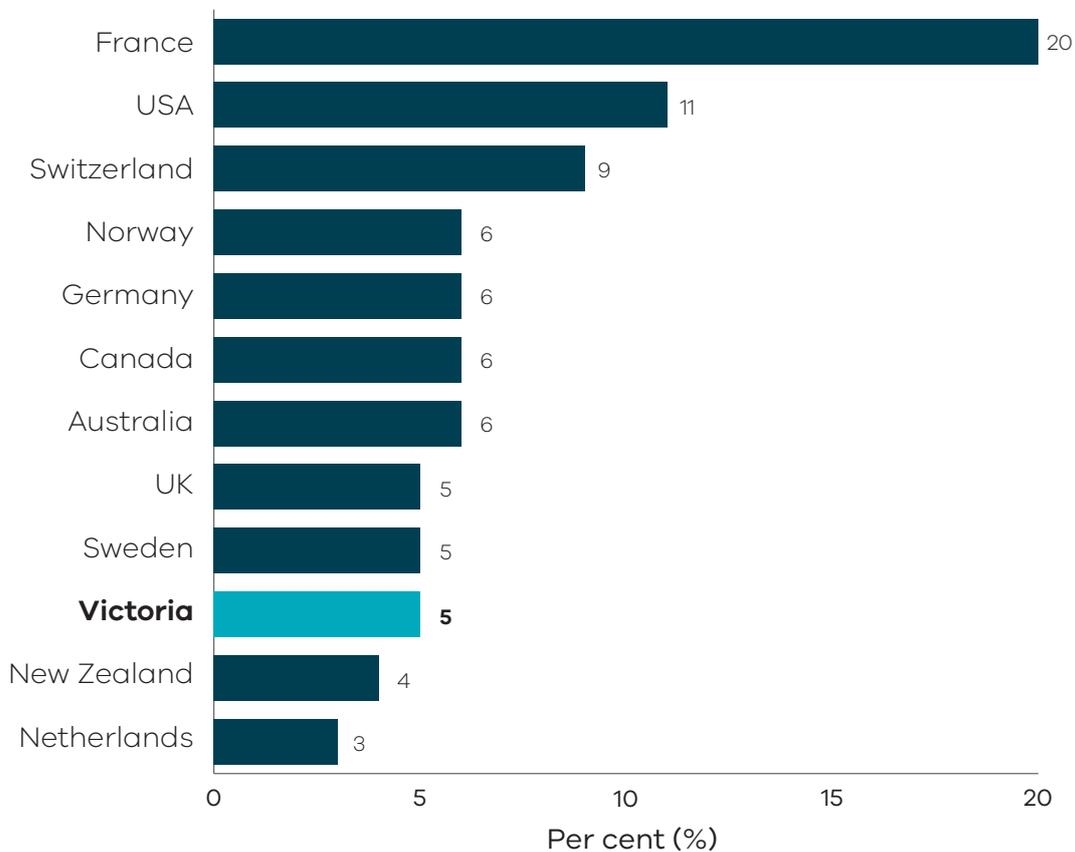
Duplication of services, such as tests being done more frequently than clinically necessary, are sources of operational waste because they create unnecessary activity and associated costs without leading to better treatment or outcomes for the patient.

The duplication of services is often the result of poor communication and information sharing between health professionals and agencies, highlighting the need for better systems to improve efficiency.

The unnecessary repeat requesting of medical tests has been described as a burdensome and costly example of duplication of service and system inefficiency.⁵⁵

One in 20 (5%) Victorian adults who responded to the IHP survey in 2016 said they had experienced unnecessary repeat requesting of medical tests in the previous 2 years (Figure 6.4). This was low when compared internationally, with only New Zealand (4%) and the Netherlands (3%) ranked lower than Victoria.

Figure 6.4: Experienced a time in the previous two years when doctors ordered a medical test that was unnecessary because the test had already been done



Data source: The Commonwealth Fund 2016.¹³



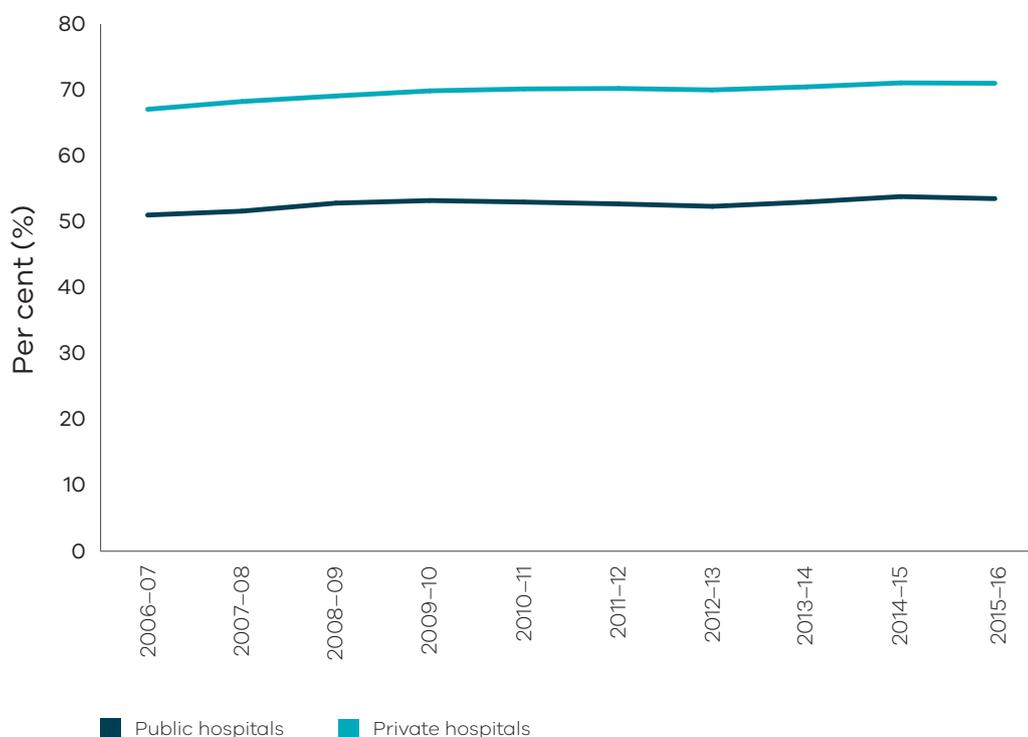
Day surgery

Ninety-seven per cent of cataract surgery in Victoria is performed as day surgery

There have been considerable efficiency gains over time, with improvements in surgical techniques and anaesthesia resulting in reductions in postoperative complications, patient recovery times and cost. Along with changes in government policy and financial incentives, there has been a push to increase day surgery across the sector.⁵⁶

Day surgery has increased as a percentage of all surgery undertaken in both public and private hospitals in Victoria over the past 10 years (Figure 6.5), up from 51% of all surgery undertaken in 2006–07 in public hospitals to 53.5% in 2015–16. In private hospitals, day surgery has increased from 67% of all surgery undertaken in 2006–07 to 71% in 2015–16.

Figure 6.5: Day surgery as a percentage of all surgery, by public and private hospital, Victoria, 2006–07 to 2015–16



Data source: Department of Health and Human Services 2017.⁴³

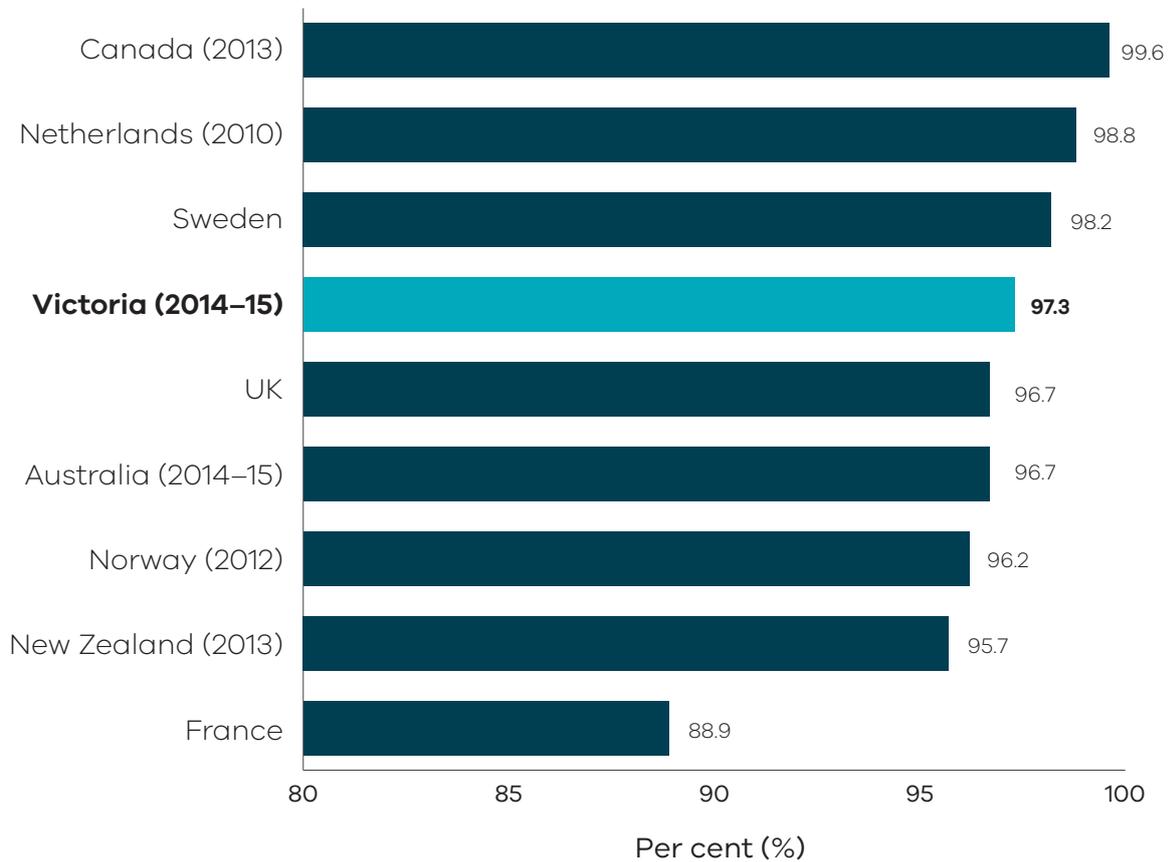
Ordinary least squares regression was used to test for trends over time.



The average length of stay for cataract surgery has declined markedly over the past 70 years from about 7 days in the 1940s to day surgery from the late 1980s onwards.⁵⁷ Figure 6.6 shows the percentage of cataract surgery

performed as day surgery in Victoria, Australia and other OECD countries. The figure shows that 97% of cataract surgery performed in Victorian hospitals in 2014–15 was performed as day surgery.

Figure 6.6: Percentage of cataract surgery performed as day surgery, 2014 (or nearest year)



Data sources: AIHW 2016,⁴⁴ Table 6.10; OECD 2016.³



Length of stay in hospital

The relative stay index for Victoria is lower than the relative stay index for Australia

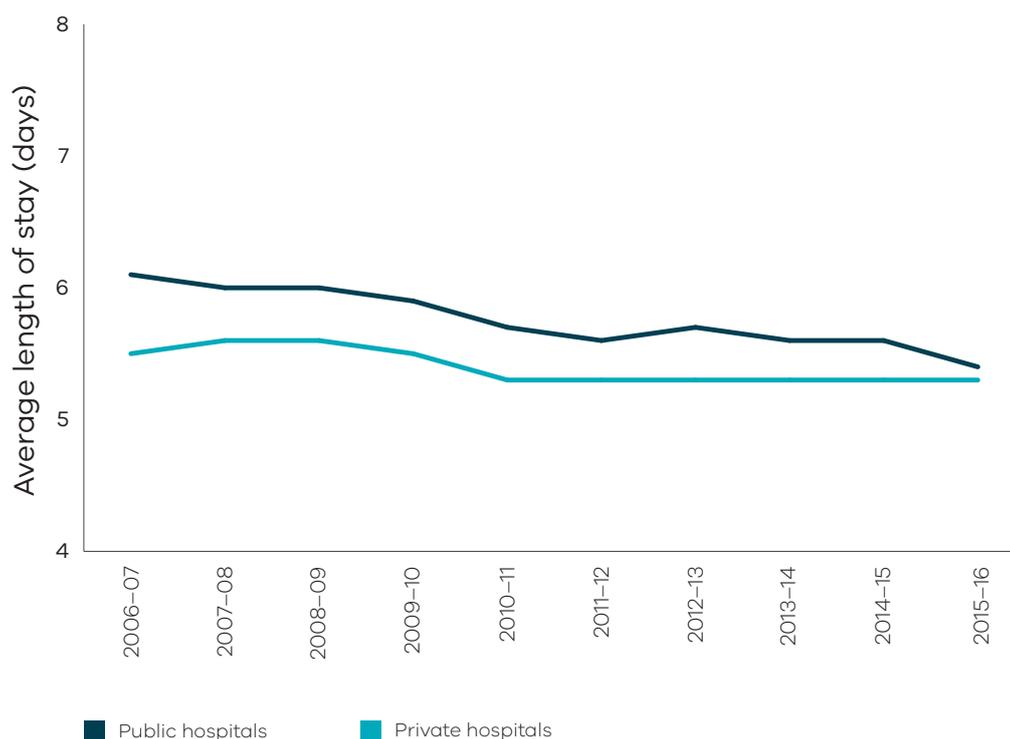
The average length of stay is a proxy measure of efficiency in the hospital setting. In most cases, a shorter length of stay is associated with a lower level of resource use (hospital cost) compared with a

longer length of stay. However, a shorter length of stay is not always best for patients, especially if it impacts on their recovery or is associated with higher readmission rates.³²

The average length of stay for patients admitted to public and private hospitals in Victoria decreased over the 10-year period

to 2015–16 (Figure 6.7), down from an average of 6.1 days in 2006–07 in public hospitals to 5.4 days in 2015–16. In private hospitals, the average length of stay decreased from 5.5 days in 2006–07 to 5.3 days in 2015–16.

Figure 6.7: Average length of stay by private and public hospital, Victoria, 2006–07 to 2015–16



Data source: Department of Health and Human Services 2017.⁴³

The average length of stay calculation is based on patients who stayed at least one night in hospital.

Ordinary least squares regression was used to test for trends over time.

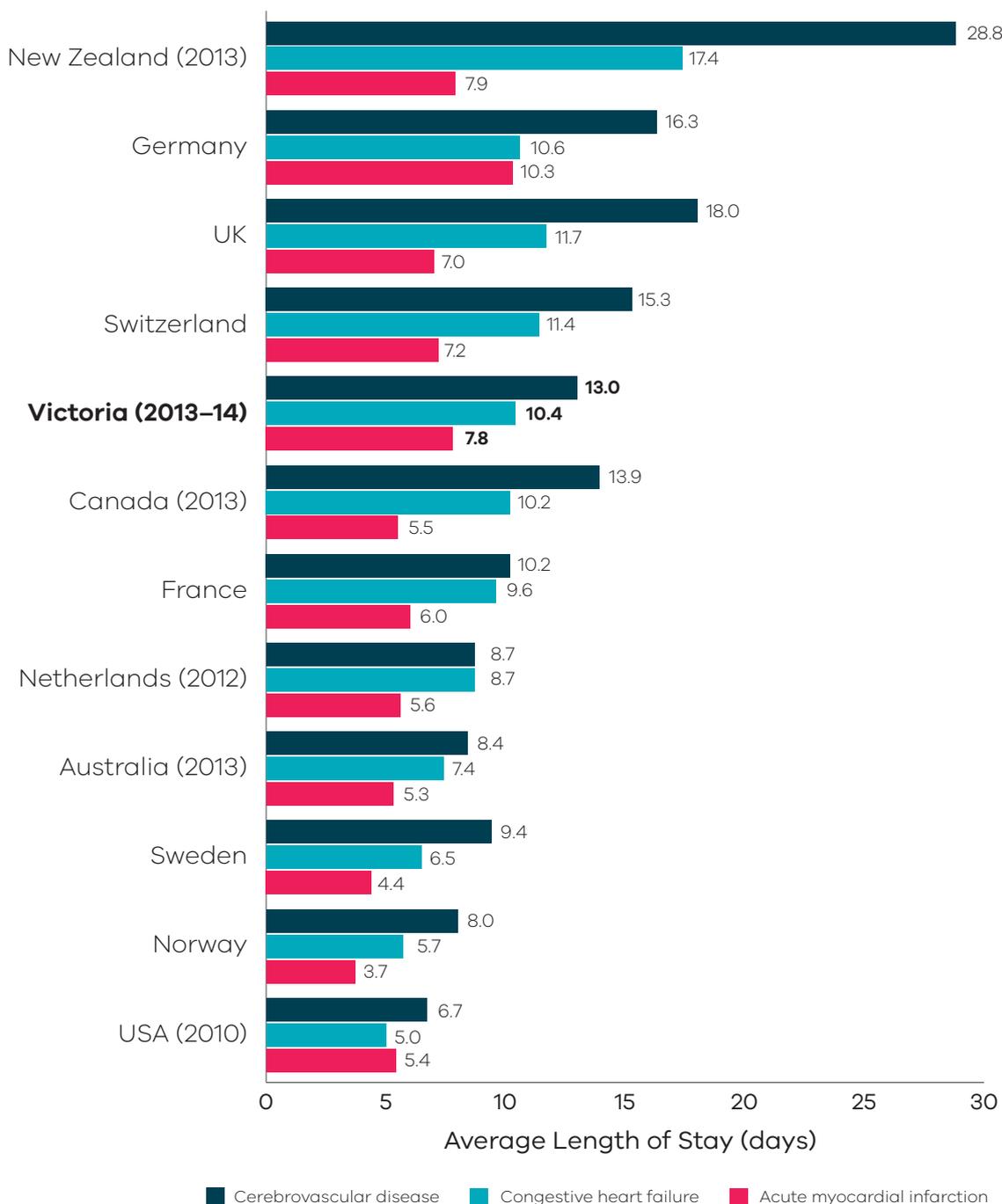


Figure 6.8 shows the average length of stay for three cardiovascular conditions – acute myocardial infarction, congestive heart failure and cerebrovascular disease – for Victoria, Australia and selected OECD countries. The data for Australia and OECD countries was obtained from the online OECD health statistics data library but do not all fully comply with the OECD data definition for this measure,⁵ so caution is advised in interpreting the results. Nevertheless, the data in the figure suggests that Victoria ranked in the mid-range for cardiovascular hospital stays when compared with the average length of stay for all Australia and other countries.

New Zealand had the longest average length of stay for cerebrovascular disease and congestive heart failure, but the length of stay information was based on publicly funded hospitalisations and included long-stay geriatric patients and other length of stay outliers. The United States had the shortest average length of stay for cerebrovascular disease and congestive heart failure, but the average length of stay calculation was based on a survey of non-federal short-stay (average length of stay < 30 days) hospitals and included same-day separations.⁵



Figure 6.8: Average length of stay for acute myocardial infarction, congestive heart failure and cerebrovascular disease, 2014 (or nearest year)



Data sources: OECD 2016;³ Department of Health and Human Services 2017.⁴³

Average length of stay is expressed in days.

Data for Victoria excludes length of stay outliers, healthy newborns (ICD-10-AM code 'Z38') and cases where the care type is listed as 'unqualified newborn' or 'posthumous organ procurement'.

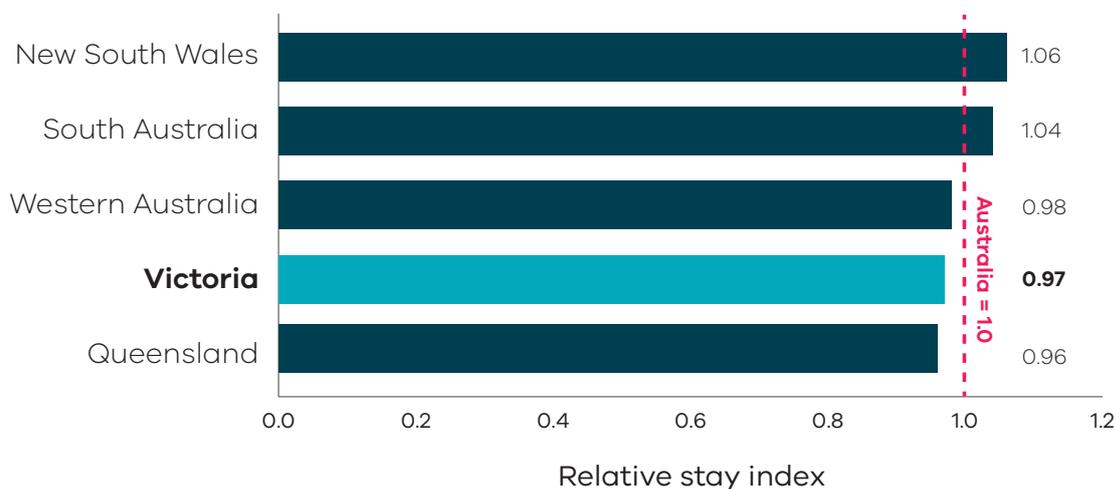
International data do not all fully comply with the OECD data definition for this measure and may not be comparable with the Victorian data (OECD 2016)⁵ – results should be interpreted with caution.



The relative stay index measures the length of stay for patients admitted to hospital, relative to a comparator and after an adjustment for casemix. In Australia, the relative stay index is a measure of efficiency and sustainability under the *National health performance framework*.⁵⁸ It is calculated as the observed number of patient days for separations in selected Australian Refined Diagnosis Related Groups, divided by the expected number of patient days, standardised for casemix (based on national figures).

Figure 6.9 presents the relative stay index for all Australian hospitals in states and territories in 2014–15. A relative stay index greater than ‘1’ indicates that the average length of hospital stay was higher than the average for all Australia. The figure shows that New South Wales (1.06) and South Australia (1.04) had a higher relative stay index than the average for Australia (1.00), whereas Victoria (0.97), along with Western Australia (0.98) and Queensland (0.96), had a lower relative stay index.

Figure 6.9: Relative stay index by state and territory, 2014–15



Data source: AIHW 2016,⁴⁴ Table 2.20.

States and territories were compared with Australia, which had a relative stay index of ‘1.00’.

The relative stay index for each state and territory was directly standardised, casemix-adjusted, and was based on AR-DRG version 7.0.

Data exclude separations for which the care type was reported as ‘acute’, ‘newborn (with qualified days)’ or was not reported.



Expenditure on health administration

Victoria ranks in the low range for expenditure on health administration in Australia

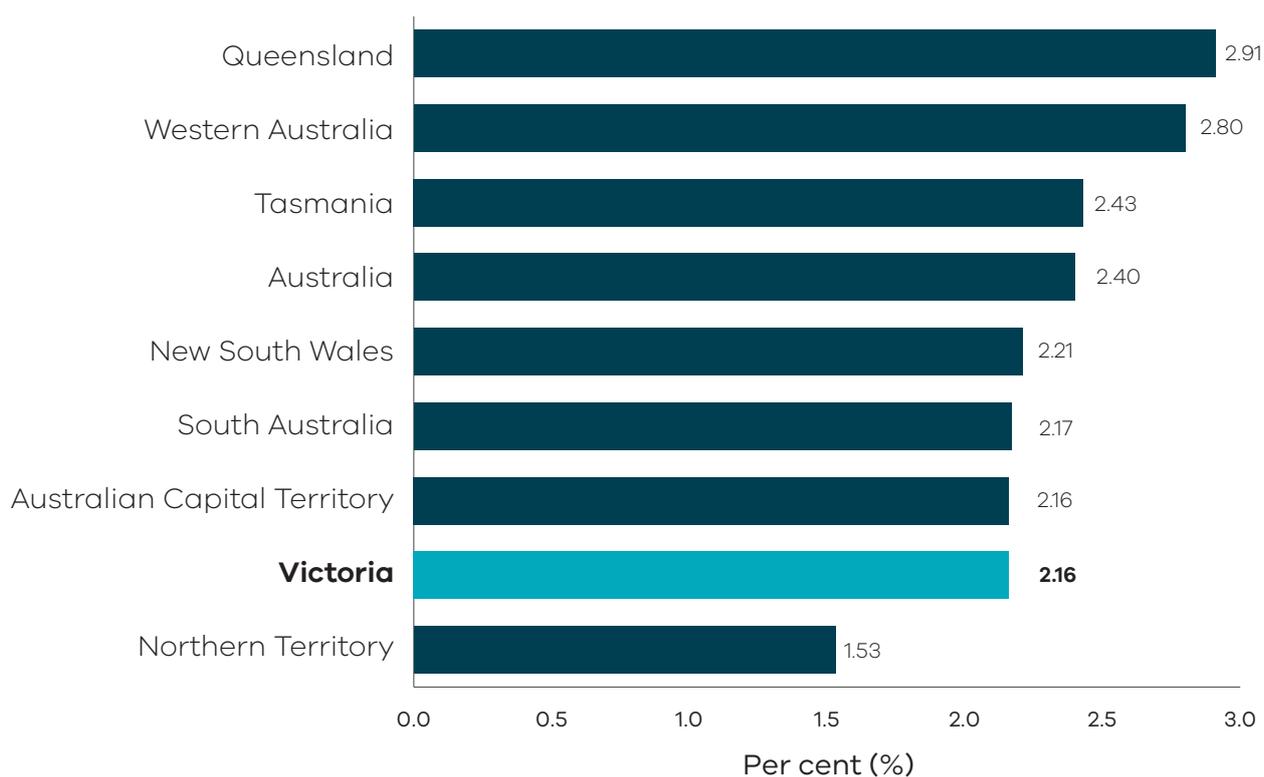
Expenditure on administrative costs is a financial measure that provides insights into health system efficiency. High administrative costs divert funding from frontline

services, so lower levels of expenditure on administration may be indicative of greater efficiency in the sector.

Figure 6.10 shows the percentage of health funding spent on administration in Australia, by state and territory, in 2014–15. The quality and completeness

of financial information varied between state and territory, depending on the way the information was collected and the quality control processes that were in place at the time of collection. The figure shows that Victoria was ranked in the low range nationally – lower than Australia but higher than the Northern Territory.

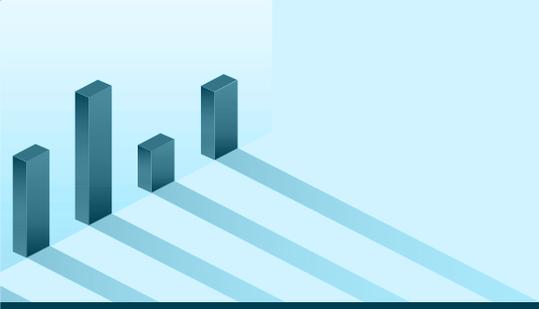
Figure 6.10: Percentage of recurrent health expenditure spent on administration, 2014–15



Data source: AIHW 2016,⁵⁸ Tables B3, B6, B9, B12, B15, B18, B21 and B24.

Data express current expenditure on administration as a percentage of total recurrent health expenditure.

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7. Equity

Health for all, health that's fair

Equity infers that health care should be provided on the basis of clinical need, regardless of personal characteristics such as age, gender, race, ethnicity, income, socioeconomic status or geographical location. However, equity also infers that health care should be provided to reduce differences or disparities in health status across different sections of the population.

Key findings for Victoria:

- Eight per cent of adults from low-income households spend \$1,000 or more in out-of-pocket healthcare costs each year.
- Eighty-seven per cent of adults with a chronic disease from low-income households are confident they can manage their own health problems.
- Adults with no private medical insurance and adults from low-income households are less likely to get an appointment to see a doctor on the same or next day when they are sick.
- Access to elective surgery within a month does not vary by private medical insurance status.
- One in seven adults with private medical insurance pays \$1,000 or more each year in out-of-pocket healthcare costs, compared with one in 10 without insurance.
- Skipping recommended medical care or treatment because of cost concerns does not vary by rural or metropolitan area.



Socioeconomic disparities in health

Adults from low-income households are less likely to get an appointment to see a doctor on the same or next day when they are sick

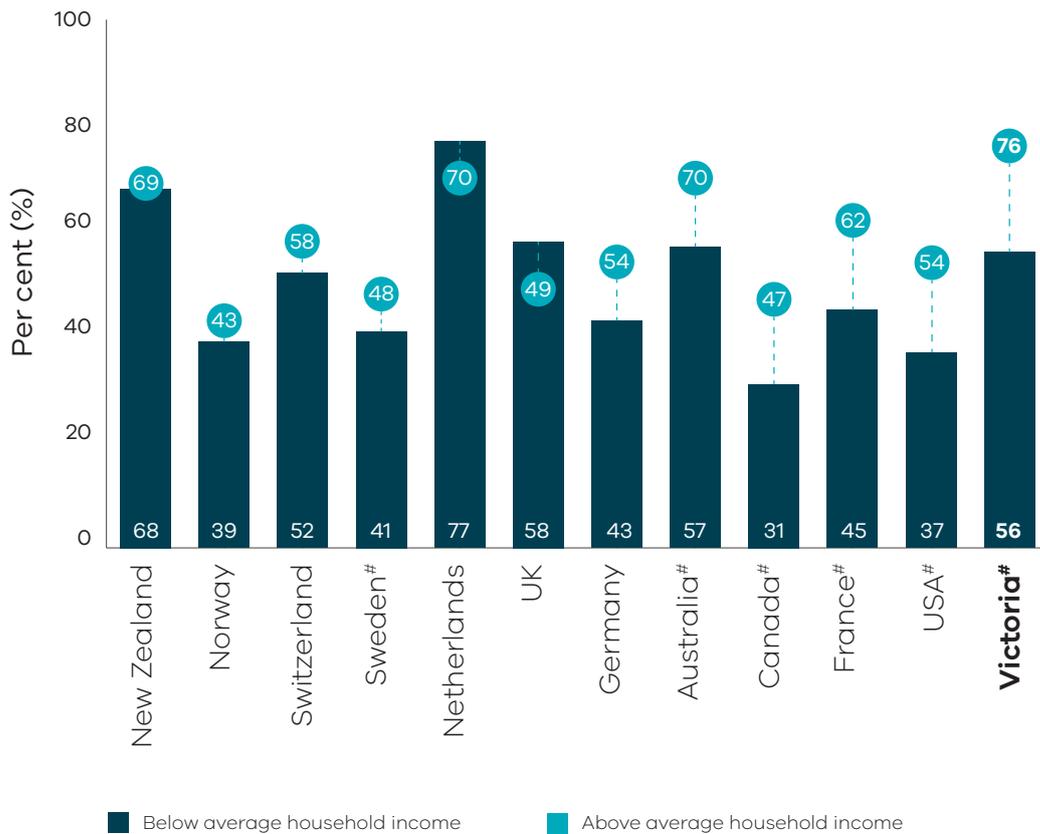
Socioeconomic disparities in health outcomes are well established and have been documented extensively in both Victoria and Australia.^{8,59} The mechanisms that lead to these disparities are not

clearly understood, but factors like accessibility, appropriateness and effectiveness provide insights into their development.

Income levels are an important measure of socioeconomic status. Fifty-six per cent of Victorian adults who responded to the IHP survey in 2016 with a household income below the Australian average reported being able to get an

appointment to see a doctor or nurse on the same day, or the next day, when they are sick (Figure 7.1). This compares with 76% of adults with an above average household income. The disparity between household income groups in Victoria was statistically significant ($p < 0.05$). Victoria was ranked in the bottom third of comparator countries.

Figure 7.1: Got an appointment to see a doctor or nurse on the same day or the next day, by level of household income



Data source: The Commonwealth Fund 2016.¹³

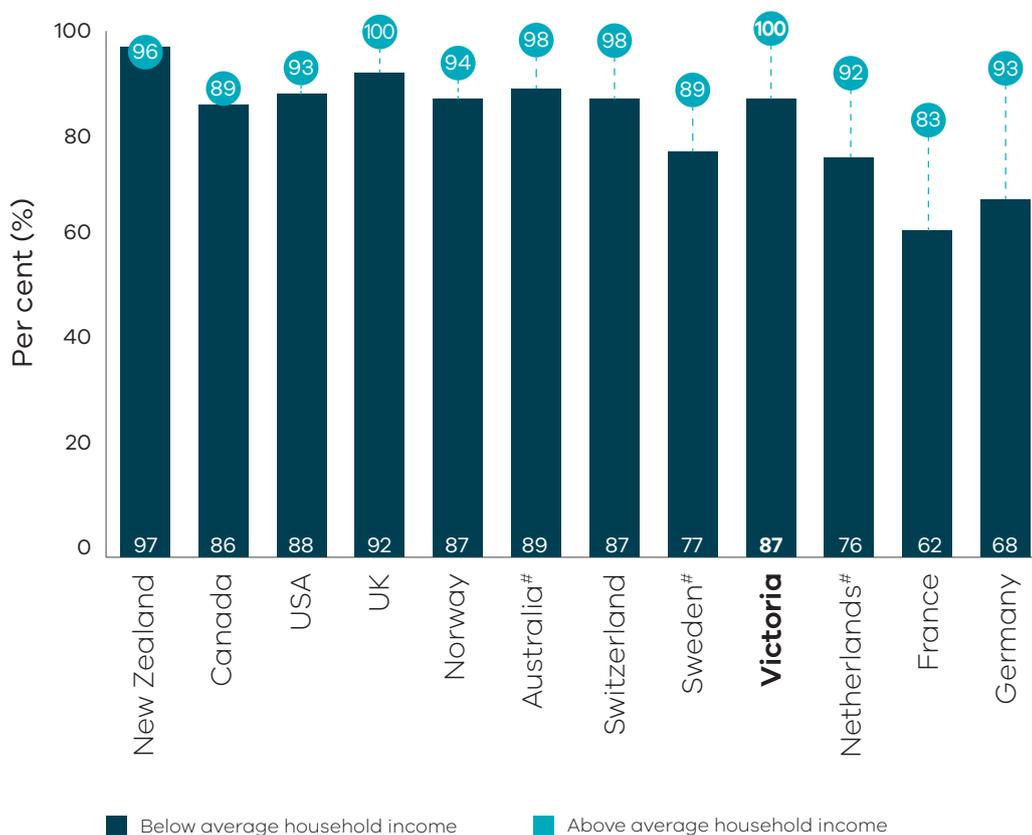
Statistically significant difference between those with above average and those with below average household incomes.



All Victorian adults (100%) who responded to the IHP survey with a chronic condition and an above average household income were confident of managing their own health problems,

compared with 87% in the below average household income group (Figure 7.2). When compared internationally, Victoria was ranked in the bottom third of countries in the survey.

Figure 7.2: Have a chronic disease and confident or very confident can control and manage own health problems, by level of household income



Data source: The Commonwealth Fund 2016.¹³

Chronic diseases include: joint pain or arthritis; asthma or chronic lung disease; cancer; depression, anxiety or other mental health problem; diabetes; heart disease including heart attack and hypertension; and stroke.

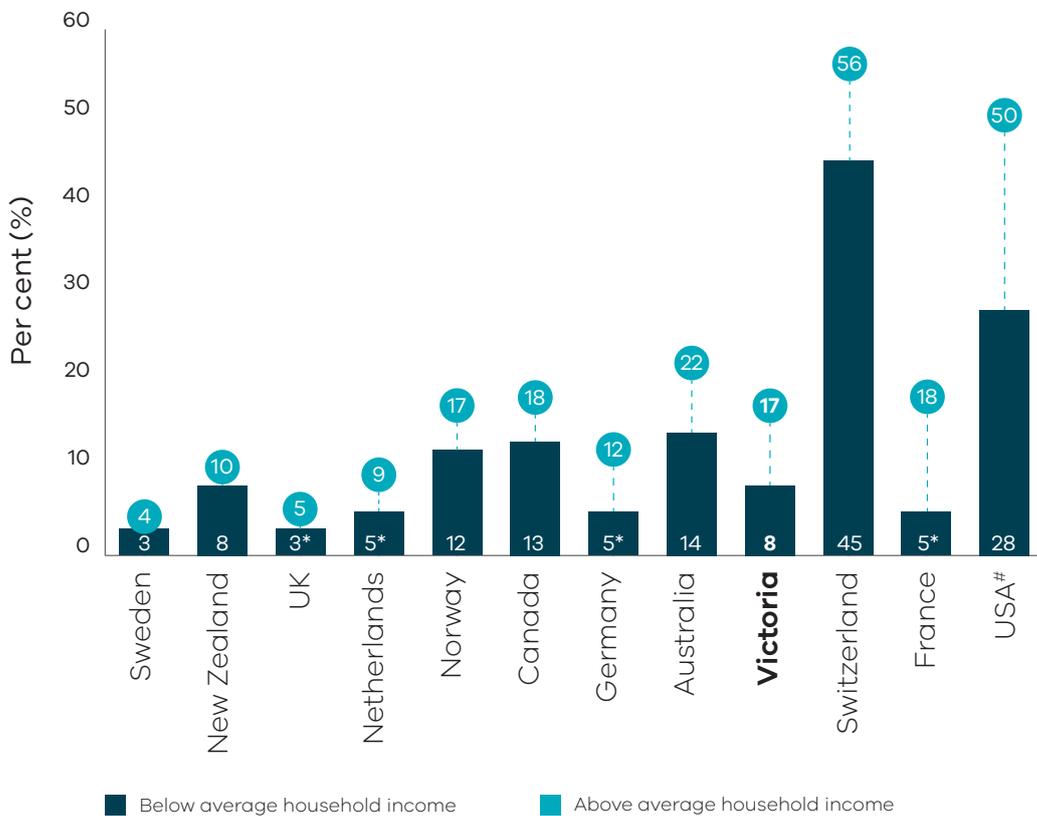
Statistically significant difference between those with above average and those with below average household incomes.



Eight per cent of Victorian adults who responded to the IHP survey with a household income below the Australian average reported spending \$1,000 or more in out-of-pocket costs for medical treatments

or services that were not covered by public or private insurance in the previous 12 months (Figure 7.3). This compares with 17% of adults with an above average income.

Figure 7.3: Spent \$1,000 or more in out-of-pocket costs for medical treatments or services that were not covered by public or private insurance, by level of household income



Data source: The Commonwealth Fund 2016.¹³

Out-of-pocket expenses are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

Statistically significant difference between those with above average and those with below average household incomes.

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



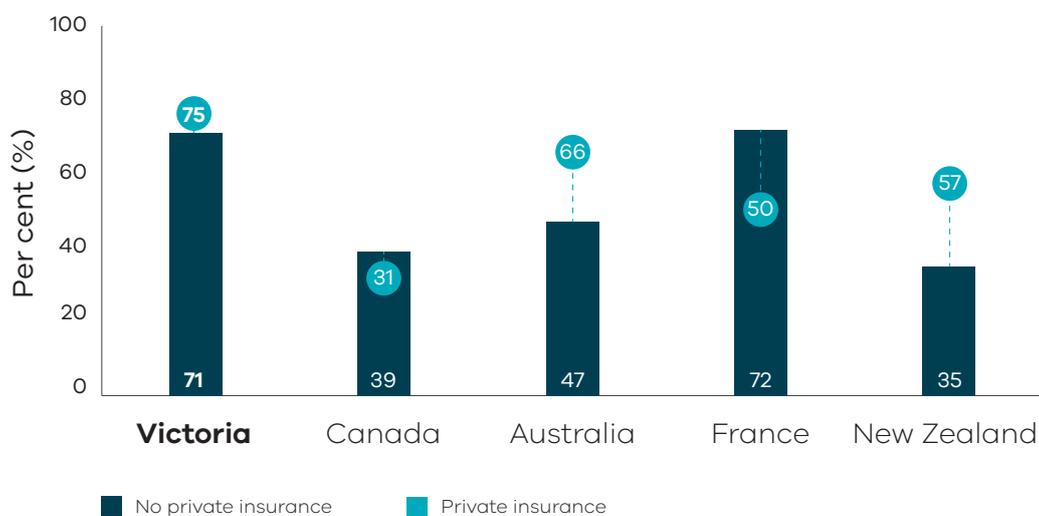
Disparities in health by private medical insurance status

Adults with no private medical insurance are less likely to get an appointment to see a doctor on the same or next day when they are sick

Private health insurance facilitates access to health care and provides a level of surety or security against unexpected or serious ill-health and injury.

The results of the IHP survey in 2016 show that, regardless of private medical insurance status, about three out of four Victorian adults who require elective surgery over a 2-year period wait less than 1 month for their surgery (Figure 7.4).

Figure 7.4: Waited less than a month for elective surgery after being advised needed surgery, by private medical insurance status



Data source: The Commonwealth Fund 2016.¹³

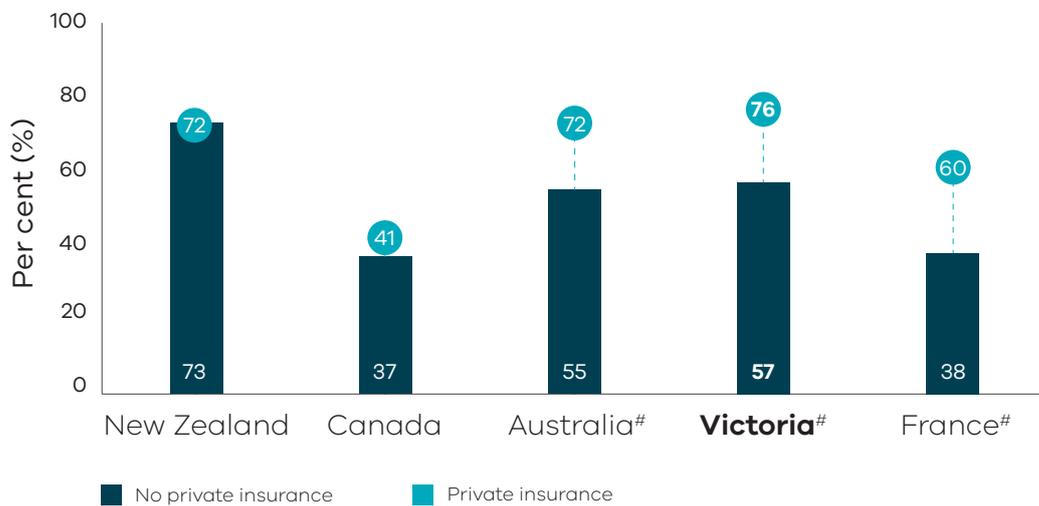
The estimates are based on responses from those who reported having had non-emergency or elective surgery in the previous 2 years.



Figure 7.5 shows that Victorian adults who responded to the IHP survey and had no private medical insurance (57%) were less likely to report having got an appointment to see a doctor or

nurse on the same day or the next day the last time they were sick than adults with insurance (76%). The disparity between income groups in Victoria was statistically significant ($p < 0.05$).

Figure 7.5: Got an appointment to see a doctor or nurse on the same day or the next day, by private medical insurance status



Data source: The Commonwealth Fund 2016.¹³

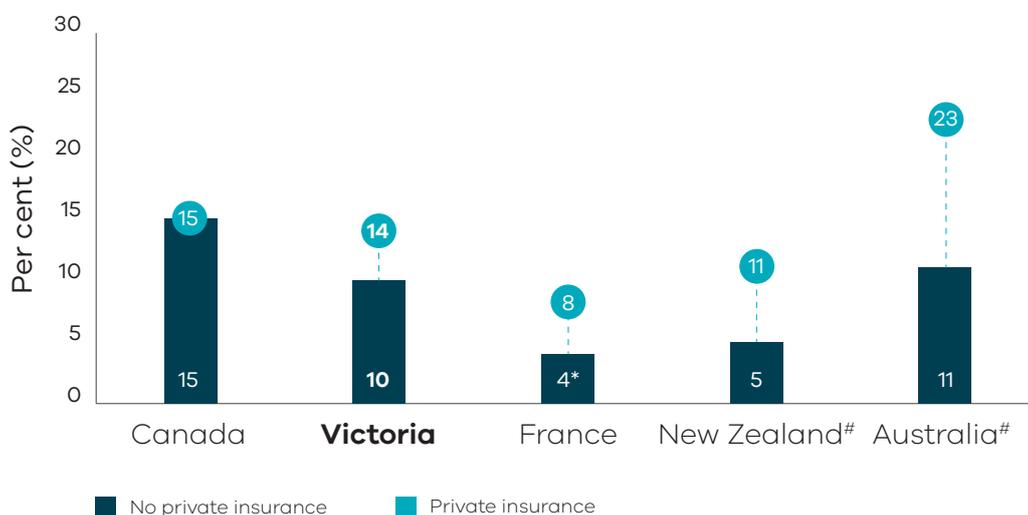
[#] Statistically significant difference in the percentages for those with private medical insurance and those without insurance.



Figure 7.6 shows that 14% of Victorian adults who responded to the IHP survey and had private medical insurance spent \$1,000 or more in out-of-pocket costs in

the previous 12 months for medical treatments or services that were not covered by public or private insurance, compared with 10% of adults without insurance.

Figure 7.6: Spent \$1,000 or more in out-of-pocket costs for medical treatments or services that were not covered by public or private insurance, by private medical insurance status



Data source: The Commonwealth Fund 2016.¹³

Out-of-pocket expenses are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

Statistically significant difference in the percentages for those with private medical insurance and those without insurance.

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



Disparities in health by rural and metropolitan area

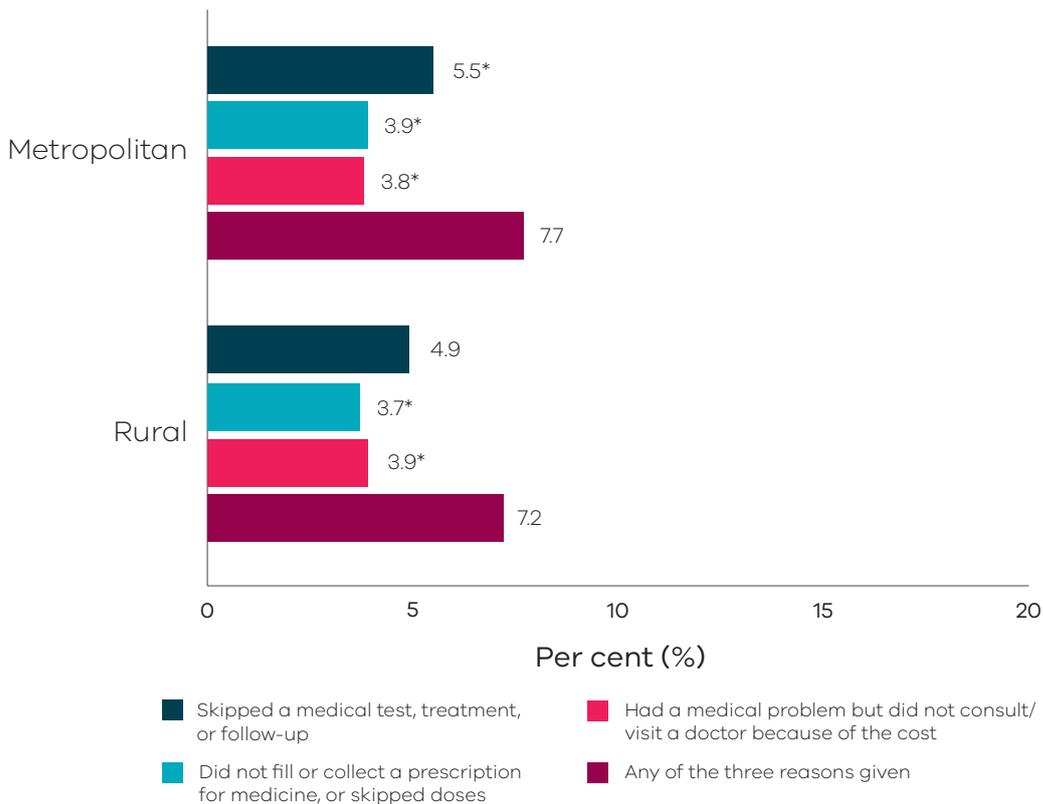
Skipping care or treatment because of cost concerns does not vary by rural or metropolitan area

About one in four Victorians live in rural Victoria, outside the Greater Melbourne or metropolitan area.⁶⁰ Victorians living in rural Victoria have poorer health outcomes than their metropolitan counterparts,

with lower levels of life expectancy and higher prevalence of disease.^{61,62}

Figure 7.7 shows the percentage of Victorians who responded to the IHP survey in 2016 and reported forgoing medical care or treatment because of cost over a 12-month period, by rural and metropolitan area.

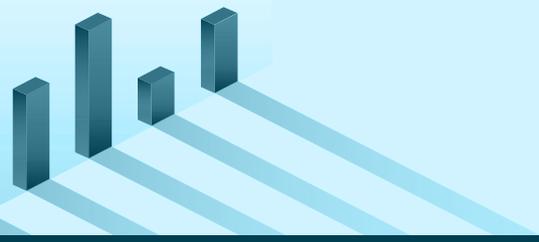
Figure 7.7: Skipped recommended medical care in the previous 12 months, by rural and metropolitan area



Data source: The Commonwealth Fund 2016.¹³

Data for metropolitan and rural areas exclude unassigned postcodes (see the appendix for more information).

* Estimate has a relative standard error between 25 and 50% and should be interpreted with caution.



8. Sustainability

Caring for the future

The efficient use of resources is a key characteristic of high-performing healthcare systems. The pressures of ageing populations, increasing costs, technological developments and increasing patient expectations are focusing attention on affordability, value for money, efficiency and sustainability. Performing well today is important but must be considered in terms of the impact on future sector performance.

Key findings for Victoria:

- The number of hospital separations in Victoria have increased by about 2.3% each year over the past 5 years.
- The overnight public acute separation rate for Victoria is in the low range nationally.
- Private medical insurance coverage has increased in Victoria each year since 2007 but is lower than coverage nationally.
- Average health expenditure per person in Victoria is lower than expenditure in other states and territories.
- Victoria ranks at the lower end of the national scale in terms of medical practitioner FTEs, and there are disparities in GP FTEs between Public Health Networks (PHNs) in Victoria.
- Victoria ranks in the mid-range internationally for available hospital beds per 1,000 population and ranks lower than Australia.



Increasing demand for health care

The overnight separation rate for Victoria is in the mid-range internationally

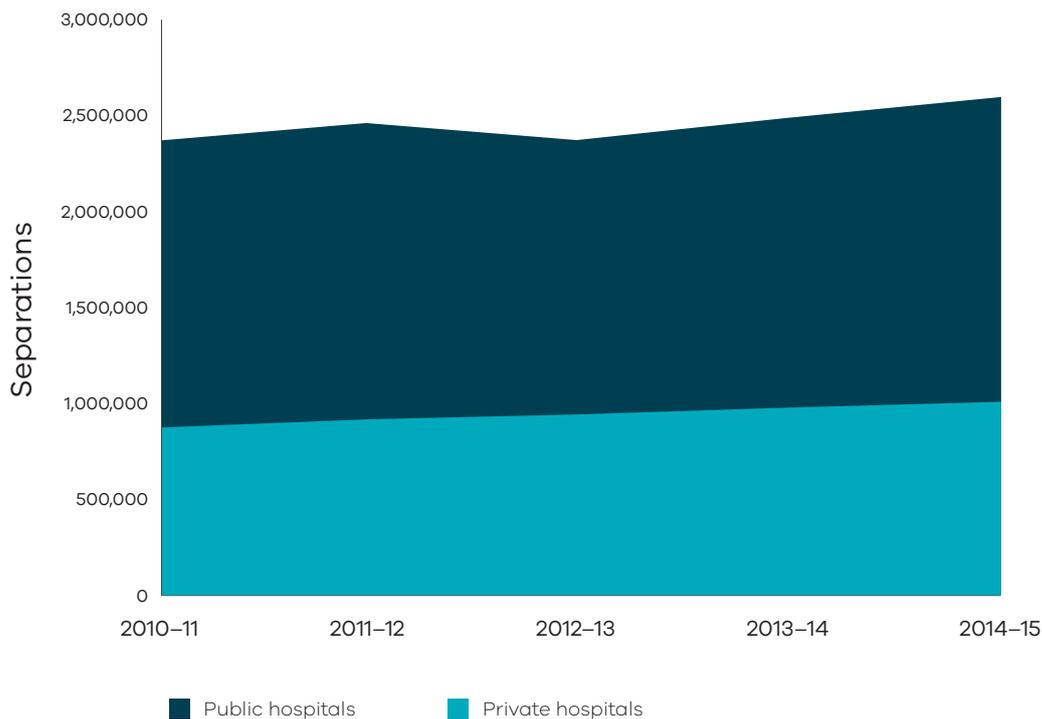
Providing universal health care is challenging, as demand for care continues to increase, along with costs and patient expectations in an environment of limited resourcing, innovative thinking and reform is required to develop

more sustainable models of care that better manage both demand and supply while meeting patient expectations and maintaining health outcomes.

The number of hospital separations in Victoria increased by about 2.3% each year between 2010–11 and 2014–15, higher than annual population growth (2.1% between

September 2015 and September 2016).⁶³ There was an average annual increase of about 1.5% for public hospitals and 3.6% for private hospitals over this period⁴⁴ (Figure 8.1).

Figure 8.1: Separations for public and private hospitals, Victoria, 2010–11 to 2014–15



Data source: AIHW 2016.⁴⁴

There were changes in coverage/policies/practices between 2010–11 and 2014–15 in Victoria that may affect the interpretation of these data.



Figure 8.2 shows the separation rates for overnight public acute hospitalisation, per 1,000 population, by Australian state and territory in 2014–15. The figure shows that Victoria (101.7)

was ranked in the low range, with Tasmania (95.2) ranked lowest of all states and territories and the Northern Territory (183.9) ranked highest.

Figure 8.2: Overnight public hospital acute separations per 1,000 population, by state and territory, 2014–15



Data source: AIHW 2016.⁴⁴

Data include patients who were formally admitted into a public hospital for treatment and/or care and who stayed for a minimum of 1 night.



Private medical insurance

Private medical insurance coverage has increased in Victoria each year since 2007 but is lower than coverage nationally

The Australian Government is responsible for Medicare – the universal public medical insurance scheme (including subsidising medical services and providing funding for PHNs). Medicare was introduced in 1984 to provide free or subsidised access to public hospital services and to treatment by health professionals (including doctors, optometrists and some other health professionals).⁶⁴

Private medical insurance is available for those who wish to fully or partly cover the costs of being admitted to hospital as a private patient and/or the costs of other ancillary health services. Private medical insurance in Australia is an important component of the health system, providing individuals with additional health cover to that provided by Medicare.

Total health expenditure in Australia in 2013–14 was estimated at \$155 billion, or 9.8% of gross domestic product, compared with about \$95 billion in 2003–04.⁶⁴

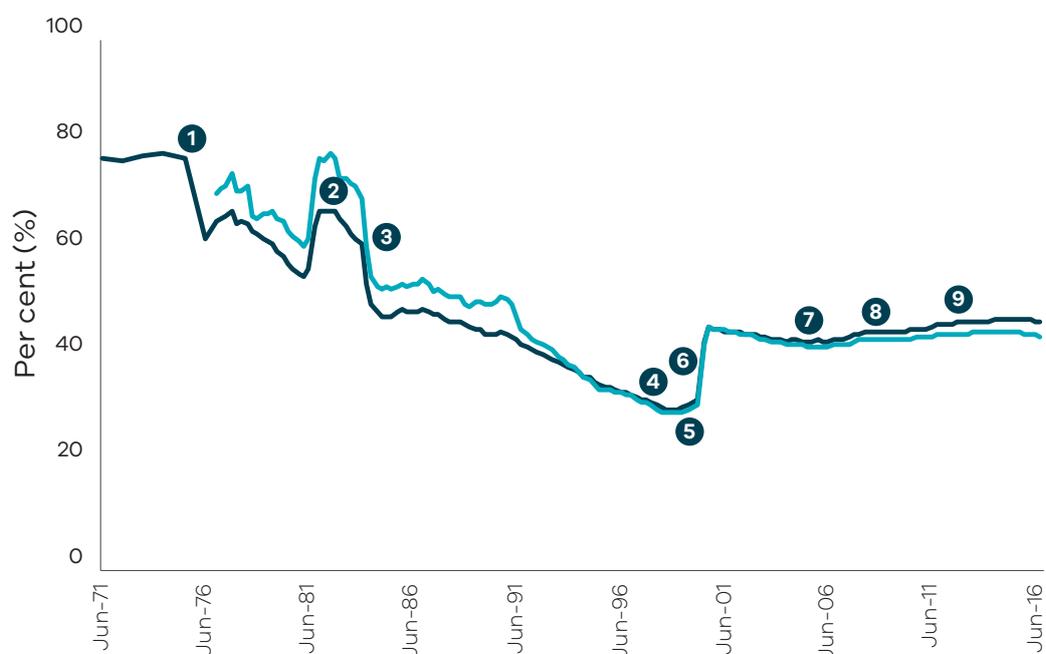
Private medical insurance funds provided \$13 billion (8.4%) of total health expenditure in 2013–14, with \$7.3 billion of this spent on hospital services.

Figure 8.3 shows the percentage of Victorians and Australians with private medical insurance for hospital treatment over time.

The figure shows similar coverage rate patterns and trends for both Australia and Victoria in response to changes to Medicare and insurance incentives since 1971. The percentage of people insured for hospital treatment in Victoria was 44.3% at 30 June 2016, compared with 46.9% for Australia.⁶⁵



Figure 8.3: Percentage of population insured for hospital treatment, Victoria and Australia, June 1971 to June 2016



1. Medibank began on **1 July 1975**. A program of universal, non-contributory health insurance, it replaced a system of government-subsidised voluntary health insurance.
2. Commonwealth medical benefits at 30% flat rate restricted to those with at least basic medical cover from **September 1981**.
3. Introduction of Medicare from **1 February 1984**.
4. **1 July 1997**. A Medicare Levy Surcharge (MLS) of 1% of taxable income is introduced for higher income earners who do not take out private health insurance.
5. Introduction of 30% rebate from **1 January 1999**.
6. Introduction of Life Time Health Cover from **1 July 2000**.
7. Higher rebates for older persons from **1 April 2005**.
8. **31 October 2008**. Increase in MLS income thresholds, subject to annual adjustment.
9. Introduction of 30% rebate means testing from **1 July 2012**.

■ Australia ■ Victoria

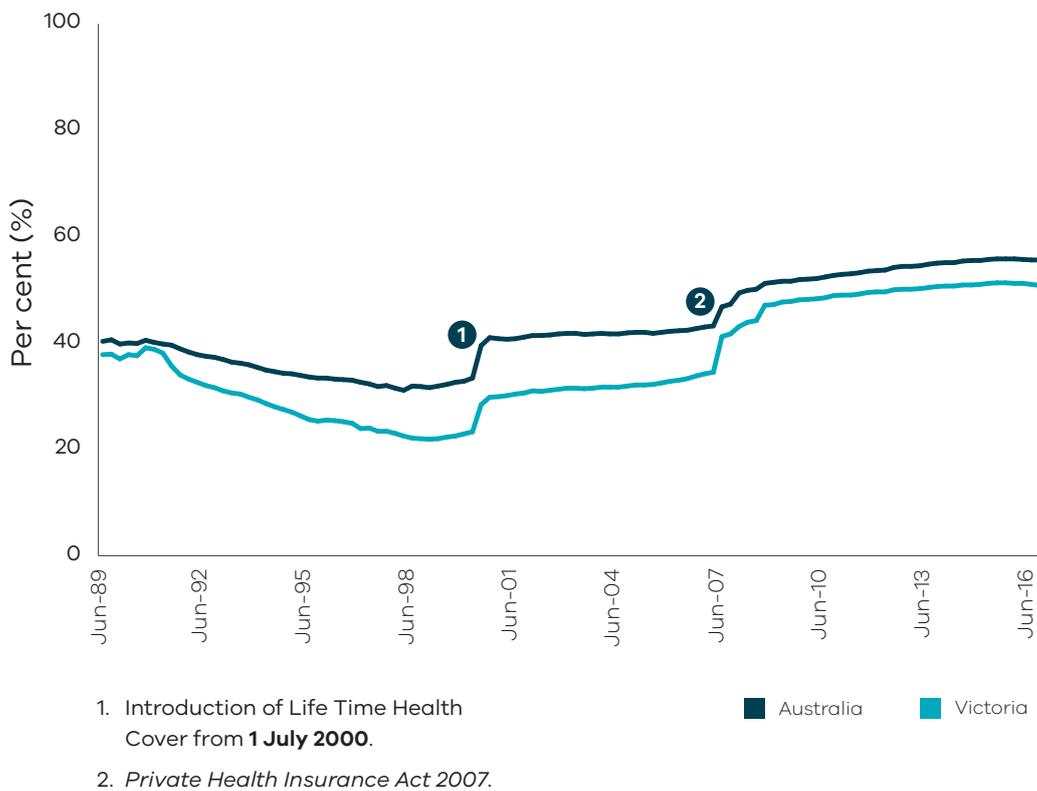
Data source: APRA 2016.⁶⁵



Figure 8.4 shows the percentage of Victorians and Australians with private medical insurance for general treatment over time. This figure also shows similar coverage rate patterns and trends for both Australia and Victoria in response

to changes to Medicare and insurance incentives since 1989. The percentage of people insured for general treatment services in Victoria was 51.0% at 30 June 2016, compared with 55.6% for Australia.

Figure 8.4: Percentage of population insured for general treatment, Victoria and Australia, June 1989 to June 2016



Data source: APRA 2016.⁶⁵

The introduction of the *Private Health Insurance Act 2007* caused an artificial increase in general treatment as a result of changes in definitions and reclassification of policies.



Average health expenditure per person

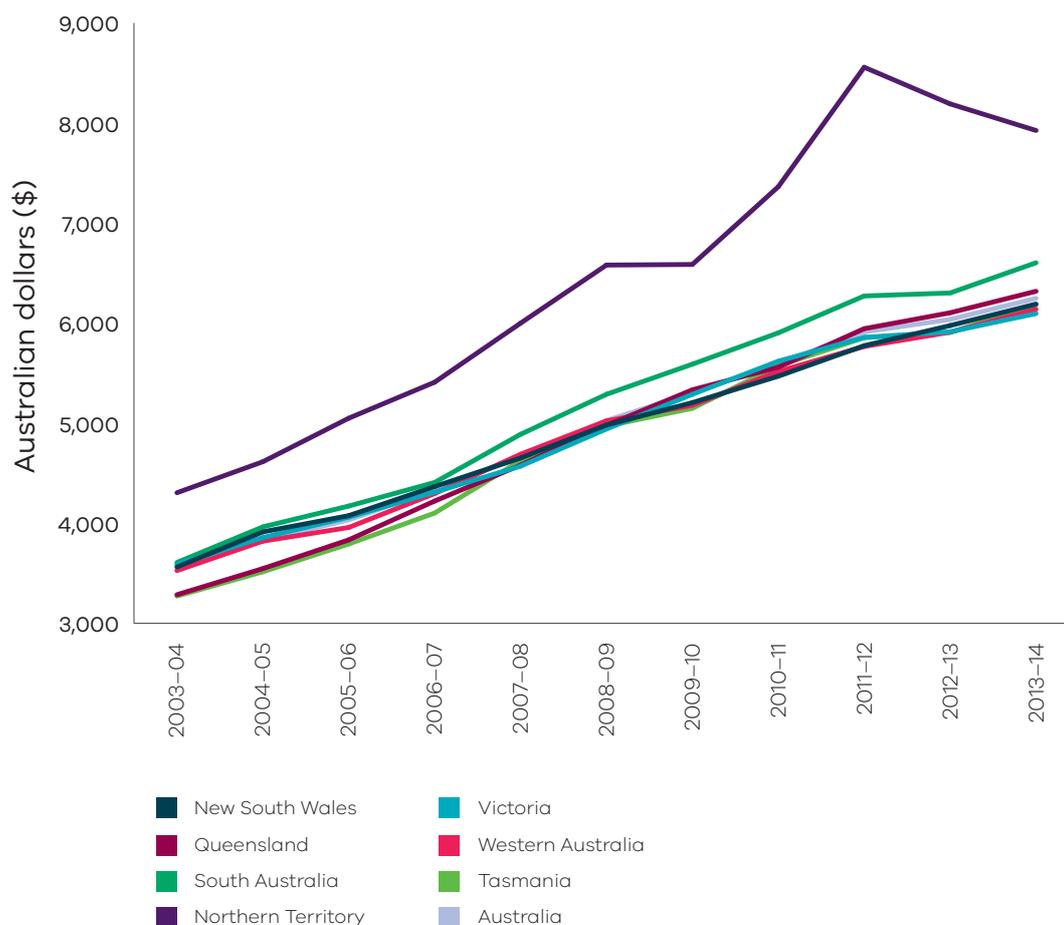
Average health expenditure per person in Victoria is lower than expenditure in other states and territories

The stability of funding and expenditure is important to sustainability in the health sector. Healthcare costs in Australia and other countries have been increasing for decades.

Figure 8.5 shows the rate of growth in per-person spending between 2003–04 and 2013–14.⁶⁶ The figure shows that annual expenditure per person has grown over time and is similar between states and territories, with the exception of the Northern Territory and South Australia.

The average recurrent expenditure on health for all Australia was \$6,248 per person in 2013–14. In Victoria, expenditure was \$6,096, 2.4% lower than the average for Australia and lower than for all other states and territories.

Figure 8.5: Average health expenditure (recurrent) per person, public and private (2013–14 prices), by state and territory, 2003–04 to 2013–14



Data source: AIHW 2015.⁶⁶

The ACT per-person averages were not calculated because the ACT estimates include substantial expenditures for NSW residents. Thus the ACT population is not the appropriate denominator. The Australian average includes the ACT.



Medical practitioner full-time equivalent positions

There are disparities in general practitioner FTEs between PHNs in Victoria

In Australia, medical practitioners include health professionals registered through the National Registration and Accreditation Scheme managed by the Australian Health Practitioner Regulation Agency.⁶⁴ They include practising clinicians, such as GPs and specialists, as well as doctors in training and people in non-clinical roles such as academics and researchers, teachers and administrators. Medical practitioners take several years to train and when they are in short supply may place pressure on existing practitioner services. Maintaining a suitably trained medical workforce is critical to ensuring a sustainable future for the Australian health sector.

The optimal ratio of patients to clinicians and definitions and methods of determining clinician shortages are contentious, with no clear consensus and considerable variation between countries and across health systems.^{67,68} In Australia, the Department of Health and Ageing use the rate, or ratio of medical practitioners to population for all of Australia as a benchmark for monitoring the workforce and the rates for Medical Benefit Scheme (MBS) claims to identify geographical areas where there are shortages in clinicians.⁶⁹

Figure 8.6 presents the number of registered medical practitioner FTEs, per 100,000 population, by state and territory. The data were obtained from the medical workforce statistics database held by the AIHW. There were no similarly defined international data

available for comparison with the Australian statistics. The figure shows that Victoria ranked at the lower end of the national scale – above Western Australia, but below the benchmark for Australia and all other jurisdictions.



Figure 8.6: Registered medical practitioner full-time equivalents, per 100,000 population, by state and territory, 2014



Data source: AIHW 2016.⁶⁴

Medical practitioners include health professionals registered through the National Registration and Accreditation Scheme managed by the Australian Health Practitioner Regulation Agency.

Full-time equivalents are based on the number of hours worked, divided by the standard working week.

The rates are based on the number of weekly hours worked per 100,000 population, as at 30 June 2014.



Figure 8.7 presents the number of registered GP FTEs, per 100,000 population, by PHN in 2014. The rates for the North Western Melbourne and South

Eastern Melbourne PHNs, which incorporate the high growth areas around the outskirts of Melbourne, were both lower than the rate for all Victoria.

Figure 8.7: Registered general practitioner full-time equivalents, per 100,000 population, by Primary Healthcare Network, Victoria, 2014



Data source: AIHW 2016.⁵⁴

Full-time equivalents are based on the number of hours worked, divided by the standard working week.

The rates are based on the number of weekly hours worked per 100,000 population, as at 30 June 2014.

Primary Healthcare Network areas are based on administrative geographies established in 2015 to replace Medicare Locals.



Hospital beds

Victoria ranks in the mid-range internationally for available hospital beds per 1,000 population and ranks lower than Australia

Australia is currently experiencing rapid population growth and a change in the age structure of the population. Although best practice models of hospital care are constantly changing, in line with health technologies and medical therapies, the demographic transition is expected to lead to a significant increase in demand for hospital services during this transition period.⁷⁰

The average number of hospital beds available per 1,000 population is a summary measure providing insights into the capacity of hospital resources. The emphasis with this measure is on measuring both capital and workforce capacity in the sector, as the number of available hospital beds relies on both the physical beds available and the necessary staff being

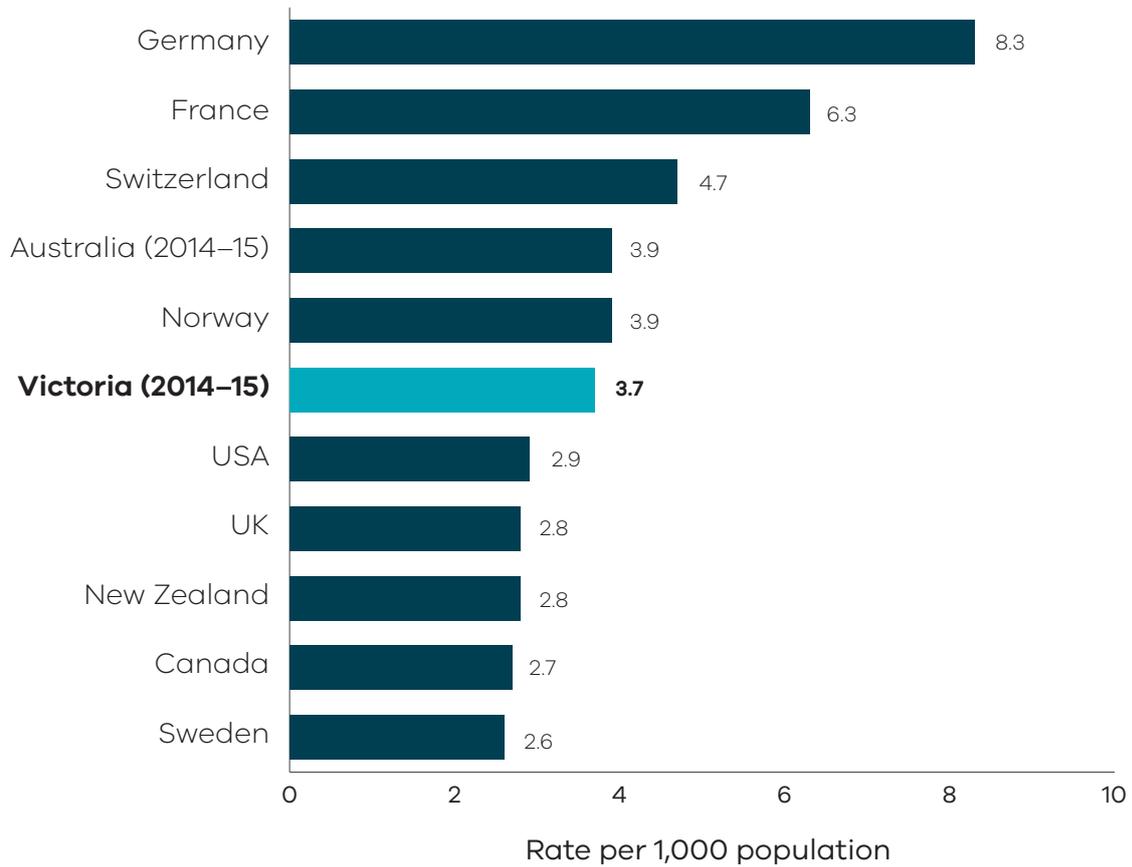
available to service the beds.

The number of available beds will vary between individual hospitals depending on the type and size of a facility, the services provided and the overnight versus day stay service mix, but at the national or state level, the number of available beds per capita gives an indication of the overall capacity or resources available in the sector.

Figure 8.8 presents the average number of beds available per 1,000 population in 2013. The data for Victoria and Australia were for the financial year 2014–15. The data included beds that were regularly maintained and staffed and were immediately available for use in general hospitals, mental health hospitals and other specialty hospitals. Beds in residential long-term care facilities were excluded from the data. The figure shows that the rate for Victoria (3.7 per 1,000 population) was in the mid-range internationally and lower than the rate for Australia (3.9 beds per 1,000 population).

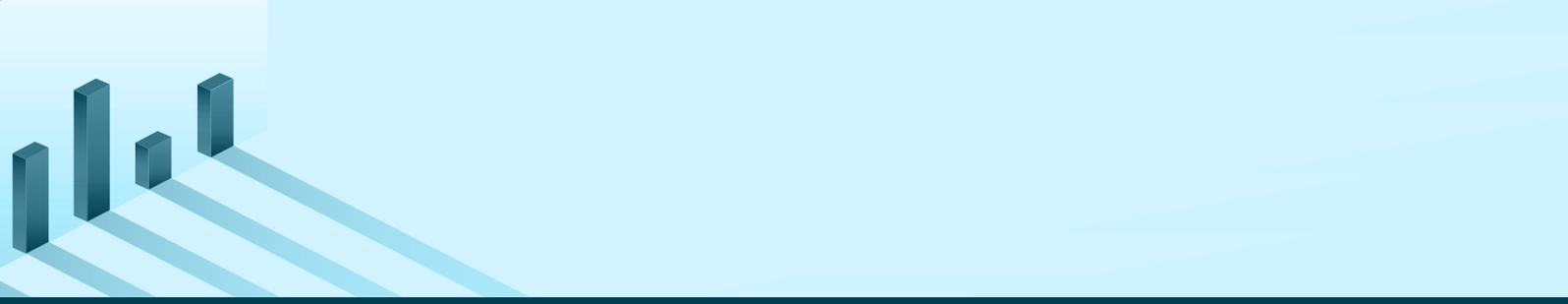


Figure 8.8: Hospital beds per 1,000 population, 2013 (or nearest year)



Data sources: AIHW 2016,⁷¹ Table 2.12; OECD 2015.⁷²

Hospital beds were defined as all beds that are regularly maintained and staffed and are immediately available for use. They included beds in general hospitals, mental health hospitals and other specialty hospitals. Beds in residential long-term care facilities were excluded.



Appendix: Methods

Data sources

Most of the data presented in this report were obtained from the 2016 IHP survey. Data were also obtained from the online OECD health statistics data library, the VAED and the Victorian Population Health Survey, as well as a series of published reports from the Victorian Department of Health and Human Services, the AIHW, the ABS and the Cancer Council Victoria.

2016 International Health Policy Survey

The Commonwealth Fund is a Washington-based foundation renowned for their research and promotion of international health system performance. Every year they conduct their IHP survey of 11 countries: Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States.

In Australia, the Bureau of Health Information in NSW contracts The Commonwealth Fund to oversample NSW to obtain data to compare the performance of the NSW health system with performance in Australia as a whole and internationally. In 2016, The Commonwealth Fund were contracted to oversample Victoria for the same purpose.

The survey has a 3-year rotating theme. In 2015 the survey focused on GPs in primary care. The emphasis with the 2016 survey was on adults 18 years of age or older, and in 2017 the target was older people 65 years of age or older.

The 2016 International Health Policy Survey of Adults in 11 Countries collected data relating to the following areas of health care, from approximately 20,000 adults in the 11 countries of interest:

- access and primary care
- use of specialists
- experience with care in hospitals and emergency departments
- health care coverage
- out-of-pocket costs and medical bills
- prescription drug use
- medical errors
- health status and chronic illness care
- social context and behavioural factors affecting health system views
- demographics.

The survey fieldwork was undertaken by Social Science Research Solutions for The Commonwealth Fund, a research company that routinely conducts population-level surveys.

The 2016 survey questionnaire was administered to 1,000 Victorians 18 years of age or older between May and July 2016 via a computer-assisted telephone interview. A detailed research protocol was used during the fieldwork phase of the project to optimise response rates and data quality. The questionnaire administered in Victoria was the core IHP survey instrument, including screening/weighting questions aimed at determining where respondents lived in Victoria.

In Victoria, similar to the rest of the Australian portion of the IHP survey, sampling involved random-digit dialling procedures and included both landline and mobile phone frames. Forty-one per cent of the Victorian interviews were completed on mobile phones and 59% on landline phones. This was very similar to the mobile/landline sample for all of Australia ($n = 5,248$; 58% landline; 42% mobile). The final response rate achieved for the Australian sample was 24%, and 34% was achieved for the Victorian oversample.

Note that a number of non-Victorian residents were surveyed in Victoria as a part of the Victorian sample. They were therefore unable to provide a Victorian postcode of residence. There were also a number of invalid postcodes recorded during the

survey. Victorian respondents with 'unassigned' postcodes were included in analysis for all Victoria but were omitted from analyses of metropolitan and rural Victoria. As a consequence, estimates for metropolitan and rural areas in the report may not always be congruent with estimates for all Victoria. Caution is advised in interpreting these results.

The out-of-pocket expenses presented in the report are in US dollars. The information that was collected from each country in the survey on out-of-pocket costs was collected in local currency and later converted to US dollars for comparative analyses.

OECD health statistics

The OECD collects a range of health measures from countries around the world each year. The data are made available online for research purposes, along with detailed data definitions and data quality and compliance statements.

Victorian Admitted Episodes Data

The VAED is an ongoing collection containing de-identified administrative and clinical information about admissions to hospitals in Victoria. The collection is managed and maintained by the Victorian Department of Health and Human Services.

Victorian Population Health Survey

The Victorian Population Health Survey has been conducted each year since 2001 and is based on a sample of 7,500 adults over 18 years of age who are randomly selected from households from each of the Victorian Department of Health and Human Services' regions. In 2008, 2011–12 and 2014, the sample size for the survey was expanded to include Victoria's 79 local government areas.

The aim of the survey is to provide quality, timely measures of population health status. The survey is based on core question modules, and data from the survey is used to inform decisions about health priorities in Victoria.

Data considerations

The aim of this report was to produce performance measures for Victoria to compare with Australia and internationally. The data that have been used to produce measures in this report are presented in a series of figures and tables.

Where possible, the methods used to produce measures for Victoria were the same as the methods used to produce country-level measures. Technical definitions of measures and how they were constructed were reviewed to assess the comparability of measures from different countries. This report notes instances where measures for relevant countries are not directly comparable with one another.

The measures sourced from published reports that have been included in this report were only included if it was clear how the measure had been defined, and then only if the measure was deemed relatively comparable between countries or states and territories.

The online OECD health statistics data library includes a description of the criteria used to define measures, as well as commentary from each country on the level of compliance with data definitions for each measure.⁵

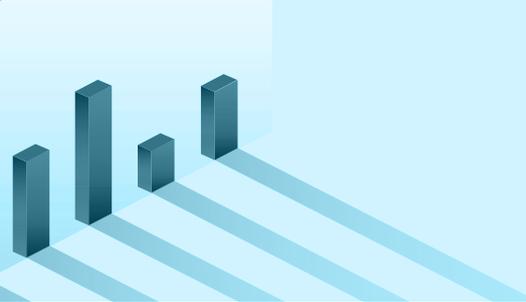
The data from the 2016 IHP survey are weighted, crude estimates expressed as percentages. Analysis of the reliability of estimates (relative standard errors) was undertaken for all estimates from the survey. Significance testing was undertaken, where relevant, for subgroups of the Victorian sample only. Statistical significance is indicated in figures where testing yielded a *p*-value < 0.05.

The measures presented in this report encompass a range of measures and units. Some measures are expressed in terms of percentages and rates, while others are expressed in terms of time intervals – days and years – or in financial units or currency (AUD\$). The figures and the notes to figures that are presented throughout this report describe the relevant unit of measurement for each measure. Any deviations from the descriptor for the measure are noted in the text or under each figure.

Issues with data comparisons and interpretation

There are several issues with the data presented in this report that impact on comparisons and interpretation of results:

- Variation in health system design and functioning – there are differences between countries in terms of how the health sector operates such as the private/public health service mix.
- Demographic differentials – differences in population size and composition may impact on results, with some conditions or behaviours more prevalent among specific population groups and less prevalent among others. Also, results derived from small populations may be vastly different from results for larger populations, reflecting issues associated with small numbers.
- No age standardisation – the data have not been adjusted for differences in the age structure between the populations of the countries presented. Age is an important factor associated with specific health conditions, care needs and health behaviours.
- Noncompliance with data definitions for measures – there are differences in the way some of the data has been compiled for different countries represented in this report. This is noted in the text where relevant.



References

1. Bureau of Health Information (BHI). Healthcare in focus 2015: how does NSW compare? Sydney: BHI; 2016.
2. Australian Institute of Health and Welfare (AIHW). National report on health sector performance indicators 2003, a report to the Australian health minister's conference, cat. no. HWI 78. Canberra: AIHW; 2004.
3. Organisation for Economic Cooperation and Development (OECD). OECD health statistics 2016. [internet] Paris: OECD [cited 7 Sep 2016]. Available from: <http://www.oecd.org/health/health-data.htm>
4. Australian Bureau of Statistics (ABS) 2015, Deaths, Australia, 2014, Table 3.2 life expectancy, selected ages, Victoria – 2004 to 2014, cat. no. 33020DO003_2014. Canberra: ABS; 2016.
5. Organisation for Economic Cooperation and Development (OECD) 2016, OECD health statistics 2016, definitions, sources and methods. [internet] Paris: OECD [cited 7 Sep 2016]. Available from: <http://www.oecd.org/els/health-systems/Table-of-Content-Metadata-OECD-Health-Statistics-2016.pdf>
6. European Commission 2014, Description of the Eurostat method for the calculation of the life expectancies at all ages. Luxembourg: OECD [internet]. [cited 23 Jan 2017]. Available from: http://ec.europa.eu/eurostat/cache/metadata/Annexes/demo_mor_esms_an1.pdf
7. Statistics New Zealand 2014, Abridged period life tables. [internet] Wellington: Statistics NZ [cited 7 Sep 2016]. Available from: http://www.stats.govt.nz/browse_for_stats/health/life_expectancy/abridged-period-life-tables.aspx
8. Australian Institute of Health and Welfare (AIHW). Australia's health 2014, Australia's health series no. 14, cat. no. AUS 178. Canberra: AIHW; 2014.
9. Australian Bureau of Statistics (ABS). Deaths, Australia, 2014, Table 2.2 death rates, summary, states and territories, Victoria – 2004 to 2014, cat. no. 33020DO002_2014. Canberra: ABS; 2015.
10. Burstrom B, Fredlund P. Self-rated health: Is it as good a predictor of subsequent mortality among adults in lower as well as higher social classes?. *J Epidemiol Community Health* 2001; 55: 836–40.
11. Idler E, Benyami Y. Self-rated health and mortality: a review of twenty-seven community studies. *J Health Soc Behav* 1997; 38: 21–37.
12. Miilunpalo S, Vuori I, Oja P. Self-rated health as a health measure: the predictive value of self-reported health status on the use of physician services and on mortality in the working age population. *J Clin Epidemiol* 1997; 50(5): 517–28.
13. The Commonwealth Fund. 2016 International health policy survey of adults in 11 countries. Washington: The Commonwealth Fund; 2016.
14. Diener E, Oishi S, Lucas RE. Subjective well-being: the science of happiness and life satisfaction. Oxford: Oxford University Press; 2002.
15. Department of Health and Human Services. Victorian Population Health Survey 2015, selected findings. Melbourne: State Government of Victoria; 2017.
16. Organisation for Economic Cooperation and Development (OECD). OECD Better Life Index. [internet] Paris: OECD [cited 6 Dec 2016]. Available from: <http://www.oecdbetterlifeindex.org/topics/life-satisfaction/>

17. Hamer M, Kivimaki M, Stamatakis E, Batty GD. Psychological distress as a risk factor for death from cerebrovascular disease. *CMAJ* 2012; 184: 1461–6.
18. Holden L, Scuffham P, Hilton M, Vecchio N, Whiteford H. Psychological distress is associated with a range of high-priority health conditions affecting working Australians. *Aust N Z J Public Health* 2010; 34: 304–10.
19. Stansfeld SA, Fuhrer R, Shipley MJ, Marmot MG. Psychological distress as a risk factor for coronary heart disease in the Whitehall II Study. *Int J Epidemiol* 2002 ; 31: 248–55.
20. Andrews G, Slade T 2001, Interpreting scores on the Kessler Psychological Distress Scale (K10). *Aust N Z J Public Health* 2002; 25: 494–7.
21. Furukawa TA, Kessler RC, Slade T, Andrews G. The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Mental Health and Well-Being. *Psychol Med* 2003; 33: 357–62.
22. Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, Howes MJ, Normand SL, Manderscheid RW, Walters EE, Zaslavsky AM. Screening for serious mental illness in the general population. *Arch Gen Psych* 2003; 60: 184–9.
23. Australian Bureau of Statistics (ABS). National Health Survey: first results, 2014–15 – Australia, Table 2.3 summary health characteristics – states and territories, proportion of persons, cat. no. 4364055001DO002_20142015. Canberra: ABS; 2015.
24. Australian Institute of Health and Welfare (AIHW). Health expenditure Australia 2008–09, Health and welfare expenditure series no. 42, cat. no. HWE 51. Canberra: AIHW; 2010.
25. Ansari Z. A review of literature on access to primary health care. *Aust J Prim Health* 2007; 13: 80–95.
26. World Health Organization (WHO). Primary health care, report on the international conference on primary health care, WHO, Geneva; 1978.
27. Department of Health and Human Services 2019, Victorian health services performance, specialist clinics, Melbourne [cited 21 February 2019]. Available from: <http://performance.health.vic.gov.au/Home/Category.aspx?CategoryKey=138#Anchor>.
28. Australian Institute of Health and Welfare (AIHW). Elective surgery waiting times 2015–16: Australian hospital statistics, cat. no. HSE 183. Canberra: AIHW; 2016.
29. Institute of Medicine. To err is human: building a safer health system. Washington: The National Academic Press; 2000.
30. Makary MA, Daniel M. Medical error – the third leading cause of death in the US. *BMJ* 2016; 353: i2139.
31. Roughead L, Semple S, Rosenfeld E. Literature review: medication safety in Australia. Sydney: Australian Commission on Safety and Quality in Health Care; 2013.
32. Bureau of Health Information (BHI). Healthcare in focus 2013: how well does NSW measure up?, Sydney: BHI; 2014.
33. Osborn R, Squires D. International perspectives on patient engagement: results from the 2011 Commonwealth Fund, *J Ambul Care Manage* 2012; 35, no. 2: 118–28.
34. Hibbard JH, Greene J. What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. *Health Affairs* 2013; 32: 207–14.
35. Laurance J, Henderson S, Howitt PJ, Matar M, Al Kuwari H, Edgman-Levitan S, Darzi A. Patient engagement: four case studies that highlight the potential for improved health outcomes and reduced costs. *Health Affairs* 2014; 33: 1627–34.
36. Travaline JM, Ruchinskas R, D'Alonzo GE. Patient–physician communication: why and how. *J Am Osteopath Assoc* 2005; 105: 13–8.

37. Haggerty J, Roberge D, Freeman G, Beaulieu C. Experienced continuity of care when patients see multiple clinicians: a qualitative meta summary. *Ann Fam Med* 2013; 11: 262–71.
38. National Health and Medical Research Council (NHMRC). Australian alcohol guidelines: health risks and benefits. Canberra: NHMRC; 2001.
39. National Health and Medical Research Council (NHMRC). Dietary guidelines for Australian adults. Canberra: NHMRC; 2003.
40. National Health and Medical Research Council (NHMRC). Dietary guidelines for children and adolescents in Australia, Canberra: NHMRC; 2003.
41. Department of Health and Ageing (DoHA). National physical activity guidelines for adults, Canberra: DoHA; 1999.
42. Ansari MZ, Collopy BT. Assessment of postoperative pulmonary embolism as a measure of patient care. *J Qual Clin Pract* 1995; 15: 75–80.
43. Department of Health and Human Services. Victorian Admitted Episodes Datasets 2006–07 to 2015–16. Melbourne: State Government of Victoria; 2017.
44. Australian Institute of Health and Welfare (AIHW). Admitted patient care 2014–15: Australian hospital statistics, Health services series no. 68, cat. no. HSE 172, Canberra: AIHW; 2016.
45. Rutstein DD, Berenberg W, Chalmers TC, Child CG, Fishman AP, Perrin EB. Measuring the quality of medical care, a clinical method. *N Engl J Med* 1976; 294, no. 11: 582–8.
46. Australian Bureau of Statistics (ABS). Causes of death, Australia, 2014, cat. no. 3303.0, Canberra: ABS; 2016.
47. Australian Institute of Health and Welfare (AIHW). Breastscreen Australia monitoring report 2013–2014, cat. no. CAN 100. Canberra: AIHW; 2016.
48. Thursfield V, Farrugia H. Cancer in Victoria: statistics & trends 2015. Melbourne Cancer Council: Victoria; 2016.
49. Australian Bureau of Statistics (ABS). Patient experiences in Australia, summary of findings, 2015–16, Table 20.2: Persons 15 years and over, experience of emergency department in the last 12 months by age and sex: proportion, cat. no. 4839.0. Canberra: ABS; 2016.
50. Australian Medical Association (AMA) 2016, AMA position statement on the doctor's role in stewardship of health care resources. [internet] Canberra: AMA [cited 7 Feb 2017]. Available from: <https://ama.com.au/media/minimising-waste-health-system>
51. Choosing Wisely UK 2017, Clinicians recommendations. [internet] London: Choosing Wisely UK [cited 7 Feb 2017]. Available from: <http://www.choosingwisely.co.uk/i-am-a-clinician/recommendations/>
52. Elshaug AG, Watt AM, Mundy L, Willis CD. Over 150 potentially low-value health care practices: an Australian study. *MJA* 2012; 197, doi:10.5694/mja12.11083.
53. Kise NJ, Risberg MA, Stensrud S, Ranstam J, Engbretsen L, Roos EM. Exercise therapy versus arthroscopic partial meniscectomy for degenerative meniscal tear in middle aged patients: randomised controlled trial with two year follow-up. [internet] London: BMJ [cited 8 Feb 2017]. Available from: www.doi.org/10.1136/bmj.i3740
54. Thorlund JB, Juhl CB, Roos EM, Lohmander LS. Arthroscopic surgery for degenerative knee: systematic review and meta-analysis of benefits and harms. *BMJ* 2015; 49(19): 1229–35.
55. Kwok J, Jones B. Unnecessary repeat requesting of tests: an audit in a government hospital immunology laboratory. *J Clin Pathol* 2005; 58: 457–62.
56. Appleby J 2015, Day case surgery: a good news story for the NHS. [internet] London: BMJ [cited 8 Feb 2017]. Available from: <http://www.bmj.com/content/351/bmj.h4060>

57. Shapiro I, Shapiro MD, Wilcox D. Measuring the value of cataract surgery. In: Cutler DM, Berndt ER, editors. *Medical care output and productivity*. Chicago: University of Chicago Press; 2001.
58. Australian Institute of Health and Welfare (AIHW). *Health expenditure Australia 2014–15, Health and welfare expenditure series no. 57, cat no. HWE 67*. Canberra: AIHW; 2016.
59. Department of Health. *Victorian Population Health Survey 2011–12, survey findings*. Melbourne: State Government of Victoria; 2014.
60. Department of Health and Human Services. 2013 LGA profiles data. [internet] Melbourne: State Government of Victoria [cited 20 Sep 2016]. Available from: https://www2.health.vic.gov.au/getfile/?sc_itemid=%7b99A6B6F5-1839-47CA-B701-13CA9EA2A556%7d&title=2013%20LGA%20profiles%20data
61. Department of Health and Human Services 2016, *Life expectancy at birth, tables and charts 2007*. [internet] Melbourne: State Government of Victoria [cited 20 Sep 2016]. Available from: <https://www2.health.vic.gov.au/public-health/population-health-systems/health-status-of-victorians/administrative-data-and-reports-health-of-victorians/life-expectancy-estimates-and-tables>
62. Department of Health and Human Services. *Victorian population health survey 2014, health and wellbeing, chronic conditions, screening and eye health*. Melbourne: State Government of Victoria; 2016.
63. Australian Bureau of Statistics (ABS). *Australian demographic statistics, Sep 2016, cat. no. 3101.0*, ABS, Canberra; 2017.
64. Australian Institute of Health and Welfare (AIHW). *Dynamic data display: Australia's registered health workforce by location*. [internet] Canberra: AIHW [cited 20 Sep 2016]. Available from: http://analytics.aihw.gov.au/Viewer/VisualAnalyticsViewer_guest.jsp?reportPath=%2FAIHW%2FReleasedPublic%2FExpenditure%2FReports&reportName=Health%20Workforce&appSwitcherDisabled=true
65. Australian Prudential Regulation Authority (APRA) 2016, *Private health insurance membership trends, September 2016*. [internet] Canberra: APRA [cited 13 Feb 2017]. Available from: <http://www.apra.gov.au/PHI/PHIAC-Archive/Pages/PHIAC-Archive-Membership-and-Coverage.aspx>
66. Australian Institute of Health and Welfare (AIHW). *Health expenditure Australia 2013–14, supplementary tables and figures*. Canberra: AIHW; 2015.
67. Kamalakanthan A, Jackson S. *The supply of doctors in Australia: is there a shortage?*, Discussion paper no. 341, School of Economics. Queensland: The University of Queensland; 2006.
68. Simoens S, Hurst J. *The supply of physician services in OECD countries*. OECD Health Working Papers, 2006; 21: 1–62.
69. Department of Health and Ageing (DoHA) 2017, *District of workforce shortage*. [internet] Canberra: DoHA [cited 1 Aug 2016]. Available from: <http://www.health.gov.au/internet/otd/publishing.nsf/Content/dwsFactsheet>
70. O'Sullivan J. *Ageing paranoia, its fictional basis and all too real costs*. In: Goldie J, Betts K, editors. *Sustainable futures: linking population, resources and the environment*, Commonwealth Scientific and Industrial Research Organisation, Victoria; 2014.
71. Australian Institute of Health and Welfare (AIHW). *Australian hospital resources 2014–15: Australian hospital statistics, supplementary data tables*. Canberra: AIHW; 2016.
72. Organisation for Economic Cooperation and Development (OECD). *Health at a glance 2015: OECD indicators*. Paris: OECD Publishing; 2015.

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