HOMELESSNESS IN VICTORIA: AN ANALYSIS OF HEALTH OUTCOMES AND HEALTHCARE UTILISATION USING THE ADVANCE TO ZERO DATABASE

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

This report builds on CSI UWA's previous work *Ending homelessness in Australia: An evidence and policy deep dive* (Flatau et al. 2021) by presenting a complementary analysis focused on Victoria. The report's primary purpose is to provide an analysis of the Advance to Zero data and complementary data sources to derive a profile of homelessness in Victoria with a focus on health outcomes and health service utilisation of those experiencing homelessness in the Advance to Zero database. The Advance to Zero database captures information from surveys, collected via interviews between people experiencing homelessness and representatives of homelessness agencies between 2010 and 2020.

These surveys were conducted using various versions of the Vulnerability Index (VI) and the Vulnerability Index – Service Prioritisation Decision Assessment Tool (VI-SPDAT). The VI was developed by Common Ground (now Breaking Ground) in the US in 2007 and measures a person's risk of death, using a study by Hwang et al. (1998) that identified key health risks among homeless people that contributed to their high mortality rate (Cronley et al. 2013). In 2014, additional questions were added to the VI around social vulnerabilities, experiences of risk and violence, and mental health to create a tool with increased utility as a screening tool for services, the VI-SPDAT (Brown et al. 2018). The VI-SPDAT has been modified over time and across regions to better reflect the local issues facing people experiencing homelessness and to integrate knowledge from lived experience (AAEH, 2020). In addition, there are versions of the VI-SPDAT for particular cohorts, namely families and youth.

In Victoria, 7,322 surveys were conducted with people experiencing homelessness, mostly living in Melbourne. As outlined in Table 1, 89.1% of respondents were interviewed using various iterations of the Individual VI-SPDAT, 6.7% using the Families VI-SPDAT and 4.2% using the Youth VI-SPDAT.

Table 1: Interviews by survey instrument, number and percentage

Tool	Number	%
Individual VI-SPDAT	6,522	89.1
Families VI-SPDAT	494	6.7
Youth VI-SPDAT	306	4.2
Total	7,322	100.0

VI-SPDAT, Vulnerability Index – Service Prioritization Decision Assistance Tool
Source: Advance to Zero national database Victoria 2010-2020

The VI was used from 2010 to 2016, with the Individual VI-SPDAT V1 used from 2017-2020 (Table 2). The numbers of surveys conducted over time fluctuates, reflecting in earlier years the scale of Registry Week events and, in later years, increased focus on homelessness in Victoria and broader data collection across the sector. The majority of surveys have been collected since 2017.

Table 2 Number and proportion of surveys, by year, by survey instruments

Year	Number of Surveys	Proportion of total surveys	Survey instruments				
			VI	Individual VI-SPDAT version 1	Family VI-SPDAT version 1	Youth VI-SPDAT version 3	Total
2010	165	2.3%	100%				
2011	155	2.1%	100%				
2012	59	0.8%	100%	-	-	-	100%
2013	156	2.1%	100%	-	-	-	100%
2014	35	0.5%	100%	-	-	-	100%
2015	156	2.1%	100%	-	-	-	100%
2016	166	2.3%	100%	-	-	-	100%
2017	1,947	26.6%	1.5%	85.5%	8.8%	4.1%	100%
2018	203	27.8%	0.7%	82.1%	11.0%	6.2%	100%
2019	1,225	16.7%	-	88.5%	5.9%	5.6%	100%
2020	1,225	16.7%	-	95.3%	2.2%	2.5%	100%
Total	7,322	100.0%	12.8%	76.3%	6.7%	4.2%	100%

Source: Advance to Zero national database; Victoria 2010–2020

2 PROFILING THE HOMELESS IN VICTORIA

There are three main sources of data that can be used to estimate the size of the homeless population in Victoria: the Census of Population and Housing, Specialist Homelessness Services data, and the Advance to Zero data. Each source provides a slightly different view of homelessness in terms of definition and sampling.

With regard to sampling, the Census triangulates data collected from all members of the population to deduce whether someone was experiencing homelessness on Census night. For example, people are counted as rough sleepers if they indicate (through a special data collection) that on Census night that they were living in improvised dwellings, tents, or sleeping out, reported no usual other address, did not own or rent the place they slept, were not in a household where at least one member worked full-time or where the household income was more than $2,000 per week (ABS, 2018a). This deductive methodology is useful for providing an estimate of homelessness among the overall population; however, it is very much an estimate (see Kaleveld et al. 2018 p.8–9 for a broader discussion of the limitations of Census estimates of homelessness).

The Specialist Homelessness Services (SHS) data pertains to people who sought help for homelessness and housing support from a SHS service. By seeking help, people themselves are directly indicating that they are experiencing homelessness or are at risk of homelessness. A limitation, however, is that not everyone who experiences homelessness seeks help (from a SHS).

Finally, the Advance to Zero database comprises data collected by homelessness services about people experiencing homelessness using the VI and VI-SPDAT instruments. Relative to other data sources, the Advance to Zero database provides substantial detail and context about people experiencing homelessness. However, it only includes people who are located by and/or engage with homelessness services that are part of the network of services using the Advance to Zero methodology. In addition, data collection heavily focuses on rough sleepers and, historically, has data collection has been concentrated in annual Registry Week (or Connection Week) events.

Therefore, the Census, SHS, and Advance to Zero databases all provide very different lenses on homelessness in Victoria. As such, information from each source should not be directly compared; rather, they should be considered complementary means to provide a more comprehensive view of homelessness in Victoria relative to using a single data source.

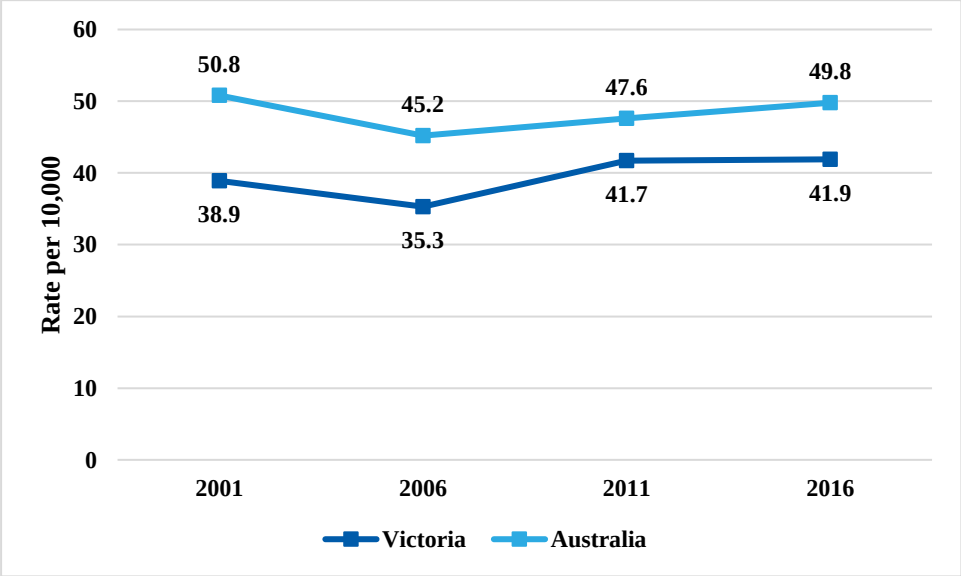
2.1 Census

The only complete assessment of overall homelessness across Australia and the most reliable way to make comparisons across states and territories is using the Census. However, the Census is a once in five years point-in-time estimate. The Census measures homelessness across six categories:

- Those living in improvised dwellings, tents, or sleeping out (rough sleeping);
- Those in supported accommodation for the homeless;
- Those staying temporarily with other households;
- Those in boarding houses; in other temporary lodgings; and
- Those in severely overcrowded dwellings.

Homelessness rates have increased since 2001 in Victoria: 38.9 per 10,000 in 2001. However, the trend is not uniform with homelessness rates decreasing from 2001 to 2006; increasing from 2006–2011; and stabilising from 2011–2016 (see Figure 1).

Figure 1: Comparison of the rate of homelessness in Victoria and Australia from 2001 to 2016



Source: ABS 2016 (Census of Population and Housing: Estimating homelessness, 2016)

2.2 *Specialist Homelessness Services*

Over 105,000 Victorians accessed Specialist Homelessness Services (SHS) in 2019/20. As Table 3 illustrates, Victorians are accessing SHS at a higher rate than Australia overall, at 174.8 per 10,000 people versus 114.5 per 10,000 in 2019/20. In terms of trends in SHS access over time, rates have increased in Victoria since 2011/12 (155.6 per 10,000).

Table 3 Rate per 10,000 estimated resident population of access to specialist homelessness services, by state and territory, 2011/12-2019/20

States and territories	2011/12	2016/17	2019/20	Direction of change 2011–2020
New South Wales	72.2	96.0	87.0	↑
Victoria	155.6	178.0	174.8	↑
Queensland	94.9	89.0	84.6	↓
South Australia	118.9	122.9	109.7	↔
Western Australia	90.0	95.3	95.2	↑

States and territories	2011/12	2016/17	2019/20	Direction of change 2011–2020
Tasmania	120.2	152.6	120.6	↔
Northern Territory	284.6	332.3	418.0	↑
ACT	152.2	117.5	97.1	↓
Australia	105.8	117.2	114.5	↑

Source: AIHW Specialist Homelessness Services Collection (AIHW, 2020)

2.3 Advance to Zero

The Advance to Zero database captures information on over 20,000 homeless people between 2010 and 2020 (Table 4). Over one-third of responses were collected among people in Victoria.

Registry Week was first held in in 2010 in Inner Melbourne involving 165 interviews, using the VI. Collections have continued across the 2010–2020 period with a large increase in the number of interviews collected in 2017 (1947 interviews) and 2018 (2,033 interviews). To date, most responses making up the youth component of the Advance to Zero data were collected in Victoria. Since 2017, VI-SPDAT has been collected via the Entry Points and Assertive Outreach teams in the inner City. Interviews have been concentrated in two areas namely the Melbourne City SA3 area covering the City itself, Southbank, South Melbourne, Carlton, North Melbourne, Kensington, St Kilda, Fitzroy, East Melbourne, Collingwood, and Richmond as well as the Port Phillip SA3 region covering St Kilda.

Table 4 Registry Week data collections by state of collection (total responses)

	Number	Per cent
Queensland	7,171	34.2
Western Australia	2,505	12.0
New South Wales	2,289	10.9
South Australia	1,280	6.1
Victoria	7,322	34.9
Tasmania	386	1.8
Total	20,953	100.0

Source: Advance to Zero Data 2010–2020

2.4 Demographic characteristics of Victorians experiencing homelessness

This section presents demographic characteristics of people experiencing homelessness in Victoria collected in the Advance to Zero database.

2.4.1 Gender

Almost two-thirds of respondents in the full dataset (2010–2020) identified as male (66.3%), 33.1% identified as female and 0.1% identified as other gender (Table 5). Males are overrepresented in the overall Advance to Zero data at 66.3%, relative to the 2016 Census estimate of overall homelessness in Australia (57.9% male) (ABS, 2018b), and SHS clients (46.0% male in 2019/20) (AIHW, 2020).

Table 5 Gender of Victorian Rough Sleepers

	Number	Percent
Male	4,669	66.3
Female	2,329	33.1
Other gender	6	0.1
Missing	33	0.5
Total	**7,037**	**100.0**

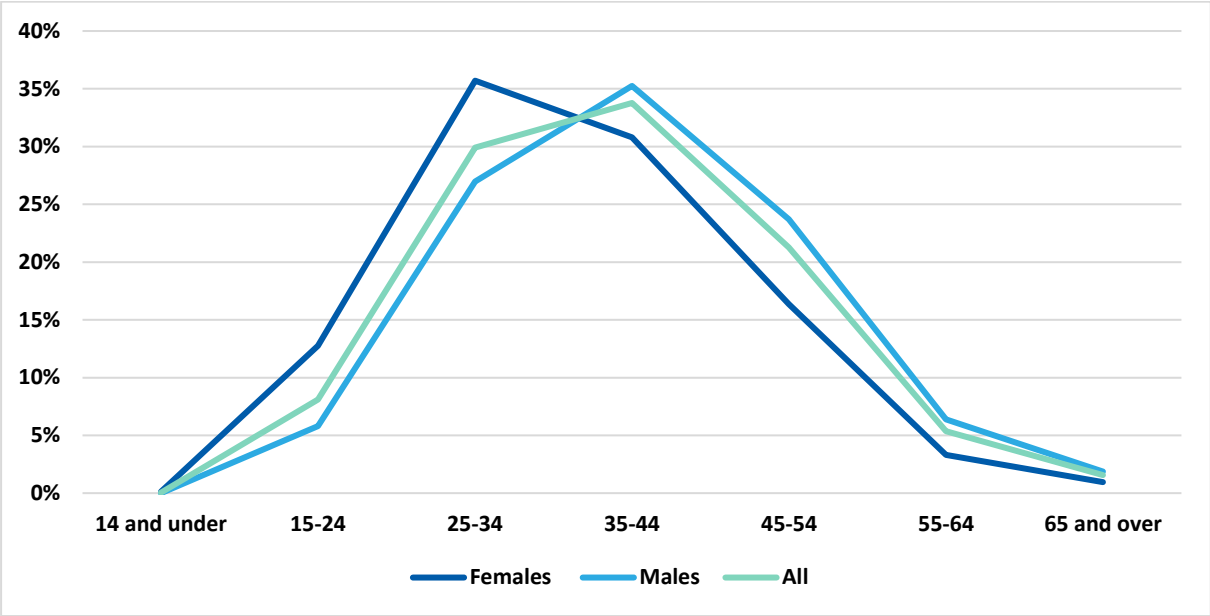
Source: Advance to Zero national data 2010–2020.

2.4.1 Age

The average age of average age of Victorian respondents in the Advance to Zero dataset (2010–2021) was 39.4 years.

Examining the age distribution (Figure 2), there are differences between the sexes, such that males were more likely to be older and females were more likely to be younger. One in five females were aged over 44, compared to one in 3 males.

Figure 2: Age distribution of respondents in years by gender 2010-2020



Source: Advance to Zero national data 2010- 2020.
Notes: Estimates based on unique respondents and exclude missing values and respondents of Other gender.

3 THE EXPERIENCE OF HOMELESSNESS

This chapter uses VI and VI-SPDAT data from the Advance to Zero database to examine the type and duration of those experiencing homelessness among Victoria's rough sleepers.

3.1 Type of homelessness

Table 6 outlines the number and percentage of Victorian rough sleepers by the location in which they indicated that they slept most frequently. The majority (65.6%) were sleeping in temporary accommodation most frequently, such as by couchsurfing, 15.1% were permanently housed.

A small proportion (0.5%) of respondents were in crisis and emergency accommodation, 1.8% in short-term accommodation, 1.4% in 'other' accommodation, and 1.2% of surveys did not indicate where the person slept most frequently.

Table 6 Number and percentage of Victorian Rough Sleepers, by Locations slept most frequently, 2010-2020

	Number	%
Sleeping rough	975	13.3
Crisis and emergency accommodation	34	0.5
Temporary accommodation (e.g. couchsurfing)	4,804	65.6
Short-term accommodation (e.g boarding house, hostel, caravan)	135	1.8

	Number	%
Institutional accommodation (e.g hospital, drug and alcohol facility, prison)	73	1.0
Permanently housed	1,108	15.1
Other	103	1.4
Missing	90	1.2
Total	7322	100.0

Source: Advance to Zero national data 2010–2020.

3.2 Duration of homelessness

The VI and VI-SPDAT surveys ask people the total amount of time they have spent homeless in their lives, with homelessness defined as living on the street, in shelters or emergency accommodation for individuals, and living without a tenancy for families. For individuals, the mean time spent homeless was 93.8 months – almost 8 years (Table 7). The median number of months spent homeless for individuals was 48 months – 4 years. This, in combination with the high standard deviation among individuals, indicates that there are chronically homeless people in the individual cohort whose very high duration of homelessness raises the mean among the total cohort.

Table 7 Lifetime duration of homelessness, months, among Victorian rough sleeping individuals and families, 2010-2020

	Individuals
N	828
Mean (Months)	93.8
SD	108.0
Median	48.0

Source: Advance to Zero national data 2010–2020.

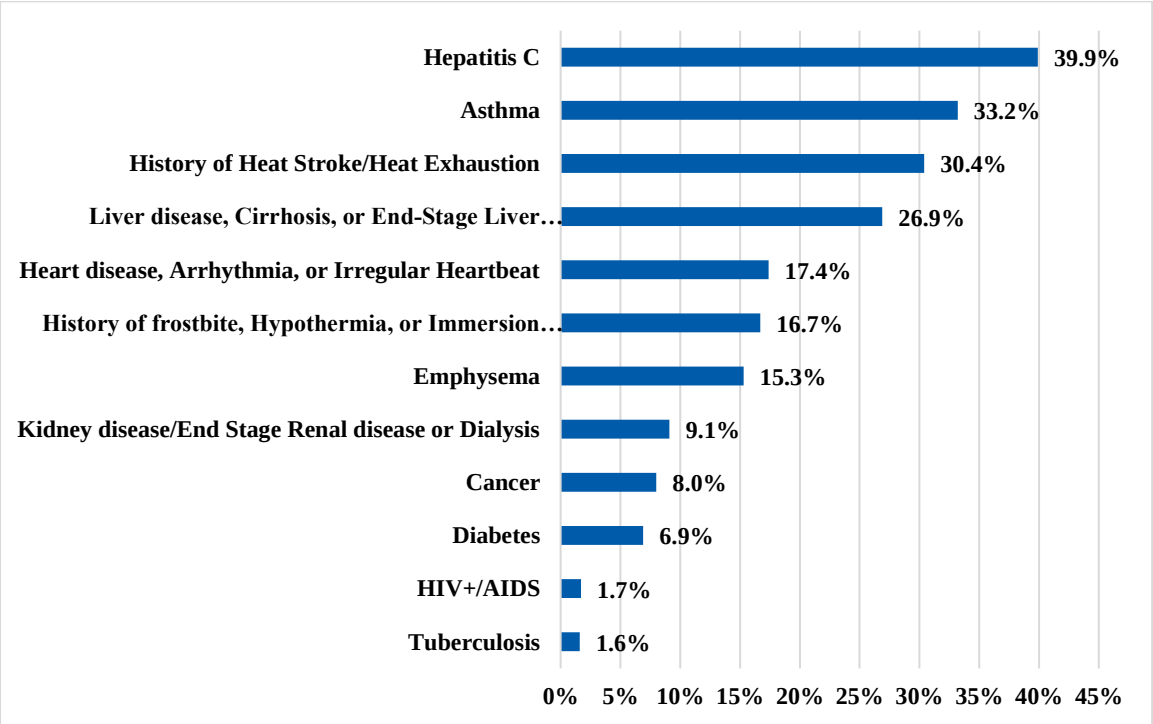
4 HEALTH OUTCOMES

The relationship between (poor) physical and mental health outcomes and homelessness is well-established. Like many correlates of homelessness, poor health is both a risk factor for and consequence of homelessness (Frankish, Hwang & Quantz, 2005). High exposure to risk factors such as alcohol and other drugs, tobacco and mental illness are likely to explain premature mortality and poor health outcomes among people experiencing homelessness; which are further intensified by poor access to healthcare and medications (Fazel, Geddes & Kushel, 2014). This chapter presents the self-reported physical health, mental health, and alcohol and other drug outcomes of Victorian respondents in the Advance to Zero database.

4.1 Physical Health Conditions

Figure 3 illustrates the prevalence of Victorian respondents in the Advance to Zero database reporting long-term physical health conditions. The most prevalent disorder was Hepatitis C which was reported by 39.9% of respondents. Other commonly reported disorders were asthma (33.2%), heat stroke or heat exhaustion (30.4%), liver disease cirrhosis or end-stage liver disease (26.9%), heart disease, arrhythmia or irregular heartbeat (17.4%), history of frostbite and (16.7%), and emphysema (15.3%). The prevalence of conditions in respondents was generally higher than that in the general population. For example, the prevalence of cancer in respondents was 8.0% which is more than double the prevalence of 3% documented for the general population. Table 8 compares Victorian prevalence rates to general population rates.

Figure 3 Lifetime prevalence of selected medical conditions, per cent



Source: National Advance to Zero 2010-2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

Table 8 Comparison of prevalence rates of respondents reporting experiencing selected physical health conditions or issues at time of survey to general population rates

Health condition	Victorian Advance to Zero and Australian population outcomes
Asthma	The rate of asthma reported by respondents is almost three times the rate of the general population (33.2% and 12%, respectively; NPS MedicineWise, 2020). It is also estimated that 57–82% of people experiencing homelessness smoke tobacco, which has been found to contribute to the development of asthma (Soar, Dawkins et al., 2020).
Liver disease	Overall, 26.9% of respondents reported having or having ever had a liver condition including liver disease, cirrhosis or end-stage liver disease. In Australia, liver disease is the 20th leading cause of death (ABS, 2019b). Liver diseases are associated with high alcohol use and hepatitis. To note, 73.8% of respondents also said that they have a problematic alcohol or drug problem, which may account for the high prevalence of liver disease in the sample. Liver cirrhosis progression can be prevented by stopping alcohol consumption. Indigenous Australians are also at greater risk of developing liver disease (Valery, Clarke et al., 2020).
Heat stroke	Overall, 30.4% of respondents reported suffering from a history of heat stroke or heat exhaustion. This is likely to be due to lack of shelter, continual exposure to the sun and dehydration.
Hepatitis	Hepatitis C is one of the most common notifiable infectious diseases in Australia and 80% of people that contract Hepatitis C will develop liver disease (NSW Government Health, 2019). Among Victorian National Advance to Zero respondents, 39.9% reported having Hepatitis C, which is much higher than the rate in the Australian general population (0.78%)(MacLachlan, Smith et al., 2020). However, Australian notification rates are much higher among injected drug users, Indigenous Australians and people from high prevalence countries (MacLachlan, Smith et al., 2020).
Heart disease	Heart conditions including heart disease, arrhythmia or irregular heartbeat were experienced by 17.4% of respondents. This is substantially higher than the national rate of 5.6% (AIHW, 2020c). The AIHW reports that coronary heart disease is very common and kills more Australians than any other disease (ABS, 2019b). Studies of homeless populations have also found high rates of mortality from heart disease (Fazel, Geddes & Kushel, 2014). Heart disease is a largely preventable through the introduction of various lifestyle changes including quitting smoking, healthy eating, and physical activity (Fazel, Geddes & Kushel, 2014; AIHW, 2020c).
Diabetes	Diabetes was reported by 6.9% of respondents in the National Advance to Zero dataset which is higher than that reported for the general population in Australia (4.9%)(AIHW, 2020c). In the general population diabetes is more prevalent in males than females and in older Australians. Indigenous Australians are also twice as likely to have the illness (ABS, 2019c). In 2018, diabetes was the cause of 10.5% of all deaths in Australia (AIHW, 2019b). Homelessness has been related to poor nutrition, access to health care and barriers managing medication which may increase the likelihood of diabetes being poorly controlled among this population group (Fazel, Geddes & Kushel, 2014).

Health condition	Victorian Advance to Zero and Australian population outcomes
Emphysema	Emphysema comes under the umbrella of Chronic Obstructive Pulmonary Disease (COPD). Emphysema was reported by 15.3% of respondents. In the general population 14.5% of people aged 40 years and over have COPD and this number increases to 29.2% for those aged 75 years and over (Lung Foundation Australia, 2018). COPD is strongly associated with tobacco use. While tobacco smoking rates have decreased among the general population (11.6%)(AIHW, 2020b), smoking prevalence remains high among people experiencing homelessness with estimates ranging from 57–82% (Soar, Dawkins et al., 2020).
Cancer	Cancer is responsible for 19% of the total burden of disease in Australia and is a major cause of morbidity; 8.0% of survey respondents reported having or having had cancer. At the end of 2010, the prevalence of who had cancer (including those who were diagnosed within the previous five years) in the Australian population was 1.7%. The proportion of people in the sample with cancer is higher than that of the general population. However, one limitation to the data is the lack of breakdown of types of cancer. However, at least 30% of cancers are preventable through lifestyle changes such as quitting smoking, eating healthy, exercising and being sun smart (Anand, Kunnumakara et al., 2008; Wilson, Antonsson et al., 2017).
Kidney disease	Overall, 9.1% of respondents reported having or having had kidney disease or end stage renal disease with dialysis. Kidney diseases are mainly caused by diabetes or high blood pressure. In the general population, it is estimated that 1.7 million people (1 in 10), aged 18 and over have a form of chronic kidney disease. However, only 10% are actually aware that they have the disease. Thus, the prevalence of 9.1% in this sample may be an underestimate, as it is possible that it is under-diagnosed. It has been estimated that the prevalence of end stage renal disease will increase by 60% (19.780 cases in 2011 to 31,589 cases in 2020) mainly due to increases in diabetes (AIHW, 2014).
Frostbite, hypothermia and immersion foot	In particular, people sleeping rough are exposed to the elements which has negative health impacts; 16.7% of respondents have suffered from frostbite, hypothermia and immersion foot.
Tuberculosis	Tuberculosis is an infection that affects an estimated 1200 Australians each year (Lung Foundation, 2018); 1.6% of respondents reported having or having had tuberculosis.
HIV/AIDS	Overall, 1.7% of respondents have HIV or AIDS, which is much higher than the prevalence in the general population. In 2019, there was an estimated 29,045 Australians living with HIV (Australian Federation of AIDS Organisations, 2021). Infectious diseases such as HIV and tuberculosis have been reported as one of the causes of high rates of mortality seen among people experiencing homelessness (Fazel, Geddes & Kushel, 2014).

The VI-SPDAT asks participants whether they currently experience foot or skin infections or dental problems. Dental problems were experienced by the vast majority of Victorian respondents foot or skin infections by 16.5% (Table 9). Housing people would presumably provide people with access to resources to improve their hygiene practises and reduce the occurrence of these conditions.

Table 9 Respondents reporting experiencing selected physical health conditions or issues at time of survey

	Yes	No	With condition (per cent)
Do you have any of the following?			
Foot/skin infections	118	599	16.5
Dental problems	241	22	91.6

Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

4.2 Mental Health, Learning and Developmental Disabilities and Brain Injury

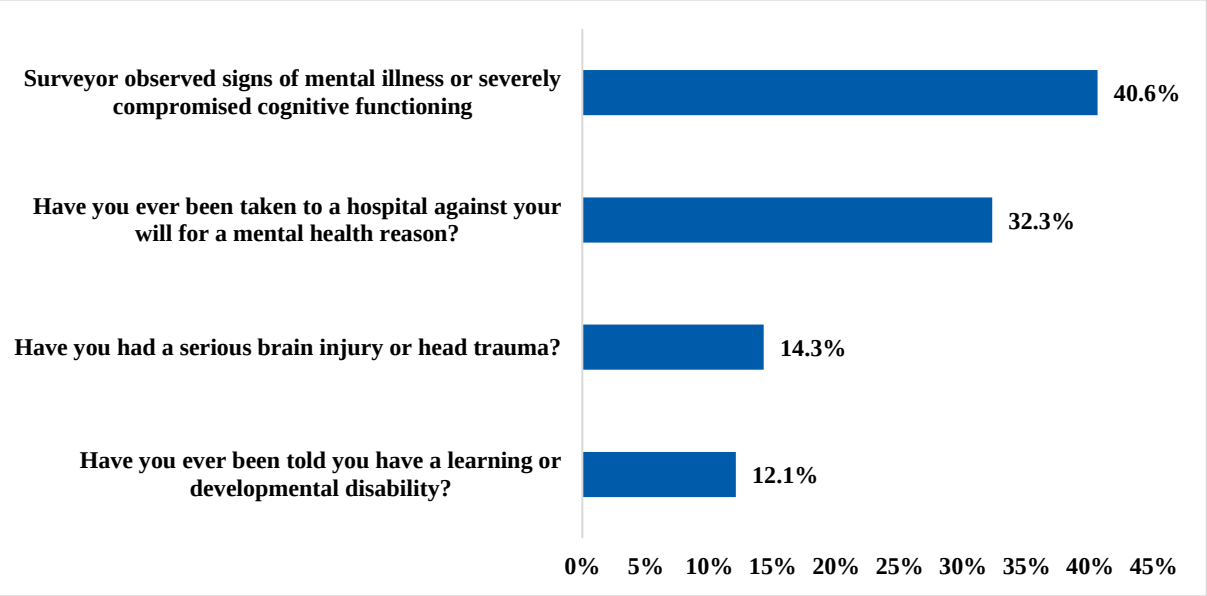
The VI and VI-SPDAT assess mental health issues by asking about symptoms and help seeking, and whether respondents have been diagnosed with certain conditions. Almost one-third, 32.3% of Victorian respondents reported that they had been taken to hospital against their will for mental health reasons and 12.1% reported that they had been told that they have a learning or developmental disability (Table 10, Figure 4). Over fourteen per cent (14.3%) of respondents reported a serious brain injury or head trauma, with a surveyor observing signs of mental illness or severely compromised cognitive functioning in 40.6% of respondents.

Table 10 Selected mental health and disability indicators

	Yes	No	Per cent Yes
Have you ever been taken to a hospital against your will for a mental health reason?	271	568	32.3
Have you had a serious brain injury or head trauma?	944	5669	14.3
Have you ever been told you have a learning or developmental disability?[3]	776	5663	12.1
Surveyor observed signs of mental illness or severely compromised cognitive functioning	319	467	40.6

Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

Figure 4 Selected mental health, disability and brain injury indicators, per cent



Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

4.3 Alcohol and Other Drug Use

As displayed in Table 11, about three quarters (73.8%) of respondents reported that they had experienced or been told that they had problematic drug or alcohol use or abused drugs or alcohol. Just over one-quarter (26.8%) reported that they had consumed alcohol or drugs almost every day or every day during the past month. For over one-third (43.1%) of respondents, the surveyor reported signs or symptoms of problematic alcohol or drug abuse.

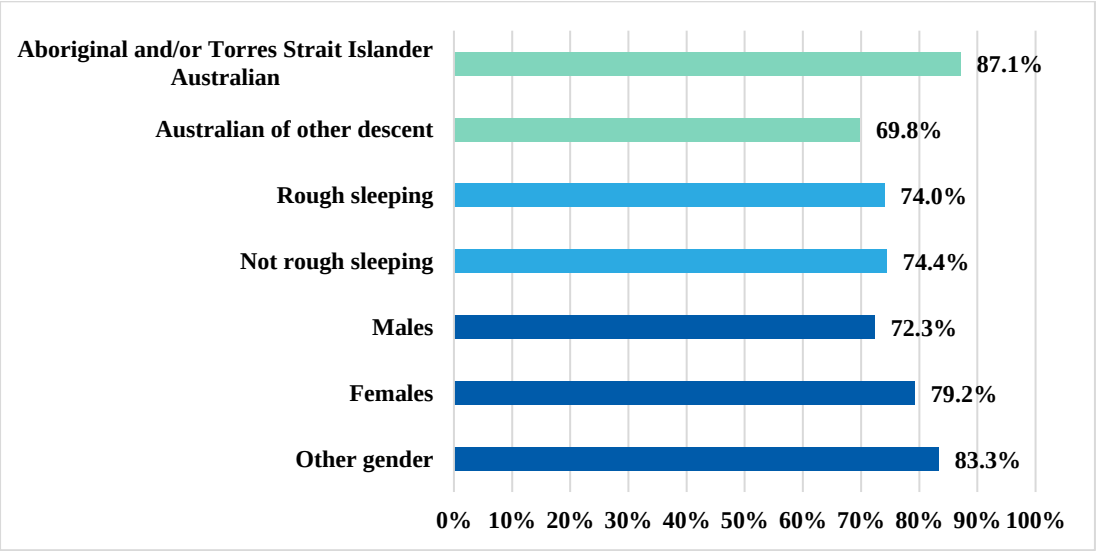
Table 11 Selected indicators of problematic drug and alcohol use, percent

	Yes	No	Per cent Yes
Have you ever had problematic drug or alcohol use, abused drugs or alcohol, or been told you do?	624	221	73.8
Have you consumed alcohol and/or drugs almost every day or every day for the past month?	226	617	26.8
Surveyor observed signs or symptoms of problematic alcohol or drug abuse[4]	346	456	43.1

Source: National Advance to Zero 2010–2020
Notes: (1) Estimates based on unique respondents (excluding missing values).

A greater proportion of Aboriginal and/or Torres Strait Islander Australians reported problematic drug or alcohol use or abused drugs than Australians of other descent (Figure 5).

Figure 5 Per cent of respondents responding yes to the question 'Have you ever had problematic drug or alcohol use, abused drugs or alcohol, or been told you do?'



Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

5 HEALTHCARE UTILISATION

The results discussed in the previous chapter illustrate that people experiencing homelessness are more likely to experience mental illness, alcohol and other drug misuse along with poorer physical health outcomes than the general population. As a result, people experiencing homelessness are over-represented in acute healthcare services such as accident and emergency departments, ambulance services and hospital admissions. This section examines self-reported health service utilisation among Victorian people in the Advance to Zero database.

5.1 Accidents and Emergency Department Use

Accident and Emergency (A&E, also known as Emergency Department) was the most commonly used health service by Victorian respondents in the Advance to Zero database. Almost half (47.3%) of respondents reported that they had used A&E in the six months prior to the survey (Table 12). One-quarter (25.0%) of respondents reported three or more visits to A&E in the six months prior to survey. The frequency distribution of Accident and Emergency visits can be seen in Figure 6.

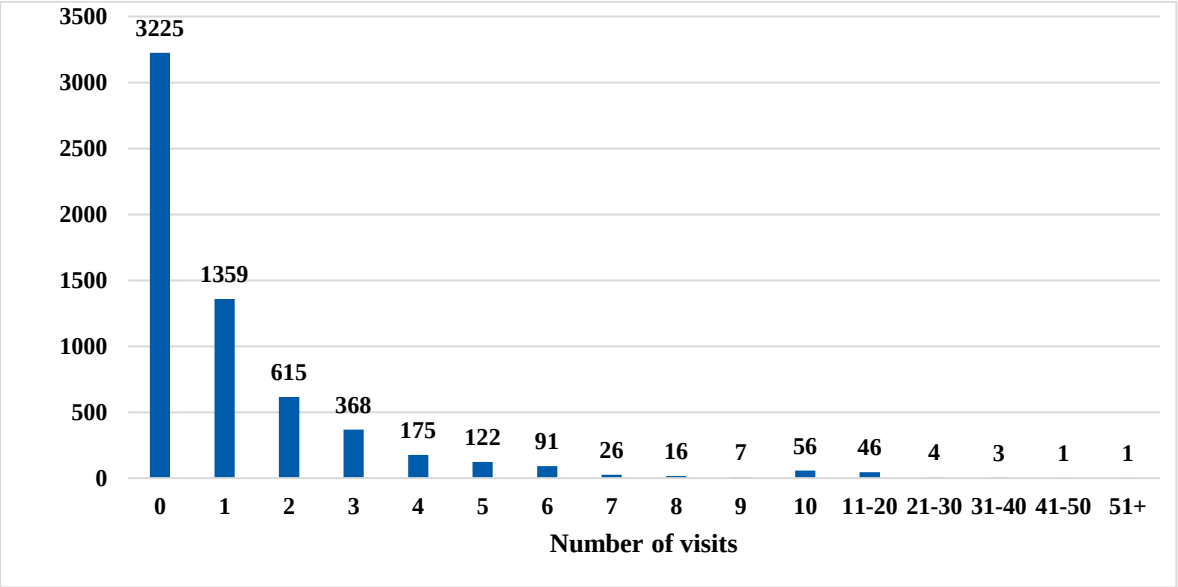
Accident and Emergency was the most frequently used healthcare service with respondents having a mean number of visits in the last six months (including zero visits) of 1.24. If we exclude those who did not use A&E in the prior six-month period, the average jumps to 2.62 incidents.

Table 12 Hospital Accident and Emergency Department visits over the last six months

	Frequency	Per cent	Cumulative Percent
0	3,225	52.7	52.7
1-10	2,835	46.4	99.1
11-20	46	0.1	99.3
21-30	4	0.1	99.5
31-40	3	0.1	99.6
41-50	1	0.1	99.7
51 and over	1	0.1	99.9
Total	6,115	100.0	

Source: National Advance to Zero 2010-2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

Figure 6 Hospital Accident and Emergency Department visits over the last six months



Source: National Advance to Zero 2010-2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

5.2 Hospitalisation as an Inpatient Use

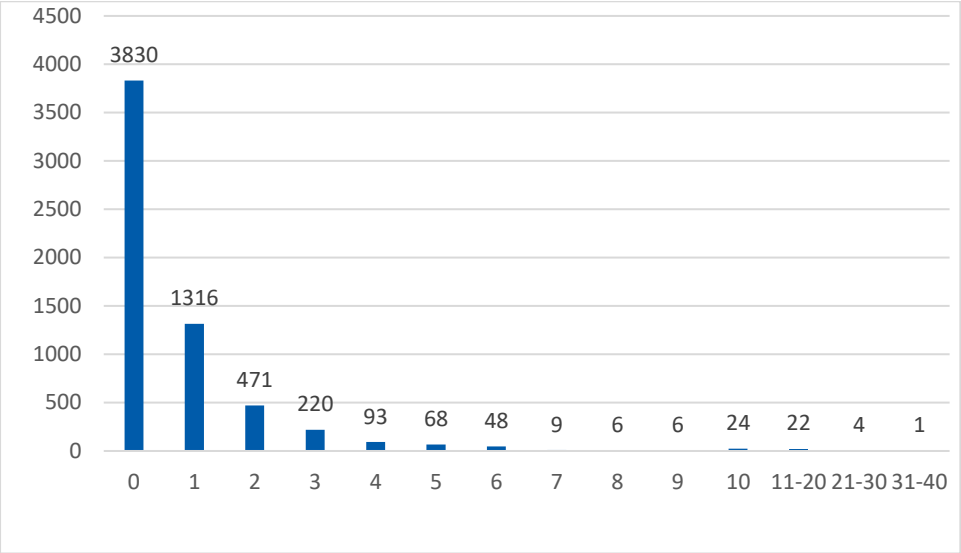
As evident in Table 13, a majority of National Advance to Zero respondents (62.6%) did not report being an in-patient in a hospital over the last six months. The equates to level of hospital inpatient use being 0.78 hospitalisations as an inpatient in the last six months across all respondents, including those with zero hospital in-patient use. If we exclude those who were not hospitalised as an inpatient in the prior six-month period, the average jumps to 2.09 incidents. A relatively small number of respondents report three or more in-patient hospital episodes in the last six months (9.0%).

Table 13 Number of times hospitalised as an in-patient (including mental health hospitalisations) over the last six months

	Frequency	Per cent	Cumulative Percent
0	3,830	62.6	62.6
1-10	2,261	37.0	99.6
11-20	22	0.4	99.7
21-30	4	0.1	99.8
31-40	1	0.1	99.9
Total	6,118	100.0	

Source: National Advance to Zero 2010-2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

Figure 7 Number of times hospitalised as an in-patient (including mental health hospitalisations) over the last six months



Source: National Advance to Zero 2010-2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

5.3 Ambulance Use

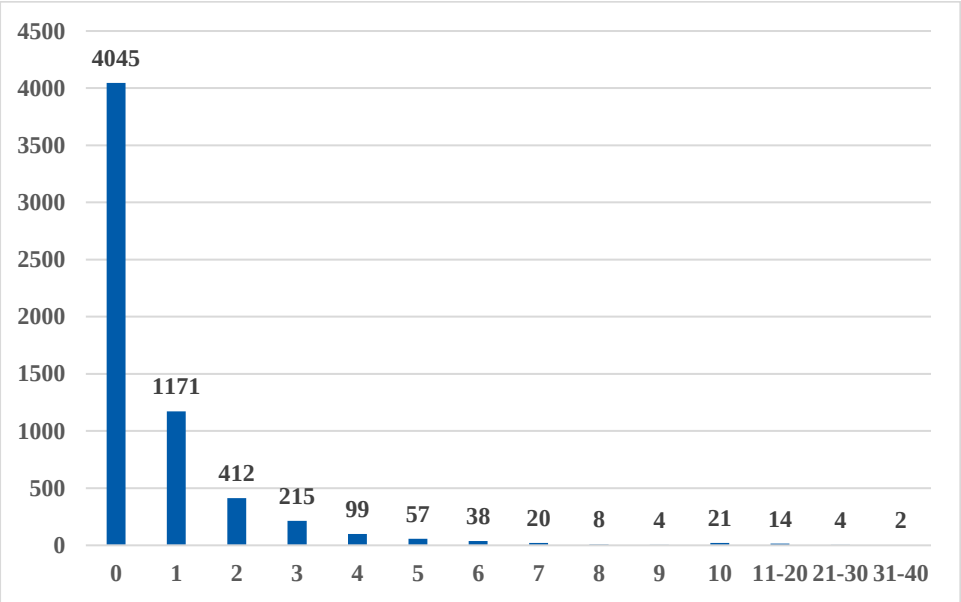
Ambulance use was the second most frequently used healthcare service (out of A&E visits, ambulance and inpatient use). Across all respondents, 66.2% report not using an ambulance to be taken to hospital and the mean number of times of being taken to hospital in an ambulance 0.74 times in the last six months (Table 14). If only those who did use an ambulance in the six-month period are considered, the average jumps to 2.19 incidents. Consistent with A&E and hospital in-patient use, a relatively small number of respondents report three or more ambulance-to-hospital episodes in the last six months (4.5%)(Figure 8).

Table 14 Number of times taken to the hospital in an ambulance over the last six months

	Frequency	Per cent	Cumulative Percent
0	4,045	66.2	66.2
1-10	2,045	33.5	99.7
11-20	14	0.2	99.8
21-30	4	0.1	99.9
31-40	2	0.1	99.9
Total	6,110	100.0	

Source: National Advance to Zero 2010-2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).
(2) Health service utilisation questions were not included in the Australia VI survey.

Figure 8 Number of times taken to the hospital in an ambulance over the last six months



Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

5.4 Estimated Hospital and Ambulance Costs

To calculate the estimated cost of the self-reported health service utilisation of Victorian respondents in the Advance to Zero database, we used the Report on Government Services 2021 (ROGS, 2021) average cost of a public hospital separation in Victoria ($4,563) and A&E visit not resulting in admission ($498) (ROGS, 2021, Table 12A.58; ROGS, 2021, Table 12A.60). The estimated cost per ambulance service ($1,029) is based on a study of Sydney Hospitals by the Independent Hospital Pricing Authority (Health Policy Analysis, 2017).

An important limitation to using average costs is that these figures reflect average time spent in hospital, hospital type and the case-mix of support. However, if those experiencing homelessness spend longer (or shorter) time in hospital than average or used differing resources for each day in hospital than others, then the accuracy of the average cost per incident will be impacted. Another limitation to this calculation of the cost of health service use is that frequencies of health service utilisation are derived from self-reports among people experiencing homelessness and can therefore only be considered estimates.

Nevertheless, high acuity healthcare use among people experiencing homelessness incurs a significant cost to government. These high costs form part of the rationale for providing housing to people experiencing homelessness, as there is evidence that the cost of housing would be largely or fully offset by savings in other government service use (Zaretzky et al. 2013; Wood et al. 2016). Accordingly, we calculate the cost of self-reported health service utilisation of Victorian respondents in the Advance to Zero database.

The mean cost of use of selected healthcare services in the six months prior to survey among Victorian respondents in the Advance to Zero database was $4,938, comprised of $3,559 associated with hospitalisations, $618 with Accident and Emergency Presentations, and $761 with ambulance (Table 15). Rough sleepers reported higher utilisation of healthcare services than those who were not sleeping rough, thus their costs are slightly higher at $7,471 overall ($5,384 hospital; $852 A&E; $1235 ambulance. Table 15**Error! Reference source not found.** outlines

mean frequency and cost of service use of Victorian respondents in the Advance to Zero database over the six months prior to survey, by rough sleeping status.

Examining costs for only those who used health services (i.e. excluding zeroes), there is a substantial increase in costs per person, particularly for hospitalisation. Among those who used each type of health service, the mean costs were $9,537 for hospitalisations, $1,305 for A&E visits and $2,254 for use of an ambulance (Table 16). These costs were once again higher among those sleeping rough, for whom the estimated mean cost of hospitalisations in the six months prior to survey was $11,088, $1,479 for A&E visits, and $2881 for ambulance use. Table 16 outlines the number of users of each type of service, mean number of uses, and mean costs, by rough sleeping status.

These findings of high healthcare costs among Victorian respondents in the Advance to Zero database are in line with previous studies showing that a small number of people experiencing homelessness, particularly those sleeping rough, incur much higher healthcare costs than the majority of the homeless population (Fuehrlein et al., 2014; Zaretzky et al., 2017). Our estimates indicate that the financial impact of homelessness on the Victorian healthcare system is substantial. Further, given that our data mainly covers the Melbourne metropolitan region, only those who were experiencing homelessness who were located and engaged with service agencies, and only includes three types of health service, these costs are likely to be an underestimate.

Table 15 Health service utilisation and estimated costs for all respondents (include those not utilising services) 6 months prior to the survey

	Ambulance (Cost per incident: $1029)		Accidents and Emergencies (Cost per incident: $498)		In-patient (Cost per incident: $4,563)		Total
	Mean number of service uses	Mean cost/person	Mean number of service uses	Mean cost/person	Mean number of service uses	Mean cost/person	Mean cost/person
Sleeping rough	1.20	$1,235	1.71	$852	1.18	$5,384	$7,471
Not sleeping rough	0.73	$751	1.23	$613	0.78	$3,559	$4,923
Other	0.17	$175	0.50	$249	0.17	$776	$1,200
Missing	0.61	$628	0.70	$349	0.37	$1,688	$2,665
Total	0.74	$761	1.24	$618	0.78	$3,559	$4,938

Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

Table 16 Health service utilisation and estimated costs for those who utilised health services 6 months prior to the survey

	Ambulance (Cost per incident: $1,005)			Accidents and Emergencies (Cost per incident: $498)			In-patient (Cost per incident: $4,563)		
	Number of people utilising service	Mean number service uses	Mean cost/ person	Number of people utilising service	Mean number of service uses	Mean cost/person	Number of people utilising service	Mean number of service uses	Mean cost/person
Sleeping rough	76	2.80	$2,881	102	2.97	$1,479	86	2.43	$11,088
Not sleeping rough	1,991	2.17	$2,233	2,771	2.61	$1,300	2,189	2.09	$9,537
Other	1	1.00	$1,029	2	1.50	$747	1	1.00	$4,563
Missing	7	4.00	$4,116	15	2.13	$1,061	12	1.42	$6,479
Total	2,075	2.19	$2,254	2,890	2.62	$1,305	2,288	2.09	$9,537

Source: National Advance to Zero 2010–2020.
Notes: (1) Estimates based on unique respondents (excluding missing values).

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