Final Report

Peer Reviewed

What are the health, social and economic benefits of providing public housing and support to formerly homeless people?

authored by

Lisa Wood, Paul Flatau, Kaylene Zaretzky, Sarah Foster, Shannen Vallesi and Darja Miscenko

for the

Australian Housing and Urban Research Institute

at The University of Western Australia

July 2016

AHURI Final Report No. 265

ISSN: 1834-7223

ISBN: 978-1-925334-27-2

AHURI

Australian Housing and Urban Research Institute

Authors	Wood, Lisa	The University of Western Australia
	Flatau, Paul	The University of Western Australia
	Zaretzky, Kaylene	The University of Western Australia
	Foster, Sarah	The University of Western Australia
	Vallesi, Shannen	The University of Western Australia
	Miscenko, Darja	The University of Western Australia
Title	What are the health, social and economic benefits of providing public housing and support to formerly homeless people?	
ISBN	978-1-925334-27-2	
Format	PDF	
Key words	homelessness, public housing, National Partnership Agreement on Homelessness, tenancy support, tenancy sustainability, mental health, drug and alcohol, and corrective services	
Editor	Anne Badenhorst	AHURI National Office
Publisher	Australian Housing and Urban Research Institute Limited Melbourne, Australia	
DOI	doi:10.18408/ahuri-8202801	
Series	AHURI Final Report; no. 265	
ISSN	1834-7223	
Preferred citation	Wood, L., Flatau, P., Zaretzky, K., Foster, S., Vallesi, S. and Miscenko, D. (2016) *What are the health, social and economic benefits of providing public housing and support to formerly homeless people?,* AHURI Final Report No.265, Australian Housing and Urban Research Institute, Melbourne, http://www.ahuri.edu.au/research/final-reports/265, doi:10.18408/ahuri-8202801. [*Add the date that you accessed this report*: DD MM YYYY].	

AHURI

AHURI is a national independent research network with an expert not-for-profit research management company, AHURI Limited, at its centre.

AHURI has a public good mission to deliver high quality research that influences policy development to improve the housing and urban environments of all Australians.

Through active engagement, AHURI's work informs the policies and practices of governments and the housing and urban development industries, and stimulates debate in the broader Australian community.

AHURI undertakes evidence-based policy development on a range of issues, including: housing and labour markets, urban growth and renewal, planning and infrastructure development, housing supply and affordability, homelessness, economic productivity, and social cohesion and wellbeing.

ACKNOWLEDGEMENTS

This material was produced with funding from the Australian Government and state and territory governments. AHURI Limited gratefully acknowledges the financial and other support it has received from these governments, without which this work would not have been possible.

AHURI Limited also gratefully acknowledges the contributions, both financial and in-kind, of its university research partners who have helped make the completion of this material possible.

We would like to extend special thanks to the Data Linkage Branch of the Western Australian Department of Health and the Western Australian Housing Authority for their support and assistance with respect to the linkage of health and housing data and the implementation of the public housing Tenant Survey. We also wish to thank Jessica Smith, Georgina Carson and Daniel Sutton for their excellent research assistance on the study.

AHURI JOURNAL

AHURI Final Report journal series is a refereed series presenting the results of original research to a diverse readership of policy-makers, researchers and practitioners.

PEER REVIEW STATEMENT

An objective assessment of reports published in the AHURI journal series by carefully selected experts in the field ensures that material published is of the highest quality. The AHURI journal series employs a double-blind peer review of the full report, where anonymity is strictly observed between authors and referees.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF BOXES

ACRONYMS

AHURI	Australian Housing and Urban Research Institute Limited
AIHW	Australian Institute of Health and Welfare
COAG	Council of Australian Governments
CPOP	Community Program for Opioid Pharmacotherapy
DCP	Department for Child Protection
DCPFS	Department for Child Protection and Family Support
ED	Emergency Department
EDDC	Emergency Department Data Collection
FSP	Full-Service Partnerships
HAS	Homelessness Accommodation Support
HASI	Housing and Accommodation Support Initiative
HILDA	Household, Income and Labour Dynamics in Australia
HITH	Hospital in the Home
HMDS	Hospital Morbidity Data System
HSWCS	Housing Support Worker, Corrective Services
HSWDA	Housing Support Worker, Drug & Alcohol
HSWMH	Housing Support Worker, Mental Health
ICU	Intensive Care Unit
MHIS	Mental Health Information System (WA)
NAHA	National Affordable Housing Agreement
NPAH	National Partnership Agreement on Homelessness
PH	Priority housing (homelessness) tenants
SAAP	Supported Accommodation Assistance Program
SHA	State Housing Authority
SHS	Specialist Homelessness Services
SHSC	Specialist Homelessness Services Collection
SLK	Statistical Linkage Key
SPSS	Statistical Package for the Social Sciences
STH	Street to Home
WA	Western Australia
UK	United Kingdom
USA	United States of America
UWA	University of Western Australia

EXECUTIVE SUMMARY

Key points

- The National Partnership Agreement on Homelessness (NPAH) was introduced in 2009 as a joint Commonwealth/state and territory initiative designed to address homelessness in Australia. Our study examines five NPAH programs in Western Australia which support homeless people and those at risk of homelessness access and then sustain public housing allocations. In Australia, homeless people and those at risk of homelessness may receive crisis accommodation and other forms of support and may be assisted to get on to public housing waiting lists, but they are generally not supported to access guaranteed public housing allocations and assisted in various ways to sustain those tenancies over time.
- Homelessness covers those people sleeping rough (primary homelessness), those in shelter, but with no tenure such as those in refuges and supported accommodation managed by homelessness services (secondary homelessness), or those in temporary or insecure accommodation, such as boarding houses and caravan parks (tertiary homelessness).
- The five Western Australian NPAH programs examined in this study are Housing Support Worker programs for: (1–3) people at risk of homelessness exiting correctional institutions, mental health units, and drug and alcohol treatment services; (4) the Street to Home program for people who are sleeping rough; and, (5) the Homelessness Accommodation Support program for people exiting short or medium-term homelessness accommodation services. The report also includes an examination of public housing tenants who were not part of an NPAH program, but over the same period of time, entered into a public housing tenancy through a priority access pathway for those experiencing or at risk of homelessness (hereafter referred to as priority housing (homelessness)).
- The extant literature indicates strong evidence of a compounding negative relationship between homelessness and mental and physical health and of high health care costs associated with homelessness. A growing body of evidence, based on self-report data in the Australian case, suggests that the provision of public housing and housing support may be a cost-effective means of improving health outcomes and reducing health system costs.
- This report addresses the question of whether health service use and health service costs fall as a consequence of supported entry to public housing for formerly homeless people and those at risk of homelessness. It also examines the health and social outcomes of formerly homeless and at-risk of homelessness tenants.
- An important benefit of the present study compared with previous Australian studies is the use of linked housing and health administrative data. The large sample size increases confidence in the findings presented because a larger number of clients and experiences are able to be investigated and the rigour of statistical analysis is improved.
- The study links Western Australian person-level health service system records with person-level public housing tenancy records and tracks the health service use patterns of 983 NPAH and 2,400 priority housing (homelessness) tenants before entry into housing and following entry into housing. On the basis of the linked health and housing data in Western Australia, our study finds that the provision of public housing for NPAH program participants as well as those entering public housing through priority housing (homelessness) was associated with reduced

health service use (both in the proportion using services as well as frequency/duration of use) in the year following entry into public housing as compared with the year prior to entry.

- In particular, significant reductions were evident, pre- and post-entry into public housing, in the proportion of NPAH program and priority housing (homelessness) tenants accessing an Emergency Department (ED), an Intensive Care Unit (ICU), or psychiatric service or mental health provider, staying overnight in a hospital, or having a prescription for opioid dependence. There was no significant change for hospital in the home (HITH) services. Reductions in the frequency of visits to an ED or ICU, the duration of time spent in hospital, in psychiatric care or with a mental health service provider and the mean number of prescriptions for opioid dependence were also observed, with only an increase, post-entry into public housing in average days per person/per year utilising HITH services.
- This study also provides an estimate of the potential economic impact of the change in health service use associated with provision of public housing and NPAH program support for homeless people and those at risk of homelessness. The overall decrease in frequency and duration of health service use, comparing the year prior to and the year following entry into a public housing tenancy, results in a combined potential health system cost saving in Western Australia of $16.4 million per year or $4,846 per person per year. If priority homeless clients are excluded; the change per person with NPAH support is nearly triple this at $13,273 per person per year. The large cost offset is primarily related to reduced health service use among clients of the NPAH Mental Health program, where potential health savings amount to $84,135 per person per year. Across all NPAH programs, the change in stays in hospital ($3,114 per person per year) and in psychiatric care ($1,558 per person per year) account for the vast majority of potential health cost savings.
- The average cost of providing support under the NPAH programs examined is estimated as $6,462 per person per year (2009–12). This is less than half the potential health cost offsets associated with the NPAH programs ($13,273 per person per year (2012–13)). In particular, the large estimated health cost offset associated with the NPAH Mental Health program ($84,135 per person per year) suggests a large potential positive impact on government budgets is associated with this program. Cost savings of the kind identified in the present study are presently not identified in government budgets. The estimated cost savings simply accrue to the health service system and result in more needs being met in the health care system than would otherwise be the case. In short, more resources are freed up in the health system to meet health needs because of a successful housing and homelessness program.
- Tenancy sustainability rates were found to be relatively high for those entering public housing through the NPAH and priority housing (homelessness) routes. Evidence from our Tenancy Survey conducted among 277 tenants entering into public housing indicated that they were highly confident they could maintain their current public housing tenancy. The Tenancy Survey findings also suggested that prior to entering their public tenancy, many individuals were receiving support for diverse issues, but that support levels fell for the priority housing (homelessness) group on entry, while in the case of the NPAH program entrants, support was maintained in line with program requirements.
- Overall, the study shows substantial reductions in health service use (both in terms of the number of people using services, and the frequency and duration of service use) from the focal NPAH programs in Western Australia. Significant and

directly calculable government health care cost offsets arise from the provision of public housing and support for formerly homeless people.

The context, research methods, key findings and policy implications of this study are summarised below.

Policy context

The NPAH was introduced in 2009 as part of an increased focus on addressing homelessness in Australia. Programs introduced under the NPAH aimed to break the cycle of homelessness through early intervention and prevention programs and by strengthening the provision of services aimed at supporting homeless clients' ability to access and sustain housing.

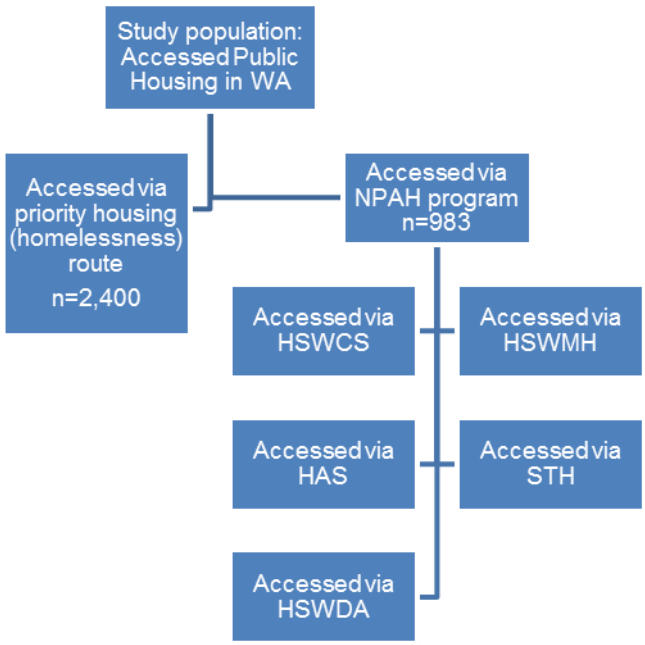
This report is the second in our review of the effectiveness and cost-effectiveness of NPAH programs that assist clients to access and maintain a social housing tenancy or support existing social housing tenants at risk of homelessness maintain their tenancies. The first report, *The cost effectiveness of Australian tenancy support programs for formerly homeless people* (Zaretzky and Flatau 2015), examined the background of people supported by NPAH programs across Australia; the support provided; the housing outcomes achieved; the cost of providing support, and the cost of capital employed in providing social housing.

Research population

This report relates to: participants in five NPAH programs identified as assisting clients to access and maintain a social housing tenancy in Western Australia; and, people who have entered public housing through a priority access route for those who are homeless or at risk of homelessness, but are not receiving NPAH support.

The research population for the study is depicted in Figure 1 below.

Figure 1: Study population



Key: HSWCS Housing Support Worker, Corrective Services; HSWMH Housing Support Worker, Mental Health; HAS Homelessness Accommodation Support; STH Street to Home; HSWDA Housing Support Worker, Drug & Alcohol.

In Western Australia, NPAH programs are funded through the Department for Child Protection and Family Support (DCPFS). The five NPAH programs in the study

include three housing support worker programs for people exiting correctional institutions (HSWCS), people existing mental health units (HSWMH), people referred through drug and alcohol treatment services (HSWDA); the Street to Home program (STH) for people who are sleeping rough, and the Homelessness Accommodation Support program (HAS) for people exiting short or medium term homelessness accommodation services.

Eligibility for priority access to public housing in WA includes primary homelessness covering those sleeping rough; secondary homelessness, where shelter is provided but no formal tenure position is available and includes staying in accommodation provided by homelessness services or staying temporarily with friends/family; and tertiary homelessness which is having an insecure accommodation arrangement (e.g., boarding house or caravan park).

Research methods

This study comprised three elements.

First, a desk top review of the policy context of NPAH programs in WA and the research literature surrounding the relationship between housing, homelessness and health, and, in particular, whether housing provision can lead to improving health outcomes and cost savings from reduced health service use.

Second, the linkage of Western Australian health service utilisation administrative data (Department of Health WA) with public housing administrative data (Department of Housing/The Housing Authority WA) for tenants supported by NPAH programs (n=983) and priority housing (homelessness) tenants (n=2,400) to examine the impact of public housing on health service utilisation and health system costs pre- and post-housing tenancy. Housing Authority data included the type of public housing entry (NPAH program or priority housing (homelessness)), duration of tenancy, and demographics. The health service utilisation data included: hospital admissions and length of stay, emergency department presentations, HITH, mental health and psychiatric services, and prescribed drugs for opioid dependence.

The WA health and housing linked data analysis compares health service use one year prior to and one year after public housing tenancy entry. We also examined the three-year pattern of health care use prior to tenancy entry and compared health service use outcomes in this three-year period versus the one-year period. The analysis looked at changes in:

1. The proportion (percentage) of people using health services, comparing use in the year prior to entering a public housing tenancy with use one year following tenancy commencement.
2. The frequency or duration of use (e.g. the number of ED presentations or length of hospital stay).

The aim of the second component of the study was to examine the impact of the provision of public housing with support on health service use and to estimate costs and potential cost savings to government due to changes in health service use following entry to a public housing tenancy. The relationship between NPAH program participation, public housing tenancies (and sustaining those tenancies) and health service use in Western Australia is examined through the linking of health system and public housing administrative data. Western Australia's internationally renowned health data linkage system enables a unique exploration of these relationships. Publically available data on health care unit prices/costs were applied to the linked administrative data to compute the potential cost savings accruing to the public purse.

Third, a survey of current Western Australian Department of Housing tenants in NPAH programs or housed via priority housing (homelessness) (n=277): this survey contained questions on demographics, homelessness history, support received pre- and post-housing tenancy, their confidence in maintaining their tenancy and self-reported health status and health service use. The Tenant Survey was voluntary and limited to current tenants only, and is not necessarily representative of the linked data population.

Key findings

The provision of public housing significantly reduces health service use

In the year following entry to a public housing tenancy, *the proportion of previously homeless individuals accessing health services fell significantly* as compared with the year prior to entry among participants who entered with the assistance of an NPAH program and those entering via a priority housing (homelessness) pathway.

Specifically, there were significant reductions in the proportion of people presenting to emergency departments, staying overnight in hospital, presenting to an ICU and psychiatric care, having contact with mental health services and with prescriptions for opioid dependence for both entry pathways. HITH was the only health service with no significant changes in the proportion of people accessing the service.

Further analysis examined *changes in frequency or duration of health service use within the subsamples of participants from each program who had accessed health services* either before or after entering their public housing tenancy. For both entry pathways, there was an overall reduction (comparing the 12 months prior to entry with the 12 months following entry) in the average length in stay in a hospital, in an ICU and in psychiatric care, and in the average number of prescriptions per person/year. There was also an overall reduction in the average number of hours spent per person/year with a mental health service for NPAH participants and an overall reduction in the average number of visits to an ED for priority housing (homelessness) participants. There was an overall increase in average days per person/year spent in HITH for both groups. This may reflect an efficient substitution into lower cost health care options from high-cost health options as formerly homeless people now have a home from which this service could work.

These results are generally in line with findings from our previous AHURI and other studies using self-report data, but carry far greater weight due to the use of linked longitudinal administrative data, the large sample size, and multiple health service measures.

Reduction in health service use greatest for tenancies sustained between one and four years

The analysis of health service use was undertaken for all those in the research population and compared health service use in the year prior to entry and the year following entry. We reanalysed the data to examine the possible role played by the duration of public housing tenancies post entry as a determinant of health care service costs. Although all in our sample had entered a public housing tenancy at least a year earlier than the close of our data window, the time since entering a tenancy differed between tenants. Our analysis is, therefore, of a preliminary nature as those entering public housing later in the data window simply had not had sufficient time, at the time of the study, to build up a longer tenancy period.

In examining those tenancies sustained beyond a year with those that were not sustained to the year point, tenancies sustained for over one year were found to be

associated with reductions in the proportion of people accessing all of the health services, with the exception of HITH. The beneficial impact on health service use was strongest for people who had sustained their tenancy for between one and four years, but started to fade once people had been in their tenancy for four or more years. This may imply that four years is a threshold amount of time required for individuals to 're-establish' their health and stability, but further research to test this hypothesis explicitly is warranted when a longer data window post-entry into public housing is available for a larger proportion of the research population of interest.

More specifically, there was a significant reduction in the proportion of people presenting to the emergency department and staying overnight in hospitals for individuals who had continued in their tenancy for one to four years. There were significantly fewer people presenting to the ICU for those who continued in their tenancy for one to two years. There were significant reductions in the proportion of people accessing psychiatric and mental health services after one year of tenancy and these reductions continued to be significant for those who had been in their tenancies for over five years. There was a significant reduction in the proportion of people with prescriptions for opioid dependence up until five years of a tenancy. These results suggest that sustaining a tenancy for over 12 months is crucial to achieving health service reductions and cost savings.

Direct calculable government health care cost savings associated with reduced health service use following public housing entry in the linked administrative data sample was nearly $16.4 million in the first year ($4,846 per person/year)

This study provides an estimate of the economic impact of the changes in health service use from the provision of public housing and support. Our economic analysis focused on the changes in emergency presentations, days in hospital and days in psychiatric care, as these have been identified in previous literature as having the largest health care cost. For each participant in the linked dataset, the change in the average number of emergency presentations, days in hospital and days in psychiatric care, was computed comparing the 12 months prior to public housing entry with data from the year following public housing entry for each tenant in the linked data sample. Data on average costs for emergency presentations and days in hospital were sourced from the National Hospital Cost Data Collection (2012–13) and for psychiatric care, from the Australian Institute of Health and Welfare (AIHW) report on Expenditure on Mental Health Services (2013-14) (AIHW 2015b).

Overall, there was a cost saving associated with reduced health service use among both the NPAH program participants and among public housing tenants given priority access due to homelessness. However, the greatest economic returns were observed among the NPAH cohort and, in particular, among those supported through the HSWMH Housing Support Worker, Mental Health program.

Fewer days in hospitals and psychiatric care account for the majority of the cost savings. The change in utilisation across these three services from entry to public housing results in a combined cost savings of $16.4 million or $4,846 per person, across all people in the sample for a single year. If priority housing (homelessness) clients are excluded, the change per person for NPAH clients is nearly triple this ($13,273). The large cost savings is primarily due to the HSWMH group, where savings amount to $84,135 per person per year.

Because health services provided in prison are not recorded in this health data, the total cost offset is potentially understated as the costs associated with individuals exiting the justice system cannot be accurately estimated. Thus, the cost of health services used prior to the tenancy commencing is potentially underestimated.

Of course, cost savings to government budgets revealed by the present research, but not identified by policy-makers, do not result in actual reductions in budget allocations at the time the savings occur. However, the decrease in demand for services from this population group potentially allows for otherwise unmet needs to be met within the existing budget allocation. They also provide the evidence base for more efficient resource allocation decisions in the future.

Prior to entering their public tenancy, many individuals were receiving support for diverse issues

The Tenant Survey conducted as part of the research asked participants to report issues they faced before and after entering their tenancy, and whether they received support for them. Unsurprisingly, the most common type of support prior to entering the tenancy was support to get a public housing tenancy (50.9%). Other common supports received were for mental health needs (31.4%), and material needs (29.2%). After entering public housing, 29.2 per cent reported issues with mental health needs and 28.2 per cent reported issues with paying rent/bills on time. The majority of respondents did receive support for their needs; for example, 23.1 per cent reported receiving support for mental health needs and 18.8 per cent reported receiving support to pay rent/bills on time.

Since moving into their current tenancy, fewer individuals reported that they were receiving support for issues except for physical health and finding/keeping a job. For every kind of support received after entering public housing, except finding/keeping a job, mental health and drug/alcohol issues, individuals receiving support were more likely to be priority housing (homelessness) tenants rather than NPAH tenants. This finding may reflect a number of things including that, in general, NPAH support workers had been largely successful in addressing the needs of tenants; that where support was highest for NPAH tenants, it was precisely in a specific target area, namely, mental health and drug/alcohol issues; and, that priority housing (homelessness) tenants' needs remained very high following entry. Despite the fact that priority housing (homelessness) tenants were not receiving support through an NPAH program, the findings suggest they clearly were receiving support from other areas.

Individuals were highly confident in maintaining their current public housing tenancy

In the Tenant Survey, respondents rated their level of confidence in being able to keep their public housing tenancy. For both NPAH and priority housing (homelessness) groups, over 85 per cent of respondents were confident or very confident in being able to maintain their tenancy. In fact, for both groups the majority were highly confident (56.3% for NPAH, 62% for priority housing); only 5.7 per cent of NPAH and 3.8 per cent of priority housing respondents reported being not very or not at all confident in sustaining their tenancies.

Mental health is a continuing issue that must be addressed

The analysis of the linked administrative data found that while there was a significant reduction in the proportion of individuals in each separate NPAH program (except HSWCS) accessing mental health services, there was actually an increase for two of the programs (STH and HSWDA) in the average duration of each contact with these services. This continued high demand for mental health services reflects not only the high prevalence of issues but also the complex and long-term nature of the problems involved.

The Tenant Survey provides more insight into the prevalence of mental illness. While the percentage of people who report receiving support for mental health issues falls from prior to after entering a public housing tenancy from 31 per cent to 22 per cent, 29 per cent report having issues. This is likely to be an underestimate as the analysis of the K10 questionnaire, an instrument designed to measure psychological distress, found that almost half the sample was experiencing high or very high distress levels, compared to 10 per cent of the general Australian population (ABS 2013a).

Policy implications

This report finds that the provision of stable public housing for people experiencing or at risk of homelessness results in reduced health service use (both in terms of the number of people and the frequency and duration of use), and associated cost savings to the health system and public purse. Providing stable housing with support should be a first priority to improving not only housing outcomes, but health outcomes and consequently reducing health care costs. This is particularly the case for individuals who experience mental health issues.

The findings support the role of public housing as a foundation for non-shelter outcomes and, in particular, health outcomes. They also point to the importance of continued support for highly vulnerable entrants to public housing, particularly for those with a history of severe and persistent mental illness who are either homeless or at risk of homelessness. They further support the need for integrated care arrangements and for a holistic approach to health issues that recognises the importance of housing and of support in terms of improved health outcomes.

Specifically, the study provides an evidence base for the continuation of NPAH programs focused on the provision of housing with support. It also shows the importance of linked health and housing data in policy-relevant research and impact evaluations and provides the basis for future Australian studies in this area.

1 INTRODUCTION

A key focus of policies surrounding homelessness in recent years in Australia has been on providing direct access to housing for those experiencing homelessness and on supporting those who gain housing to maintain it, thus ending the cycle of homelessness. This focus is particularly evident in programs funded under the 2009 National Partnership Agreement on Homelessness (NPAH) between the Commonwealth of Australia, and Australian states and territories. NPAH programs support those experiencing homelessness and those at-risk of homelessness to access and sustain social housing in a variety of circumstances. Homelessness covers those sleeping rough (primary homelessness), those in shelter but with no tenure such as those in refuges and supported accommodation managed by homelessness services and those 'couch surfing' (secondary homelessness), or those in temporary or insecure accommodation such as boarding houses and caravan parks (tertiary homelessness).

Our study examines five NPAH programs in Western Australia which support homeless people to access and sustain public housing allocations. In the standard case, without programs such as these, homeless people and those at risk of homelessness receive crisis accommodation and other forms of support and may be assisted to get onto public waiting lists, but they are not provided with direct support in accessing guaranteed public housing and support to sustain those tenancies.

The five NPAH programs includes those exiting prisons or juvenile detention centres; people with severe and persistent mental illness who are either homeless or at risk of homeless when they are discharged from a Mental Health Inpatient Unit; people sleeping rough; people who have undertaken treatment for drug and alcohol issues and who may otherwise become homeless after exiting the treatment service or while they are receiving assistance with their substance use; and people exiting short or medium-term homelessness accommodation services (DCP n.d.; OAG 2012).

The five NPAH programs in question are:

1. Housing Support Worker Corrective Services (HSWCS) which supports those exiting prisons or juvenile detention centres.
2. Housing Support Worker Mental Health (HSWMH) which supports people with severe and persistent mental illness who are either homeless or at risk of homelessness when discharged from a Mental Health Inpatient Unit.
3. Street to Home (STH) which supports people sleeping rough.
4. Housing Support Worker Drug & Alcohol (HSWDA) which supports people who have undertaken treatment for drug and alcohol issues and who may otherwise become homeless while they are receiving assistance with their substance use or after exiting a treatment service.
5. Homelessness Accommodation Support (HAS) which supports people exiting short or medium-term homelessness accommodation services.

The present report is the second to be released in an AHURI-funded project that examines the effectiveness and cost-effectiveness of NPAH programs aimed at accessing and maintaining social tenancies for formerly homeless people and those at high risk of homelessness. The first report, *The cost effectiveness of Australian tenancy support programs for formerly homeless people* (Zaretzky and Flatau 2015), examined the background of households supported by NPAH tenancy support programs across Australia, the support provided and the housing outcomes achieved, the cost of providing support and the cost of capital employed in providing social

housing. Zaretzky and Flatau (2015) showed that NPAH programs aimed at supporting homeless clients and those at risk of homelessness to access and maintain a social housing tenancy or maintain existing tenancies at risk of homelessness, were successful in assisting households to sustain their tenancy and prevent eviction.

In this second report, we focus on NPAH programs operating in Western Australia and use Western Australia's rich health service utilisation databases linked to public housing administrative data. This is supplemented with a one-off survey of a sample of current public housing tenants who were previously homeless or at risk of homelessness. This provides the most in-depth examination to date in Australia of the public health, social and economic impact of public housing programs to support homeless people and those at risk of homelessness. In addition to the assessment of the impact of NPAH program participation, the report also considers the benefit of providing public housing for formerly homeless people more broadly, irrespective of whether intensive NPAH-type support is provided. This is achieved by including in the sample (both linked administrative data and the survey sample) people who have entered public housing through a priority access route for those who are homeless or at risk of homelessness, but are not receiving NPAH support. Eligibility for priority public housing in WA includes primary homelessness covering those sleeping rough; secondary homelessness, shelter but no formal tenure including staying in accommodation provided by homelessness services or staying temporarily with friends/family ('couch surfing); and tertiary homelessness which is having an insecure accommodation arrangement (e.g., boarding house or caravan park).

The present study comprises three parts. Part 1 entails a literature and desktop review relating to the issues addressed in the study and the policy context. Part 2 involves the linking and analysis of administrative data on health service utilisation from the Western Australian Department of Health, with public housing tenancy data from the Western Australian Housing Authority (or Department of Housing) for tenants supported by NPAH programs (n=983) and priority housing (homelessness) tenants (n=2,400), to examine the impact of public housing on health service utilisation and health system costs pre- and post-housing. Housing Authority data includes the nature of public housing entry (type of NPAH program or priority housing (homelessness)), duration of tenancy, and demographics. The health service utilisation data included: hospital admissions and length of stay, emergency department presentations, hospital in the home (HITH), mental health and psychiatric services, and prescribed drugs for opioid dependence. Part 3 collected data from a cross-sectional survey sent to public housing tenants (n=277) who entered public housing through an NPAH program or priority housing (homelessness).

This study provides an estimate of the economic impact of the changes in health service use from the provision of public housing and support through the NPAH programs as well as those accessing housing through priority housing channels. Our economic analysis focuses on the notional cost savings to government budgets that the provision of public housing and support has from changes in emergency presentation, days in hospital and days in psychiatric care. These services have been identified in previous research as being highly used by people who are homeless, and having the largest health care cost (Culhane, Metraux et al. 2002; Flatau, Zaretzky et al. 2008; ARTD 2010; Zaretzky and Flatau 2013; Conroy, Bower et al. 2014).

Cost savings to government budgets revealed by research, but not identified by policy-makers do not result in actual reductions in budget allocations at the time the savings occur. However, the decrease in demand for services from this population group potentially allows for otherwise unmet needs to be met within the existing

budget allocation. They also provide the evidence base for more efficient resource allocation decisions in the future. For that to occur, stronger connections between research and policy need to be built.

Linked administrative data has been used extensively in public health research in Australia, but has been far less applied in other fields such as housing and homelessness. The unique feature of the present study is the linkage of health service utilisation administrative data with WA public housing records to examine the impact on health service use and health costs among NPAH program participants and other people given priority access to public housing due to homelessness (hereafter referred to as priority housing (homelessness)). The Western Australian health service utilisation data we draw on includes hospital admissions and length of stay, emergency department presentations, hospital in the home (HITH), mental health and psychiatric services, and prescribed drugs for opioid dependence. Importantly for this study, the linked data identifies whether a particular tenant has received support under an NPAH program or entered public housing under the priority access homelessness route.

The present study contributes to the knowledge base by using administrative data sources to examine the impact that public housing and support have on health service use and subsequently on health costs. We supplement findings from the linked administrative data with a survey of public housing tenants who either received support under NPAH programs or who entered public housing through priority housing access routes for those experiencing homelessness. The public housing Tenant Survey provides additional insights into the background of public housing tenants, their homelessness histories and most recent housing position prior to entry into public housing, the tenancy-related issues they faced as tenants and the role of support in meeting those issues, their use of alcohol, tobacco and drugs, their levels of psychological distress, self-reported health status and perceived change in health status and use of health services.

The report begins in Chapter 2 with a discussion of the background and rationale for investigating the impact of public housing and support initiatives for homeless people and those at risk of homelessness and also includes further background on the NPAH. Chapter 3 outlines the methods used in the study, with particular focus on the sources of linked health service utilisation and public tenant data used. Chapters 4 and 5 discuss the results of the linked health service utilisation and public housing administrative data analysis and the Tenant Survey respectively. Chapter 6 summarises the findings of the report and concludes with a discussion of implications for future research and policy.

2 BACKGROUND

This chapter provides the background and rationale for investigating the impact of housing access and tenancy support initiatives, through the NPAH, on public health, social and economic outcomes. It is structured as follows: Section 2.1 outlines the relationship between housing, homelessness and health; Section 2.2 reviews the recent literature around the impact of housing support on health and housing outcomes; Section 2.3 reviews the literature on cost savings from reduced health service use as a consequence of housing access and homelessness support; Section 2.4 summarises the current state of play of the National Partnership Agreement on Homelessness (NPAH), particularly in regard to this study and relevant WA programs; and, finally Section 2.5 describes some of the challenges in evaluating the impact of NPAH programs.

2.1 Relationship between homelessness and health

There is now a substantial evidence base that homelessness and housing insecurity can have significant negative impacts on non-shelter outcomes, particularly physical and mental health outcomes (Fazel, Geddes et al. 2014). Moreover, there is a bi-directional and compounding relationship between homelessness and health; housing and health do not merely 'go together', but strongly influence each other (Foster, Gronda et al. 2011; Department of Social Services 2008). For example, while mental illness can precipitate homelessness, housing insecurity and homelessness also act as a significant risk factor for poor mental health (Baker, Mason et al. 2014; Altena, Brilleslijper-Kater et al. 2010). One of the suggested pathways is that adverse social conditions (e.g. insecure housing, unemployment, social isolation) act as chronic stressors that may contribute to the onset of mental health problems. Even for people who are in housing, housing payment problems and rent arrears have significant detrimental effects on mental wellbeing (Taylor, Pevalin et al. 2007). Both mental and physical health issues can also adversely impact on employment and financial security which, in turn, can precipitate homelessness (Nooe and Patterson 2010).

Rates of morbidity and premature mortality are higher in homeless groups than in the general population; in both relative and absolute terms (Fazel, Geddes et al. 2014;*The Lancet* 2014). People experiencing homelessness are over-represented in many health statistics, including emergency department presentations, hospitalisation, and psychiatric care. However, they are under-represented in the use of some other health services, such as preventive health check-ups (Kushel, Perry et al. 2002; Salit, Kuhn et al. 1998; Folsom, Hawthorne et al. 2005) and in respect of podiatry and dental health care (relative to severe need) where health needs may not be met because of high cost barriers (Flatau, Conroy et al. 2012). Decreased access to care also contributes to increased risk for later-stage diagnosis among people who are homeless (Rieke, Smolsky et al. 2015), poorer control of cardiovascular disease, hypertension and diabetes (*The Lancet* 2014), and hospitalisation for preventable conditions such as skin and respiratory conditions (Salit, Kuhn et al. 1998). In homeless groups, there is an increased prevalence of infectious diseases (HIV, tuberculosis, hepatitis C), non-communicable diseases, and higher rates of suicide and unintentional injuries (Fazel, Geddes et al. 2014).

It is important to note that comorbidities are common in homeless populations (*The Lancet* 2014). In particular, a significant proportion of homeless individuals suffer from substance dependence and mental illness (*The Lancet* 2014; Fazel, Geddes et al. 2014; Cheung, Somers et al. 2015; Spicer, Smith et al. 2015). Homelessness, substance abuse and mental illness have all individually been associated with higher use of emergency departments and higher rates of hospitalisation (Kushel, Vittinghoff

et al. 2001; Kushel, Perry et al. 2002; Culhane, Metraux et al. 2002; Kim, Kertesz et al. 2006; Chartier, Carrico et al. 2012), and so the impact on health service use and costs are compounded when these circumstances are clustered together. For this reason, mental health and substance abuse issues are of particular importance when considering the relationship between health and homelessness. Typically, people experiencing homelessness are more likely to engage with the 'pointy end' of the health system, which bears a higher price tag than earlier intervention or health service provision outside of hospital settings (Sadowski, Kee et al. 2009; *The Lancet* 2014).

2.2 Can the provision of housing and/or support improve health and housing outcomes?

Many of the existing studies investigating the relationship between housing and health comprise evaluations of specific programs or interventions. A number of studies of Housing First programs (i.e., the rapid housing of those experiencing homelessness before presenting issues have been fully addressed) have demonstrated significant reductions in homelessness, reduced health costs and improved housing tenancies (Larimer, Malone et al. 2009, Gulcur, Ana et al. 2003; DeSilva, Manworren et al. 2011; Conroy, Bower et al. 2014). One Housing First study also reported a decrease in visits to emergency department, detoxification centre and medical clinics (DeSilva, Manworren et al. 2011). A Canadian study reported a reduction in emergency department visits among Housing First participants (compared to 'treatment as usual' participants), but found no difference in hospitalisations (Russolillo et al. 2014). In a review of the Housing First approach, Fitzpatrick-Lewis, Ganann et al. (2011) concluded that among people with a mental illness experiencing homelessness, tenancies are improved when housing is provided on hospital discharge, and for those with substance abuse issues, provision of permanent housing can decrease substance abuse and therefore increase the likelihood of staying in a stable accommodation environment. They also note that provision of housing can improve health outcomes for homeless populations with HIV (Fitzpatrick-Lewis, Ganann et al. 2011). These findings are of particular interest in the present study. While the NPAH programs being investigated were not Housing First programs per se, they do share a common focus on 'rapid housing' of homeless people or those at risk of homelessness in circumstances such as exiting from mental health and drug and alcohol facilities, from corrective services facilities and from street-based homelessness. In the case of the NPAH programs in Western Australia, greater pre-entry support may be evident as well as perhaps post-entry support compared with standard Housing First models.

Other wrap-around support programs, such as Australia's Michael Project (Flatau, Conroy et al. 2010; 2012), have also shown positive housing and health outcomes. Sadowski, Kee et al. (2009) reported that offering housing and case management to homeless adults with chronic mental illnesses resulted in fewer hospital and emergency department visits when compared to usual care. Other studies have shown that providing supportive housing can reduce the days/nights spent in psychiatric hospitals and non-psychiatric hospitals (Perlman and Parvensky 2006; Culhane, Metraux et al. (2002) as cited in Nooe and Patterson 2010), reduce emergency department admissions (Rieke, Smolsky et al. 2015) and show an increase in outpatient admissions (Rieke, Smolsky et al. 2015; Gilmer, Stefancic et al. 2010; Culhane, Metraux et al. 2002; Sadowski, Kee et al. 2009). The decrease in emergency department visits and increase in outpatient visits implies that when housed, individuals are able to more appropriately use health care services, that is, fewer unnecessary emergency department visits are made.

However, these positive outcomes are not universal. In Gilmer, Stefancic et al.'s (2010) evaluation of Full-Service Partnerships (FSP) in California, the mean number of days of homelessness experienced, and the likelihood of receiving inpatient and emergency services declined, but outpatient mental health visits increased. Mares and Rosenheck (2011) also reported an increase in outpatient visits, as well as increased visits to other medical, mental health, substance abuse and health care services. They concluded that systems-level service integration programs, applied in addition to intensive care arrangements, were associated with additional positive housing outcomes, but not health outcomes. In a systematic review of the literature on the impact of housing interventions on health and housing outcomes, Rog, Marshall et al. (2014) summarised the evidence for permanent supportive housing as 'moderate', with evidence that it can reduce homelessness, increase tenure and decrease emergency department room visits and hospitalisation.

One of the gaps in the literature to date is larger scale studies that have accessed linked housing and medical record data to examine the link between homelessness, housing and health. Of the few published studies that have used linked health care and housing data, the sample sizes have tended to be small. In the USA, Martinez and Burt (2006) analysed administrative data of 236 adults and found that providing permanent supportive housing to homeless people with psychiatric and substance abuse disorders can reduce emergency department and hospital inpatient visits. In another US study, Brown, Miao et al. (2015) interviewed and accessed the medical records of 200 individuals and found that among homeless adults over 50 years old, those who gained housing had fewer depressive symptoms and a lower rate of acute care use than those who did not, but other measures of health status were not significantly different. The use of linked administrative data on a larger scale is an opportunity to improve knowledge both in terms of the number of different clients and experiences that can be investigated and understood, and also the rigour of the statistical analysis.

2.3 Can reducing homelessness contribute to cost savings to government via reduced health service use?

Economic analysis indicates that the health sector bears much of the cost and consequences of recurring homelessness in Australia (Culhane, Metraux et al. 2002; Corporation for Supportive Housing 2004; Perlman and Parvensky 2006; Social Policy Research Centre 2007; Flatau and Zaretzky 2008; Flatau, Zaretzky et al. 2008; Zaretzky, Flatau et al. 2008; Flatau, Conroy et al. 2010; 2012; ARTD 2010; Zaretzky and Flatau 2013; 2015; Conroy, Bower et al. 2014). More broadly, housing has been described as a central element in tackling broader health inequalities (Shaw 2004).

While it is recognised that investment into housing support can be expensive, a growing body of international and Australian evidence suggests that, given the disproportionate illness or health care cost burden attributable to housing insecurity (e.g., higher rates of hospitalisation, use of emergency services, over-representation in psychiatric services) (Redelmeier, Molin et al. 1995), housing support 'may represent a more cost-effective as well as a more humane approach to the problem of homelessness' (Salit, Kuhn et al. 1998).

There have been a number of attempts in international and Australian studies to estimate the cost savings of reduced health service use when homelessness is addressed or housing support provided. Evidence from the USA generally indicates that providing housing support does reduce costs, although the patterns and extent of cost saving can vary considerably for different health outcomes (Gilmer, Stefancic et al. 2010; Larimer, Malone et al. 2009; Martinez and Burt 2006; Gulcur, Ana et al.

2003). For example, Larimer, Malone et al. (2009) found that, for the Housing First group examined, Medicaid costs fell by 80 per cent in the 12 months after intervention while emergency medical service costs fell by 56.6 per cent. The importance of considering all services and costs was highlighted in a study by Gilmer, Stefancic et al. (2010) which found that while the costs associated with inpatient and emergency service use and some mental health services decreased for previously homeless people participating in a Full-Service Partnerships (FSP) program, use of outpatient services increased, resulting in a net increase to the total cost of services. Importantly, however, this study also concluded that the total cost reductions in the health and justice systems offset over 80 per cent of the cost of the FSP.

Australian studies have predominantly found homelessness support to be associated with reduced use of high cost health services (Flatau and Zaretzky 2008; Flatau, Zaretzky et al. 2008; Zaretzky, Flatau et al. 2008; Flatau, Conroy et al. 2010, 2012; Bruce, McDermott et al. 2012; Zaretzky and Flatau 2013; 2015; Conroy, Bower et al. 2014). This is particularly true where longer term wrap around tenancy support is provided, as shown in the Mission Australia Michael Project with homeless men, where healthcare costs decreased by $8,222/person/year on average as consumers moved away from the use of crisis and acute services towards the community end of the health care system (Flatau, Conroy et al. 2010; 2012). In the subsequent Mission Australia MISHA project that assisted homeless men using a 'Housing First' model but with strong post-housing support, health costs were found to decrease by an average 47 per cent ($6,657/year) in the two years after support commenced, predominantly relating to stays in hospital and psychiatric facilities (Conroy, Bower et al. 2014). An important finding in the MISHA study was that in the first year of support, the use of some health services actually increased for many clients as a result of previously unmet needs being addressed, with broader decreases in health system use and costs in the second year of support as health issues were stabilised (Conroy, Bower et al. 2014). In another Australian study, the provision of supported housing for people with a mental health diagnosis through the NSW Housing and Accommodation Support Initiative (HASI), was associated with a 24 per cent decrease in mental health inpatient hospital admissions (Bruce, McDermott et al. 2012). A decrease was also observed in the average number of days spent in hospital per year of 59 per cent, resulting in hospital costs avoided of $27,917 per person/year (Bruce, McDermott et al. 2012).

Comparison across studies is difficult however, as there is considerable variation in the type, source and quality of the health data sourced, ranging from self-reported use of health services by people who were previously homeless, through to analysis of Medicaid records in the US. Differences in the nature of the interventions to reduce homelessness can also hinder the comparability or generalisability of findings. Provision of housing alone, for example, is less likely to impact on health outcomes and service use than interventions that couple housing with other forms of support (Rog, Marshall et al. 2014). Additionally, there is evidence to suggest that some forms of health system contacts (and thus costs) may initially increase (Conroy, Bower et al. 2014), particularly if there are previously undiagnosed or untreated health issues that are better able to be addressed once people are in stable housing. Different methods of calculating cost savings also renders comparisons between existing studies difficult.

2.4 Evidence gaps addressed by this study

There is a small but growing body of evidence to support the contention that intervening to reduce homelessness potentially yields improvements in health at the individual level, and cost savings at the societal level. However, findings for these

outcomes are limited by small sample sizes. The limited number of studies and their limited scope also signifies a notable gap in the literature. This study addresses two challenges; first and foremost, understanding the public health, social and economic impacts of the NPAH and access to public housing more broadly, and second, addressing methodological issues in extant studies by using rich linked administrative data and large sample sizes to increase confidence in the findings presented.

2.5 NPAH as an Australian Government initiative to reduce homelessness

As described in our first report in this AHURI study (Zaretzky and Flatau 2015), 2009 heralded the introduction of the new National Affordable Housing Agreement (NAHA) and NPAH as the cornerstone of a concerted national effort to reduce homelessness in Australia via greater focus on prevention, early intervention and the strengthening of services aimed at supporting homeless clients' ability to access and retain housing. To implement the Agreement, each state and territory developed its own plan. The approach in all jurisdictions except South Australia was to implement or expand a range of programs each with a specific target group. In contrast, South Australia took an integrated approach to homelessness assistance and delivered a range of regional responses with a range of generic service elements to apply across all regions.

However, reporting on NPAH objectives varied considerably by jurisdiction. Audits undertaken by five of the jurisdictions as well as the Australian National Audit Office noted limitations with the publically available data making it difficult to assess both the effectiveness of programs and the cost effectiveness. Appendix 1 of the First Report from this AHURI study (Zaretzky and Flatau 2015) provides an overview of publically available NPAH implementation plans, Annual Reports and evaluations.

Stated NPAH objectives included a dual focus on supporting not only access to stable permanent housing, but also on the sustaining of those housing tenancies and focusing on sustaining pre-existing tenancies that were at risk. It is the sustainability of tenancies and how this relates to health outcomes and associated cost savings that is as much the focus of this AHURI study as the access to the housing.

In our first report from this study (Zaretzky and Flatau 2015), an overview was provided of NPAH programs across all Australian jurisdictions that were aimed at accessing and sustaining social tenancies for formerly homeless people and those at risk of homelessness. Specialist Homelessness Service Collection (SHSC) data showed that for clients who were able to access housing during support, the proportion living in public or community housing increased from 36.3 per cent prior to support to 87.6 per cent at completion of support, and correspondingly the proportion classified as homeless decreased from 33.7 per cent prior to support to 2.1 per cent at completion of support. Where data was available, it suggested that the vast majority of tenancies were sustained for 12 months or more (Zaretzky and Flatau 2015).

Homelessness administrative data, such as that examined in our first report, does not, however, provide any broader outcome measures on which to gauge the impact of accommodation outcomes on non-accommodation aspects of client's lives and on aspects of government expenditure outside of homelessness. In particular, it does not provide an insight into whether the positive accommodation outcomes result in improved health outcomes for clients or a beneficial impact on the health system. Previous Australian studies have used a survey method to examine this issue (see e.g. Flatau, Zaretzky et al. 2008; Flatau, Conroy et al. 2010; 2012; Zaretzky and Flatau 2013, 2015; Conroy, Bower et al. 2014). However, the data is limited in duration, relies on client self-report, uses comparatively small samples and is costly to obtain. The method used in this report of linking homelessness and health data avoids

these issues. Nevertheless, it will be instructive to see whether previous findings based on self-report data line up with the results from linked administrative data.

2.5.1 NPAH and homelessness in Western Australia

In 2009, Western Australia and the Commonwealth signed the four-year National Partnership Agreement on Homelessness (OAG 2012). The stated overarching intentions of NPAH were to:

- intervene early to prevent people from becoming homeless
- break the cycle of homelessness by helping people get back on their feet
- provide pathways between homelessness services and connect people to mainstream services that help them to sustain their housing.

The NPAH Implementation Plan in WA (OAG 2012) set out 20 programs to help homeless people and those at risk of homelessness. Overall, these programs sought to provide one-on-one support for up to 12 months to help people find and stay in stable housing, and to help connect people with mainstream mental and general health services, as well as other support such as financial counselling, employment or education. In WA, the Department for Child Protection and Family Support (DCPFS) has been the lead agency for the Agreement in WA, and contracted a range of not-for-profit organisations to deliver these programs.

In this AHURI study, the focus is on those NPAH programs that were identified as assisting clients to access and maintain a social housing tenancy or to maintain an existing social housing tenancy. DCPFS identified eight NPAH programs that met this definition (as discussed in the first report from this study) and the Department of Housing database has a flag for clients entering a public housing tenancy under five of these NPAH programs (see Table 1 below).

In this second report, we examine the health and tenancy outcomes for participants from these five NPAH programs. Clients assisted in these five programs represent approximately 80 per cent of clients assisted in identified NPAH tenancy-related programs (OAG 2012). There is also an NPAH program in WA that supports people to maintain an existing social housing tenancy (estimated to represent approximately 20% of clients assisted in identified NPAH tenancy-related programs in WA overall), but there is no flag for this program in the Department of Housing database, so it could not be included in this study.

An evaluation of Western Australia's NPAH programs was conducted between January 2011 and December 2012 (Cant, Meddin et al. 2013). It found that in the two-year period 5,094 individual clients were assisted across 14 NPAH programs (Cant, Meddin et al. 2013). It was found that clients often had complex and multiple needs requiring ongoing support for an array of issues including: mental health conditions, domestic family violence, long-term unemployment, disability, severe financial hardship, trauma, serious health complications, caring responsibilities, and language difficulties. On top of this, many case workers were working with clients presenting with dual diagnosis of mental health and/or drug and alcohol conditions (up to 39% of clients in one service) (Cant, Meddin et al. 2013). Overall, clients interviewed in the evaluation stated that support in combination with the accommodation provided was life changing and, in some cases, lifesaving (Cant, Meddin et al. 2013).

2.5.2 Priority housing access in Western Australia

In addition to those entering public housing through an NPAH program, people with urgent housing needs in Western Australia can be given priority access to public rental housing. Homelessness is the predominant reason for this priority housing

access, and can include the need for housing for where life, safety or health is at risk in current housing circumstances (e.g. domestic violence) (Government of Western Australia 2015).

Table 1: NPAH programs identified in Department of Housing database

NPAH program	Description
HSWCS—Housing Support Worker Corrective Services	*Housing support workers—corrective services*: Provides one-on-one support for people exiting prisons or juvenile detention centres with sourcing and maintaining stable accommodation to avoid homelessness (OAG 2012). Referrals are made from the discharge units at correctional facilities and by Re-entry or similar programs. Support period begins three months prior to release and continues for 12 months post release (DCP n.d.).
HSWMH—Housing Support Worker Mental Health	*Housing support workers—mental health*: These services provide dedicated support for people with severe and persistent mental illness who are either homeless or at risk of homelessness when they are discharged from a Mental Health Inpatient Unit. A case management approach, linking with community and clinical mental health services is employed. Referrals are from the Specialist Mental Health Inpatient Units, hospitals or community mental health services. Workers offer one-on-one support up to 12 months with sourcing, accessing and maintaining suitable long-term accommodation (DCP n.d.).
STH—Street to Home	*Street to Home—Assertive Outreach Program* Workers in this program find and support people sleeping rough/living on the street and offer help with access to mainstream services and accommodation. The workers are supported by a Mobile Clinical Outreach Team and Housing Support Workers (OAG 2012).
HSWDA—Housing Support Worker Drug & Alcohol	*Housing support workers—drug & alcohol:* This program works with clients who have undertaken treatment for drug and alcohol issues and who may otherwise become homeless after exiting the treatment service or while they are receiving assistance with their substance use (DCP n.d.). Workers help people with sourcing or maintaining accommodation and engagement with drug and alcohol treatment programs. Referrals to this program mainly come from specialist drug and alcohol services (OAG 2012).
HAS—Homelessness Accommodation Support	*Homelessness Accommodation Support Workers:* This program offers support to people exiting short or medium-term homelessness accommodation services (e.g., shelters, refuges). Workers help with sourcing and maintaining long-term stable accommodation and link people into mainstream services such as education and employment. Support workers also seek to address issues such as employment, health, financial management and social integration.

Eligibility for priority public housing includes homelessness in many forms, including primary homelessness (e.g. someone who is sleeping rough, e.g., in a park or under bridges); secondary homelessness (an accommodation arrangement that has no formal tenure, e.g., staying in crisis accommodation or temporarily with friend/family); and tertiary homelessness (insecure accommodation arrangement, e.g., boarding house or caravan park) (Chamberlain and Mackenzie 1992).

For the purposes of this report, we refer to this group as priority housing (homelessness). It is pertinent to note that provision of priority public housing access

via this route differs from entry via a wrap-around, targeted support program like NPAH. However, it does not preclude the possibility that people may have been, or are, receiving various types of support from other sources. This was evident in the subsample responding to the Tenant Survey (see Section 5 of this report). Many of those entering public housing via a priority access homelessness channel do so from prevailing support services.

2.6 Challenges in assessing the impact of NPAH programs

As noted in the WA Auditor General Office report on the Implementation of the NPAH on Homelessness in Western Australia (OAG 2012), it is difficult to know whether the NPAH programs actually reduced homelessness for clients assisted by them, unless there is data on how many people became and remained housed over the NPAH period, and ideally beyond that (OAG 2012). At the time of writing the OAG report, it was noted that such data were not readily available, even for programs with a stated aim of assisting clients to sustain tenancies.

Continuing shortages in the availability of public housing has been recognised as one of the factors impeding attainment of the intended 7 per cent decrease in the number of people experiencing homelessness in WA (OAG 2012). It is important, therefore, to look at other ways to gauge the impacts of the NPAH program. This study seeks to do this by looking at the proportion of tenancies sustained among NPAH participants and assessing changes in health service usage prior to and following entry into the NPAH program and the associated public housing tenancy.

2.7 Summary

People experiencing homelessness are over-represented in a myriad of health statistics, including premature mortality, emergency presentations, recurrent hospitalisation and psychiatric care (Fazel, Geddes et al. 2014; Moore, Gerdtz et al. 2007). Conversely, they are less likely to use preventive health services (Kushel, Perry et al. 2002; Folsom, Hawthorne et al. 2005) or to seek earlier intervention for manageable chronic diseases (*The Lancet* 2014). A significant proportion of individuals experiencing homelessness suffer from substance dependence and mental illness (Cheung, Somers et al. 2015; *The Lancet* 2014; Fazel, Geddes et al. 2014) and comorbidities are higher among this population group.

People who are homeless are more likely to have contact with the acute and pointy end of the health system, which is far more expensive than early intervention or primary care provision outside of hospital settings (Sadowski, Kee et al. 2009; *The Lancet* 2014). In addition to the consequential demand on health system resources (Culhane, Metraux et al. 2002; Zaretzky, Flatau et al. 2008; Zaretzky and Flatau 2013; Conroy, Bower et al. 2014), the homelessness sector is strained by the proportion of clients needing more intense support due to underlying health issues (Foster, Gronda et al. 2011).

Thus intervening to reduce homelessness could not only improve an individual's health but also generate cost savings at a societal level. There is a small but growing body of evidence supporting this argument, with several studies showing that Housing First and other wrap-around support programs can significantly reduce homelessness, improve health outcomes or reduce health service use and reduce health costs (Rieke, Smolsky et al. 2015; Gilmer, Stefancic et al. 2010; Culhane, Metraux et al. 2002; Sadowski, Kee et al. 2009; Larimer, Malone et al. 2009; Gulcur, Ana et al. 2003; DeSilva, Manworren et al. 2011). However, research to date has primarily relied on self-reported health data, single intervention studies or small sample sizes. This present study addresses this challenge, using longitudinal linked administrative data

from health and housing with a large sample of participants from five NPAH programs implemented in WA, and additional data from formerly homeless people provided with priority public housing access during the same study window.

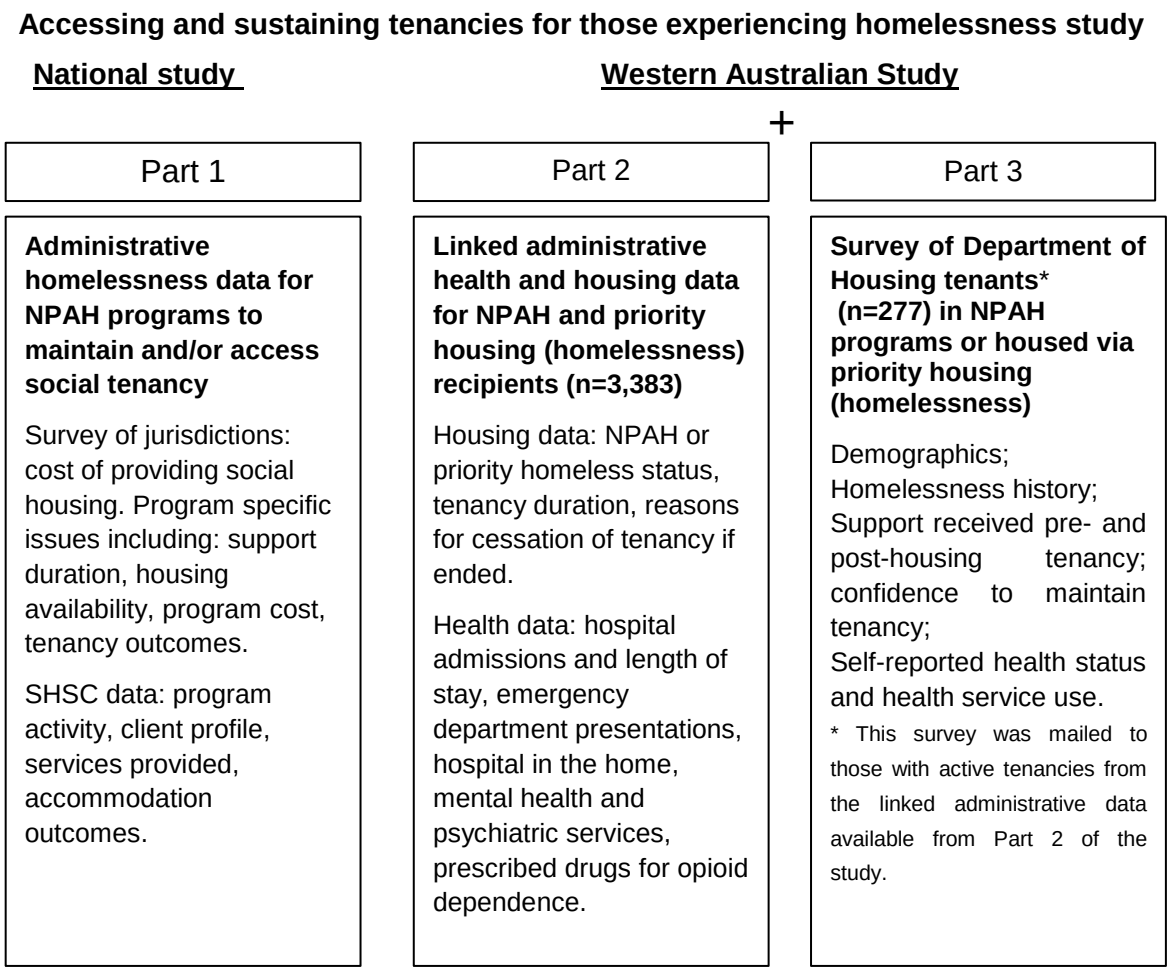
Determining whether or not NPAH programs have reduced homelessness is difficult due to the lack of available data. Furthermore, continuing public housing shortages restrict the attainment of the intended 7 per cent decrease in the number of homeless people in WA (OAG 2012). For this reason, this study takes a different perspective and investigates the impacts of NPAH programs on health service usage.

3 METHODS

3.1 Study design

The overall study comprised three parts as depicted in Figure 2 below. The methods and findings of Part 1 of the overall study have been described in an earlier report (Zaretzky & Flatau 2015). The methods for Part 2 and 3 are described in the remainder of this chapter.

Figure 2: Overall study design



Part 2 of the overall study involved an investigation of WA linked administrative housing and health data to:

- examine the impact of social housing tenancies (and sustaining of tenancies) on health outcomes and associated government costs of formerly homeless tenants
- estimate costs to government and potential cost savings associated with changes in health service use following entry into public housing tenancies.

Part 3 of the overall study involved a survey of Department of Housing tenants who were either participants in one of the five NPAH programs or who had been given priority for tenancies via a priority housing (homelessness) list managed by the Department of Housing.

3.2 Measures

Appendix 1 summarises the data that was obtained from the Departments of Health and Housing, as well as the measures collected via the Tenant Survey.

3.3 Sources of data

3.3.1 Department of Housing data

The Department of Housing dataset comprised tenants who received support to access and/or to sustain their tenancy through an NPAH program from 1 August 2009 to 31 August 2013 and a comparison group who had received a public housing tenancy through priority access channels due to homelessness, but who were not supported by an NPAH program (priority housing (homelessness) tenants). The variables provided are outlined in Appendix 1. Only de-identified data from the Department of Housing was provided to the research team.

3.3.2 Department of Health data

The Department of Housing data was provided to the Department of Health Data Linkage Branch to extract and link with data from five WA Department of Health data collections:

- *Emergency Department Data Collection (EDDC)*: contains data on emergency department activity in WA's public hospitals and activity in private hospitals under contract with the WA Government.
- *Hospital Morbidity Data System (HMDS)*: includes all hospitals in WA (public and private). The HMDS contains inpatient discharge summary data from all public and private hospitals in WA. Each unit record in the HMDS is an episode of care, which starts with a formal admission to hospital and ends with a formal discharge or separation from hospital. The HMDS includes all episodes of care that occur in the following Western Australian health services: public acute hospitals; public psychiatric hospitals; private acute hospitals (licensed by WA Health); private psychiatric hospitals (licensed by WA Health); and private day surgeries (licensed by WA health). The HMDS has some exclusions and does not include episodes of care (or equivalent unit of measurement) pertaining to: patients attending outpatient or community health services; patients in private residential aged care facilities; patients in community residential care facilities; and patients treated in Defence Force health services.
- *Mental Health Information System (MHIS)*: psychiatric episodes can be inpatient (public and private) and outpatient (public only). Inpatient data is sourced from Psychiatric Inpatient Units; Community Accommodation Support Program Hostels; Community Residential Facilities; Acute general hospitals. Outpatient data is sourced from; Psychiatric Clinics; Triage Services; Community mental health centres; Psychiatric Day centres; Outreach programs; and Rehabilitation programs.
- *Mortality Register Data*: all deaths registered in the state.
- *Monitoring of Drugs of Dependence System Data Collection*: the Community Program for Opioid Pharmacotherapy (CPOP) framework was developed to regulate the prescribing of opioid pharmacotherapy used for the treatment of opioid dependence in Western Australia. CPOP Drugs include: Methadone, Subutex and Suboxone.

Seven key health service variables were created from the linked health system data for the purposes of analysis (see Table 2 below). As people entered their tenancy at different times, the period for which health data was available after entry to a tenancy

differed for each person. The window with data available for the *complete cohort* is three years prior to entering a tenancy to one year post entry to a tenancy.

Table 2: Health service use data

Variable	Definition	Measures used in analysis
Emergency department attendance (ED)	An emergency admission is an admission of a patient for care or treatment which, in the opinion of the treating clinician, is necessary and admission for which should occur within 24 hours. Emergency care includes patients suffering from an acute illness or injury that requires urgent assessment and treatment. HMDS collects data on the number of emergency department attendances.	Attendance at ED Average annual number of presentations at ED
Hospital admission (overnight)	Hospital discharge and admission data.	Number of hospital admissions
Average length of hospital stay	Length of stay in hospital (days in the year).	Average annual number of days spent in hospital
ICU	Admission to and days spent in an intensive care unit in one of the hospitals providing data to the HMDS.	Number of admissions to ICU Average annual number of days spent in ICU
Mental health service (MHIS)	The MHIS holds information about people who are treated by mental health services (MHS) in WA. It is a client-based information system where data for each client is stored and includes demographic and clinical information relating to their care received in ambulatory (community and outpatient), inpatient and community residential mental health settings. Raw data provided in minutes, recoded into hours to facilitate interpretation of findings.	Number of contacts with mental health service Average annual duration of contact hours with a mental health service
Hospital in the home (HITH)	Most states and territories have hospital-in-the-home programs under which admitted patients are provided with hospital care in the home (defined in National health data dictionary version 13 (HDSC 2006) as occurring in the patient's (permanent or temporary) place of residence as a substitute to hospital accommodation, and within an episode of care for an admitted patient.	Number of days provided with HITH care Average annual number of days provided with HITH care
Psychiatric care (dopsych)	Admission to and days of psychiatric care (hospital-based) This can include admission to designated psychiatric units within public or private acute care hospitals, or admission to psychiatric hospitals, which are establishments devoted primarily to the treatment and care of admitted patients with psychiatric, mental or behavioural disorders. Staffing is by health professionals with specialist mental health qualifications or training and have as their principal function the treatment and care of patients affected by mental disorder(s) (Department of Health 2014).	Number of days of psychiatric care Average annual number of days in psychiatric care
Number of prescriptions treatment of opioid dependence	Prescribed opioid pharmacotherapy used for the treatment of opioid dependence in Western Australia. Data on Methadone, Subutex and Suboxone.	Number of prescriptions (Subutex, Suboxone, Methadone) Average annual number of prescriptions (Subutex, Suboxone, Methadone)

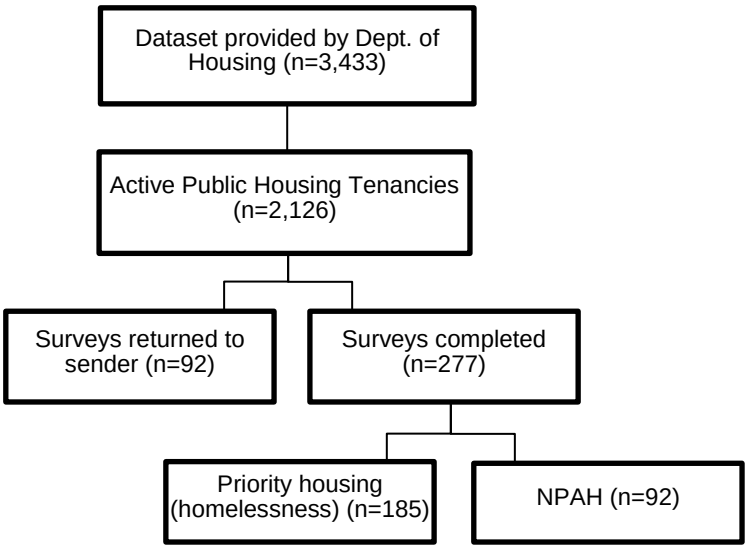
As each participant could have multiple records for the different data collections (i.e., emergency department admissions, hospital admissions, contacts with the mental health system, and repeat prescriptions for the treatment of drugs of dependence), summary variables were created for different windows of time (i.e., one year, two years, three years) prior to, and after, the start date of their tenancy with the Department of Housing. Variables were summarised as either the count of unique contacts with the health system (e.g., number of hospital admissions before and since the tenancy commenced) or amount of time spent in the health system (e.g., number of days admitted to hospital before and since the tenancy commenced).

3.4 Survey administration

The Tenant Survey was mailed out by the Department of Housing to 2,126 Western Australian public housing tenants who had current active public housing tenancies (1,307 from the Department of Housing list that had been linked to health data had inactive tenancies as at October 2014 and were removed from the survey mail out list) (see Figure 3) below. Of the 2,126 on the survey mailing list, 1,061 comprised current tenants who were flagged as participants in one of five NPAH programs. The remainder of the survey list comprised tenants who had been housed through priority housing (homelessness) channels.

The Tenant Survey was posted out by the Department of Housing over a two-day period (26 and 27 August 2015). The survey was accompanied by a cover letter, participant information sheet outlining the aims of the study and what participation would involve, and a reply paid envelope addressed to the University of Western Australia (UWA). To encourage potential respondents to take the time to complete the survey, the covering information indicated that participants who completed and returned the Tenant Survey went into a draw to win one of three iPad minis or one of ten $100 Coles/Myers shopping vouchers (13 prizes in total). The first three numbers (housing ID number) drawn anonymously out of a container were allocated to receive iPad minis. To protect anonymity of respondents, these were distributed by the Department of Housing who delivered them to the closest regional office of the participant, and the participant had to collect the prize from the office. The next 10 numbers pulled won $100 Coles/Myers shopping vouchers which were also given to the Department of Housing who posted them out to the winners.

Figure 3: Summary of the response rates and trajectory for the surveys



Of the 2,126 surveys posted, 92 were 'returned to sender' at the Department of Housing and 277 were completed and returned to UWA. This represents a response rate of 13.6 per cent which is low when compared to other studies that used mail out surveys with a public housing demographic (e.g., 27.3% of WA public housing tenants (AIHW 2014c)). However, the AIHW study was able to send out two reminders to complete the survey where we were unable to do this.

3.5 Data linkage

3.5.1 Linkage of Department of Health and Department of Housing data

Western Australia's comprehensive data linkage system systematically links available administrative health data within WA by matching patient names and other identifiers (Holman, Bass et al. 1999). The Department of Housing dataset was provided directly to the Department of Health, Data Linkage Branch, via a secure file transfer system (SUFEX). This file contained the identifying information (e.g., name, date of birth) necessary to enable data linkage with the health data collections (note: all identifying information was removed from the dataset before it was supplied to the research team). The file also contained a unique study ID to enable data from the Tenant Survey to be linked at a later date.

The Department of Housing dataset included 3,433 records, but after the removal of duplicates (n=30) and records that could not be linked (n=20), the final dataset included information on 3,383 unique Department of Housing clients. Of these, 983 clients received support from NPAH and 2,400 received housing through priority channels due to homelessness.

Separate files for each of the linked datasets were provided to the research team following data linkage. Each record included a Statistical Linkage Key (SLK) that enabled each housing tenant to be matched with their corresponding health system data.

3.5.2 Linkage of Tenant Survey data to linked administrative data

Permission was sought from Tenant Survey respondents to link (in a de-identified way) Tenant Survey data to the health and housing administrative linked data set. The Participant Information sheet for the Tenant Survey explained that the Tenant Survey was part of a larger data linkage project, and that if permission were granted, survey answers would be confidentially linked to housing and health data to help the research team see the 'bigger picture' of how housing tenancy, support and health, might be related. An example was provided related to using the data to see whether people are less likely to go to hospital with health problems when they have more stable housing and better support.

Survey respondents were assured that the data linkage process maintains their privacy as name, address and any other personal details are all replaced by a unique anonymous code that is used by each organisation. Research projects can then use information from different organisations without needing to know any personal details about individuals.

The surveys were printed out with a unique housing ID code which corresponded to the data linkage SLK and the tenant. The Department of Housing generated cover letters with the same ID code, and the corresponding survey and cover letter were packaged at the Department of Housing to ensure that no identifying information was handled outside of the Department of Housing.

3.6 Data analysis

3.6.1 Data analysis (housing and health data)

The linked housing and health data analysis included computation of the proportion (percentage) of people accessing health services. For those who used these services, the frequency or duration of use was computed; mean annual service use prior to and following entry into a tenancy were compared; and health outcomes in relation to tenancy status (current or ended) and length of tenancy were analysed. Statistical Package for the Social Sciences (SPSS) version 21 was used for all analyses. Three years of health service use data was available for the period prior to tenancy entry and one year of data for the period after tenancy entry. The main analysis refers to comparison of health service use in the 12 months prior to and the 12 months after tenancy entry. By design, all those in the research population had health service and housing tenancy data for this balanced pre- and post-entry analysis. Past a year on entry, the data becomes unbalanced given the staggered entry of people into housing. Additional analyses also examine the average annual percentage of people who accessed a service in the three years prior to tenancy entry. Our starting assumption is that homelessness is likely to be more severe in the period immediate prior to entry into housing and that services are targeting entry into NPAH programs in light of this. Moreover, we hypothesise, given links between homelessness and health costs, that health costs will be highest in this period as well. Without complete histories of homelessness of those in the research population we cannot be sure of these working assumptions.

The percentage of people who used a service prior to tenancy entry was based on the annual recorded number of people accessing a service in the year prior to tenancy entry. Additionally, the percentage of people who accessed a service in the three years prior to entry to a tenancy was calculated, and converted into a variable representing the average annual percentage of people accessing the service. The percentage of people who accessed a service after entry to a tenancy is based on a one-year period. The percentage of people who accessed a service before versus after entry to a tenancy was then compared. Two comparisons were made:

1. The main analysis compares the percentage of people who accessed the service in the year prior to tenancy entry with the year after tenancy entry.
2. The second analysis compares the mean annual percentage of people who accessed the service in the three years prior to tenancy entry with the percentage of people who accessed the service in the year after tenancy entry.

The mean frequency and duration of health service use was then calculated for the year before and the year after entry to a tenancy. The mean frequency or duration was calculated conditionally on the basis that the individual accessed the particular service in the period of interest; that is, mean service frequency or duration before commencing a tenancy (among those who had accessed a service in the year prior to tenancy) or mean service frequency or duration after commencing public housing tenancy (among those who accessed the service after tenant entry).

The percentage of people accessing prescriptions for drug dependency and the frequency of access was assessed through the number of prescriptions issued. Prescriptions for Subutex, Suboxone and Methadone were combined into one variable for analysis of drug dependency service usage.

Housing outcomes were determined on current tenancy status and the reason for tenancy termination if individuals had not sustained their tenancy. Kaplan-Meier survival analysis was used to calculate cumulative ‘survival’ functions (i.e., for how

long do tenants remain in, or survive, in their tenancy) for tenancy length as the data is 'right censored' at the end of the observation window (some individuals have yet to leave their tenancy).

Calculations for the percentage of people accessing a health service and the mean frequency or duration of service usage before and after entry to a tenancy and housing outcomes were completed with the data split by type of support program. The percentage of people accessing a service was also split by tenancy length. Frequency or duration of service use was also split by gender and Indigenous status.

For those who had left their tenancy, the agreement start date and end dates are known while for those who have so far sustained their tenancy, only the agreement start date is known. These variables can be used to find the tenancy length based on the date of 24 October 2014 as the last known time point of information for those who have so far sustained their tenancy.

3.6.2 Economic impact; health costs and the cost of providing NPAH support

The economic impact of the NPAH services was assessed by examining the dollar value associated with any change in usage of health services and the cost of providing tenancy support through NPAH programs.

The dollar value of change in health service usage was calculated for three health areas—emergency presentations, days in hospital and days in psychiatric care. These areas are shown in previous studies to have the largest economic impact due to the high cost of each episode of care and the comparatively wide use of these services by the homeless (Flatau, Conroy et al. 2012; Conroy, Bower et al. 2014; Zaretzky and Flatau 2013).

The change in the cost of health service use across all clients and the average change per person were calculated by program and health service. The total cost of health service use both prior to and after entry into public housing tenancy were calculated by applying the unit cost for each health service to the number of times a service was used in the year prior to and the year after the tenancy commenced.

The total number of times a service was used in each period was calculated from the number of people who accessed the service in that period and the mean frequency or duration of service use. The number of people who accessed the service in each annual period and the mean frequency or duration of service use were obtained from the linked health data and calculated as described in Section 3.6.1.

> Total cost of health service = number of people to access service * average duration or frequency of use * unit cost per incident.

The change in total cost was calculated as the total cost in the year prior to tenancy minus the change in total cost in the year after tenancy. The change in health service cost per person was calculated with reference to all people supported by the program. Change in cost was calculated as:

- Change in health service cost across all clients = Total cost of health service prior to entering tenancy minus Total cost of health service after entering tenancy.
- Change in health service cost per person = Change in health service cost across all clients divided by total people supported under the program(s) (NPAH and/or PH).

The unit cost per incident for each health service was obtained for Western Australia for the period 2012–13 from:

- ‘Emergency presentations’ and ‘Cost per hospital day’ from IHPA (2015): National Hospital Cost Data Collection Australian Public Hospitals Cost Report 2012-13, Round 17.
- Cost per psychiatric care day from AIHW (2015b): Mental Health Services in Australia, Expenditure on Mental Health Services, Table EXP.7.

The cost of providing tenancy support through NPAH programs was estimated from publically available data for the period 2009–12:

NPAH program cost/person = Program expenditure (2009–12)/people assisted 2009–12

Program expenditure data is not publically available for the period 2012–13. Data was sourced from:

- Expenditure: OAG 2012, *Implementation of the National Partnership Agreement on Homelessness in Western Australia: Report 13 to October 2012*, Office of the Auditor General Western Australia, Perth.
- People assisted: WA Government 2013, *NPAH Annual Report 2011–2012*, [14 October 2015].

Where health service use decreases from prior to after entry to a tenancy there is potential impact on the government health budget through health costs avoided and/or existing services being more able to meet overall demand. In terms of whole-of-government cost, the potential health costs avoided represent an offset to the cost of providing NPAH support. The net cost of support would be estimated as NPAH program cost minus change in health service cost. As NPAH program cost data (2009–12) is not available for the same period as the health cost data (2012–13), it is not possible to calculate a figure for the net cost of NPAH support. It is only possible to compare the direction and relative magnitude of the change in health costs and NPAH program costs.

3.7 Ethics

As the study involved data linkage and the accessing of Department of Health data, ethics approval had to be obtained from the Department of Health. Ethics approval was granted by the Department of Health WA Human Research Ethics Committee, number 2014/48. As required by the Ethics Committee, only de-identified data could be provided to the research team. The following steps ensured the anonymity of the Department of Housing tenants:

- *Data linkage*—The Department of Housing created a database of tenants meeting the study criteria. The file included identifying information (e.g., name, date of birth), housing support details, and a SLK generated by the Department of Housing to allow the subsequent linkage of the Tenant Survey data. The Department of Housing provided this file directly to the Department of Health, Data Linkage Branch. The identifying information was used to link tenants with their health system information. The Department of Health then removed all identifying information before providing the research team with the linked Department of Housing and Department of Health data.
- *Tenant Survey*—The Tenant Survey was provided to the Department of Housing, who sent the survey to current public housing tenants who have received or who are receiving NPAH support. These survey forms included the SLK generated by the Department of Housing, but no other identifying information. On completion, clients were asked to post the surveys to the research team at UWA. Those completing the Tenant Survey were asked to provide informed consent for their

survey information to be linked with their health data. For those who provided consent, the SLK on the survey was used to link this information with their health data already held by the research team.

4 RESULTS: LINKED ADMINISTRATIVE DATA

The results of analysis of the linked administrative data are presented in this chapter. Health service outcomes are reported by NPAH program type: Section 4.1 presents the proportion of people using health services before and after entering their public housing tenancy and Section 4.2 outlines the frequency and duration of health service use within the subsample of participants who had used any of the health services. Results are generally presented as an average annual measure of health service use (e.g., visits to emergency department, days in psychiatric care) in the 12 months prior to public housing tenancy, compared with the average annual amount of health service use in the 12 months after tenancy commencement. The proportion of people accessing a service prior to their tenancy is also calculated as the average annual percentage for the three years prior to tenancy, and compared with the 12 months after tenancy commencement. P-values from paired t-tests are also shown for the difference in the average annual percentage of people who accessed a service.

4.1 The linked administrative sample

The demographic profile of the sample is summarised below in Table 3:

Table 3: Sample characteristics

	N	%
Age group		
18–24	297	8.8
25–34	1,004	29.7
35–44	905	26.8
45–54	646	19.1
55–64	315	9.3
65–74	141	4.2
75+	75	2.2
Gender		
Male	1,204	35.6
Female	2,178	64.4
Intersex^		
Aboriginal or Torres Strait Islander		
Yes	998	29.5
No	2,385	70.5
*Program**		
Priority housing (homelessness)	2,400	71.0
HWSCS	126	3.7
HSWMH	124	3.7
HSWDA	177	5.2
STH	172	5.1
HAS	384	11.4
NPAH (all)	983	29.1

	N	%
Duration of public housing tenancy (both completed and uncompleted spells)		
< 12 months	433	12.8
13.00–24.00 months	985	29.1
25.00–36.00 months	788	23.3
37.00–48.00 months	750	22.2
49.00–60.00 months	390	11.5
61.00+ months	37	1.1

* HWSCS (Housing Support Workers Corrective Services program), HSWMH (Housing Support Worker Mental Health program), HSWDA (Housing Support Worker Drug & Alcohol), STH (Street to Home program), HAS (Homelessness Accommodation Support).

^ Less than 10.

Source: Linked Western Australia Department of Housing and Department of Health data.

A relatively high proportion of the linked health and housing administrative data were female (64.4%), which is congruent with the findings of the recent AIHW study of Specialist Homelessness Services (SHS) clients who were assisted into public housing, of whom 61 per cent were female (AIHW 2015a). Nearly 30 per cent (29.5%) of the sample identified as Aboriginal or Torres Strait Islander. This reflects recent AIHW data indicating that Indigenous Australians are six times more likely to be living in social housing (AIHW 2014a), and that high priority is given in Australia to assisting Indigenous people to access public housing tenancies (AIHW 2015a). The spread of age ranges and duration of tenancies (both completed and uncompleted spells) are also shown in Table 3 above.

4.2 NPAH program participation

Of the 3,383 Department of Housing tenants in the linked dataset, 983 were participants in one of the five NPAH programs, while the other 2,400 received housing through priority channels due to homelessness. Of these, 124 were in the health program for those with severe mental health illnesses who were homeless or at risk of homelessness (HSWMH), 172 in the NPAH Street to Home programs (STH), 177 in the Housing Support Worker Drug & Alcohol programs (HSWDA), 384 in the Homelessness Accommodation Support programs (HAS), and 126 in the Housing Support Workers Corrective Services (HSWCS).

While the data for those who indicated participation in corrective services have been included in the reported analysis, it needs to be interpreted with some caution for a number of reasons. First, the 'before' tenancy data for these participants is not sufficiently comprehensive as it does not include health services and treatment provided within the prison or correctional institution. Due to the security and logistic issues of prisoners attending hospitals and services outside of the prison, treatment that may otherwise have occurred in a hospital may often be met by a prison clinic (AIHW 2014d). Second, being imprisoned sometimes leads to detection of health issues that have previously been unidentified or untreated (AIHW 2006). Third, there is evidence of discontinuity of treatment for mental and physical health issues both during incarceration and/or post-release (Sodhi-Berry, Knuiman et al. 2014; 2015), hence apparent declines in health service use (or prescribed use of drugs for opioid dependency) may not represent an improved health outcome.

Finally, while life can be vulnerable and thwart with complex issues for all people experiencing homelessness, this can be particularly pronounced among people

exiting correctional institutions (Baldry, McDonnell et al. 2006). Hence, health issues may be exacerbated for reasons unrelated to housing tenancy status. In particular, this group is known to have higher requirements for assistance with drug/alcohol counselling and is one of the lowest achieving groups in the SHS population for achieving all case management goals (AIHW 2016), which has obvious implications for their health status.

4.3 Priority housing (homelessness) participation

Over 70 per cent of the Department of Housing tenants in the linked dataset had entered their public housing tenancy through the priority housing (homelessness) access route (n=2,400). Priority access can be granted in a number of circumstances related directly or indirectly to homelessness. When the reason for access is broken down, the vast majority were granted access as they were currently homeless, with nearly half of the group gaining access due to secondary homelessness (47.8%), less than 3 per cent were given priority access for reasons other than those directly listed as homelessness, although causes cited such as domestic violence are intimately linked to homelessness.

4.4 Proportion of people using health services before and after entering public housing tenancy

The proportion of people within each NPAH program and the priority housing (homelessness) group who used health services one year prior to and one year following entry into their public housing tenancy is shown in Table 4 below. The p-values denote whether there was a significant difference in the proportion of people using a health service prior to and following entry into a public housing tenancy.

Table 4: Per cent (%) using health service by NPAH program and priority housing (homelessness) (one year before/one year after)

		Per cent (%) using health service by type of housing support program						
		HSWCS	**HSWMH**	**STH**	**HSWDA**	**HAS**	**NPAH (all)**	**PH**
Emergency Dept.	Before	48.4	81.5	61.1	57.1	52.9	58.1	55.5
	After	51.6	50.0***	49.4***	48.0*	42.5***	46.8***	50.0***
Hospital (overnight)	Before	27.8	79.8	47.7	44.6	41.2	46.1	38.9
	After	33.3	44.4***	37.8**	35.0**	30.5***	34.7***	35.3***
Hospital in the home	Before	0.0	2.4	1.7	0.6	0.5	0.9	1.3
	After	0.0	4.8	1.2	0.6	0.3	1.0	1.2
Intensive care unit	Before	1.6	4.0	4.7	0.6	1.0	2.0	1.4
	After	0.8	0.8	1.7*	1.1	0.5	0.9**	0.7**
Psychiatric care	Before	1.6	67.7	15.1	9.0	4.2	14.7	4.9
	After	4.0	26.6***	5.2***	2.3***	2.6	6.2***	3.7***
Mental health service	Before	14.3	78.2	45.4	32.8	18.5	32.8	17.5
	After	12.7	61.3***	29.1***	24.3*	14.1*	24.3***	15.3***
Prescriptions^	Before	11.9	0.8	7.0	14.7	2.3	6.4	3.7
	After	4.8***	0.0	0.0***	1.1***	0.0***	0.8***	0.6***

Significance in difference of means: * p<0.1; ** p<0.05; *** p<0.01.

Before—average annual proportion of people using this health service in the 12 months prior to tenancy.

After—average annual proportion using this health service in 12 months after tenancy commencement.

^ Prescriptions for opioid dependency treatment—Methadone, Subutex and Suboxone.

Source: Linked Western Australia Department of Housing and Department of Health data.

4.4.1 Proportion of people presenting to emergency

There was a significant reduction in the proportion of people presenting to emergency departments in the year following public housing entry into all but one (HSWCS) of the five NPAH programs, and in the broader priority housing (homelessness) group. For HSWCS, there was an increase in the proportion of people accessing an emergency department in the year following tenancy access, but this was not significant. The largest change was observed in the HSWMH group with a 38.7 per cent decrease in the proportion presenting to emergency in the year after public housing tenancy compared with the year prior to entering their tenancy.

4.4.2 Proportion of people admitted to hospital

There was a significant reduction in the proportion of people being admitted to hospital overnight in the year following entry into all but one (HSWCS) of the five NPAH programs, and in the broader priority housing (homelessness) group. Similar to

the proportion of people presenting to the ED, there was also an increase in the proportion of people from HSWCS who were being admitted to hospital overnight, but this was not statistically significant. The largest change was observed in the HSWMH group with a 44.4 per cent decrease in the year after public housing tenancy compared with the year prior to entering their tenancy.

4.4.3 Proportion of people using hospital in the home

There were no statistically significant changes observed in the proportion of people using HITH services in the year after accessing their tenancy compared with the year prior to entry into their tenancy.

4.4.4 Proportion of people accessing the ICU

When looking at individual NPAH programs there was only a significant reduction in the proportion of people accessing the ICU for those who entered their tenancy through the STH program. Overall, there was a significant reduction for both NPAH (55% decrease) and priority housing (homelessness) (50% decrease) entry pathways.

4.4.5 Proportion of people accessing psychiatric care

There was a significant reduction in the proportion of people admitted for psychiatric care in the HSWMH, STH and HSWDA programs and the priority housing (homelessness) group. There was an increase in the proportion of people from HSWCS accessing psychiatric care, but this was not significant. The largest reduction was observed in the HSWDA group, where there was a 74.4 per cent reduction observed.

4.4.6 Proportion of people accessing mental health services

There was a significant reduction in the proportion of people accessing mental health services for all NPAH (except HSWCS) and the priority housing (homelessness) group following entry into a tenancy. The largest reduction in proportion was observed for the STH group with a decrease of 35.9 per cent.

4.4.7 Proportion of people with prescriptions for drug treatment

The overall proportion of people prescribed any of the three drugs (Methadone, Subutex, Suboxone) was small, but there was still significant reductions observed for all NPAH groups (except HSWMH) and the priority housing (homelessness group). The largest reduction in proportion was observed for STH, HAS and HSWMH where there was a 100 per cent decrease.

4.4.8 Changes in the proportion of people using health services in three years prior to public tenancy compared with the year after entry

As data was available for people's health service utilisation for a three-year window prior to entry into their public housing tenancy, further analysis was undertaken to look at the average proportion of people using services in this period compared with the year following tenancy entry (See Appendix 2). While the one-year prior/one-year post-tenancy commencement data shows significant reductions in the proportion of people accessing all services (with the exception of HITH), analysis of the average three-year utilisation prior to tenancy entry conversely shows a number of increases in the proportion of people accessing some services. Specifically, among NPAH program participants, significant increases were observed in overnight hospital admittance and accessing of mental health services. Among the priority housing (homelessness) cohort, significant increases in the proportion of people who entered through priority housing (homelessness) were observed in the proportion of people

admitted to hospital overnight, and use of HITH, psychiatric care and mental health services.

In examining these patterns of use over three years versus one year prior, it was generally observed that the proportion of people who accessed health services increased markedly over the three years prior to entering the public housing tenancy, increasing to a very high level in the year prior to tenancy and then dropping back to a lower level in the year after entry, although not to as low a level as the average over the three years prior to tenancy entry.

The data available do not provide insight into why these differences exist between average use in the three years prior to tenancy, compared with one-year prior, but the most plausible reason is that the seriousness of health issues and, therefore, use of services rose sharply in the year prior to entry into housing as compared with the three-year history. In other words, support via the NPAH programs appears to have been targeted at a point in time in the cycle when health needs and health care use were escalating indicating appropriate targeting of the program. One possible explanation for this outcome is that, on average, housing situations became progressively less stable over the three-year period prior to tenancy entry and the incidence and severity of homelessness worsens. As a result, the average health situation deteriorates resulting in a larger proportion of people accessing health services. This hypothesis is consistent with the literature detailed previously and supports a conjecture that the NPAH programs were targeted to those experiencing increasing need.

In many cases, support under NPAH commenced prior to tenancy entry, so it is also possible that health service use increased prior to entry as a result of NPAH support assisting people to access health services and to stabilise their health situation. The decrease in the proportion of people accessing health services in the year after entry potentially, on this reading, also reflects the dual effects of addressing health needs and stabilisation of the health situation. This would be consistent with evidence from the MISHA study (Conroy, Bower et al. 2014), which found that a decrease in health costs was observed for only 52.5 per cent of people when comparing the 12 months after support commenced and a tenancy was entered into and the 12 months prior, with 47.5 per cent incurring an increase in costs. In contrast, when examining the second year after support commenced and comparing it with the 12 months prior to support, a decrease in health costs was observed for 71.2 per cent of people and there was a large decrease in the average health cost/person. This was interpreted as suggesting that, for many people, existing and previously neglected health issues were addressed in the first 12 months of support resulting in an increase in health service access for some. This subsequently reduced in the second year of support as their health situation stabilised.

This issue should be examined further when health service data for this complete cohort becomes available for the second and third year after entering a tenancy. This will provide a balanced six-year data window for the three years prior and the three years after tenancies commence, allowing trend analysis of access to services in these periods. Future research should also consider the linking of health, housing and homelessness administrative data.

4.5 Frequency and duration of health service use

Further analysis was undertaken with the subsample of participants who had used the seven health services before and/or after entering their public housing tenancy to look at the frequency of use (number of presentations annually in the case of emergency departments); duration of use (computed as average annual days of service use) for

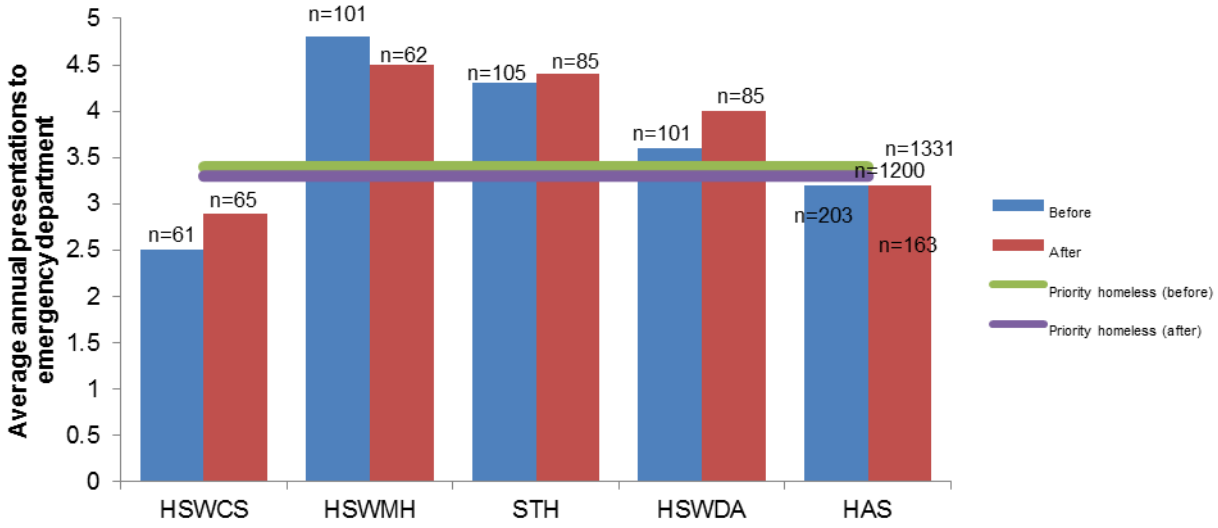
hospital, HITH care, ICU, psychiatric care, and mental health services, and the mean number of prescriptions for three medical drug treatments. Table 5 below presents the descriptive statistics (i.e., averages, standard deviations) for the subsample that used each health service 12 months before and/or 12 months after their entry into public housing. In other words, the mean figures presented are *conditional* averages, where 'before' relates to subsample of participants who had used the given health service in the 12 months prior to entering a tenancy and 'after' relates to the subsample of participants who had used the given health service in the 12 months after entering their public housing tenancy.

4.5.1 Number of emergency presentations annually

Among the subsample who had attended an emergency department one year before and/or after entering their public housing tenancy, there was very little change in the mean number of visits per year (3.5 visits per person in the year prior compared with 3.4 visits in the year after). For those who entered their tenancy with NPAH assistance, there was no observed changed in the conditional mean number of presentations to ED in the year before and after entering their tenancy (see Figure 4 and Table 5 below).

Participants in the HSWCS, STH and HSWDA groups presented to emergency between 0.1 and 0.4 times/year on average more in the year after entry into their public housing tenancy, compared with the year prior to entry (2.3% to 16% increase in presentations per year).

Figure 4: Average annual presentations to emergency department by NPAH program type and priority housing (homelessness) (conditional means)



Source: Linked Western Australia Department of Housing and Department of Health data.

Table 5: Frequency and duration of health services by NPAH program and priority housing (homelessness) (conditional means and standard deviations)

Health service		Frequency/duration of health service use by type of housing support program Mean *Standard deviation*							
		HSWCS	**HSWMH**	**STH**	**HSWDA**	**HAS**	**PH**	**NPAH (all)**	**Total**
Number of emergency department visits	Before	2.5	4.8	4.3	3.6	3.2	3.4	3.7	3.5
		2.3	8.5	6.5	7.1	3.5	4.4	5.9	4.9
	N	61	101	105	101	203	1,331	571	1,902
	After	2.9	4.5	4.4	4.0	3.2	3.3	3.7	3.4
		3.2	6.7	11.1	7.2	3.2	4.0	6.6	4.8
	N	65	62	85	85	163	1,200	460	1,660
Length of stay in hospital (days)	Before	12.2	47.9	14.7	9.7	8.7	9.3	18.8	12.4
		28.2	47.8	21.3	13.9	25.3	18.6	33.7	24.9
	N	35	99	82	79	158	933	453	1,386
	After	12.4	26.8	14.5	9.3	7.3	9.0	12.8	10.1
		36.6	38.6	33.2	15.9	15.9	20.4	28.0	22.9
	N	42	55	65	62	117	846	341	1,187
Hospital in the home care (days)	Before	-	7.3	10.0	4.0	16.5	10.8	9.9	10.6
		-	5.5	8.5	-	17.7	9.9	9.1	9.6
	N	0	3	3	1	2	30	9	39
	After	-	13.8	17.0	6.0	6.0	12.8	12.9	12.8
		-	9.8	15.6	-	-	8.8	9.8	8.9
	N	0	6	2	1	1	28	10	38
ICU (days)	Before	2.0	2.0	4.5	1.0	3.0	5.9	3.2	4.9
		1.4	1.2	4.2	-	2.2	15.3	3.0	12.3
	N	2	5	8	1	4	34	20	54
	After	3.0	2.0	2.7	2.0	5.5	2.5	3.1	2.7
		-	-	1.5	1.4	0.7	2.3	1.7	2.1
	N	1	1	3	2	2	17	9	26
Psychiatric care (days)	Before	61.5	51.5	26.5	9.6	19.8	23.5	38.9	31.9
		50.2	47.0	26.0	7.4	18.8	26.9	41.5	36.4
	N	2	84	26	16	16	118	144	262
	After	24.8	36.2	31.6	25.3	16.0	22.7	30.5	25.9
		42.5	40.5	50.1	27.4	13.7	27.6	38.1	32.4
	N	5	33	9	4	10	89	61	150
Mental health service (hours)	Before	12.3	34.5	14.7	4.6	12.0	12.0	18.1	14.7
		26.9	59.7	26.1	5.7	25.6	27.5	39.3	33.3
	N	18	97	78	58	71	419	322	741
	After	4.1	26.0	17.7	6.1	10.7	13.3	15.7	14.3
		6.2	52.5	37.6	12.3	20.5	47.6	36.7	43.6
	N	16	76	50	43	54	368	239	607

Health service		Frequency/duration of health service use by type of housing support program Mean *Standard deviation*							
		HSWCS	**HSWMH**	**STH**	**HSWDA**	**HAS**	**PH**	**NPAH (all)**	**Total**
Average number of prescriptions in a year	Before	10.2	13.0	9.6	10.9	10.9	10.8	10.5	10.7
		3.7	-	6.1	3.5	3.9	4.2	4.1	4.1
	N	15	1	12	26	9	89	63	152
	After	2.0	-	-	1.0	-	1.7	1.8	1.7
		0.9	-	-	0.0	-	1.1	0.9	1.0
	N	6	0	0	2	0	15	8	23

Before—average frequency and duration of health service use in the 12 months prior to tenancy.

After—average frequency and duration of health service use in the 12 months after tenancy commencement.

^ Prescriptions for opioid dependency treatment—Methadone, Subutex and Suboxone.

Source: Linked Western Australia Department of Housing and Department of Health data.

For participants in the HSWMH group, the average emergency presentations reduced from 4.8 to 4.5; a decline of 6.3 per cent. For participants in HAS, there were no changes in conditional mean presentations per year. Overall, although average visits per year did not dramatically change among the subsample who accessed emergency departments, 242 fewer people presented to an ED in the year after tenancy when compared to the year prior to tenancy.

As this is the first study of its kind using linked administrative data, there are no directly comparable findings from other studies. However, a number of studies have examined changes in self-reported data on emergency presentations following the provision of housing or support to people who have been homeless. Generally, studies report a larger decline in emergency presentations compared to our results. However, the results are not always statistically significant. For example, Sadowski, Kee et al. (2009) reported a reduction of 1.2 emergency department visits per person per year in their intervention group over 18 months (not statistically significant) and in a Housing First study by DeSilva, Manworren et al. (2011) a decrease of 1.1 visits per year to emergency departments was observed post-intervention (not statistically significant).

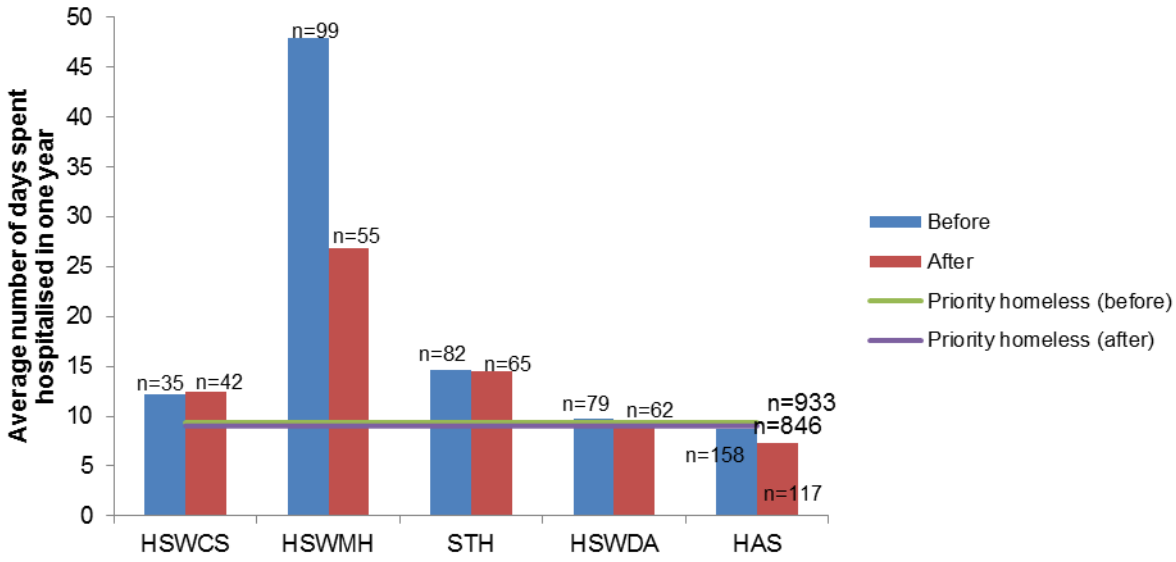
Several Australian studies have also included some analysis of emergency department use pre- and post-intervention. In the J2SI study (Johnson, Kuehnle et al. 2014), the average number of emergency visits of the experimental group fell from 4.6 at the baseline to 1.1 at the 48-month follow-up. However, the small sample size (N=28 at the 48-month follow-up) precluded any analysis of statistical significance. In the Michael Project (Flatau, Conroy et al. 2012), the average number of emergency presentations fell 37.3 per cent (from 1.34 in the last 12 months to 0.84 at the 12-month follow-up). In contrast, the MISHA study (Conroy, Bower et al. 2014) found the visits to emergency rose from 0.46 at the baseline to 0.51 at the 12-month follow-up, and further to 1.8 at the 24-month follow-up.

4.5.2 Length of stay in hospital

Among the subsample who had been admitted in hospital prior to and/or before entry into a support program, there was an overall reduction in the average length of

hospital stay when one year prior to and after program entry was compared (see Figure 5 below).

Figure 5: Average number of days spent in hospital in one year by NPAH program and priority housing (homelessness) (conditional means)



Source: Linked Western Australia Department of Housing and Department of Health data.

Specifically, the conditional mean length of stay for the HSWMH group reduced by 44.1 per cent (from 47.9 to 26.8 days on average), and the conditional mean length of stay for the HAS group decreased by 16.1 per cent (from 8.7 to 7.3 days on average).

This supports findings from a New York study that compared hospitalisation of homeless adults with low-income adults over the same time period and found that homeless individuals remained on average in hospital 36 per cent longer (Salit, Kuhn et al. 1998). One of the determinants of longer duration hospital stay in this study was the difficulty of finding appropriate discharge placements (Salit, Kuhn et al. 1998), and the lack of housing for patients to go home to has been similarly observed elsewhere in the literature (Feigal, Park et al. 2014).

Our findings support the results of previous studies which found that providing housing support reduced length of stay in hospital (Conroy, Bower et al. 2014; Flatau, Conroy et al. 2012; Sadowski, Kee et al. 2009; Johnson, Kuehnle et al. 2014). Sadowski, Kee et al. (2009) found that hospital days per person per year fell by 2.7 over 18 months, while the J2SI survey found the number of days admitted fell by 75 per cent from the baseline to the 48-month follow-up (from 16 days to 4). In Australia, the Michael Project saw nights in hospital fall by 20.5 per cent from the baseline to the 12-month follow-up (from 5.08 to 4.04 on average) (Flatau, Conroy et al. 2012); and in the MISHA Project, nights in hospital fell by 5.3 per cent from the baseline to the 12-month follow-up (from 4.92 to 4.66), but by 51.8 per cent from the baseline to the 24-month follow-up (to 2.37) (Conroy, Bower et al. 2014). However, none of these previously reported results were found to be statistically significant.

4.5.3 Hospital in the home

HITH was the only service overall to have an increase in duration of use (increase from a mean number of 10.6 days per person/per year to 12.8 days). It is worth noting that the HSWMH group had a large increase in usage with average days nearly doubling from 7.3 to 13.8. This increase is not surprising given the limited scope to

access HITH services when homeless or living in precarious housing circumstances, and the corresponding decrease observed in hospital stays among the same group. Evaluations elsewhere of the HITH initiative have shown that it can contribute to reduced duration of hospitalisation, as well as providing lower cost care while achieving equivalent clinical outcomes (Deloitte Access Economics 2011).

4.5.4 ICU days

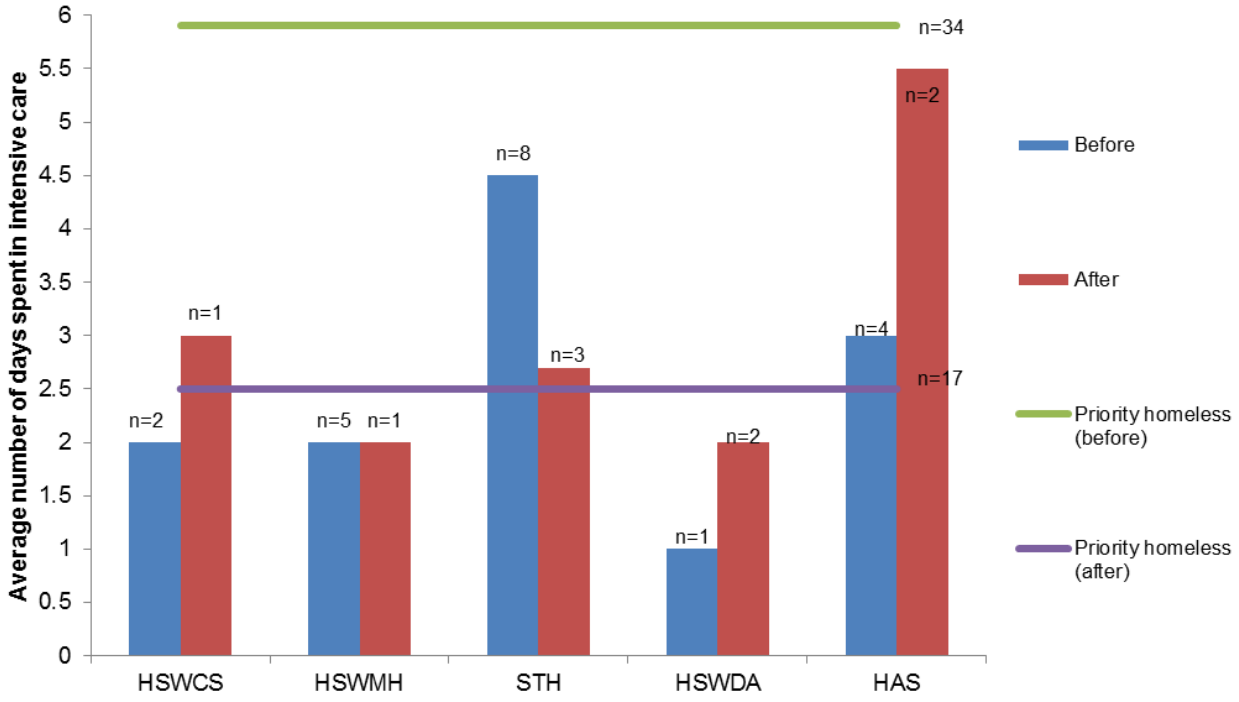
Overall, there was a decrease in the average number of days in ICU following entry into public housing tenancy from 4.9 to 2.7 days per person/per year. The largest decrease was observed in the group entering their tenancy through the priority housing (homelessness) route with a 57.7 per cent decrease. A decrease of 40 per cent was observed in the STH group (See Figure 6).

4.5.5 Psychiatric care

For hospitalised psychiatric care, there was an overall reduction in the mean number of days admitted for participants (for the subsample of participants who had psychiatric care before and/or after entering their public housing tenancy), from an average of 31.9 days per person/per year in the year prior to tenancy to 25.9 days per person/per year in the year after entering their tenancy (18.8% decrease).

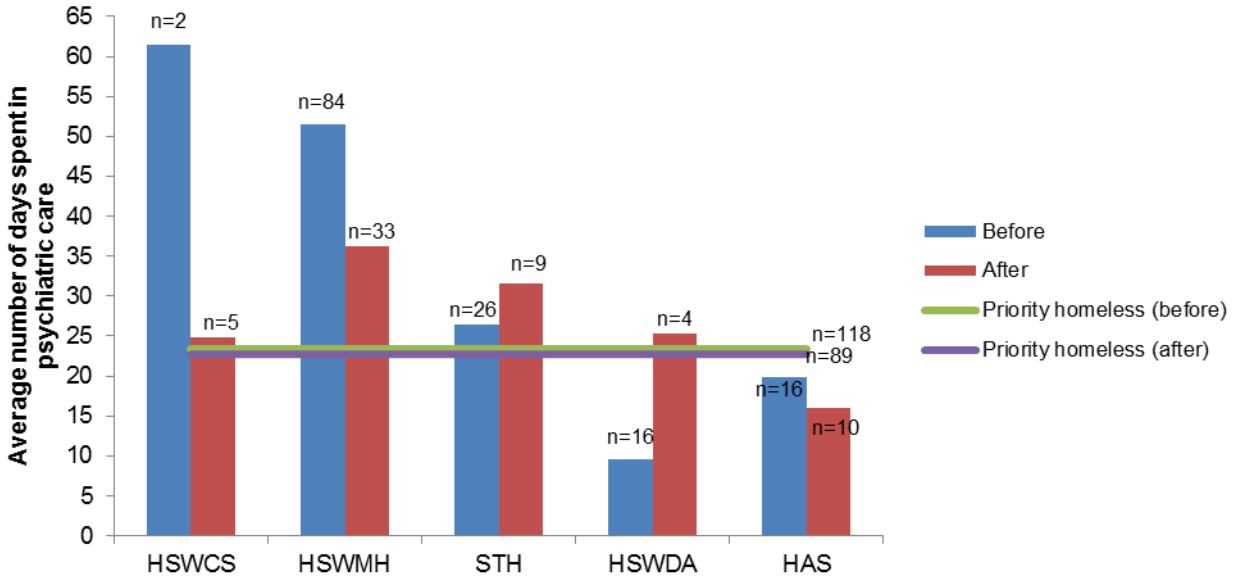
While there are no directly comparable Australian studies that have used a similarly large linked data set, our findings are congruent with several other homelessness studies that have examined changes in psychiatric care. In the J2SI randomised control trial (Johnson, Kuehnle et al. 2014), the number of days admitted in a psychiatric unit declined by 70 per cent between the baseline and the 36-month follow-up (from 24 days to 6 days). In the J2SI study, however, the authors note that the average number of days increased to 19.5 by the 48-month follow-up (Johnson, Kuehnle et al. 2014). Again, the small sample size in the J2SI study precluded detection of significant differences.

Figure 6: Average number of days spent in intensive care by NPAH program and priority housing (homelessness) (conditional means)



Source: Linked Western Australia Department of Housing and Department of Health data.

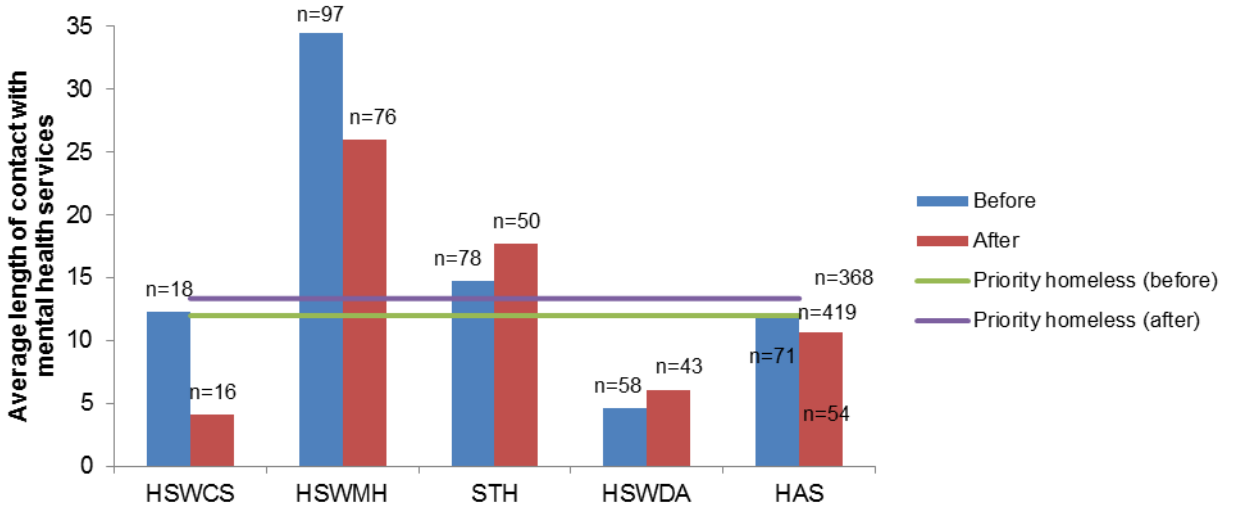
Figure 7: Average number of days spent in psychiatric care by NPAH program and priority housing (homelessness) (conditional means)



Source: Linked Western Australia Department of Housing and Department of Health data.

The Michael and MISHA projects also reported reductions in the average number of nights spent in mental health facilities; falling from 3.61 to 2.15 nights for the Michael Project and 2.78 to 1.63 for the MISHA Project (Conroy, Bower et al. 2014; Flatau, Conroy et al. 2012) from baseline to the first follow-up. This trend continued to the 24-month follow-up in the MISHA study which was looking at the group of individuals recruited from psychiatric hospitals, these results are not comparable to our study.

Figure 8: Average length of contact (hours) spent with mental health services by NPAH program and priority housing (homelessness) (conditional means)



Source: Linked Western Australia Department of Housing and Department of Health data.

4.5.6 Mental Health Services

There was an overall reduction in the average hours of mental health service use when average annual use before and following public housing tenancy was compared (14.7 hours per person before, 14.3 hours per person since). Those who entered their

tenancy through priority housing (homelessness) increased their service use in the year following tenancy (10.8% increase). The largest decrease in mental health service use was observed in the HSWCS where duration of service access decreased by two-thirds (12.3 hours to 4.1 hours) (see Figure 8 above).

4.5.7 Prescriptions for opioid dependency treatment

Across all programs, there were only 152 participants who were prescribed one of the three drug treatments before entry into public housing. This number dropped to 23 after entry into public housing. As shown in Table 5 above, the average number of prescriptions reduced to an average of 0 (100% decrease) for those in HSWMH, STH and HAS programs. Overall, this was an 84.3 per cent reduction in the priority housing (homelessness) and an 82.9 per cent reduction for those in an NPAH program.

4.6 Frequency and duration of health service use by gender and Aboriginality

4.6.1 Differences in health service use by gender

When health service use is compared before and after entering public housing by gender overall patterns of service use are the same for all services except presentations to ED and contact with mental health services (see Table 6 below).

Table 6: Frequency and duration of health services before and after entering public housing tenancy by gender and Aboriginality (conditional means and standard deviations)

Health service		Mean *Standard deviation*			
		Female	**Male**	**Non ATSI**	**ATSI**
Number of emergency department presentations	Before	3.3	3.9	3.4	3.8
		3.6	*6.6*	*5.1*	*4.3*
	N	*1,247*	*655*	*1,243*	*659*
	After	3.2	3.9	3.3	3.7
		3.8	*6.4*	*5.1*	*4.4*
	N	1,098	562	1,078	582
Length of stay in hospital (days)	Before	10.6	16.1	14.3	8.0
		22.2	*29.4*	*28.1*	*13.9*
	N	924	462	976	410
	After	8.9	12.6	11.1	7.9
		21.9	*24.7*	*24.9*	*17.4*
	N	802	385	818	369
Hospital in the home care (days)	Before	10.7	10.4	11.1	8.9
		9.3	*10.7*	*10.6*	*5.6*
	N	27	12	30	9
	After	10.9	15.7	1.4	10.8
		8.1	*9.6*	*9.4*	*7.3*
	N	23	15	29	9
ICU (days)	Before	4.4	5.4	4.9	4.9
		5.0	*17.1*	*14.7*	*5.2*
	N	28	26	36	18
	After	2.6	2.9	3.0	2.0
		1.9	*2.6*	*2.3*	*1.4*
	N	16	10	19	7

Health service		Mean *Standard deviation*			
		Female	**Male**	**Non ATSI**	**ATSI**
Psychiatric care (days)	Before	32.7	31.1	34.1	19.5
		37.1	*35.8*	*38.3*	*18.1*
	N	140	122	224	38
	After	27.8	23.2	26.5	23.6
		37.7	*22.7*	*32.3*	*33.3*
	N	89	61	121	29
Duration of contact with a mental health service (hours)	Before	13.5	16.3	16.1	9.7
		31.3	*36.0*	*35.7*	*22.2*
	N	446	295	575	166
	After	15.5	12.8	15.5	10.4
		48.4	*36.5*	*46.5*	*32.9*
	N	342	265	459	148
Average number of prescriptions in a year	Before	10.5	10.9	10.5	12.1
		4.3	*4.0*	*4.1*	*4.3*
	N	75	77	139	13
	After	1.6	1.8	1.7	1.5
		1.0	*1.1*	*1.0*	*1.0*
	N	11	12	19	4

Before–average frequency and duration of health service use in the 12 months prior to tenancy.

After—average frequency and duration of health service use in the 12 months after tenancy commencement.

^ Prescriptions for opioid dependency treatment—Methadone, Subutex and Suboxone.

The average number of presentations to an ED per person per year decreases for females from 3.3 to 3.2 times, whereas it remains the same for males (3.9 visits per year). The other observed differences between males and females is seen in the average duration of contact with a mental health service per year; average contact for males decreases from 16.3 hours to 12.8 hours, but actually increases for females in the year following tenancy entry (from 13.5 hours to 15.5 hours per year).

4.6.2 Differences in health service use by Aboriginality

When health service use is compared between Aboriginal and Torres Strait Islander people and non-Aboriginal and Torres Strait Islander people, there were three observed differences between the two groups. Average frequency and duration per person decreases for all seven services for non- Aboriginal or Torres Strait Islander participants, but average duration of HITH, psychiatric care and mental health service use for Aboriginal and Torres Strait Islander participants all increased in the year following entry to tenancy. It is important to note that the figures presented are conditional means so although mean duration of access per person increased, the number of people accessing these services decreased for psychiatric care (from 38 people to 29) and contact with mental health services (from 166 to 148); the number accessing HITH remained the same (n=9).

4.7 Economic impact of change in health service use

The change in health service use reported in Table 7 below has a potential impact on health care costs. Where health care costs are estimated to fall, there is the potential for state government health budgets to be reduced or for more people to receive health care support for a given budget allocation, or some combination of the two. The

potential change in health service costs from the year prior to entering a tenancy to the year after is determined for selected services; emergency presentation, days in hospital and days in psychiatric care. These are the three cost areas that have been shown in other studies to have the largest economic impact due to the high cost of each episode of care and the comparatively wide use of these services by the homeless (Flatau, Conroy et al. 2012; Conroy, Bower et al. 2014; Zaretzky and Flatau 2013). They are also three areas where comparison of the proportion of people accessing health services in the year prior to and after entering a tenancy shows a significant change.

In total, the change in the use of these three services results in a combined cost offset across all services of $16,394,449 or $4,846 per person/year (across all people in the sample). When priority housing (homelessness) tenants are excluded from the analysis, the change per person is a much larger $13,273/person/year. This large cost offset relates predominantly to the HSWMH Health group, where the offsets amounted to $84,135/person/year.

Analysis of the linked administrative data shows that provision of housing leads to a significant reduction in the proportion of people accessing the emergency department for both NPAH and priority housing (homelessness) (19.4% and 9.9% decrease respectively). Overcrowding is one of the most serious problems and also the most avoidable cause of harm that faces our hospital system (Fatovich and Hirsch 2003; Richardson and Mountain 2009). The greatest contributing factor is access block, which is the inability to provide patients with a bed in a timely fashion (>8 hours total in the ED) (Fatovich and Hirsch 2003; Richardson and Mountain 2009). Given that overcrowding in ED can lead to reduced quality of care and to poorer patient outcomes (Richardson and Mountain 2009), providing housing has the potential to reduce overcrowding, thus freeing up beds and resources to provide a higher quality care to other patients.

Table 7: Change in health cost associated with change in health service use—selected health services (2012–13)

	Cost/ incident	HSWCS	HSWMH	STH	HSWDA	HAS	PH	Total	Total NPAH (excluding PH)
Total people		126	124	172	177	384	2,400	3,383	983
Change in cost ($)									
Emergency presentations	594								
All clients		20,791	-118,801	-43,956	-17,820	-80,190	-348,692	-588,654	-239,962
Per person		165	-958	-256	-101	-209	-145	-174	-244
Length of stay in hospital (days)	2,032								
All clients		188,974	-6,638,546	-526,283	-386,081	-1,050,530	-2,123,440	-10,535,920	-8,412,480
Per person		1,500	-53,537	-3,060	-2,181	-2,736	-885	-3,114	-8,558
Psychiatric care	1,175								
All clients		1,175	-3,675,400	-474,700	-61,100	-184,475	-875,375	-5,269,875	-4,394,500
Per person		9	-29,640	-2,760	-345	-480	-365	-1,558	-4,470
Total change $									
All clients		210,940	-10,432,748	-1,044,938	-465,001	-1,315,195	-3,347,507	-16,394,449	-13,046,942
Per person		1,674	-84,135	-6,075	-2,627	-3,425	-1,395	-4,846	-13,273

Source:

Unit cost of service:

Emergency: IHPA, 2015, National Hospital Cost Data Collection Australian Public Hospitals Cost Report 2012–13, Round 17
Average cost per emergency presentation WA (2012–13)

Cost per hospital day: IHPA, 2015, National Hospital Cost Data Collection Australian Public Hospitals Cost Report 2012–13, Round 17
Average cost per admitted separation WA (2012–13)/Average length of stay WA (2012–13) = $5,285/2.6=$2,032/day

Cost per psychiatric care day: Mental Health Services in Australia, 2015, Expenditure on Mental Health Services, Table EXP.7 accessed https://mhsa.aihw.gov.au/resources/expenditure.

Service utilisation: Linked Western Australia Department of Housing and Department of Health data.

The STH program displayed the second largest cost decrease of $6,075/person/year. The only program associated with an increase in costs is HSWCS, and this finding should be interpreted with care. As discussed previously (Chapter 3), health services provided in prison are not recorded in this health data and the cost of health services used prior to the tenancy commencing is potentially underestimated. Consequently, the total cost offset is potentially understated.

Stays in hospital and stays in psychiatric care account for the vast majority of cost savings identified, being $3,114 and $1,558/person/year respectively. Again these related primarily to the HSWMH program. The comparatively small decrease in the cost of emergency presentations reflects the fact that although the proportion of people who accessed emergency decreased significantly for those who did access emergency in each period, on average across all programs there was only a very small decrease in the mean frequency of visits from the year prior to entering a tenancy to the year after, although there was some variation between programs.

Comparison of these health costs avoided for people supported by the NPAH programs ($13,273/person/year 2012–13) (see Table 7 above) with the cost of providing these programs suggests that on average the cost support is offset by savings associated with reduced use of higher cost health services. Data is not publically available to estimate the cost of NPAH support for 2012–13. Over the 2009–12 period, the average cost of NPAH support for programs examined is estimated at $6,462/person/year (Table 8 below). This is for all people supported under these programs. As the health costs and support costs are from different periods they are not directly comparable. Therefore it is not possible to estimate the cost of support net of health cost offsets. However, the data does suggest that the average health costs avoided as a result of people being housed and supported would substantially offset the cost of support.

When considering individual programs, the cost of delivering the HSWMH program is likely to be either totally or substantially offset by savings from health costs avoided. No separate estimate is available for the annual cost of the HSWMH program. Table 8 below reports that the average cost/person/year for people assisted when leaving child protection, correctional and health facilities was $8,646/person/year (2009–13). Of the 571 people assisted by these programs only 11 per cent were leaving child protection and an equivalent number of people were assisted under the health-related and the correctional services program, suggesting that the cost/person for the HSWMH health program is markedly less than the associated health costs avoided of $84,135/person/year. A large positive impact on government budgets is associated with this program.[1] The cost of the STH, HAS and HSWDA programs would also be at least partially offset by savings associated with health costs avoided.

It should be noted that health savings reported here relate to one year only. The MISHA project (Conroy, Bower et al. 2014) found a large variation in change in health costs in the first year after support and that in the second year of support, health costs decreased for a substantial proportion of those people whose costs increased in the first year after support. This suggests that the health savings reported here are likely to at least continue into subsequent years and could potentially be larger.

The total cost of supported tenancies also includes the cost of providing social housing; both recurrent and capital, and the costs associated with evictions if these tenancies fail. These issues are considered in the first report of this study (Zaretzky

[1] Number of people assisted 2009–12: assistance leaving child protection services, 64; assistance leaving correctional facilities, 255; assistance leaving mental health facilities, 252. Total people assisted 571.

and Flatau 2015). The total annual cost of providing public and community housing (net of rental receipts) for WA is estimated at $27,424/dwelling/year (2012–13): made up of recurrent cost/dwelling net of rental receipts of $4,122, and opportunity cost of capital invested in housing of $23,302/dwelling/year. This is a substantial additional program cost. However, it should be considered as a cost of providing affordable housing to people who would not otherwise be able to access it, rather than specifically related to these supported tenancy programs.

Table 8: NPAH program cost/person (2009–12)

Program	Expenditure 2009–12 ($000)	People assisted 2009–12	Cost/person/year assisted ($)
Assistance leaving child protection services, correctional, health facilities	4,936.8	571	8,646
Services to assist people with substance abuse	3,267.1	468	6,981
Street-to-home	8,158.0	882	9,249
Assistance for homelessness people including families with children.	5,176.4	1,412	3,666
Total	21,538	3,333	6,462

Source:

Expenditure: OAG 2012, *Implementation of the National Partnership Agreement on Homelessness in Western Australia: Report 13 to October 2012*, Office of the Auditor General, Western Australia, Perth.

People assisted: WA Government 2013, *NPAH Annual Report 2011–2012*, [14 October 2015].

When considering the cost of eviction, the eviction rate and associated cost is considerably lower when adequate tenancy support is provided compared with housing the chronically homeless without support. At an average estimated cost per eviction event of $10,441 (2012–13) for WA (Zaretzky and Flatau 2015), every eviction avoided due to the support provided through these programs represents a substantial savings to social housing landlords and an offset to the cost of tenancy support. For 2012–13, WA reported an eviction rate of 4.61 per cent for people with NPAH-supported tenancies and 5.44 per cent for people classified as homeless or at risk of homelessness. Although this rate is higher than the WA mainstream public housing eviction rate of 1.4 per cent, it is considerably lower than the public housing eviction rates of between 16.7 per cent and 100 per cent reported previously for people accessing homelessness services (see Zaretzky and Flatau 2015), suggesting considerable savings from evictions avoided when support is provided. However, as it is not possible to estimate how many of the people in NPAH-supported tenancy programs would have been housed if these programs were not in place, the total dollar saving associated with evictions avoided is not able to be estimated.

4.8 Tenancy duration and its relationship to health service use

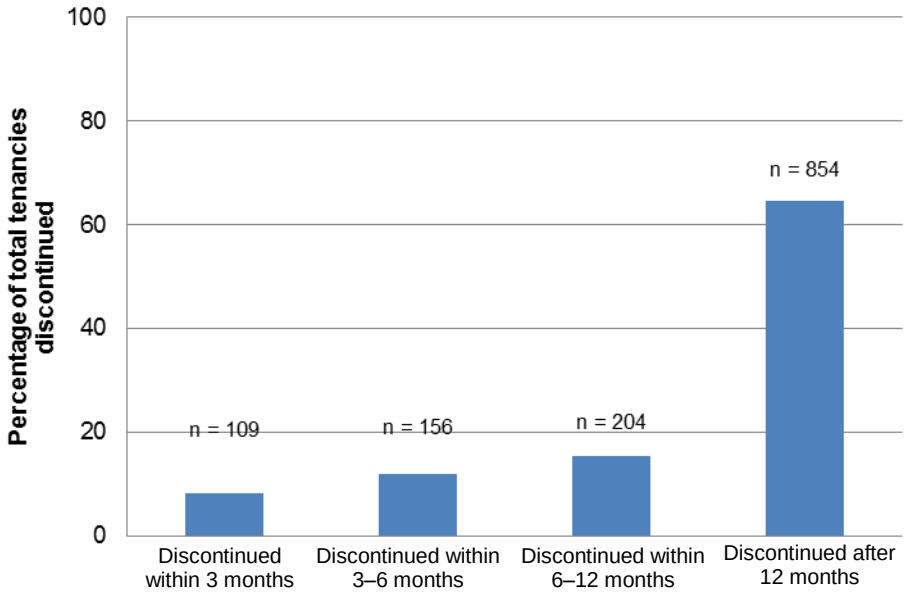
4.8.1 Tenancy sustainment rates

One of the critical research questions in this study was to explore the relationship between the sustaining of public housing tenancies and health outcomes that contribute to the cost burden associated with homelessness. As shown in a recent AIHW report (2015) that used linked administrative and SHS data from two states (WA and NSW), there is quite a high tenancy attrition rate even among people

assisted to secure a public housing tenancy (AIHW 2015a). Moreover the AIHW study found that loss of tenancy often occurs in the first three months (17%) or three to six months (19%) of tenancy commencement, and that loss of tenancy is more likely among people with complex and concurrent problems, including a greater need for drug and alcohol, mental health, gambling and legal support services (AIHW 2015a). Multiple problems and dual diagnosis (e.g. of mental health and drug and alcohol issues) was also commonly reported in the 2011–12 evaluation of WA NPAH programs (Cant, Meddin et al. 2013).

In our sample, 1,323 individuals provided with public housing discontinued their tenancy during the study window. Of these, 35.4 per cent discontinued their tenancy within 12 months (20% within six months, and a further 15.4% within 6–12 months), the majority (64.6%) discontinued their tenancy after 12 months (see Figure 9 below).

Figure 9: Percentage of tenancies discontinued by time



Source: Linked Western Australia Department of Housing and Department of Health data.

As shown in Table 9 below, there are a myriad of reasons recorded by the Department of Housing for vacation of a tenancy (n=1,292), ranging from termination through to moving into the private rental market or the house no longer being suitable to their needs. What this data is unable to capture, however, is the other underlying factors that may contribute to loss of tenancy, such as mental health issues or relationship breakdown.

Table 9: Reasons for vacation of public housing tenancy

	N	%
Purchased Homeswest property	1	0.1
Purchased own home	6	0.5
Due to neighbours	28	2.2
Changed employment	10	0.8
Accommodation no longer suitable	89	6.9
Change in family circumstances	167	12.9
Harassment	26	2.0
Private lease	40	3.1
Termination notice	23	1.8
Terminated by court order	74	5.7
Cross transfer	1	0.1
Moved to nursing home	14	1.1
Deceased tenant	74	5.7
Transferred	214	16.6
Abandoned property	77	6.0
Transfer tenancy agreement	15	1.2
Eviction by bailiff	175	13.5
Housed by community housing organisation	11	0.9
Property exchange	25	1.9
Unknown/other	222	17.2
Total	1,292	100.0

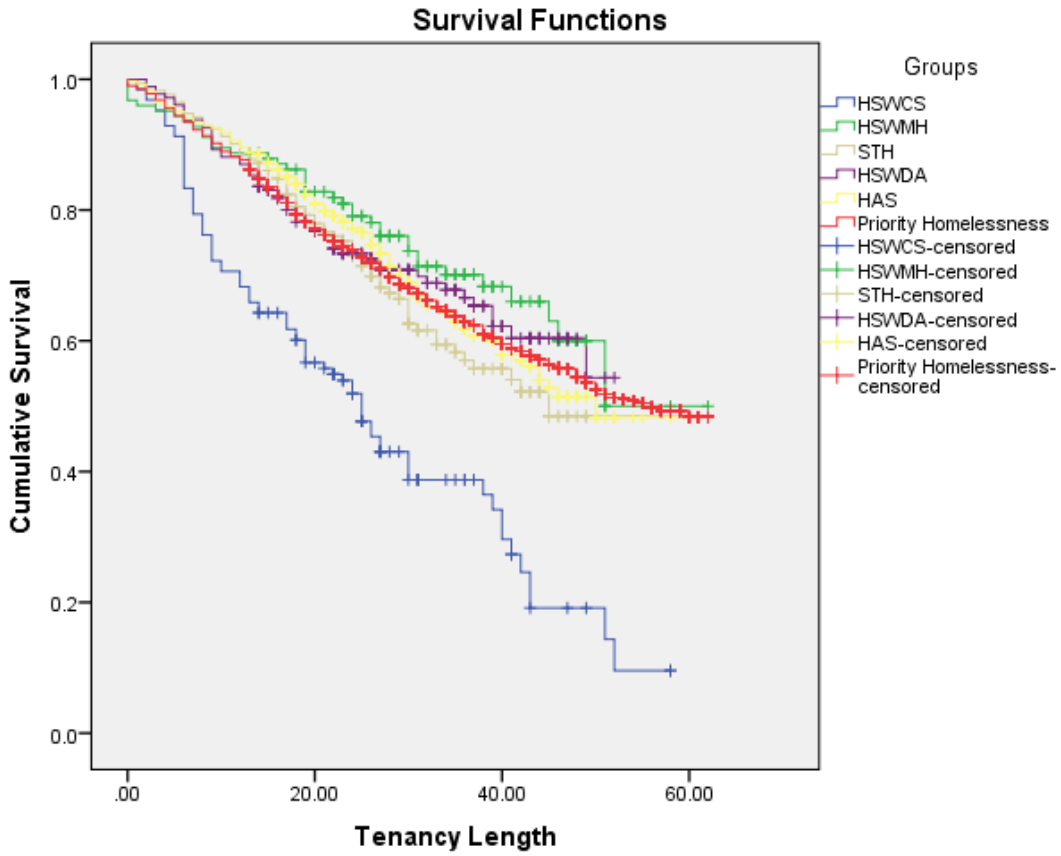
Source: Linked Western Australia Department of Housing and Department of Health data.

4.8.2 Patterns of tenancy duration by program type

The Kaplan-Meier survival functions (i.e., time 'surviving in public housing after entering a tenancy) were estimated in SPSS. Results are presented by type of program in Figure 10 below. The event for the survival function is defined as an individual leaving their housing tenancy. In this case, a censored data point is defined as an individual who has yet to leave their tenancy (i.e., they have so far sustained their tenancy).

A log rank test was run to determine if there were significant differences in the survival distributions for the different homeless support programs. The survival distributions for the six support programs were found to be statistically significantly different from one another, $\chi^2(5) = 67.60, p < 0.00$. Participants in the HSWMH program were most likely to have a higher rate of tenancy survival, while this was lowest for the program for people exiting correctional institutions. This is not really surprising given that those exiting prison are likely to have multiple and complex issues, which has been shown elsewhere to be associated with greater likelihood of losing a tenancy (AIHW 2015a).

Figure 10: Survival analysis by NPAH program



Source: Linked Western Australia Department of Housing and Department of Health data.

The mean survival time in months (the length of time a tenant survived in public housing) for each support program is presented in Table 10 below. Where the groups contain censored data (i.e., where a tenant's start date was not known or they remain in public housing at the measurement point), estimation is limited to the largest survival time.

Table 10: Mean survival time (months) by NPAH program

Program	Mean tenancy survival time (months)
HSWCS	21.1
HSWMH	30.1
STH	27.1
HSWDA	27.1
HAS	28.1
Priority housing (homelessness)	29.4

Source: Linked Western Australia Department of Housing and Department of Health data.

4.8.3 Tenancy duration and proportion of people accessing services

Overall, tenancy duration of one year or more was positively associated with reductions in the proportion of people accessing all seven services. The only increase in the proportion of people accessing a service was for overnight stays in hospital and HITH, both which were not significant and observed in tenancies sustained for less

than one year. As shown in Table 11, this trend was particularly evident among people who had been in their public tenancy for either 1–2, 2–3, or 3–4 years, but was less apparent once people had been in their tenancy for 4 or more years. For example, there was a significant reduction in the number of people using emergency services following entry into a public housing tenancy among participants who had been in their tenancy for 1–2 years, 2–3 years and 3–4 years, but fewer significant differences for those who had been in their tenancy 4–5 years or more than five years. There were no significant changes associated with the length of tenancy and the proportion of people accessing HITH.

Table 11: Percent (%) using health service by length of tenancy (one year before/one year after)

Service		Percent (%) using health service by length of tenancy					
		Length of tenancy (months)					
		≤ 12	13–24	25–36	37–48	49–60	61+
Emergency Department	Before	62.6	57.2	57.4	53.1	51.3	48.7
	After	62.4	46.4 ***	51.9 ***	43.5 ***	46.9	40.5
Overnight stay in hospital	Before	43.7	40.7	43.5	40.0	34.6	48.7
	After	43.9	32.4 ***	38.5 **	32.1 ***	31.8	27.0 **
Hospital in the home care	Before	1.2	1.3	0.9	1.1	1.5	0.0
	After	2.1	1.1	0.8	0.8	1.5	0.0
Intensive care unit	Before	1.9	1.4	1.9	1.6	1.3	0.0
	After	0.9	0.1 ***	1.4	0.8	1.0	0.0
Psychiatric care	Before	9.7	6.7	7.9	9.1	5.1	10.8
	After	8.1	4.0 ***	4.7 ***	3.6 ***	2.8 **	2.7 *
Mental health provider	Before	29.3	21.6	22.3	20.5	15.1	32.4
	After	26.8	17.3 ***	18.9 **	15.6 ***	12.1 *	21.6 *
Prescriptions^	Before	5.8	4.6	3.3	5.3	3.6	5.4
	After	2.5 ***	0.5 ***	0.6 ***	0.1 ***	0.3 ***	0.0

* p<0.1; ** p<0.05; *** p<0.01

Before—average annual proportion of people using this health service in the 12 months prior to tenancy.

After—average annual proportion of people using this health service in the 12 months after tenancy commencement.

^ Prescriptions for opioid dependency treatment—Methadone, Subutex and Suboxone.

Source: Linked Western Australia Department of Housing and Department of Health data.

4.8.4 Tenancy duration and frequency/duration of health service use

Only duration of psychiatric care and average number of prescriptions was associated with reductions of service use regardless of tenancy duration (see Table 12).

Table 12: Tenancy duration (months) by service

		Tenancy duration (months) by service Mean *(standard deviation)*					
		≤ 12.00	**13–24**	**25–36**	**37–48**	**49–60**	**61+**
Number of emergency department presentations	Before	4.5	3.3	3.6	3.1	3.3	3.8
		5.2	*3.7*	*6.1*	*3.5*	*6.3*	*5.4*
	N	271	563	452	398	200	18
	After	4.4	3.2	3.4	2.8	3.2	5.7
		5.2	*4.0*	*6.0*	*3.3*	*5.1*	*5.2*
	N	270	457	409	326	183	15
Length of stay in hospital (days)	Before	15.4	11.2	12.6	12.9	11.1	6.6
		26.5	*22.2*	*25.9*	*25.1*	*28.6*	*5.3*
	N	189	401	343	300	135	18
	After	16.0	9.8	9.9	8.0	7.0	6.4
		30.7	*20.6*	*24.1*	*20.0*	*14.6*	*5.2*
	N	190	319	303	241	124	10
Hospital in the home care (days)	Before	22.2	10.8	9.0	9.3	4.3	-
		16.5	*7.4*	*5.4*	*9.4*	*3.0*	-
	N	5	13	7	8	6	-
	After	13.0	10.1	13.0	17.0	13.0	-
		7.7	*7.5*	*9.8*	*11.3*	*10.9*	-
	N	9	11	6	6	6	-
ICU (days)	Before	13.0	3.6	4.1	3.2	2.2	-
		30.7	*4.9*	*4.5*	*3.5*	*2.7*	-
	N	8	14	15	12	5	-
	After	3.0	5.0	2.3	2.7	3.3	-
		0.8	-	*2.4*	*1.5*	*3.2*	-
	N	4	1	11	6	4	-
Psychiatric care (days)	Before	30.1	29.6	32.6	31.5	47.3	10.8
		34.2	*33.5*	*28.3*	*38.6*	*60.5*	*6.1*
	N	42	66	62	68	20	4
	After	28.6	27.9	24.3	18.9	34.3	7.0
		37.5	*31.9*	*36.3*	*17.6*	*34.4*	-
	N	35	39	37	27	11	1
Duration of contact with a mental health service (hours)	Before	13.3	15.1	13.6	15.1	15.8	26.3
		29.4	*34.2*	*29.4*	*34.6*	*42.0*	*45.4*
	N	127	213	176	154	59	12
	After	11.1	10.1	18.0	15.6	23.5	6.7
		20.3	*30.3*	*64.2*	*42.3*	*51.2*	*8.3*
	N	116	170	149	117	47	8
Average no. prescriptions in a year	Before	11.3	10.6	10.8	10.3	10.9	10.7
		3.6	*4.4*	*4.3*	*4.3*	*4.2*	*4.1*
	N	25	45	26	40	14	152
	After	1.7	1.8	1.8	1.0	1.0	1.7
		1.2	*0.8*	*1.1*	-	-	*1.0*
	N	11	5	5	1	1	23

^ Prescriptions for opioid dependency treatment—Methadone, Subutex and Suboxone.

Source: Linked Western Australia Department of Housing and Department of Health data.

The average number of ED presentations per person per year reduced up until a person had been in their tenancy for more than five years, where average ED presentations increased by 50 per cent. It is important to note that there was only a small sample of people accessing ED after being in a tenancy for more than five years. A participant whose tenancy was 12 months or less was associated with an increase in the length of overnight stays in hospital (increased from 15.4 days to 16 days per person per year). Tenancies sustained between one and two years were associated with shorter durations of stay/frequencies of use of all services except for days spent in ICU, which increased from 3.6 days to 5 days per person per year.

4.9 Summary

The linked administrative data provides detailed information about housing tenancies and health service use for nearly 3,400 individuals, both NPAH program participants (n=983) as well as those entering through priority housing (homelessness) (n=2,400).

The provision of public housing is shown to have a significant impact in reducing health service use both in terms of the proportion of people using health services, and the frequency and duration of health service use. There were significant reductions in the proportions of people accessing the ED, staying overnight in hospital, spending time in the ICU, psychiatric services and mental health services and the number of people with prescriptions for opioid dependence. There were no significant increases in the proportion of people accessing any of the seven services in any of the programs.

Further analysis examined the changes in frequency or duration of health service use within the subsamples of participants from each program who had accessed health services either before or after entering their public housing tenancy. Overall, looking at the whole sample of participants there was an average annual reduction in frequency of use of all services in the relevant subsample with the exception of HITH after entering a tenancy. Looking at those who entered through an NPAH program, there were reductions in the average annual service use for all services except for average annual ED visits where no change was observed and HITH where there was an increase in average annual days spent using the service. Looking at those who entered their tenancy through priority housing (homelessness), there was an observed increased in average annual contact with those using HITH services and those using mental health services.

It is important to note that there were few significant results for the HSWCS group. This may stem from the smaller number of participants, incomplete data, and the potential for health issues to be related to circumstance unrelated to housing tenancy.

Importantly, the reduction in health service use observed can be a source of considerable cost savings. This study focuses on the changes in emergency presentation, days in hospital and days in psychiatric care. These have been identified in previous literature as having the largest economic impact. Stays in hospital and psychiatric care account for the vast majority of cost savings. The size of combined cost offsets from the change in use of these three services is estimated to be nearly $16.4 million, or just under $5,000 per person. This figure is potentially understated given the incomplete data from individuals exiting the justice system.

Finally, this chapter also explored the relationship between tenancy duration and health outcomes. The patterns of tenancy duration and reduction in health services vary over time. In particular, tenancies sustained for less than one year only generated a significant reduction in the proportion of people with prescriptions for opioid dependence, while tenancies sustained for over one year are associated with

reductions in the proportion of people accessing all of the health services, with the exception of HITH. This effect is strongest for people who had sustained their tenancy for between one and four years, and fades once people had been in their tenancy for four or more years. Individuals who had sustained their tenancy for one to two years experienced a significant reduction in the largest number of distinct health services (all services except HITH). For those who sustained their tenancy for more than five years, there were still significant reductions associated with the proportion of people staying overnight in a hospital, and the proportion of people seeking psychiatric care and mental health services; however after four years the number of significant changes starts to fade. This may imply that four years is the amount of time required for individuals to 're-establish' their health and stability, while sustaining a tenancy for over 12 months is crucial to achieving health service reductions and cost savings. In our sample, 1,323 individuals lost or discontinued their tenancy during the study window—nearly two-thirds of whom vacated their tenancy after 12 months.

5 RESULTS—TENANT SURVEY

In this chapter, we review the results from the survey of Western Australian Department of Housing tenants in NPAH programs or housed via priority housing (homelessness) routes. The Tenant Survey contained questions on demographics, the respondent's history of homelessness, support received pre- and post-housing tenancy, their confidence in maintaining their tenancy and self-reported health status, alcohol, tobacco and drug use, and health service use.

5.1 Profile of respondents

As reported in Table 13 below, in total, 277 people completed the Tenant Survey, 92 (33.2%) entered their current tenancy via an NPAH program and 185 (66.8%) entered their tenancy via the priority housing for homelessness list. The proportion of respondents entering via an NPAH program is slightly larger than the proportion in the overall sample for which linked data is available, where 29 per cent entered via an NPAH program.

Table 13: Study population characteristics—Tenant Survey

	Number	%
NPAH or priority housing		
NPAH	92	33.2
Priority housing (Homelessness)	185	66.8
Total	*277*	100.0
Sex		
Female	170	62.0
Male	103	37.6
Transgender	1	0.4
Missing	3	-
Total	*277*	100.0
Age group		
18–24	11	4.0
25–34	46	16.9
35–44	50	18.4
45–54	69	25.4
55–64	55	20.2
65–74	24	8.8
75+	17	6.3
Missing	5	-
Total	*277*	100.0
Aboriginal or Torres Strait Islander		
Yes	47	17.3
No	221	81.5
Unsure	3	1.1
Missing	6	-
Total	*277*	100.0
Highest attained level of education		
Primary school	12	4.4
Some secondary/high school	113	41.2
Completed secondary school	42	15.3

	Number	%
TAFE/Trade certificate/apprenticeship	78	28.5
Bachelor's degree	22	8.0
Did not go to school	2	0.7
Unsure	5	1.8
Missing	3	-
Total	*277*	100.0
Current source of income		
Wages/salaries	24	8.7
Newstart allowance or other unemployment benefits	68	24.7
Pension (Age and Disability Support Pension)	171	61.7
Other government allowance payments	51	18.5
Other income	4	1.5
No income	2	0.7
Current employment/education situation		
In full-time paid employment	5	1.8
In part-time paid employment	20	7.3
Casual or occasional employment	10	3.6
Home duties	49	17.8
Retired	46	16.7
Student	15	5.5
Voluntary work/employment	8	2.9
Unemployed	40	14.5
Not currently engaged in work and not actively looking for work	2	0.7
Unable to work due to health condition or disability	76	27.6
Other	4	1.5
Missing	2	-
Total	*277*	100.0
Children under 18?		
Yes, and they live with me most/all of the time.	95	34.9
Yes, but they only live with me some of the time.	10	3.7
Yes, but they do not live with me.	18	6.6
No.	149	54.8
Missing	5	-
Total	*277*	100.0
Which country were you born in?		
Australia	184	67.2
Other	90	32.5
Unsure	1	0.4
Missing	3	-
Total	*277*	100.0

Source: The Tenant Survey

The Tenant Survey sample has a similar gender split to the overall sample for which linked data is available. However, the age and Indigenous profile is different. Females represented 62 per cent of the survey sample, similar to the 64.4 per cent females for which linked data is available and across all NPAH programs across Australia identified as providing support to assess and/or maintain a public housing tenancy

(67.5% female) (Zaretzky and Flatau 2015). The age profile of the survey sample is significantly different (p=0.003) than for the complete linked data sample, with just under half of all survey respondents (45.6%) in the 45 to 64 age group, and 39.3 per cent of survey respondents under 44 years of age. In comparison, 65.3 per cent of those for which linked data is available are under 44 years. There is an underrepresentation of Indigenous tenants in the sample resulting in a significant difference between the samples (p=0.000), with 17.3 per cent of survey participants indicating they are Indigenous compared with 29.5 per cent of clients in the linked data. As a consequence of the skewness in the Tenant Survey data, the survey is not representative of the linked data sample. The skewness in age and Indigenous status is likely to affect interpretation of some of the results of the survey.

Of those responding to the survey, 41.2 per cent had completed some secondary school, with a further 15.3 per cent having completed secondary school. In total, 36.5 per cent had completed some form of post-secondary education; 28.5 per cent TAFE/Trade certificate/apprentice and 8 per cent had completed a Bachelor's degree. In total, 12.7 per cent of respondents reported that they were employed in paid work in some capacity. However, only 1.8 per cent was in full-time employment. A large proportion of the Tenant Survey respondents (27.6%) reported not being able to work due to health conditions. The vast majority of respondents reported a government payment as their main income source, 24.7 per cent received Newstart unemployment benefits, 61.7 per cent received a pension (includes Disability Support Pension) and 18.5 per cent reported some other type of government benefit. Only 8.7 per cent reported a wage or salary as their main income source. The educational, income source and employment characteristics are similar to other homeless populations (see e.g. Zaretzky and Flatau 2013).

Over half of all respondents (54.8%) did not have children, and only 34.9 per cent have children who live with them most/all of the time. Around two-thirds (67.2%) of respondents were born in Australia.

5.2 Prior experiences of homelessness

The survey included measures to examine cumulative lifetime experiences of homelessness. This has been shown to be predictive of a range of outcomes, including some relating to health. In a study of homeless veterans in the US (Tsai, Kasprow et al. 2014), those with alcohol and drug use disorders had more extensive homeless histories.

Approximately half of all respondents reported they had slept rough at some stage over their lifetime; 54.5 per cent of NPAH and 50.3 per cent of priority housing (homelessness) respondents (see Table 14 below).

Table 14: Lifetime experiences of homelessness (%)

NPAH programs*	Never	In the past 12 months	Between one and four years ago	More than four years ago	Lifetime experience#
Slept rough	45.5	2.3	14.8	37.5	54.5
Living with family or friends	25.3	3.4	18.4	52.9	74.7
Short-term accommodation for homeless people	37.2	3.5	23.3	36.0	62.8
Medium- to long-term accommodation for homeless people	43.5	4.7	18.8	32.9	56.5
Temporary accommodation	37.2	3.5	14.0	45.3	62.8
Institutional or residential facility	50.0	5.8	11.6	32.6	50.0
Private rental	15.0	5.0	12.5	67.5	85.0
Public housing	15.3	34.1	22.4	28.2	84.7
Own home	72.9	3.5	0.0	23.5	27.1
Priority housing (homelessness)**	**Never**	**In the past 12 months**	**Between one and four years ago**	**More than four years ago**	**Lifetime experience#**
Slept rough	49.7	0.6	10.3	39.4	50.3
Living with family or friends	26.7	3.0	14.5	55.8	73.3
Short-term accommodation for homeless	53.0	2.4	12.8	31.7	47.0
Medium- to long-term accommodation for homeless people	65.8	2.5	5.6	26.1	34.2
Temporary accommodation	50.0	1.9	8.8	39.4	50.0
Institutional or residential facility	69.4	2.5	7.5	20.6	30.6
Private rental	18.1	3.9	16.1	61.9	81.9
Public housing	23.0	33.5	21.1	22.4	77.0
Own home	63.0	1.2	0.6	35.2	37.0

* Note: Missing data between 4.3 per cent and 13 per cent for NPAH programs.

** Note: Missing data between 10.8 per cent and 16.2 per cent for priority housing (homelessness).

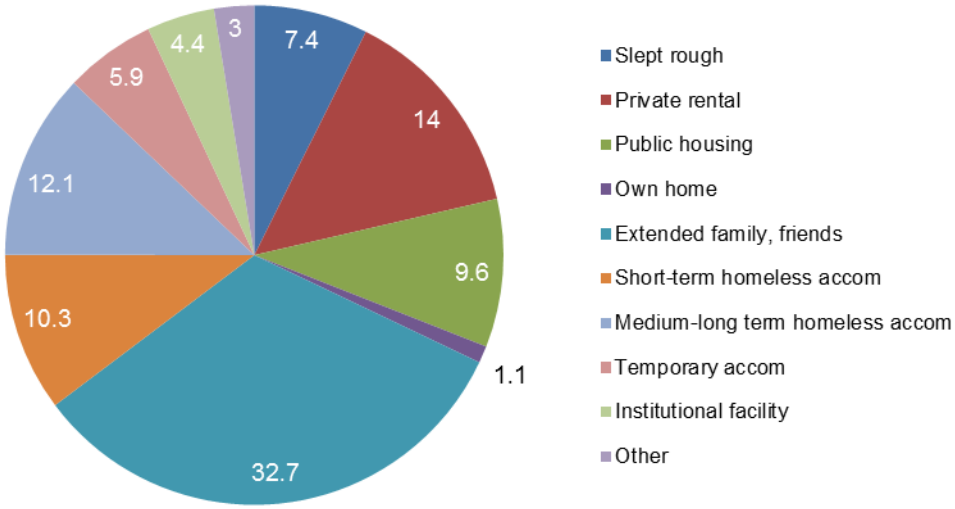
Lifetime experience calculated by the sum of 'In the past 12 months', 'Between one and four years ago', and 'More than four years ago'.

Source: The Tenant Survey

For the vast majority, this occurred more than four years ago (37.5% of NPAH and 39.4% of priority housing (homelessness) respondents); (see Appendix 3 for a breakdown by gender). Nearly three quarters of people for both NPAH and priority housing (homelessness) groups reported staying with friends and family as they had nowhere else to live (74.7% and 73.3% respectively). The percentage of respondents that had stayed in short-term accommodation for people experiencing homelessness was higher for those entering through an NPAH program (62.8%) when compared to those entering through priority housing (47.0%).The majority of respondents had been in a public housing tenancy at some stage in their life (84.7% of NPAH and 77.0% of priority housing (homelessness) respondents), and around one-third of both groups had been in a public housing tenancy within the previous 12 months. NPAH respondents were more likely to have lived in an institutional setting at some time in their life (50.0%) than priority housing (homelessness) respondents (30.6%). They were also more likely to have lived in accommodation supporting those who are homeless; short or medium- to long-term accommodation.

Immediately prior to entering their current public housing tenancy (see Figure 11 and Table 15 below), one third (32.7%) of respondents were staying with extended family or friends (14.3% NPAH, 42.0% priority housing). About one quarter (22.4%) of all respondents were staying in accommodation for those experiencing homelessness (specifically: 10.3% in short-term and 12.1% in medium- to long-term accommodation). Of those living in accommodation for people experiencing homelessness, a difference between NPAH and priority housing (homelessness) entry pathways is evident, with 41.8 per cent of NPAH respondents (16.5% in short-term and 25.3% in medium- to long-term homelessness accommodation) and 12.7 per cent of priority housing (homelessness) respondents (7.2% in short-term and 5.5% in medium- to long-term accommodation for those experiencing homelessness).

Figure 11: Living situation immediately before entering public housing (%)



Source: The Tenant Survey

Table 15: Living situation immediately prior to current public housing tenancy (%)

	Slept rough	Private rental	Public housing	Own home	Extended family, friends	Short-term homeless accom.	Medium- to long-term homeless accom.	Temporary accom.	Institutional facility	Other
All[#]	7.4	14.0	9.6	1.1	32.7	10.3	12.1	5.9	4.4	2.6
*Gender**										
Male	10.0	13.0	9.0	1.0	25.0	14.0	13.0	7.0	4.0	4.0
Female	6.0	14.3	10.1	1.2	36.9	8.3	11.3	5.4	4.8	1.8
Entry to public housing										
Priority housing (homelessness)	8.3	15.5	8.8	1.7	42.0	7.2	5.5	6.1	1.7	3.3
HSWCS**	0.0	0.0	0.0	0.0	0.0	33.3	33.3	0.0	33.3	0.0
HSWMH	5.3	10.5	0.0	0.0	26.3	15.8	21.1	10.5	10.5	0.0
STH	9.5	14.3	9.5	0.0	4.8	19.0	28.6	9.5	4.8	0.0
HSWDA	6.7	20.0	6.7	0.0	6.7	13.3	0.0	6.7	33.3	6.7
HAS	3.0	6.1	21.2	0.0	18.2	15.2	36.4	0.0	0.0	0.0
NPAH (all)	5.5	11.0	11.0	0.0	14.3	16.5	25.3	5.5	9.9	1.1

Note: Missing data between 0 per cent and 5 per cent for living situation immediately prior to moving into current public housing tenancy.

Information relating to the 'All' category is depicted in Figure 11.

*Note that three participants' genders were not indicated.

**Note that total number of respondents under this category <10.

Source: The Tenant Survey

Overall, about a quarter (24.7%) of respondents were living in other tenancies such as their own home, a private rental or alternate public housing, prior to moving into their current public housing tenancy (22.0% NPAH, 26.0% priority housing). Of NPAH respondents, 9.9 per cent moved from an institution into their current tenancy, but this only applied to 1.7 per cent of priority housing clients; this could be due to the fact that over a third of NPAH participants entered through either the Drug and Alcohol or Mental Health programs. Only 5.5 per cent of NPAH and 8.3 per cent of priority housing (homelessness) respondents were sleeping rough immediately prior to entering their current public tenancy. It should be noted that this does not represent the respondent's accommodation situation at commencement of support, which may be prior to or after the current tenancy commenced.

5.3 Support received by tenants

5.3.1 Tenant support prior to entering their current public housing tenancy

Receiving support from services can assist tenants in obtaining and maintaining their tenancy. Support received from an agency or organisation immediately prior to moving into public housing was assessed and respondents were asked to indicate issues for which they had received support. Over half (50.9%) of respondents indicated that they received support for getting into a public housing tenancy, with more NPAH indicating that they received this type of support when compared with priority housing (homelessness) (65.2% compared with 43.8%). This means that prior to entering their tenancy 49.1 per cent of tenants did not receive assistance finding a tenancy that suited their family's needs placing immediate stress on the tenancy. It would be of benefit to know whether, of those that did not receive support, it was because they did not know there was support available, they did not know where to look for support, or they simply did not need support.

Of those receiving support prior to entering their tenancy, for the majority of categories asked about, there is a fairly even distribution between NPAH and priority housing (homelessness) groups (see Table 16 below), the exceptions being that 78.8 per cent of those receiving support for legal issues, 67.9 per cent receiving support for finding/keeping a job and 63.6 per cent receiving support for their physical health were in the priority housing (homelessness) group (see Table 16).

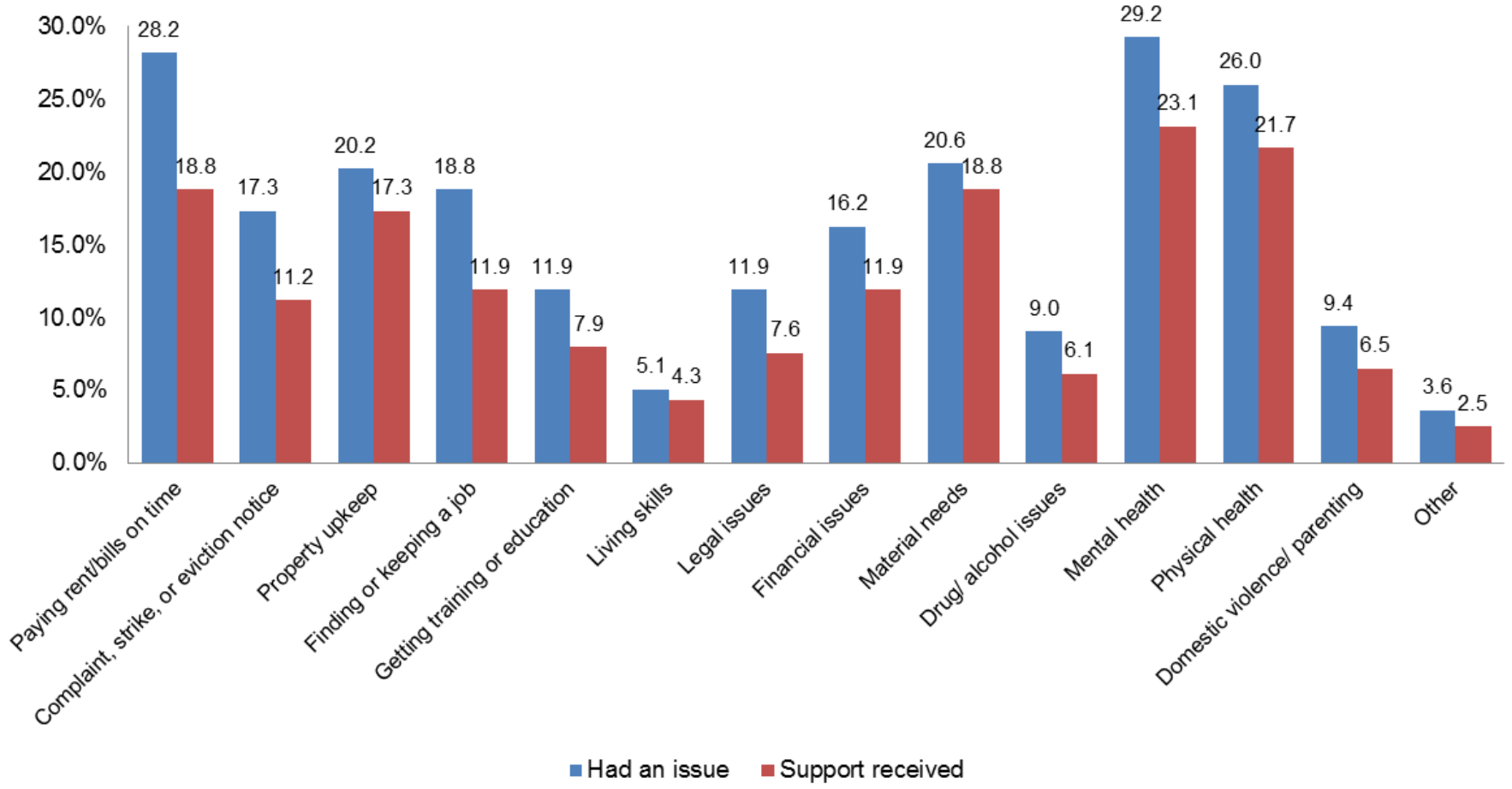
Table 16: Support received *before* entering current public housing tenancy (%)

Issues addressed	Total	NPAH Before^	PH Before^
Getting a public housing tenancy	50.9	42.6	57.4
Finding or keeping a job	10.1	32.1	67.9
Getting training or education	9.0	40.0	60.0
Living skills	7.9	54.5	45.5
Legal issues	11.9	21.2	78.8
Financial issues	20.2	42.9	57.1
Material needs	29.2	45.7	54.3
Drug/ alcohol issues	13.4	51.4	48.6
Mental health	31.4	48.3	51.7
Physical health	19.9	36.4	63.6
Parenting	7.6	47.6	52.4
Domestic violence	11.6	46.9	53.1
Gambling	1.4	50.0	50.0

Note: ^ Of those who received support

Source: The Tenant Survey

Figure 12: Tenant issue and support received *since* entering current public housing tenancy (%)



Source: The Tenant Survey

5.3.2 Tenant issues and support received since entering their current public housing tenancy

People experiencing homelessness frequently suffer difficulty with many aspects of life. However, it appears that many did not receive support for some of the issues they indicated they were having. For example, 28.2 per cent indicated that they had difficulties paying rent or bills on time, but only 18.8 per cent received support to help manage this issue and 18.8 per cent indicated that they were having issues with finding and maintaining employment, but only 11.9 per cent received support (see Figure 12 on previous page and Table 17 below). Due to the format of the survey question, it is not possible to work out if those indicating they had issues were the same people to receive support.

Table 17: Tenants issues and support received *since* entering current public housing tenancy (%)

	Had issues SINCE			Received support SINCE		
Issues addressed	**Total**	**NPAH^**	**Priority^**	**Total**	**NPAH After^**	**Priority After^**
Paying rent/bills on time	28.2	37.2	62.8	18.8	44.2	55.8
Complaint, strike, or eviction notice	17.3	27.1	72.9	11.2	45.2	54.8
Property upkeep	20.2	37.5	62.5	17.3	41.7	58.3
Finding or keeping a job	18.8	40.4	59.6	11.9	54.5	45.5
Getting training or education	11.9	42.4	57.6	7.9	50.0	50.0
Living skills	5.1	28.6	71.4	4.3	41.7	58.3
Legal issues	11.9	30.3	69.7	7.6	42.9	57.1
Financial issues	16.2	35.6	64.4	11.9	48.5	51.5
Material needs	20.6	29.8	70.2	18.8	42.3	58.8
Drug/ alcohol issues	9.0	44.0	56.0	6.1	70.6	29.4
Mental health	29.2	42.0	58.0	23.1	51.6	48.4
Physical health	26.0	34.7	65.3	21.7	38.3	61.7
Parenting/domestic violence	9.4	30.8	69.2	6.5	38.9	61.1
Other	3.6	20.0	80.0	2.5	42.9	57.1

Note: ^ Of those who received support.

Source: The Tenant Survey

In addition to support received *prior to*, support received *since* entering their tenancy is also fairly even between the two groups. The main difference being that 70.6 per cent of those receiving support for drug and alcohol issues were from the NPAH group, which could relate to participants that specifically entered public housing from the NPAH Drug and Alcohol program (see Table 17).

There is, however, a difference between NPAH and priority housing (homelessness) when looking at the issues experienced since moving into their current public housing tenancy. For every single issue asked about, a higher proportion (when compared to NPAH) of priority housing (homelessness) experienced these issues. This is particularly evident when looking at issues with complaint/strike/eviction notices, living skills, material needs and other, with each of these categories over 70 per cent of

those experiencing issues were from the priority group. This could be due to a number of reasons:

1. Those entering through NPAH are generally less likely to experience issues than those entering through priority.
2. Those entering through NPAH are more likely to receive support prior to entering and thus do not experience the issue once they are in their tenancy.
3. Support received prior to entering for the priority housing (homelessness) group is not as effective as the support received from the NPAH group.
4. This may be simply due to the fact that two-thirds of the survey respondents were from the priority housing (homelessness) group and thus it is more likely to have sampled people experiencing issues.

5.3.3 Social support received

The literature indicates that people experiencing homelessness typically have smaller social networks than people not experiencing homelessness (Nooe and Patterson 2010; Shinn, Knickman et al. 1991; Calsyn and Winter 2002). However, of those who answered the Tenant Survey, 71.7 per cent indicated that they had received at least one other type of social support to help them stay in their current public housing tenancy that did not include support from an agency or service (see Table 18). About a third of respondents received support from a foodbank or a friend (33.6% and 29.2% respectively), however the majority of those who received this support were priority housing (homelessness) (61.3% and 64.2% respectively). Only 11.2 per cent indicated that they received support from a neighbour.

Table 18: Support received from social networks (%)

Type of network	All	NPAH^	PH^
Friend	29.2	35.8	64.2
Neighbour(s)	11.2	41.9	58.1
Foodbank	33.6	38.7	61.3
Church	18.5	29.4	70.6
Local community group	10.2	28.6	71.4
Local council	6.5	27.8	72.2
Volunteer support person	6.2	41.2	58.8
Support or self-help group	6.5	61.1	38.9
Other	18.5	31.4	68.6
Total	*71.7*	*36.9*	*63.1*

Note: ^ Of those who received support

Source: The Tenant Survey

5.4 Confidence in keeping tenancy

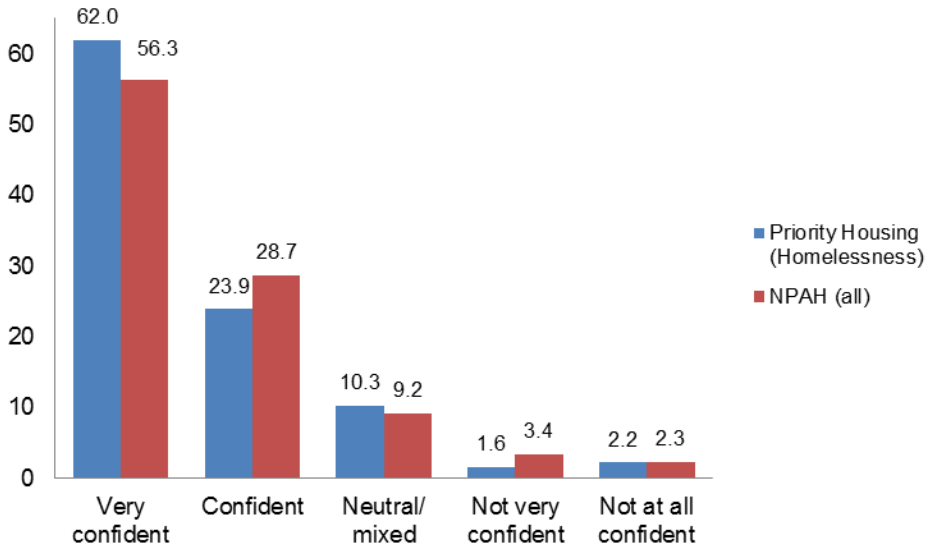
Confidence to maintain the respondent's public housing tenancy was explored using a five-point Likert scale rating from very confident to not at all confident in being able to keep their tenancy. The majority of priority housing (homelessness) and NPAH groups felt very confident in being able to keep their public housing tenancy (62.0% and 56.3% respectively) (see Figure 13 and Table 19 below). This was also reflected in some of the responses from respondents that housing, support and stability are intertwined with confidence:

I feel confident about keeping my public housing tenancy because I feel stable and have gotten my everything under control, such as, money problems, bills, food, clothing.

I feel very confident in keeping my public housing as I have an awesome support base such as family, my housing manager, my domestic violence unit and friends.

I have never been late with rent or water. I am in front. I don't have parties or try to disturb other tenants. I have even had a letter from housing saying that my unit is one of the best they have seen, due to gardens, painting and keeping it clean.

Figure 13: Confidence to keep current public housing tenancy (%)



Source: The Tenant Survey

Table 19: Tenant confidence in keeping current public housing (%)

	Very confident	Confident	Neutral/ mixed	Not very confident	Not at all confident
All	60.1	25.5	10.0	2.2	2.2
*Gender**					
Male	53.0	30.0	11.0	4.0	2.0
Female	64.3	22.6	9.5	1.2	2.4
Entry to public housing					
Priority housing (homelessness)	62.0	23.9	10.3	1.6	2.2
HSWMH	64.7	17.6	11.8	5.9	0.0
STH	47.4	36.8	10.5	0.0	5.3
HSWDA	60.0	20.0	6.7	6.7	6.7
HAS	57.6	33.3	6.1	3.0	0.0
NPAH (all)	56.3	28.7	9.2	3.4	2.3

*Note that three participants' genders were not indicated

Note: Missing data for tenant confidence ranges between 0.0 per cent and 9.5 per cent for each program

Source: The Tenant Survey

Although only a small percentage, not all respondents felt confident in being able to sustain their tenancy with 3.8 per cent of priority housing (homelessness) and 5.7 per cent of NPAH respondents stating that they were not very, or not at all confident (see Table 19 below). This was due to a number of reasons, as reflected in some of the responses:

> The reason that I am not confident of staying where I am, because my grandson and grand-daughter keep coming back when they have not got no-where to go, even they have been told they cannot, because they are seniors' units.
>
> My biggest concern is that I may be found to be no longer eligible for the disability support pension. If I were to lose the pension then I would not be confident of maintaining my present situation.
>
> There is always anxiety about the future, about losing my housing, even if remote, because I know I could not afford anything else. There is always fear of being homeless again.

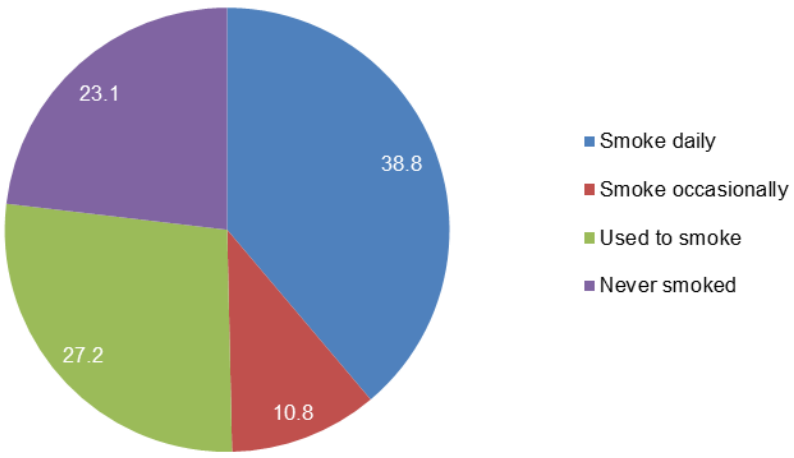
5.5 Tobacco, alcohol and drug use

With a significant proportion of chronic disease preventable and attributable to lifestyle risk factors such as smoking, excessive alcohol consumption, diet and drug use, there has been an interesting recent analysis applying this lens to the health burden associated with homelessness. A recent US study (Baggett, Chang et al. 2014), analysed clinical records for data for 28,033 adults who had attended the Boston Health Care for the Homeless Program from 2003 to 2008. Among the 1,302 recorded deaths, 52 per cent were attributable to tobacco, alcohol or drug use (using etiological population-attributable fractions). When the researchers compared these attributable deaths to the general Massachusetts population data, tobacco-attributable mortality rates were three to five times higher, and drug-attributable mortality rates were eight to 17 times higher.

5.5.1 Tobacco use

Tobacco use among homeless people has been described as the neglected addiction (Baggett, Tobey et al. 2013). Smoking related deaths among homeless and marginally housed people occur at double the rate seen among people with more stable housing and account for a considerable fraction of the absolute mortality disparities between these groups (Baggett, Chang et al. 2014).

Figure 14: Smoking status (%)



Source: The Tenant Survey

About half of the study population indicated that they are current smokers, with 38.8 per cent indicating that they smoke daily. This is a considerably larger proportion that the general Australian adult population with only 16.1 per cent reporting that they smoke daily (ABS 2013b). Only 23.3 per cent of the study population reported having never smoked which is considerably less than the 51.1 per cent of the general Australian population who have never smoked (ABS 2013b). The percentage of ex-smokers in the study population (27.2%) is similar to the percentage of ex-smokers in the general population (31.1%) (ABS 2013b). A greater proportion of the study population smoked occasionally (10.8%) when compared to the general Australian population (1.8%) (ABS 2013b) (see Figure 14 and Table 20). The Tenant Survey may also underestimate the proportion of smokers compared to the linked data population, as Indigenous Australians are under-represented in this sample. Indigenous Australians have been found to be 2.5 times more likely to smoke tobacco daily compared to non-Indigenous Australians (AIHW 2014b).

Table 20: Tenant smoking status

Smoking	Smoke daily	Smoke occasionally	Used to smoke	Never smoked
All	38.8	10.8	27.2	23.1
*Gender**				
Male	41.0	12.0	31.0	16.0
Female	37.0	10.3	24.8	27.9
Entry to public housing				
Priority housing (homelessness)	36.5	12.9	29.2	21.3
HSWMH	36.8	5.3	21.1	36.8
STH	42.9	9.5	19.0	28.6
HSWDA	60.0	13.3	20.0	6.7
HAS	39.4	3.0	27.3	30.3
NPAH (all)	43.3	6.7	23.3	26.7

*Note that three participants' genders were not indicated.

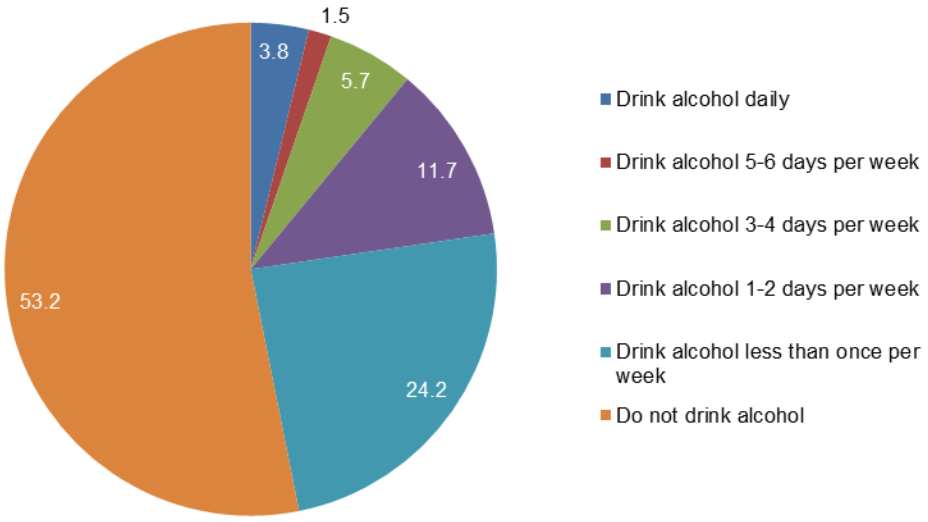
Note: Missing data between 0.0 per cent and 3.8 per cent.

Source: The Tenant Survey

5.5.2 Alcohol use

Overall, the sample population consumed alcohol on fewer occasions compared with the general Australian population. However, risk from harm could not be compared as the number of standard drinks consumed was not measured. 3.8 per cent of the sample indicated that they consumed alcohol daily compared with 6.9 per cent of Australian adults who consumed alcohol daily in 2013 (AIHW 2014b) and 53.2 per cent of the sample reported that did not consume alcohol compared with 16.3 per cent of Australian adults who reported that they had not consumed alcohol in the past twelve months (see Figure 15 below). These results may be driven by the higher proportion of women in the Tenant Survey response data.

Figure 15: Days per week drinking alcohol (%)



Source: The Tenant Survey

About 85 per cent of female survey respondents reported drinking alcohol less than once per week or not at all, compared to 64 per cent of male respondents (see Figure 15 and Table 21 below). This reflects the trend in the general Australian population in which females are considerably less likely than males to drink alcohol in quantities that are potentially harmful (AIHW 2014b).

However, in other ways, the Tenant Survey results differ considerably from what we would expect given the general population trends. For example, the age group most likely to consume alcohol daily in the Australian population is those aged 70+ and it would be expected that a higher proportion of those aged 40 to 70+ consume alcohol daily when compared with those aged 18 to 29 (AIHW 2014b). However, those aged over 40 in the Tenant Survey are over-represented when compared to the linked data, and yet results are substantially lower than the general population (i.e., because there is a higher proportion of those aged 40+ you would expect daily alcohol consumption to be greater than the general population).

5.5.3 Drug use

Evidence suggests that drug and alcohol misuse are strongly associated with both the initiation and persistence of homelessness (Fazel, Geddes et al. 2014). People experiencing homelessness are more likely to use tobacco, alcohol and illicit drugs compared with the general population (Whittaker, Swift et al. 2015). In a meta-analysis by Fazel, Khosla et al. (2008), people experiencing homelessness in western countries were substantially more likely to have alcohol and drug dependence compared with the general population of those countries. Interestingly, their meta-analysis did not find any studies of alcohol dependence in women experiencing homelessness, but the pooled prevalence estimate of alcohol and drug dependence from surveys (n=10) of homeless men was 37.9 per cent. For drug dependence, the pooled prevalence estimate among men was 24.4 per cent (95% CI 13.2%–35.6%) and a similar prevalence was observed (24.2%) in the one included study of dependence in women (Fazel, Khosla et al. 2008).

Table 21: Tenant alcohol consumption (%)

Level of alcohol consumption	Drink alcohol daily	Drink alcohol five to six days per week	Drink alcohol three to four days per week	Drink alcohol one to two days per week	Drink alcohol less than once per week	Do not drink alcohol
All	3.8	1.5	5.7	11.7	24.2	53.2
*Gender**						
Male	6.0	4.0	10.0	16.0	19.0	45.0
Female	2.5	0.0	3.1	9.3	27.8	57.4
Entry to public housing						
Priority housing (homelessness)	4.0	2.3	6.8	12.4	24.3	50.3
HSWMH	0.0	0.0	5.3	10.5	26.3	57.9
STH	0.0	0.0	5.0	10.0	20.0	65.0
HSWDA	7.1	0.0	0.0	7.1	21.4	64.3
HAS	3.0	0.0	3.0	9.1	27.3	57.6
NPAH (all)	3.4	0.0	3.4	10.2	23.9	59.1

*Note that three participants' genders were not indicated

Note: Missing data between 0 per cent and 6.7 per cent

Source: The Tenant Survey

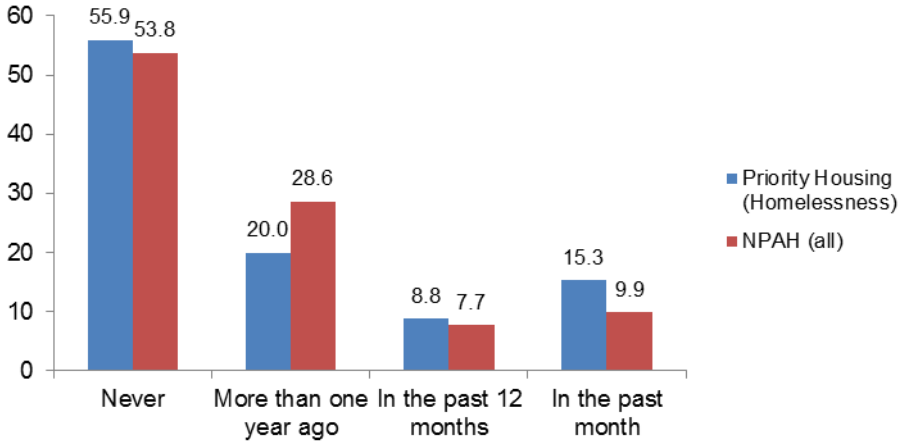
Less is known, however, about how drug use changes once people have been placed into a public housing tenancy and are participating in a homelessness support program such as the NPAH programs being examined in this study. While we only have cross-sectional data, respondents were asked about past and recent use of various drugs, which provides a rough proxy measure of change over time.

We found that 44.8 per cent of the sample had used at least one illicit drug at some point in their lifetime. There was a large decrease for most drugs (with the exception of cannabis and opioids) in the proportion that had used in the last month, compared to the last year.

Almost 18 per cent of NPAH participants and 24.1 per cent of priority housing (homelessness) participants had used an illicit drug in the past month or past 12 months (see Figure 16 and Table 22 below). This is higher than the general WA figure of 15 per cent [2] (AIHW 2014b). In addition, the Tenant Survey results may underestimate drug use because the age group most likely to have used an illicit drug in the past 12 months are those aged between 20 and 29; males are more likely to have used an illicit drug in the past 12 months than females; and rates of cannabis use among Indigenous Australians is generally twice that of non-Indigenous Australians (AIHW 2014b). These are all demographics that are under-represented in the Tenant Survey compared to the linked data set.

[2] Please note that the Tenant Survey figures and the AIHW (2014b) figures are not directly comparable as the WA figure refers to those over 14 years, whereas the Tenant Survey includes only those over 18 years.

Figure 16: Most recent drug use (%)



Source: The Tenant Survey

Table 22: Tenant most recent drug use (%)

Level of drug use	Never	More than one year ago	In the past 12 months	In the past month
All	55.2	23.0	8.4	13.4
*Gender**				
Male	45.9	24.5	10.2	19.4
Female	60.6	22.5	7.5	9.4
Entry to public housing				
Priority housing(homelessness)	55.9	20.0	8.8	15.3
HSWMH	75.0	15.0	10.0	0.0
STH	57.1	14.3	9.5	19.0
HSWDA	26.7	66.7	0.0	6.7
HAS	53.1	28.1	6.3	12.5
NPAH (all)	53.8	28.6	7.7	9.9

*Note that three participants' genders were not indicated.

Note: Missing data ranges between 0 per cent and 8.1 per cent for most recent drug use.

Source: The Tenant Survey

5.6 Mental health

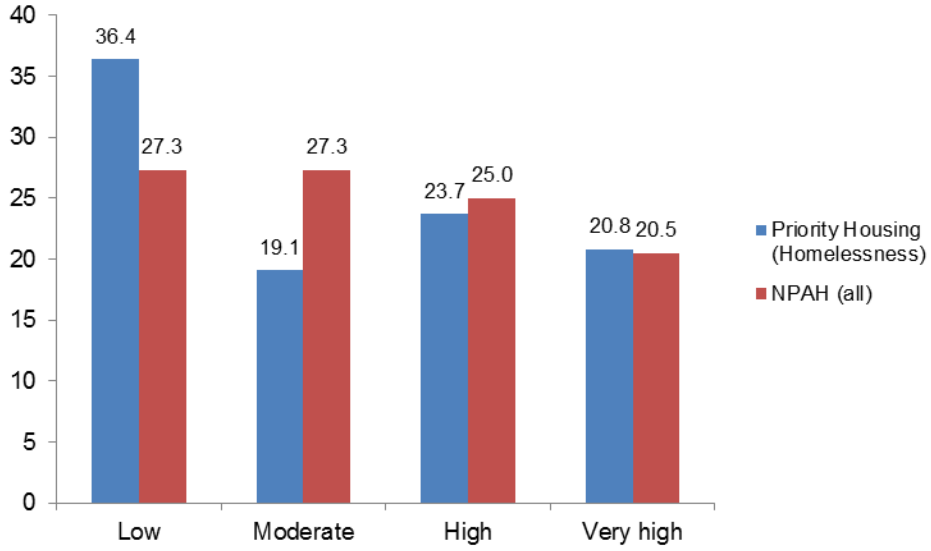
The association between homelessness and mental health is well documented, and each compounds the other. In a meta-analysis of homelessness studies, the prevalence of psychotic illnesses and personality disorders was considerably higher among people who were homeless compared with the general population (Fazel, Khosla et al. 2008). The meta-analysis reported a pooled prevalence of 12.7 per cent (95% CI 10.2%–15.2%) across 28 studies, and for major depression, a pooled prevalence of 11.4 per cent (95% CI 8.4%–14.4%) from 19 studies.

While the linked data analysis (Chapter 4) looked at hospital contacts for mental health, the Tenant Survey collected additional mental health data, and included the Kessler measure of psychological distress (K10), and a question asking respondents

whether they had been diagnosed with a mental health condition by a health professional.

From the analysis of the K10 it was found that almost half (44.8%) of the sample was found to be experiencing high (24.1%) or very high (20.7%) levels of distress compared with only 10.1 per cent of the general Australian public reported to be experiencing high or very high levels of psychological distress (ABS 2013a) (See Figure 17 and Table 23 below).

Figure 17: Level of distress by priority housing (homelessness) and NPAH (%)



Source: The Tenant Survey

Table 23: Psychological distress (%)

Level of psychological distress	Low	Moderate	High	Very high
All	33.3	21.8	24.1	20.7
*Gender**				
Male	34.7	20.4	22.4	22.4
Female	32.5	22.5	25.6	19.4
Entry to public housing				
Priority housing (homelessness)	36.4	19.1	23.7	20.8
HSWMH	26.3	26.3	31.6	15.8
STH	23.8	28.6	23.8	23.8
HSWDA	20.0	20.0	46.7	13.3
HAS	33.3	33.3	13.3	20.0
NPAH (all)	27.3	27.3	25.0	20.5

*Note that three participants' genders were not indicated

Note: Missing data between 0 per cent and 11.9 per cent for K10.

Source: The Tenant Survey

The level of psychological distress observed in our study is comparable or low when compared with other homeless populations. On entry to the MISHA program, which aimed to support homeless men to enter and sustain permanent housing, 39 per cent of clients experienced high to very high levels of distress. This reduced to approximately 35 per cent 12 months after support commenced, but increased to approximately baseline levels again after 24 months of support (Conroy, Bower et al. 2014).

Looking at the broader population of homelessness programs that have used the K10 measure of psychological distress, Zaretzky and Flatau (2013) found that a very high 66 per cent of people receiving support to sustain a tenancy experienced high to very high levels of psychological distress, although this had reduced from 75 per cent prior to receiving support. In that same study, clients of services for single men also experienced reduced distress as a result of support, with 71 per cent experiencing high to very high distress prior to support and 48 per cent 12 months after support. In contrast, distress experienced by clients of services to support single women increased with support from 39 per cent experiencing high to very high distress to 58 per cent experiencing this level of distress after support.

Mental health was often mentioned unprompted in the open ended question that gave respondents the opportunity to describe how they were feeling about their housing situation just prior to moving into their public housing, as reflected in the following quotes:

> Very depressed. I lost all sense of belief in myself and became very unsure of my life and future.
>
> Being unable to afford private housing and not having a safe place to stay long-term is all consuming. Stress, anxiety and hopelessness become everyday occurrences. Not knowing if there is a future that will be any better is very dangerous, not just unhealthy or an inconvenience.
>
> I was feeling a high level of anxiety and a constant low state of depression, daily. I was frightened every day that I would be out on the street. I was even more worried for Sophie my cat—she is everything to me. If I had of been forced to find care for her and be apart from her I was considering suicide. I didn't feel good about myself at all and felt a sense of shame for being my age and homeless.
>
> I was panicked and constantly living in fear living in private rental. It was playing havoc with my anxiety with the three monthly inspections and also my bipolar. I was also panicked about the rental going up and was finding the situation very difficult with living on a disability pension.

5.7 General Health

A larger proportion of priority housing (homelessness) clients rated their current health as poor (18.0%) and a smaller proportion as excellent (6.6%), compared to NPAH respondents (poor 11.0%, excellent 11.0%). However, current health varied markedly across NAPH programs. Over 60 per cent of STH respondents reported fair (38.1%) to poor (23.8%) health. Respondents from the HSWMH program were most likely to report a higher level of health (63.2% reporting good to excellent health), followed by the HAS program (60.7% reporting good to excellent health) (See Table 24 below).

Considering change in health over the previous 12 months, half of all NPAH respondents reported that their health had improved over the previous 12 months (28.9% much better and 21.1% somewhat better), but 22.2 per cent reported that it had become worse (18.9% somewhat worse, 3.3% much worse). Priority housing

(homelessness) respondents were less likely to report that their health had improved (14.4% somewhat better and 20.0% much better) and more likely to report that it had become worse (16.1% somewhat worse and 10.0% much worse) (See Figure 18 and Table 25 below).

Table 24: Rating of current health (%)

	Poor	Excellent	Very good	Good	Fair
All	15.7	8.0	14.2	31.8	30.3
*Gender**					
Male	16.7	7.8	15.7	24.5	35.3
Female	14.8	8.3	13.0	36.7	27.2
Entry to public housing					
Priority housing (homelessness)	18.0	6.6	14.2	32.8	28.4
HSWMH	15.8	5.3	26.3	31.6	21.1
STH	23.8	14.3	0.0	23.8	38.1
HSWDA	0.0	0.0	20.0	46.7	33.3
HAS	3.0	18.2	15.2	27.3	36.4
NPAH (all)	11.0	11.0	14.3	29.7	34.1

*Note that three participants' genders were not indicated.

Note: Missing data between 0 per cent and 1.1 per cent for rating of current health.

Source: The Tenant Survey

Change in health varied across NPAH programs. Over half of respondents from the HSWMH programs and STH programs reported an improvement in health (HSWMH: 33.3% much better and 22.2% somewhat better; STH: 14.3% much better and 38.1% somewhat better). Interestingly, these were also the only two NPAH programs where some respondents reported their health had become much worse (HSWMH; 11.1% and STH 4.8%). Just under half of respondents from the HSWDA program and the HAS program reported an improvement in health (See Table 25 below).

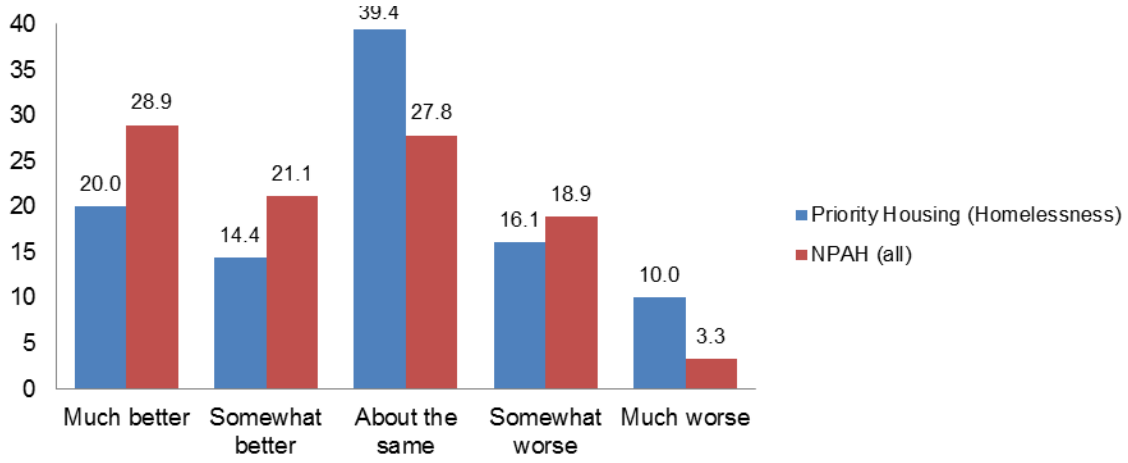
Health was often mentioned in the unprompted open-ended question that gave respondents the opportunity to describe how they were feeling about their housing situation just prior to moving into their public housing, as reflected in the following quotes:

> My world was up in the air I couldn't concentrate on personal problems, my health was somewhat affecting my life,

> Due to extreme trauma I stayed with family, but that turned out to be volatile. So I slept rough with some friends at their houses couch surfing and going from place to place until I got my unit. Having a bad back and chronic vertigo things were very hard for me at that time.

> I was extremely stressed from temp house-sitting and not knowing whether I would have a roof over my head between assignments, because I couldn’t afford short-term accommodation like hostels etc. The stress caused a heart attack. The 12 months of homelessness 'and house-sitting were the most stressful of my life.

Figure 18: Self-report health improvement by priority housing (homelessness) and NPAH (%)



Source: The Tenant Survey

Table 25: Change in health evaluation compared to one year ago (%)

	Much better	Somewhat better	About the same	Somewhat worse	Much worse
All	23.0	16.7	35.6	17.0	7.8
*Gender**					
Male	15.8	17.8	40.6	18.8	6.9
Female	27.1	16.3	31.9	16.3	8.4
Entry to public housing					
Priority housing (homelessness)	20.0	14.4	39.4	16.1	10.0
HSWMH	33.3	22.2	27.8	5.6	11.1
STH	14.3	38.1	19.0	23.8	4.8
HSWDA	33.3	13.3	40.0	13.3	0.0
HAS	36.4	12.1	27.3	24.2	0 .0
NPAH (all)	28.9	21.1	27.8	18.9	3.3

*Note that three participants' genders were not indicated

Note: Missing data between 0 per cent and 2.7 per cent for change in health.

Source: The Tenant Survey

5.8 Summary

The Tenant Survey was answered by 277 individuals and contributes detailed information about demographics, history of homelessness, support received pre- and post-housing tenancy, their confidence in maintaining their tenancy and self-reported health status and health service use. This gives us a more personal insight into the experiences of these individuals.

The survey responses indicate that approximately half of all respondents (and half in each group receiving NPAH and priority housing (homelessness)) had slept rough at some stage over their lifetime. However, under 10 per cent in each group were sleeping rough immediately prior to entering their current public tenancy. Instead,

immediately prior, over 40 per cent of NPAH respondents were living in short/medium/long-term homelessness accommodation while over 40 per cent of priority housing (homelessness) respondents were living with family and friends.

Previous research indicates that people who are homeless are high users of tobacco, alcohol and illicit drugs (Whittaker, Swift et al. 2015). We found that while a much higher proportion of the study population (49.6%) indicated that they were current smokers than the general Australian adult population (16.1%), the sample population consumed alcohol on fewer occasions than the general population. Approximately 45 per cent of the sample had used at least one illicit drug at some point in their lifetime. For those who entered public housing (in both NPAH and priority housing (homelessness)), a greater percentage had consumed in the last month than in the 11 months prior. The exception is HSWMH, where zero individuals indicated that they had consumed drugs in the last month, implying that drug use had stopped. However, the result for other programs is not as easy to interpret. It may be that those who consumed in the past 12 months have since stopped, or it may be that they are infrequent but continual users. Those who consumed in the past month may be more frequent but continual users or new users. Thus, it is not clear whether there has been an increase in frequency of drug use, or an increase in uptake of drug use, or both. The survey instrument only asked about most recent use, not about history, and so we are unable to distinguish between the two.

The survey also provided more information about self-reported health status. Only 11.0 per cent of NPAH respondents and 6.6 per cent of priority housing respondents indicated that their health was excellent. However, when considering change over the previous 12 months, half of all NPAH respondents reported that their health had improved. Priority housing (homelessness) respondents were less likely to report that their health had improved, and more likely to report that it had become worse, despite the fact that of those individuals receiving support for physical health after entering public housing nearly two-thirds were priority housing (homelessness) clients. In terms of mental health, the analysis of the K10 found that nearly half of the sample were experiencing high or very high levels of distress compared to 10.1 per cent in the general Australian population (ABS 2013a).

People experiencing homelessness frequently suffer difficulties in diverse aspects of life. The Tenant Survey asked people to report on which issues they faced before and after entering their tenancy, and whether they received support for it. Unsurprisingly, the most common type of support prior to entering the tenancy was support to get a public housing tenancy (50.9%). Other common supports received were for mental health (31.4%), and for material needs (29.2%). After entering public housing, 29.2 per cent reported issues with mental health and 28.2 per cent reported issues with paying rent/bills on time. About 23 per cent reported receiving support for mental health and 18.8 per cent reported receiving support to pay rent/bills on time. For every kind of support received after entering public housing (except finding/keeping a job, mental health and drug/alcohol issues), individuals receiving support were more likely to be priority housing (homelessness) clients than NPAH participants.

6 DISCUSSION

The existing literature points to a strong compounding relationship between homelessness and housing insecurity on the one hand, and physical and mental health outcomes on the other. Homelessness generates health risks and health outcomes which in turn are associated with higher use of emergency departments and higher rates of hospitalisation. As a result, health care service costs are higher than they need or ought to be. Intervening to reduce homelessness and provide secure housing may not only improve individual health outcomes but also generate cost savings at a societal level.

There is a growing body of evidence supporting the role of the direct provision of housing with wrap-around-support programs in reducing homelessness, improving health outcomes and reducing health service use and health costs. However, the use of administrative health record data rather than self-report data to examine the impact of homelessness programs is still in its infancy as is the linkage of health and housing records. This study addresses this challenge by using linked health care and public housing administrative data for those who accessed public housing as part of an NPAH program or through priority access routes.

6.1 Key findings and policy implications

This study uses linked health care service and public housing administrative data for over 3,000 individuals as well as the self-report Tenant Survey data to examine the impact of public housing provision and support for formerly homeless people and those at risk of homelessness on health service use and health outcomes.

Box 1: The report points to four key findings.

1. That the provision of public housing significantly reduces health service use. After entering a public housing tenancy, the proportion of individuals accessing health services fell significantly for tenants in NPAH programs as well as those entering public housing through the priority housing (homelessness) route. There were significant reductions in people presenting to emergency departments, people staying overnight in hospital, people presenting to ICU, people in psychiatric care, people accessing mental health services and people with prescriptions for opioid dependency treatment. While there was also a decrease in the number of people accessing HITH services, this was not significant.
2. Significant direct calculable government health care cost savings arise from the provision of public housing and support for formerly homeless people. This study provides an estimate of the economic impact of the changes in health service use from the provision of public housing and support through the NPAH programs for those in the linked administrative data. We find that stays in hospital and stays in psychiatric care account for the vast majority of cost savings. The change in use across health care services examined from entry to public housing results in a combined cost saving of $16.4 million or $4,846 per person per year, across all people in the sample for a single year. If the priority housing (homelessness) clients are excluded, this change per person nearly triples (to $13,273 per person per year with NPAH support). The large cost saving is primarily due to the NPAH Mental Health group, where savings amount to $84,135 per person per year.
3. The reduction in health service use is greatest for tenancies sustained between one to four years. Tenancies sustained for less than one year only generated a significant decrease in the number of people with prescriptions of opioid dependency. Tenancies sustained for over one year are associated with significant decreases in six out of the seven services, and a reduction in the number of people accessing HITH services.
4. That tenancy sustainability rates were relatively high for those entering public housing (homelessness) and that tenants were highly confident in maintaining their current public housing tenancy.

This report provides a clear indication that the provision of stable housing is effective in reducing health care service use and associated costs. Providing stable housing should, therefore, be a first priority to improving not only housing outcomes, but health outcomes and consequently health care costs. This is particularly the case for individuals with mental health issues who are also experiencing homelessness or who are at risk of homelessness. The most significant reductions in health service use and associated cost savings observed in this study related to mental health; both within the NPAH program that provided access to housing and support for people referred through the mental health system and more broadly, for a significant reduction in the proportion of people accessing hospital-based psychiatric care in three of the NPAH programs.

While mental health has traditionally been cast as the remit of the health sector, there is increasing recognition, confirmed by the findings of the present study, that many of the key determinants of mental illness, and avenues for effectively improving mental wellbeing lie outside of the health sector (Fisher and Baum 2010). Encouragingly, this has been recognised in the 2015 Mental Health Commission review of mental health programs and services in Australia, which highlights the crucial role that non-clinical services and other sectors outside of health play in the prevention of and recovery from mental illness (Australian Government 2015). Housing first type initiatives are in fact cited as an illustrative example in the Mental Health Commission review, which notes that the 'initial expenditure will be more than offset with savings in use of crisis and inpatient services' (Australian Government n.d).

The earlier Council of Australian Governments (COAG) roadmap for mental health reform (COAG 2012) also referred to housing and homelessness as one of the sectors that can play a critical role in fulfilling governments' commitment to 'develop better mental health services and support across all relevant government portfolios, including mental health, health, education, early childhood, child protection, youth, employment and workplace relations, housing and homelessness, police and the justice system'. This aligns well with the NPAH program themes of more joined-up service provision and support for people who are homeless or require support to access or maintain housing tenancy.

Our findings also point to the importance of continued support for highly vulnerable entrants to public housing, and, in particular, those with a history of severe and persistent mental illness who are either homeless or at risk of homelessness. They further support the need for integrated care arrangements and for a holistic approach to health issues that recognises the importance of housing and of support in terms of improved health outcomes. These conclusions align strongly with recent mental health system reforms being rolled out across Australia, which advocate for a more integrated and stepped care approach for those individuals with greater mental health-related needs (Turnbull and Ley 2015). The NPAH program in this study that showed greatest reductions in health service use overall was the mental health support program (HSWMH), which provided a case management approach to mental health support as well as assisting its clients to access and maintain suitable long-term accommodation and source other forms of support. More broadly, there were also reductions in mental health-related service use among participants in some of the other NPAH programs, which suggests that securing stable housing and addressing other forms of support can also contribute significantly to preventing and reducing the massive burden of mental health in Australia. These findings highlight the potential for multi-faceted interventions to simultaneously improve mental health and homelessness outcomes, and yield cost savings in both domains. From a policy perspective this provides compelling evidence not only for the continuation of NPAH

and similar programs, but also for the roll out of more integrated programs that have a tripartite homelessness, housing and health agenda.

Beyond mental health, housing has been described as a central element in tackling broader health inequalities (Shaw 2004), but systematic reviews highlight the need for better evidence as to what constitutes effective interventions (Prior and Harfield 2012). This study helps to address this evidence gap, as it provides some compelling evidence for the role that programs such as NPAH can play not only in reducing homelessness, but also simultaneously improving health outcomes that will yield a significant cost saving to government overall. The findings in particular support the role of public housing as a foundation for non-shelter outcomes and in particular health outcomes. Inter-sectoral solutions and integration are popular terms in public policy discourse currently at both federal and jurisdictional level, and our findings suggest that the NPAH initiative (with housing, health and other social support elements) serves as an effective example of a more integrated approach in action.

These findings highlight the potential for multi-faceted interventions to simultaneously improve mental health and homelessness outcomes, and yield cost savings in both domains. From a policy perspective, this provides compelling evidence not only for the continuation of NPAH and similar programs, but also for the roll out of more integrated programs that have a dual homelessness and health agenda.

Linked data sets are an increasingly important resource for shaping and evaluating public policy initiatives in a range of sectors, including health care, housing, and social services (Kamateri, Panopoulou et al. 2015; Olver 2014). Originating in health research, there is now substantial evidence of the way in which linking datasets can provide key evidence to guide health policy towards better outcomes (Olver 2014). Emerging expansions of linked data analysis across other areas of research further exemplifies the enormous opportunity this presents to direct and evaluate policy and programs in a range of sectors, including homelessness. As articulated by Petrila (2014):

> Policy initiatives in one area—for instance, housing—typically can affect individual and community outcomes in other areas such as health or education. As a result, analyzing data from only one system frequently results in a one dimensional perspective that misses myriad outcomes in other systems, and thus makes it more difficult to accurately diagnose a problem and develop a solution.

One example of linked data expansion for future research is including homelessness data with health and housing data. It was our intention to do so in the present study, but we were advised to await the results of a study by AIHW (2015) which linked data from Specialist Homelessness Services (SHS) agencies and public housing authorities in WA and NSW. AIHW identified 18,688 public housing tenants who sought support from SHS either before or during their public housing tenancy, or after losing it. Two key results highlight the importance of linking housing and homelessness data. First, of those adults assisted by specialist homelessness agencies into public housing who then exited public housing, just under one-half returned to a specialist homelessness agency for support (AIHW 2015a). Second, of those who only accessed support from SHS agencies after losing their public housing tenancy, almost half were identified as homeless (AIHW 2015a). A critical piece of future research is to extend the current work so that it combines the homelessness, health and housing data.

There appears to be a significant risk of becoming homeless after losing a public housing tenancy. This is reflected in the responses to the Tenant Survey; while

confidence in maintaining tenancies was generally high, frequently respondents commented that there was constant anxiety about becoming homeless (again). Those who did not sustain their public housing tenancies were found to be more likely to have complex and multiple needs, reporting a greater need for mental health and drug and alcohol support services. Future work in this area should consider not only the relationship between housing and health, but also the impact of experiences with homelessness.

There remain considerable challenges, however, for researchers wishing to have timely access to linked data, particularly when multiple data sets are sought from different jurisdictions or sectors. For the homelessness and housing sector, this hinders the realisation of the vast opportunities that linked data can yield for public policy and the forging of greater links between research, policy and practice. But as has been demonstrated in WA's renowned data linkage initiative, concerns about confidentiality, privacy and use for intended purpose only can be rigorously addressed (Olver 2014). There is a general consensus in the international literature and Australian discourse that there is currently suboptimal use of big data and linked data for policy-making and collaborative social impact (Misuraca, Mureddu et al. 2014)□the homelessness field has much to gain if this can be more effectively harnessed, and indeed AHURI is well placed to support greater use of linked data in its portfolio of research.

While this study has emphasised the significant potential benefits from a health system and public resource allocation perspective of housing people who have been homeless, the cost-effectiveness of initiatives such as NPAH and priority housing (homelessness) is but one part of their justification; as more fundamentally, access to shelter is a key human right, as is health. Thus the coupling of public housing with access to support is also a more humane approach to the problem of homelessness (Salit, Kuhn et al. 1998).

6.2 Limitations and future research

As previously stated, there are significant benefits to linking health, housing and homelessness data in future research. As part of that analysis, it would be ideal to examine health service use, homelessness and housing outcomes for those eligible for the NPAH programs in question and for the priority access programs but who did not receive support. We believe that this may be possible with careful linkage of the health, corrective services and homelessness data, but this will require an exploratory study to examine the extent to which this can be realised. One area of difficulty is that homelessness administrative data may identify some of those eligible but has limited ability to provide broader outcome measures on which to gauge the impact of accommodation outcomes on non-accommodation aspects of client's lives and on aspects of government expenditure outside of homelessness. Further linkage with Centrelink data may be required.

Future research can also consider a more precise pricing of heath care use than that relevant for the present exercise. For example, the reported average costs for each category of health service incident (e.g., emergency visit, psychiatric care) were used, and this may mask variations in costs associated with different subcategories of those incidents (e.g., an emergency department visit for a more critical or complex health issue). As the specific reasons for particular emergency visits were not included in the analysed data, we had to use an average cost per visit (or per day in hospital), rather than, for example, the health condition that prompted the visit. It is acknowledged also that the costs of service delivery may vary between different hospitals (e.g., between a small regional versus large metropolitan hospital), but this was not identifiable within

the data available. Future studies with more disaggregated data may be able to explore this further, but from a government policy perspective, the aggregated picture of potential cost savings is nonetheless appropriate.

A limitation with the Tenant Survey is the low response rate. The Tenant Survey has a response rate half that of comparable studies (i.e., surveys of Western Australian public housing tenants), one main reason for this was the inability to send out any reminders, or call and prompt tenants to complete our survey. As a result of this, the demographics of the Tenant Survey are skewed in comparison to the demographics of the public housing tenant list with the mean age of survey participants higher and a smaller proportion of Indigenous participants.

There is a potential non-response bias for a number of questions; overall tenants were confident in being able to keep their tenancy, this could be influenced by the fact that tenants who were not confident also did not feel confident answering the survey; Indigenous Australians are under-represented in the Tenant Survey, thus there is potential that the proportion of smokers is also under-represented as Indigenous Australians are 2.5 times more likely to smoke tobacco daily; results that alcohol consumption is lower in the study population compared with the general population could be due to the over-representation of females in the Tenant Survey, as females are considerably less likely than males to drink alcohol in potentially harmful quantities; drug usage may also be under represented in the Tenant Survey data as males aged 20–29 are the most likely to have used an illicit substance in the past 12 months and older females made up the majority of survey respondents.

Another limitation of the Tenant Survey is that it was only produced in English. This poses a potential sampling bias by excluding participants from culturally and linguistically diverse groups.

REFERENCES

ABS, (2013a) *Profiles of Health, Australia, 2011–2013 Psychological Distress*, cat. no. 4338.0, Australian Bureau of Statistics, http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4338.0main+features42011-13.

ABS, (2013b) *Profiles of Health, Australia 2011–2013 Tobacco Smoking*, cat. no. 4338.0, Australian Bureau of Statistics, http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4338.0~2011-13~Main%20Features~Tobacco%20smoking~10008.

AIHW (2006) *Towards a National Prisoner Health Information System*, cat. no. PHE 79, Australian Institute of Health and Welfare, Canberra.

AIHW (2014a) *Housing Assistance for Indigenous Australians*, cat. no. IHW 131, Australian Institute of Health and Welfare, Canberra.

AIHW (2014b) *National Drug Strategy Household Survey Detailed Report 2013*, Australian Institute of Health and Welfare, Canberra.

AIHW (2014c) *National Social Housing Survey Detailed Results 2014*. cat. no. HOU 278, Australian Institute of Health and Welfare, Canberra.

AIHW (2014d) *Prisoner Health Services in Australia 2012*, bulletin no. 123, cat. no. AUS 183, Australian Institute of Health and Welfare, Canberra.

AIHW (2015a), *Exploring Transitions Between Homelessness and Public Housing*, cat. no. HOU 277, Australian Institute of Health and Welfare, Canberra.

AIHW (2015b), *Expenditure on Mental Health Services*, Australian Institute of Health and Welfare, Canberra, https://mhsa.aihw.gov.au/resources/expenditure/.

AIHW (2016), Clients exiting custodial arrangements, accessed 3 February 2016, http://www.aihw.gov.au/homelessness/specialist-homelessness-services-2014-15/exiting-custodial-arrangements/.

Altena, A. M., Brilleslijper-Kater, S.N. and Wolf, J.R. (2010) 'Effective interventions for homeless youth: A systematic review', *American Journal of Preventive Medicine*, vol. 38, no. 6: 637–645.

ARTD (2010) *Review of the Homelessness Intervention Project, report to the NSW Department of Premier and Cabinet*, ARTD Consultants, Sydney.

Australian Government (2015) *Australian Government Response to Contributing Lives, Thriving Communities—Review of Mental Health Programmes and Services*, Department of Health, Canberra, Australia.

Australian Government (n.d) *Fact Sheet 8—What This Means for Non-Clinical Support Services such as Housing, Employment, Education, Justice and Welfare*, National Mental Health Commission.

Baggett, T.P., Chang, Y., Singer, D.E., Porneala, B.C., Gaeta, J.M., O'Connell, J.J. and Rigotti, N.A. (2014) 'Tobacco-, alcohol-, and drug-attributable deaths and their contribution to mortality disparities in a cohort of homeless adults in Boston', *American Journal of Public Health*, vol. 105, no. 6: 1189–1197.

Baggett, T.P., Tobey, M.L. and Rigotti, N.A. (2013) 'Tobacco use among homeless people—addressing the neglected addiction', *New England Journal of Medicin*e, vol. 369, no. 3: 201–204.

Baker, E., Mason, K., Bentley, R. and Mallett, S. (2014) 'Exploring the bi-directional relationship between health and housing in Australia', *Urban Policy and Research*, vol. 32, no. 1: 71–84.

Baldry, E., McDonnell, D., Maplestone, P. and Peeters, M. (2006) 'Ex-prisoners, homelessness and the state in Australia', *Australian & New Zealand Journal of Criminology*, vol. 39, no. 1: 20–33.

Brown, R.T., Miao, Y., Mitchell, S.L., Bharel, M., Patel, M., Ard, K.L., Grande, L.J., Blazey-Martin, D., Floru, D. and Steinman, M.A. (2015) 'Health Outcomes of Obtaining Housing Among Older Homeless Adults'*, American Journal of Public Health*, vol. 105, no. 7: 1482–1488.

Bruce, J., McDermott, S., Ramia, I., Bullen, J. and Fisher, K.R. (2012) *Evaluation of the Housing and Accommodation Support Initiative (HASI) Final Report*, A report by the Social Policy Research Centre and ARDT Consultants for NSW Health and Housing NSW.

Calsyn, R.J. and Winter, J.P. (2002) 'Social support, psychiatric symptoms, and housing: a causal analysis', *Journal of Community Psychology*, vol. 30, no. 3: 247–259.

Cant, R., Meddin, B. and Penter, C. (2013) 'National Partnership Agreement on Homelessness; Evaluation of Western Australian Programs; Final Report', Social Systems & Evaluations, Perth, Western Australia.

Chamberlain, C. and Mackenzie, D. (1992) 'Understanding contemporary homelessness: issues of definition and meaning', *The Australian Journal of Social Issues*, vol. 27, no. 4: 274.

Chartier, M., Carrico, A.W., Weiser, S.D., Kushel, M.B. and Riley, E.D. (2012) 'Specific psychiatric correlates of acute care utilization among unstably housed HIV-positive adults', *AIDS Care*, vol. 24, no. 12: 1514–1518.

Cheung, A, Somers, J, Moniruzzaman, A, Patterson, M, Frankish, C, Krausz, M & Palepu, A (2015), 'Emergency department use and hospitalizations among homeless adults with substance dependence and mental disorders', *Addiction Science & Clinical Practice*, vol. 10, no. 1: 17.

COAG (2012) *The Roadmap for National Mental Health Reform 2012–2022*, Australian Government, Canberra.

Conroy, E., Bower, M., Flatau, P., Zaretzky, K., Eardley, T. and Burns, L. (2014) *The MISHA Project. From Homelessness to Sustained Housing 2010–2013*, A Research Report produced for Mission Australia.

Corporation for Supportive Housing (2004) *Benefits of Supportive Housing: Changes in Residents' Use of Public Services, report prepared by Harder+Company Community Research*, Corporation for Supportive Housing, New York.

Culhane, D.P., Metraux, S. and Hadley, T. (2002) 'Public service reductions associated with placement of homeless persons with severe mental illness in supportive housing', *Housing Policy Debate*, vol. 13, no. 1: 107–163.

DCP, *National Partnership Agreement on Homelessness Western Australian Initiatives Information Update*, Department of Child Protection, https://www.dcp.wa.gov.au/servicescommunity/Documents/NPAHFactSheet.pdf.

Deloitte Access Economics (2011) *Economic Analysis of Hospital in the Home (HITH),* Hospital in the Home Society of Australasia, Deloitte Access Economics, Australia.

Department of Health (2014) *Hospital Morbidity Data System (HMDS) Reference Manual, July 2014,* Department of Health, Government of Western Australia.

Department of Social Services (2008) *The Road Home: A National Approach to Reducing Homelessness*, Commonwealth of Australia, Canberra.

DeSilva, M.B., Manworren, J. and Targonski, P. (2011) 'Impact of a Housing First program on health utilization outcomes among chronically homeless persons', *Journal of Primary Care & Community Health*, vol. 2, no. 1: 16–20.

Fatovich, D. and Hirsch, R. (2003) 'Entry overload, emergency department overcrowding, and ambulance bypass', *Emergency Medicine Journal*, vol. 20, no. 5: 406–409.

Fazel, S., Geddes, J.R. and Kushel, M. (2014) 'The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations', *The Lancet*, vol. 384, no. 9953: 1529–1540.

Fazel, S., Khosla, V., Doll, H. and Geddes, J. (2008) 'The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis'*, PLoS Med*, vol. 5, no. 12: e225.

Feigal, J., Park, B., Bramante, C., Nordgaard, C., Menk, J. and Song, J. (2014) 'Homelessness and discharge delays from an urban safety net hospital', *Public Health*, vol. 128, no. 11: 1033–1035.

Fisher, M. and Baum, F. (2010) 'The social determinants of mental health: implications for research and health promotion', *Australian and New Zealand Journal of Psychiatry*, vol. 44, no. 12: 1057–1063.

Fitzpatrick-Lewis, D., Ganann, R., Krishnaratne, S., Ciliska, D., Kouyoumdjian, F. and Hwang, S.W. (2011) 'Effectiveness of interventions to improve the health and housing status of homeless people: a rapid systematic review', *BMC Public Health*, vol. 11, no. 1: 638.

Flatau, P., Conroy, E., Marchant, T., Burns, L., Spicer, B., Di Nicola, K., Edwards, R., Bauskis, A., Athanassios, M. and Larsen, K. (2012) 'The Michael Project 2007–2010', *New Perspectives and Possibilities for Homeless Men, Sydney: Mission Australia*.

Flatau, P., Conroy, E., Marchant, T., Burns, L., Spicer, B., Nicola, K.D., Edwards, R., Bauskis, A., Athanassios, M. and Larsen, K. (2010), *Increasing our understanding of homeless men: the Michael Project*, Mission Australia, Sydney.

Flatau, P. and Zaretzky, K. (2008) 'The economic evaluation of homelessness programmes', *European Journal of Homelessness*, 2 (December), 305, vol. 320.

Flatau, P., Zaretzky, K., Brady, M., Haigh, Y. and Martin, R. (2008) *The Cost-Effectiveness of Homelessness Programs: A First Assessment*, Melbourne, Vic.

Folsom, D.P., Hawthorne, W., Lindamer, L., Gilmer, T., Bailey, A., Golshan, S., Garcia, P., Unützer, J., Hough, R. and Jeste, D.V. (2005) 'Prevalence and risk

factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system', *American Journal of Psychiatry*, vol. 162, no. 2: 370–376.

Foster, G., Gronda, H., Mallett, S. and Bentley, R. (2011) *Precarious Housing and Health: Research Synthesis*, Australian Housing and Urban Research Institute, Hanover Welfare Services, University of Melbourne, University of Adelaide and Melbourne Citymission, Australia.

Gilmer, T.P., Stefancic, A., Ettner, S.L., Manning, W.G. and Tsemberis, S. (2010) 'Effect of Full-Service Partnerships on Homelessness, Use and Costs of Mental Health Services, and Quality of Life Among Adults With Serious Mental Illness', *Archives of General Psychiatry*, vol. 6, no. 67.

Government of Western Australia (2015) Priority Public Housing Assistance, Housing Authority, accessed 3 February 2016, http://www.housing.wa.gov.au/housingoptions/rentaloptions/publichousing/priority/Pages/default.aspx.

Gulcur, L., Stefancic, A., Shinn, M., Tsemberis, S. and Fischer, S.N. (2003) 'Housing, hospitalization, and cost outcomes for homeless individuals with psychiatric disabilities participating in continuum of care and housing first programmes', *Journal of Community & Applied Social Psychology*, vol. 13, no. 2: 171–186.

Health Data Standards Committee (HDSC) (2006) *National Health Data Dictionary, version 13*, National health data dictionary, cat. no. HWI 88, AIHW, Canberra. accessed 18 May 2016, http://www.aihw.gov.au/publication-detail/?id=6442467867.

Holman, C.D.J., Bass, A.J., Rouse, I.L. and Hobbs, M.S.T. (1999) 'Population‐based linkage of health records in Western Australia: development of a health services research linked database', *Australian and New Zealand Journal of Public Health*, vol. 23, no. 5: 453–459.

IHPA (2015) 'National Hospital Cost Data Collection Australian Public Hospitals Cost Report 2012–13, Round 17'.

Johnson, G., Kuehnle, D., Parkinson, S., Sesa, S. and Tseng, Y. (2014) 'Sustaining exits from long-term homelessness: A randomised controlled trial examining the 48 month social outcomes from the Journey to Social Inclusion pilot program', *Sacred Heart Mission*, *St Kilda*.

Kamateri, E., Panopoulou, E., Tambouris, E., Tarabanis, K., Ojo, A., Lee, D. and Price, D. (2015) 'A comparative analysis of tools and technologies for policy making', in *Policy Practice and Digital Science*, vol. 10, eds M. Janssen, M.A. Wimmer and A. Deljoo, Springer International Publishing: 125–156.

Kim, T.W., Kertesz, S.G., Horton, N.J., Tibbetts, N. and Samet, J.H. (2006) 'Episodic homelessness and health care utilization in a prospective cohort of HIV-infected persons with alcohol problems', *BMC Health Services Research*, vol. 6, no. 1: 1.

Kushel, M.B., Perry, S., Clark, R., Moss, A.R. and Bangsberg, D. (2002) 'Emergency department use among the homeless and marginally housed: Results from a community-based study', *American Journal of Public Health*, vol. 92, no. 5: 778–784.

Kushel, M.B., Vittinghoff, E. and Haas, J.S. (2001), 'Factors associated with the health care utilization of homeless persons', *JAMA,* vol. 285, no. 2: 200–206.

Larimer, M.E., Malone, D.K., Garner, M.D., Atkins, D.C., Burlingham, B., Lonczak, H.S., Tanzer, K., Ginzler, J., Clifasefi, S.L., Hobson, W.G. and Marlatt, A.G. (2009) 'Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems', *The Journal of the American Medical Association*, vol. 13, no. 301.

Mares, A.S. and Rosenheck, R.A. (2011) 'A comparison of treatment outcomes among chronically homelessness adults receiving comprehensive housing and health care services versus usual local care', *Administration and Policy in Mental Health and Mental Health Services Research*, vol. 38, no. 6: 459–475.

Martinez, T.E. and Burt, M.R. (2006) 'Impact of permanent supportive housing on the use of acute care health services by homeless adults', *Psychiatric Services*, vol. 57, no. 7: 992–999.

Misuraca, G., Mureddu, F. and Osimo, D. (2014), 'Policy-making 2.0: unleashing the power of big data for public governance', in *Open Government*, vol. 4, eds M. Gascó-Hernández, Springer, New York: 171–188.

Moore, G., Gerdtz, M. and Manias, E. (2007) 'Homelessness, health status and emergency department use: an integrated review of the literature', *Australasian Emergency Nursing Journal*, vol. 10, no. 4: 178–185.

Nooe, R.M. and Patterson, D.A. (2010) 'The ecology of homelessness', *Journal of Human Behavior in the Social Environment,* vol. 20, no. 2: 105–152.

OAG (2012) *Implementation of the National Partnership Agreement on Homelessness in Western Australia: Report 13 to October 2012*, Office of the Auditor General, Western Australia, Perth.

Olver, I. (2014) 'Linking data to improve health outcomes', *Medical Journal of Australia* vol. 7: 368–369.

Perlman, J. and Parvensky, J. (2006) 'Denver Housing First collaborative', *Cost Benefit Analysis and Program Outcomes Report. Colorado Coalition for the Homeless, Colorado*.

Petrila, J., *Data Integration for Social Policy: Challenges and Opportunities*, http://www.whatcountsforamerica.org/portfolio/data-integration-for-social-policy-challenges-and-opportunities/.

Prior, J. and Harfield, S. (2012), 'Health, well-being and vulnerable populations'. *International Encyclopedia of Housing and Home*, Vol. 2: 355 - 361.

Redelmeier, D., Molin, J-P. and Tibshirani, R.J. (1995) 'A randomised trial of compassionate care for the homeless in an emergency department', *The Lancet,* vol. 345, no. 8958: 1131–1134.

Richardson, D.B. and Mountain, D. (2009) 'Myths versus facts in emergency department overcrowding and hospital access block', *Medical Journal of Australia*, vol. 190, no. 7: 369.

Rieke, K., Smolsky, A., Bock, E., Erkes, L.P., Porterfield, E. and Watanabe-Galloway, S. (2015) 'Mental and nonmental health hospital admissions among chronically homeless adults before and after supportive housing placement', *Social Work in Public Health*, vol. 30, no. 6: 496–503.

Rog, D.J., Marshall, T., Dougherty, R.H., George, P., Daniels, A.S., Ghose, S.S. and Delphin-Rittmon, M.E. (2014) 'Permanent supportive housing: assessing the evidence', *Psychiatric Services*, vol. 65, no. 3: 287–294.

Russolillo, A.L., Patterson, M., McCandless, L., Moniruzzaman, A. and Somers, J. (2014) *Emergency Department Utilization Among Formerly Homeless Adults with Mental Disorders After 1-year of Housing First: A Randomized Controlled Trial, International Journal of Housing Policy* vol. 14, no. 1: 79–97.

Sadowski, L.S., Kee, R.A., VanderWeele, T.J. and Buchanan, D. (2009), 'Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: A randomized trial.', *The Journal of the American Medical Association*, vol. 17, no. 301.

Salit, S.A., Kuhn, E.M., Hartz, A.J., Vu, J.M. and Mosso, A.L. (1998), 'Hospitalization costs associated with homelessness in New York City', *New England Journal of Medicine*, vol. 338, no. 24: 1734–1740.

Shaw, M. (2004) 'Housing and public health', *Annual Review of Public Health*, vol. 25: 397–418.

Shinn, M., Knickman, J.R. and Weitzman, B.C. (1991) 'Social relationships and vulnerability to becoming homeless among poor families', *American Psychologist*, vol. 46, no. 11: 1180.

Social Policy Research Centre (2007) *Housing and Accommodation Support Initiative [HASI] Stage 1 Evaluation Report, prepared for NSW Department of Health*, Social Policy Research Centre, University of New South Wales, Sydney.

Sodhi-Berry, N., Knuiman, M., Alan, J., Morgan, V.A. and Preen, D.B. (2015) 'Pre- and post-sentence mental health service use by a population cohort of older offenders (‡45 years) in Western Australia', *Social Psychiatry Psychiatric Epidemiology*, vol. 50: 1097–1110.

Sodhi-Berry, N., Knuiman, M., Preen, D.B., Alan, J. and Morgan, V.A. (2014) 'Predictors of post-sentence mental health service use in a population cohort of first-time adult offenders in Western Australia', *Criminal Behaviour and Mental Health*, vol. 25, no. 5: 355–374.

Spicer B., Smith, D.I., Conroy, E., Flatau, P., Burns, L. (2015), Mental Illness and Housing Outcomes Among a Sample of Homeless Men in an Australian Urban Centre, *Australian & New Zealand Journal of Psychiatry*, vol. 49, no. 5: 471–480.

Taylor, M.P., Pevalin, D.J. and Todd, J. (2007) 'The psychological costs of unsustainable housing commitments', *Psychological medicine*, vol. 37, no. 07: 1027–1036.

The Lancet (2014), 'Health of the homeless (editorial)', *The Lancet*, vol. 384, no. 9953: 1478, 31 October.

Tsai, J., Kasprow, W.J. and Rosenheck, R.A. (2014) 'Alcohol and drug use disorders among homeless veterans: Prevalence and association with supported housing outcomes', *Addictive Behaviors*, vol. 39, no. 2: 455–460.

Turnbull, M. and Ley, S. (2015) *Media Release: A New Blueprint for Mental Health Services*, Canberra, Australia.

Whittaker, E., Swift, W., Roxburgh, A., Dietze, P., Cogger, S., Bruno, R., Sindicich, N. and Burns, L. (2015) 'Multiply disadvantaged: Health and service utilisation factors faced by homeless injecting drug consumers in Australia', *Drug and Alcohol Review*, vol. 34, no. 4: 379–387.

Zaretzky, K. and Flatau, P. (2013) *The Cost of Homelessness and the Net Benefit of Homelessness Programs: A National Study*, Final Report no.218, Australian Housing and Urban Research Institute, Melbourne, www.ahuri.edu.au/research/final-reports/218.

Zaretzky, K. and Flatau, P. (2015) *The Cost Effectiveness of Australian Tenancy Support Programs for Formerly Homeless People*, AHURI Final Report no. 252, Australian Housing and Urban Research Institute, Melbourne, www.ahuri.edu.au/research/final-reports/252.

Zaretzky, K., Flatau, P. and Brady, M. (2008) 'What is the (net) cost to government of homelessness programs?', *The Australian Journal of Social Issues*, vol. 43, no. 2: 231–254.

APPENDIX

Appendix 1: Data summary

Tenant survey	Dept. of Housing data	Dept. of Health linked data
Tenant demographics		
Age, gender, employment (including main activity if not employed), income, country of birth	Occupation, gender, age, language, country, income resident/citizen/refugee	Age, gender, employment (including main activity if not employed), income, country of birth
Household characteristics		
Children (living with or not)	Number of people in household, composition—single with x child(ren); couple with x child(ren); multiple fam. groups; single, senior single; senior couple, other	
Housing support scheme or priority application status		
	Six flagged NPAH programs Street to home—STH homelessness (SAAP)—HAS adult corrections—HSWCS Juvenile corrections—NPJC drug and alcohol—HSWDA Health—NPAH Health Plus priority homeless category	
Tenancy status and duration		
When tenancy commenced Duration of tenancy	Current tenant—yes/no Tenancy start date Tenancy completion date total length of time in tenancy	
Reasons for vacating tenancy (for those who have)		
	Purchased Homeswest property Purchased own home Change employment Accom.no longer suitable Private lease Termination Moved to nursing home Transfer tenancy agreement Housed by community housing Property exchange Harassment Eviction by bailiff Transferred or abandoned property Change in family circumstances Due to neighbours Deceased tenant	

Tenant survey	Dept. of Housing data	Dept. of Health linked data
Past and current housing circumstances		
Lifetime housing experiences Housing circumstance prior to public housing How long lived in current public housing	Length of time in tenancy (includes sample of people who have had more than one tenancy over the period)	
Health and wellbeing outcomes		
Self-report Qs in survey re health status, health behaviours, engagement with health system		Emergency Dept. presentations (number) Hospital admission and length of stay ICU and number of days Contacts with mental health service (number) Hospital in home (days) Psychiatric care (days) Number of prescriptions for opioid dependency (subutex, suboxone, methadone)
Support received		
Types of support received or not received Satisfaction with support received	Just info. on the support program they are in (e.g., NPAH)	
Barriers and enablers to sustained tenancy		
Problems/issues since being in public housing Support/help re issues		
Confidence to maintain public housing		
Likert qu. re how confident Open-ended re why confident/not confident		

Appendix 2: Per cent (%) using health service by type of housing support program (three years before/one year after)

		Percent (%) using health service by type of housing support program						
		HSWCS	**HSWMH**	**STH**	**HSWDA**	**HAS**	**NPAH (all)**	**PH**
Emergency Dept.	Before	50.5	64.3	56.4	59.0	53.0	55.8	53.2
	After	51.6	50.0***	49.4*	48.0***	42.5***	46.8***	50.0***
Hospital (overnight)	Before	16.4	57.3	34.3	31.1	26.0	31.1	25.2
	After	33.3***	44.4***	37.8	35.0	30.5*	34.7**	35.3***
Hospital in the home	Before	0.0	0.8	1.0	0.8	0.6	0.6	0.8
	After	0.0	4.8**	1.2**	0.6	0.3	1.0	1.2*
Intensive care unit	Before	0.8	2.4	1.9	0.6	0.6	1.1	0.8
	After	0.8	0.8	1.7	1.1	0.5	0.9	0.7
Psychiatric care	Before	1.9	42.2	7.6	5.5	2.2	8.7	2.9
	After	4.0	26.6***	5.2***	2.3*	2.6	6.2***	3.7**
Mental health service	Before	9.8	56.5	29.5	22.0	11.7	22.1	11.5
	After	12.7	61.3	29.1	24.3	14.1	24.3*	15.3***
Prescriptions^	Before	9.8	0.8	5.2	12.4	2.2	5.4	3.1
	After	4.8**	0.0	0.0***	1.1***	0.0***	0.8***	0.6***

Significance in difference of means: * p<0.1; ** p<0.05; *** p<0.01.

Before—average annual proportion of people using this health service in the three years prior to tenancy.

After—average annual proportion of people using this health service in the 12 months after tenancy commencement.

^ Prescriptions for opioid dependency treatment—Methadone, Subutex and Suboxone.

Source: Linked Western Australia Department of Housing and Department of Health data.

Appendix 3: Tenant Survey results

Lifetime housing experiences separated by gender					
	Male				
	Never	In the past 12 months	Between one and four years ago	More than four years ago	Total
Slept rough	39.6	0.0	15.4	45.1	100%
Living with family or friends	30.8	3.3	16.5	49.5	100%
Short-term accommodation for homeless people	51.1	2.2	20.0	26.7	100%
Medium- to long-term accommodation for homeless people	59.1	3.4	11.4	26.1	100%
Temporary accommodation	41.8	1.1	12.1	45.1	100%
Institutional or residential facility	54.9	1.1	8.8	35.2	100%
Private rental	17.9	2.4	10.7	69.0	100%
Public housing	20.7	31.5	22.8	25.0	100%
Own home	64.1	3.3	1.1	31.5	100%
	Female				
	Never	In the past 12 months	Between one and four years ago	More than four years ago	Total
Slept rough	54.8	1.9	8.9	34.4	100%
Living with family or friends	22.4	3.2	16.0	58.3	100%
Short-term accommodation for homeless people	46.5	3.2	14.2	36.1	100%
Medium- to long-term accommodation for homeless people	58.8	3.3	9.8	28.1	100%
Temporary accommodation	48.0	3.3	10.0	38.7	100%
Institutional or residential facility	68.0	4.7	9.3	18.0	100%
Private rental	16.2	5.4	17.6	60.8	100%
Public housing	20.0	36.0	19.3	24.7	100%
Own home	67.3	1.3	0.0	31.4	100%

AHURI Research Centres

AHURI Research Centre—Curtin University
AHURI Research Centre—RMIT University
AHURI Research Centre—Swinburne University of Technology
AHURI Research Centre—The University of Adelaide
AHURI Research Centre—The University of New South Wales
AHURI Research Centre—The University of Sydney
AHURI Research Centre—The University of Western Australia
AHURI Research Centre—University of Tasmania

Australian Housing and Urban Research Institute
Level 1, 114 Flinders Street, Melbourne Victoria 3000
Phone +61 3 9660 2300
Email information@ahuri.edu.au Web www.ahuri.edu.au