

2018

## Nurse-led primary health care for homeless men: a multimethods descriptive study

Michael A. Roche

Christine M. Duffield  
*Edith Cowan University*

Judith Smith

Dana A. Kelly

Robyn Cook

*See next page for additional authors*

Follow this and additional works at: <https://ro.ecu.edu.au/ecuworkspost2013>



Part of the [Nursing Commons](#)

---

10.1111/inr.12419

This is an Author's Accepted Manuscript of: Roche, M. A., Duffield, C., Smith, J., Kelly, D., Cook, R., Bichel-Findlay, J., ... & Carter, D. J. (2017). Nurse-led primary health care for homeless men: a multimethods descriptive study. *International nursing review*. 65(3), 392-399. Available [here](#).

This Journal Article is posted at Research Online.

<https://ro.ecu.edu.au/ecuworkspost2013/4649>

---

**Authors**

Michael A. Roche, Christine M. Duffield, Judith Smith, Dana A. Kelly, Robyn Cook, Jen M. Bichel-Findlay, Carla Saunders, and David J. Carter

ROCHE, M. A., DUFFIELD, C., SMITH, J., KELLY, D., COOK, R., BICHEL-FINDLAY, J., SAUNDERS, C., & CARTER, D. (2017). NURSE-LED PRIMARY HEALTH CARE FOR HOMELESS MEN: A MULTI-METHODS DESCRIPTIVE STUDY. *INTERNATIONAL NURSING REVIEW*. 65(3), 392-399. doi:10.1111/inr.12419

1. **Associate Professor Michael A. ROCHE** *PhD, RN*  
Associate Professor in Mental Health Drug and Alcohol Nursing, Australian Catholic University and Northern Sydney Local Health District, NSW, Australia. Adjunct Professor, Faculty of Health, University of Technology Sydney, NSW, Australia.  
Northern Sydney Mental Health Drug and Alcohol Service  
PO Box 169, North Ryde NSW 1670  
Email: Michael.Roche@acu.edu.au  
Twitter: @Michael\_A\_Roche
2. **Professor Christine DUFFIELD** *PhD, RN*  
Professor of Nursing & Health Services Management, University of Technology Sydney, NSW and Edith Cowan University, Joondalup, WA, Australia.
3. **Ms Julie SMITH** *BN, RN*  
Team leader, Primary Health Clinic, Matthew Talbot Hostel, St Vincent de Paul Society New South Wales, Woolloomooloo, NSW, Australia.
4. **Mr David KELLY** *BA*  
Senior Operations Manager, Support Services, St Vincent de Paul Society New South Wales, Woolloomooloo, NSW, Australia.
5. **Ms Rebecca COOK** *BAppSc ExSpSc/BSc Nutr (Hons)*  
Research Assistant, Centre for Health Services Management, University of Technology Sydney, NSW, Australia.
6. **Dr Jen BICHEL-FINDLAY** *HScD, RN*  
Senior Lecturer and Director, Digital Health and Innovation, Deputy Director, Centre for Health Services Management, Faculty of Health, University of Technology Sydney, NSW, Australia.
7. **Dr Carla SAUNDERS** *PhD, RN*  
Lecturer, Centre for Health Services Management, Faculty of Health, University of Technology Sydney, NSW, Australia.
8. **Mr David J. CARTER** *LLM*  
Lecturer, Faculty of Law, University of Technology Sydney, NSW, Australia.

## ABSTRACT

### *Aim*

To explore the primary health care needs and health service use of homeless men in inner Sydney.

### *Background*

People experiencing homelessness have greater health needs than the general population and place high demands on tertiary care, which is expensive and may not be the optimum service for their needs. Accessible, approachable, and affordable primary health care services could improve the health of homeless persons and potentially decrease costs to the healthcare system.

### *Methods*

A multi-method design using a cross-sectional survey (n=40) and administrative data (n=2707 daily summaries) collected from a nurse-led primary health care clinic for homeless men in Sydney.

### *Findings*

Survey respondents were aged 27-76 years. Health problems reflected multi-morbidity, with mental health issues present in almost all respondents. The majority had attended the clinic more than 20 times in the past year and said the services, treatments and referrals helped them avoid the emergency department. Administrative data indicated that medication administration was the most frequent service provided. Referrals to other health services doubled over the 7-year period.

### *Discussion*

Multiple morbidities, particularly mental health issues, are associated with homelessness. A proactive approach by nurses including preventative services appeared to overcome barriers to health service use.

### *Conclusion*

This nurse-led primary health care clinic highlights the importance of providing services to homeless men with multiple comorbidities. Respect and trust in addition to easy access to health services appear to be important facilitators of health service use.

### *Implications for Nursing, and Implications for Health Policy*

A greater number of primary health services that collaborate with specialist services, including nurse-led clinics, may facilitate healthcare for persons who are homeless, reducing the burden on acute services.

**Keywords:** Homelessness, primary health care, health service use, nurse-led, mixed-methods, Australia, health policy.

## INTRODUCTION

Homeless persons have multiple, often complex, health care needs (Stenius-Ayoade et al., 2017, Nikoo et al., 2015, Queen et al., 2017) and often use acute health services at high rates (Moore and Rosenheck, 2017). The provision of primary health care (PHC) to this population has the potential to improve health and reduce costs (Mitchell et al., 2017). Nurses have a key role in the organisation and provision of available, approachable, and affordable care (Savage et al., 2008, Khanassov et al., 2016).

## HOMELESSNESS & HEALTH

Definitions of homelessness vary internationally. In Australia, a three-tiered definition reflects the absence (primary), temporality (secondary) or substandard nature (tertiary) of the person's accommodation (Homelessness Taskforce, 2008). This paper incorporates all tiers in order to focus on health, defining homelessness as *sleeping without shelter or living in over-crowded, temporary, or otherwise unsustainable housing* (Australian Bureau of Statistics, 2012).

In the developed world, although data collection procedures differ, estimates suggest there are over 610,000 homeless people per night in the United States (The U.S. Department of Housing and Urban Development, 2013); 150,000 to 300,000 annually in Canada (Canadian Housing & Renewal Association, 2011); 410,000 per night the European Union (European Commission, 2013), and 105,237 per night in Australia (Homelessness Australia, 2013). In Sydney Australia, where the present study was undertaken, a one-night census in 2017 found 433 people sleeping rough and 489 people in temporary shelters and hostels (City of Sydney, 2017).

People experiencing homelessness have significantly greater health needs than the general population (Kertesz et al., 2014, Nikoo et al., 2015, Fazel et al., 2014), with high rates of long-term physical health problems (Nikoo et al., 2015), mental health disorders (Teesson et al., 2004, Fazel et al., 2014, Keogh et al., 2015), and multi-morbidity (Queen et al., 2017, Keogh et al., 2015). Homeless persons place high demands on tertiary care (Chin et al., 2011, Moore and Rosenheck, 2017), which is expensive and in many cases not the most appropriate service for their needs (Poulin et al., 2010). PHC is considered effective in addressing chronic disease (Starfield, 2012), but is typically not accessed by homeless people (Kertesz et al., 2014, Khandor et al., 2011). Similarly, homeless people with mental health or drug and alcohol problems are often disconnected from relevant specialist services (Canavan et al., 2012). Consequently, homeless people have been found to use a disproportionate number of acute hospital services with high rates of presentations to emergency departments (ED; Moore and Rosenheck, 2017), and acute bed use (Chin et al., 2011).

There are many barriers to use of healthcare services by homeless people who have described feeling rushed, ignored, brushed aside or otherwise treated disrespectfully when they attempt to access health care (Hwang and Burns, 2014, Kertesz et al., 2013). The costs of prescription medications or travel to obtain free medication are significant issues (Fazel et al., 2014), with the suggestion that approaches such as dispensing free medication via community pharmacies, Emergency Department (ED), or clinics can increase concordance (Christiani et al., 2008, Coe et al., 2015). Other barriers include competing priorities such as food, shelter and employment (Elder and Tubb, 2014). Kim et al. (2007) found that homeless people thought the problem would get better spontaneously, believed health services would not meet their needs, or wanted to solve the problem alone. Facilitators of access to healthcare services include the availability of the service, the approachability of staff, and its affordability (Khanassov et al., 2016). The location of the service accentuates availability, and health services targeted towards homeless people are often located in

residential hostels or other contexts close to the population being served, frequently adopting open-door policies and treatment drop-in to enhance access (Keogh et al., 2015, Mission Australia, 2012). Approachability is reflected through respect, dignity and empathy (Hwang and Burns, 2014, Queen et al., 2017). Hwang and Burns (2014) also note that comprehensive clinic-based services, often paired with accommodation, are appealing to homeless persons, despite the noted effectiveness of outreach services in engaging those unlikely to seek health care. They, and others (Canavan et al., 2012), suggest optimal care is provided through collaborative approaches between outreach and clinic-based services.

Nurse-led care is being used more frequently in PHC care with the aims of improving access to care, enhancing continuity of care and containing costs (Wong and Chung, 2006). Clinic services led by nurses have been found to be effective approaches to the management of chronic diseases (Al-Mallah et al., 2016), in general practice (Eley et al., 2013), and specifically for homeless persons (Savage et al., 2008). Nurse responsibilities vary across settings, but may be summarised as comprehensive assessment and case management, health education, nursing interventions and treatments, and referral for specialist care (Savage et al., 2008, Wong and Chung, 2006). These rely on a wide-ranging skill set and strong interpersonal skills (Dawson and Jackson, 2013, Woith et al., 2016).

Overall, despite the acknowledged and significant issue of homelessness, the complex health issues of homeless persons and their increased health care needs, there is limited referral to specialist care with a disproportionate number of homeless persons using acute care services and ED. This is costly to health budgets and strains an already overburdened hospital system, with the chronic health needs of homeless persons often not addressed. Nurse-led primary health services are effective and the humanistic skills and inclusive approach taken by nurses offers an opportunity to provide the most appropriate care to this vulnerable population.

### **The Service**

One of several residential support services for homeless people in inner Sydney is a 98-bed men-only hostel for those aged 21 years and over who are homeless or at risk of homelessness. Co-located with this hostel is a nurse-led PHC clinic (hereafter, 'the clinic') that provides services to homeless men. Nurses undertake general medical and mental health assessment and care, administer medications and facilitate prescription and dispensing, provide case management for men with more complex needs, and make referrals to other health professionals and specialist services. The latter includes making appointments and facilitating attendance. Other services at the clinic include general medical practice, specialised preventative and chronic disease management programs, optometry, and podiatry care.

### **Aim**

The aim of this study was to explore the primary health care needs and health service use of homeless men attending this clinic in inner Sydney, including men's views of the impact of the care provided and approaches that may facilitate more effective care.

## **METHOD**

This descriptive study used a multi-method design with cross-sectional survey and administrative data. Cross-sectional data were collected from July to December 2015 and administrative data were extracted from May 2008 to December 2015. Ethics approval was granted by the university's Human Research Ethics Committee (No. 2015000363) and the executive committee of the clinic's parent organisation.

## Samples & Data Collection

Cross-sectional data were collected via questionnaire administered at interview. Participants were approached to consent on completion of their visit at the clinic. Capacity to consent was determined if the person was judged able to give consent by clinic staff, could describe to researchers the intent and risks of the study, and was not intoxicated, in accordance with national guidelines. Any man attending the clinic was eligible. Sample size calculations were not performed for this descriptive study and a convenience sample was taken of men attending the clinic during the period. Forty men participated in the interview (response rate 78%).

Administrative data comprised daily activity summaries from the Clinic Information Management (CIM) system for the full 92 months of its operation, with no unique patient identifiers, precluding linkage to cross-sectional data. The CIM was not designed for analysis but to meet reporting requirements that changed frequently over the period. Data were in a format and structure not amenable to analysis and required considerable cleaning and reformatting. Data to August 2008 were inconsistent and excluded from analysis. Details on the type of treatment or service were collected for only a short period, or sporadically, and only the parent category was retained (e.g. treatments were analysed, but not the type of treatment). The final dataset included over seven years of presentations, treatments, other services, and referrals (n=2707 daily summaries).

## Instruments & Variables

Data elements from both sources are listed below. No instrument was located that obtained sufficient specific detail to address the aims of this study and a new questionnaire was developed. Survey items were derived from the literature and anecdotal reports of health needs or types of service use, subsequently reviewed for face validity by members of the research team and service providers. Respondents selected their health issues from a pre-defined list and the men identified which of these was their main problem. They rated their current overall health, provided the reason for their present visit to the clinic, and described referrals to and use of other (external) health services. The men's views of referrals, of the outcomes of accessing the clinic, and of their use of health services more broadly, provided information on the impact of the care provided, and potential facilitators of more effective care. Hwang et al. (2016) found this group to be reliable reporters of health care use.

### *Survey Data Elements (self-reported via interview):*

- Demographics, accommodation status, alcohol and drug consumption, employment status,
- Health problems: *Mental Health; Diabetes; Hepatitis, HIV, STI; Skin/Foot Problems, Liver/Kidney/GIT; Hypertension, Stroke; Asthma, Bronchitis; Brain Injury, Seizures; Arthritis; Drug or Alcohol; Heart disease; Cancer; Other*
- Main health problem: *Chosen from the above list*
- Reason for clinic visit
- Access of other (external) services: *Emergency Department; GP; Hospital; Mental Health; Dentist; Methadone Clinic; Other*
- How did staff from this clinic help you attend your referral?
- Has this clinic helped improve your health? If yes, how?
- Do you 'put off' going to see a health care provider when you have a health problem? If yes, why?

The CIM system was developed for clinic reporting through collection of daily summaries and did not adhere to national data dictionary standards, providing an overview of the clinic but with limitations of categorisation and definition. Treatments were reliable as a broad category without detail, and medication included administration but excluded related tasks. Referral sources were recorded. Referrals to external

services were noted as single activities and did not reflect the multifaceted nature of many of the tasks, such as preparatory phone calls and escort to appointments.

#### *Administrative Data Elements:*

- Treatments: *Dressing, Ear/Eye Treatment, Skin conditions, Observations, Blood sugar monitoring, General/Other*
- Medication administration
- Other services accessed: *Pathology, Emergency, Education, Other*
- Referrals in: *Hospital, Jail, Mental Health Service, Welfare Organisation, Other/Uncategorised Source*
- Referrals out: *GP, Hospital, Dentist, Police/Emergency Service, Mental Health Service, Visiting Mental Health Specialist, Drug & Alcohol Service, Welfare Case Management, Homelessness Health Team, Other*

## Analysis

Administrative data were aggregated to month to address wide daily variation and produce more interpretable results. Cross-sectional data were largely complete with little missing data. Quantitative data were cleaned in Microsoft Excel<sup>®</sup> and analysed in SPSS<sup>®</sup> v22. Descriptive analyses were undertaken with multiple response frequency approaches taken for health problems and access of other services, and monthly mean, minimum and maximum values for the higher-level categories in administrative data. The open-ended questions in the cross-sectional data (i.e. those that asked ‘why?’ or ‘how?’) provided short text responses and were retained and reported as such.

## RESULTS

Results from both components of the study are presented as an integrated whole, with similar results grouped together for comparison and expansion. Where data were only available from one part of the study, only that component is presented.

The 40 men in the cross-sectional component were aged between 27 and 76 years (mean 51, *SD*=11). Most were single (72.5%) or divorced/separated (25.0%). One-tenth identified as Aboriginal or Torres Strait Islander (ATSI). Many (42.5%) had no educational qualifications with one-third (35%) holding a school leaving certificate, 12.5% a trade/apprenticeship certificate or diploma, and 10.0% a university education. None were currently employed and all but one had previously been employed. One-quarter (25.8%) of respondents were sleeping rough with the remainder residing in over-crowded or improvised dwellings, or staying in temporary hostels or boarding houses.

Health problems reflected multi-morbidity with most (87.5%) having more than one health issue. Mental health problems, mainly depression or psychotic disorders, were present in almost all respondents (Table 1), and of those who reported only a single health issue, it was a mental health problem. Nearly half reported hepatitis or other infectious disease, and more than one-third reported asthma or bronchitis, skin or foot problems, liver, kidney or gastrointestinal problems, or hypertension. Over half of participants named mental health problems as their main health concern, followed by diabetes and miscellaneous other problems. Nearly 80% of men smoked and more than half (53.8%) reported illicit drug use, primarily cannabis and crystal methamphetamine (‘Ice’). Most reported no alcohol consumption but one-fifth were drinking at harmful levels of 5 or more standard drinks per day (50g/day; NHMRC, 2009). Despite these findings, half of respondents reported their overall health as good, very good or excellent.



TABLE 1 HEALTH PROBLEMS (SELF-REPORT)

	Experienced Problem <sup>a</sup>	Main Problem <sup>b</sup>
	n (%)	n (%)
<b>Mental Health</b>	36 (90.0%)	21 (52.5%)
<b>Hepatitis, HIV, STI</b>	19 (47.5%)	1 (2.5%)
<b>Skin/foot Problems</b>	16 (40.0%)	0 (0%)
<b>Liver/kidney/GIT</b>	14 (35.0%)	2 (5%)
<b>Hypertension, Stroke</b>	14 (35.0%)	0 (0%)
<b>Asthma, Bronchitis</b>	13 (32.5%)	1 (2.5%)
<b>Brain Injury, Seizures</b>	12 (30.0%)	2 (5%)
<b>Other, unspecified</b>	11 (27.5%)	4 (10%)
<b>Arthritis</b>	10 (25.0%)	1 (2.5%)
<b>Diabetes</b>	8 (20.0%)	5 (12.5%)
<b>Drug or Alcohol Problems</b>	7 (17.5%)	3 (7.5%)
<b>Heart Disease</b>	5 (12.5%)	0 (0%)
<b>Cancer</b>	4 (10.0%)	0 (0%)
<b>Total Respondents</b>	<b>40</b>	<b>40</b>

*a=number and percent of respondents who reported experiencing this health problem (multiple responses possible)*

*b=number and percent of respondents for which this was their main health problem (single responses only)*

The complexity of health needs for these men was also apparent in the range of reasons given for attending the clinic. These included the administration or prescription of medication (51.3%), GP or other appointments (20.5%), mental health advice (7.7%), skin/foot conditions (7.7%), other/unspecified (7.7%) and smoking cessation (5.1%). Administering medication was the most frequent service provided by the clinic, ranging up to more than 2700 instances per month, and average of three-quarters of activities (Table 2), reflecting the nature of the frequent but short duration activity. Almost 90% of respondents had attended the clinic on more than 20 occasions in the past 12 months. Referrals into the service, from hospitals, mental health teams or community welfare organisations, were a small percentage of activities, while treatments and other services typically accounted for around 20%. Referrals to other health services ('Referrals Out' in Table 2) per month averaged 4.7% but more than doubled over the 7-year period, from 2.6% to 7.2% of clinic activities (data not shown).

TABLE 2 PRIMARY HEALTH CLINIC TREATMENTS, SERVICES AND REFERRALS, PER MONTH

	Mean	Minimum	Maximum
	n (%)	n (%)	n (%)
<b>Administer Medication</b>	2126.7 (75.9%)	1580 (68.9%)	2728 (81.2%)
<b>Treatment<sup>a</sup></b>	294.7 (10.4%)	153 (7.3%)	497 (15.1%)
<b>Other Services<sup>b</sup></b>	232.5 (8.2%)	123 (4.8%)	427 (13.5%)
<b>Referrals In</b>	21.6 (0.8%)	3 (0.1%)	39 (1.4%)
<b>Referrals Out</b>	127.1 (4.7%)	64 (2.2%)	189 (8.2%)
<b>Total Clinic Services</b>	<b>2802.5</b>	<b>1937</b>	<b>3552</b>

*Note: Figures are the mean, minimum and maximum number and percent of treatments, services, and referrals per month;*

*a=dressings, ear, eye, or skin conditions, blood sugar monitoring or other observations, general or unspecified treatments;*

*b=pathology, education, emergency, uncategorised services*

The clinic made referrals to general practitioners, mental health services, methadone clinics, dentists, specialist doctors and the ED. Men also accessed these services without referral, particularly general practitioners and the ED (Table 3). Of those who used other services, around one-third were referred by the clinic to that service. Most (95%) said referrals eased access to other services, with half (51.7%) reporting that clinic staff facilitated the referral by reminders, phoning the other service, or by accompanying them to the service. Most (82.5%) said the services, treatments and referrals helped them avoid the ED.

TABLE 3 ACCESS OF OTHER SERVICES AND REFERRALS

	Accessed Service <sup>a</sup>	Referral by Clinic <sup>b</sup>
	n (%)	n (%)
<b>GP</b>	26 (65%)	8 (30.8%)
<b>Hospital Emergency Dept.</b>	23 (57.5%)	4 (17.4%)
<b>Mental Health</b>	14 (35%)	4 (28.6%)
<b>Dentist</b>	14 (35%)	5 (35.7%)
<b>Hospital Admission</b>	12 (30%)	6 (50%)
<b>Methadone</b>	6 (15%)	1 (16.7%)
<b>Other<sup>d</sup></b>	4 (10%)	3 (75%)
<b>Total Respondents</b>	<b>40</b>	<b>31 (77.5%)</b>

*a=number and percent of respondents who reported accessing the service, with or without referral (multiple responses possible);*

*b=number and percent of respondents who accessed each service, because of a referral;*

*d=specialist such as respiratory, diabetes, liver, and neurology services*

Respondents were also asked for reasons they might avoid healthcare services (see supplementary material, Box 1), and for their perceptions of the impact of care by the clinic (see supplementary material, Box 2). Findings for the former are consistent with previous literature regarding barriers such as waiting time, with one respondent demonstrating an understanding of the complexity of their own health needs and limited consultation times: "I need more than 10 minutes...my needs are never met". Regarding clinic outcomes, participants noted the comprehensive support and services, and highlighted the preventative aspect, for example medication administration and appropriate referral. One participant stated, "I've lived because of it".

## DISCUSSION

This descriptive study has reaffirmed the complexity of health care needs for homeless men in inner Sydney and provides support for accessible, comprehensive nurse-led PHC services. Consistent with previous studies, men reported a wide range of health issues with a preponderance of mental health and long-term physical health problems. Many of the latter were associated with other chronic illnesses such as diabetes, further emphasising the multiple morbidities associated with homelessness. Despite significant health issues, many men still perceived themselves as healthy and rated their health as good. In contrast to other studies in the same geographical area (Teesson et al., 2004, Mission Australia, 2012), many participants reported not drinking alcohol. However, over half of respondents had recently taken illicit drugs, particularly crystal methamphetamine, and most smoked. A wide range of age, educational background, ethnicity, language was found, adding to the complexity in health care needs and suggesting that clinic nurses must have the skills to assess and provide care to men from widely disparate backgrounds. Nearly two-thirds of the men stated they had achieved either no school or other qualification, or attained only a

basic school leaver's certificate, contrasting with another study in Sydney that found half had a high school qualification (Mission Australia, 2012). Reported reasons for avoiding health care are consistent with the literature (Hwang and Burns, 2014, Queen et al., 2017, Woith et al., 2016). However, men's comments and the large number of repeat attendees at the clinic suggest that barriers are being overcome and this service is accessible with approachable nurses who are addressing the breadth of needs. These important facilitators of PHC have been incorporated into a comprehensive homeless outreach service in Sydney (Mission Australia, 2012), and future work should explore the advantages, disadvantages, or potential combination of these models in the current context.

One of the main activities of the clinic was the medication administration. Concordance with medication is critical for mental health and other chronic conditions such as hypertension, stroke, asthma and diabetes, with a potential major impact as a preventative intervention (Hunter et al., 2014). Accessibility of medications at no cost in an approachable service with continuity of care and monitoring of side-effects is important to improve concordance and consequently health outcomes (Coe et al., 2015). Figures presented here may be under-reported, as data did not include related activities such as facilitating prescription and dispensing.

Referrals to other services comprised a small proportion of activities although again the data do not capture the full scope of this task. A key feature of referral here is that nurses facilitate attendance at the appointment through reminders and, when needed, accompanying men to the service, consistent with the findings of Zur et al. (2016). The increase in referrals over the period may suggest refinement in assessments of men's needs, greater complexity of these needs over time, increased specialist service availability, or stronger collaboration between the clinic and specialist services. The relative magnitude of referrals is difficult to identify as recent comparative rates were not located. Facilitated referrals have the potential to be a major contributor to better health outcomes for these men, as is suggested by some of their comments. This may also reduce the burden on acute health care services and the ED, although this could not be confirmed as, while most respondents indicated they avoided the ED because of clinic attendance, a significant number did report attending the ED.

Reducing ED presentations through effective PHC is important in order to reduce costs (Mitchell et al., 2017), but may also provide the most appropriate care. That is, continuity and preventative care approaches are not typical of ED, and sporadic care is not well suited to the needs of this group (Hwang and Burns, 2014). Logically, this may lead to unresolved health problems with further reliance on short-term acute services. However, this suggestion is complicated by the effect of homelessness alone, independent of health factors, in increasing ED visits (Fazel et al., 2014, Moore and Rosenheck, 2017).

There was a high rate of mental health problems, consistent with previous studies (Stenius-Ayoade et al., 2017). Around one-third were in contact with mental health services, suggesting many men are receiving their mental health care from the clinic and not specialists. The reason for this disparity is not clear and the data do not clarify. What is known is that there is good support for collaboration between PHC and specialist mental health services to address mental health needs more effectively (Canavan et al., 2012).

Other than recent accommodation status, the present study did not explore the onset or details of homelessness. However, with a relatively low educational attainment and a high rate of long-term mental health issues, it may be speculated that homelessness, or events leading to homelessness, occur early in the lifespan. There is some support for this contention in the literature (Brown et al., 2016) with consequent potential for very early intervention to reduce the likelihood of homelessness. Further exploration is required to provide substance to this suggestion.

## Implications for Nursing, and Implications for Health Policy

The positive outcomes reported by the homeless men in this study highlight the potential of nurse-led primary health services to facilitate accessible PHC and reduce the burden on acute services. This adds to the early evidence that nurse-led services are effective for this population (Savage et al., 2008), and suggests there is potential for expansion and perhaps augmentation through the establishment of nurse practitioner positions. Collaboration with mental health and other specialist services is vital and again nurse practitioner positions could be utilised to enable in-clinic specialist care and to facilitate connections externally. Homelessness is an issue independent of health so preventative mechanisms should be sought. Early mental health issues and educational dropout may provide indicators for exploration. Once established, these indicators could permit appropriate services, such as school-based nurses, to initiate interventions to reduce the likelihood of homelessness.

### *Limitations*

Limitations include the small convenience cross-sectional sample and inconsistencies in the administrative data. Respondents were volunteers, perhaps excluding those with more severe health problems. The representativeness of the sample relative to the clinic population could not be assessed, so the presence or degree of this potential bias is unknown. Also, survey data were collected via interview, another source of potential bias. However, many results are consistent with previous studies of the same group, somewhat countering these issues. Administrative data irregularities were addressed through systematic cleaning, and exclusion of data or variables where required. The findings should be considered with these limitations in mind.

## CONCLUSION

The complexity of health needs of homeless men is well established and this study is no exception. The high prevalence of mental health problems and multi-morbidity supports a long-term focus emphasising approachability, availability, and continuity of care. The nurse-led service described here includes these features incorporating nursing fundamentals such as interpersonal skills and advocacy alongside comprehensive assessment, treatment, and referral. Further exploration is needed of specific health outcomes, impact on acute service use, and cost-effectiveness, whilst the underlying issue of homelessness itself demands broader policy interventions. A major issue in this population group identified by the clinic nurses, but beyond the scope of the current study, is that homeless services rarely continue support for the homeless after housing is established. This withdrawal may then increase the likelihood of future homelessness, a vicious cycle that can lead to poorer health and increased costs as these men 'fall between the cracks'. Effective transition services and longer-term continuity of care are essential in breaking this cycle.

## REFERENCES

- Al-Mallah, M. H., Farah, I., Al-Madani, W., Bdeir, B., Al Habib, S., Bigelow, M. L., Murad, M. H. & Ferwana, M. (2016) The impact of nurse-led clinics on the mortality and morbidity of patients with cardiovascular diseases: a systematic review and meta-analysis. *Journal of Cardiovascular Nursing*, **31** (1), 89-95.
- Australian Bureau of Statistics (2012) Census of Population and Housing: Estimating homelessness, Australia 2011. ABS. Cat. no. 2049.0 ed.
- Brown, R. T., Goodman, L., Guzman, D., Tieu, L., Ponath, C. & Kushel, M. B. (2016) Pathways to homelessness among older homeless adults: results from the HOPE HOME study. *PLoS one*, **11** (5), e0155065.
- Canadian Housing & Renewal Association. (2011) *Homelessness*. Available <http://www.chra-achru.ca/en/index.php/our-work/homelessness/>. (accessed 29th May 2015).
- Canavan, R., Barry, M. M., Matanov, A., Barros, H., Gabor, E., Greacen, T., Holcnerová, P., Kluge, U., Nicaise, P. & Moskalewicz, J. (2012) Service provision and barriers to care for homeless people with mental health problems across 14 European capital cities. *BMC Health Services Research*, **12** (1), 222.
- Chin, C. N., Sullivan, K. & Wilson, S. F. (2011) A 'snap shot' of the health of homeless people in inner Sydney: St Vincent's Hospital. *Australian Health Review*, **35** (1), 52-56.
- Christiani, A., Hudson, A. L., Nyamathi, A., Mutere, M. & Sweat, J. (2008) Attitudes of homeless and drug-using youth regarding barriers and facilitators in delivery of quality and culturally sensitive health care. *Journal of Child & Adolescent Psychiatric Nursing*, **21** (3), 154-163.
- City of Sydney. (2017) *Street count*. Available <http://www.cityofsydney.nsw.gov.au/community/community-support/homelessness/street-count>. (accessed July 21 2017).
- Coe, A. B., Moczygemba, L. R., Gatewood, S. B. S., Osborn, R. D., Matzke, G. R. & Goode, J.-V. R. (2015) Medication adherence challenges among patients experiencing homelessness in a behavioral health clinic. *Research in Social and Administrative Pharmacy*, **11** (3), e110-e120.
- Dawson, A. & Jackson, D. (2013) The primary health care service experiences and needs of homeless youth: A narrative synthesis of current evidence. *Contemporary Nurse*, **44** (1), 62-75.
- Elder, N. C. & Tubb, M. R. (2014) Diabetes in Homeless Persons: Barriers and Enablers to Health as Perceived by Patients, Medical and Social Service Providers. *Social Work in Public Health*, **29** (3), 220-231.
- Eley, D. S., Patterson, E., Young, J., Fahey, P. P., Del Mar, C. B., Hegney, D. G., Synnott, R. L., Mahomed, R., Baker, P. G. & Scuffham, P. A. (2013) Outcomes and opportunities: a nurse-led model of chronic disease management in Australian general practice. *Australian Journal of Primary Health*, **19** (2), 150-158.
- European Commission (2013) Commission Staff Working Document: Confronting Homelessness in the European Union. IN Package, E. S. I. (Ed. Brussels, European Commission).
- Fazel, S., Geddes, J. R. & Kushel, M. (2014) The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *The Lancet*, **384** (9953), 1529-1540.
- Homelessness Australia (2013) Homelessness in Australia. Lyneham, Homelessness Australia.
- Homelessness Taskforce (2008) The road home: a national approach to reducing homelessness. Canberra, ACT, Australia, Department of Families, Housing, Community Services, and Indigenous Affairs.
- Hunter, C. E., Palepu, A., Farrell, S., Gogosis, E., O'Brien, K. & Hwang, S. W. (2014) Barriers to prescription medication adherence among homeless and vulnerably housed adults in three Canadian cities. *Journal of primary care & community health*, 2150131914560610.
- Hwang, S. W. & Burns, T. (2014) Health interventions for people who are homeless. *The Lancet*, **384** (9953), 1541-1547.
- Hwang, S. W., Chambers, C. & Katic, M. (2016) Accuracy of Self-Reported Health Care Use in a Population-Based Sample of Homeless Adults. *Health services research*, **51** (1), 282-301.
- Keogh, C., O'Brien, K. K., Hoban, A., O'Carroll, A. & Fahey, T. (2015) Health and use of health services of people who are homeless and at risk of homelessness who receive free primary health care in Dublin. *BMC Health Services Research*, **15** (1), 1-8.
- Kertesz, S. G., Holt, C. L., Steward, J. L., Jones, R. N., Roth, D. L., Stringfellow, E., Gordon, A. J., Kim, T. W., Austin, E. L. & Henry, S. R. (2013) Comparing homeless persons' care experiences in tailored versus nontailored primary care programs. *American journal of public health*, **103** (S2), S331-S339.
- Kertesz, S. G., McNeil, W., Cash, J., Desmond, R., McGwin, G., Jr., Kelly, J. & Baggett, T. (2014) Unmet Need for Medical Care and Safety Net Accessibility among Birmingham's Homeless. *Journal of Urban Health*, **91** (1), 33-45.
- Khanassov, V., Pluye, P., Descoteaux, S., Haggerty, J. L., Russell, G., Gunn, J. & Levesque, J.-F. (2016) Organizational interventions improving access to community-based primary health care for vulnerable populations: a scoping review. *International Journal for Equity in Health*, **15** (1), 168.
- Khandor, E., Mason, K., Chambers, C., Rossiter, K., Cowan, L. & Hwang, S. W. (2011) Access to primary health care among homeless adults in Toronto, Canada: results from the Street Health survey. *Open Medicine*, **5** (2), 94-103.
- Kim, M. M., Swanson, J. W., Swartz, M. S., Bradford, D. W., Mustillo, S. A. & Elbogen, E. B. (2007) Healthcare Barriers among Severely Mentally Ill Homeless Adults: Evidence from the Five-Site Health and Risk Study. *Administration and Policy in Mental Health and Mental Health Services Research*, **34**, 363-375.

- Mission Australia (2012) The Michael Project, 2007-2010: New perspectives and possibilities for homeless men. Sydney, Mission Australia.
- Mitchell, M. S., León, C. L. K., Byrne, T. H., Lin, W.-C. & Bharel, M. (2017) Cost of health care utilization among homeless frequent emergency department users. *Psychological Services*, **14** (2), 193-202.
- Moore, D. T. & Rosenheck, R. A. (2017) Comprehensive services delivery and emergency department use among chronically homeless adults. *Psychological Services*, **14** (2), 184-192.
- NHMRC (2009) Australian guidelines to reduce health risks from drinking alcohol. Canberra, National Health & Medical Research Council, Commonwealth of Australia.
- Nikoo, N., Motamed, M., Nikoo, M. A., Neilson, E., Saddicha, S. & Krausz, M. (2015) Chronic Physical Health Conditions among Homeless. *Journal of Health Disparities Research & Practice*, **8** (1), 81-97.
- Poulin, S. R., Maguire, M., Metraux, S. & Culhane, D. P. (2010) Service use and costs for persons experiencing chronic homelessness in Philadelphia: a population-based study. *Psychiatric Services*, **61** (11), 1093-1098.
- Queen, A. B., Lowrie, R., Richardson, J. & Williamson, A. E. (2017) Multimorbidity, disadvantage, and patient engagement within a specialist homeless health service in the UK: an in-depth study of general practice data. *BJGP Open*, BJGP-2016-0641.
- Savage, C. L., Lindsell, C. J., Gillespie, G. L., Lee, R. J. & Corbin, A. (2008) Improving health status of homeless patients at a nurse-managed clinic in the Midwest USA. *Health & Social Care In The Community*, **16** (5), 469-475.
- Starfield, B. (2012) Primary care: an increasingly important contributor to effectiveness, equity, and efficiency of health services. SESPAS report 2012. *Gaceta sanitaria*, **26**, 20-26.
- Stenius-Ayoade, A., Haaramo, P., Erkkilä, E., Marola, N., Nousiainen, K., Wahlbeck, K. & Eriksson, J. G. (2017) Mental disorders and the use of primary health care services among homeless shelter users in the Helsinki metropolitan area, Finland. *BMC Health Services Research*, **17** (1), 428.
- Teesson, M., Hodder, T. & Buhrich, N. (2004) Psychiatric disorders in homeless men and women in inner Sydney. *Australian & New Zealand Journal of Psychiatry*, **38** (3), 162-168.
- The U.S. Department of Housing and Urban Development (2013) The 2013 Annual Homeless Assessment Report (AHAR) to Congress. Washington, HUD.
- Woith, W. M., Kerber, C., Astroth, K. S. & Jenkins, S. H. (2016) Lessons from the Homeless: Civil and Uncivil Interactions with Nurses, Self-Care Behaviors, and Barriers to Care. *Nursing Forum*, n/a-n/a.
- Wong, F. K. & Chung, L. C. (2006) Establishing a definition for a nurse-led clinic: structure, process, and outcome. *Journal of Advanced Nursing*, **53** (3), 358-369.
- Zur, J., Linton, S. & Mead, H. (2016) Medical Respite and Linkages to Outpatient Health Care Providers among Individuals Experiencing Homelessness. *Journal of Community Health Nursing*, **33** (2), 81-89.

## SUPPLEMENTARY MATERIAL

### Box 1 Mens' Views On Approaches To Facilitate More Effective Care: Reasons For Avoiding Health Services

- "Because I don't want to trouble them and I think I can battle through it."
- "Because I don't want to waste their time if it's minor. I give it a couple of days and if I don't get worse I'm ok. Best to see the doctor when you are really sick."
- "Sometimes I just don't feel like going."
- "Because I'm scared."
- "Because I'm a stubborn little bugger, you know blokes put things off."
- "Sometimes being scared of hearing the truth and medical results."
- "Because the issues I have aren't ones you can take up with a local GP. I need more than 10 minutes. I've learned that my needs are never met."
- "It's not usually as bad as what it is - sometimes things go away."
- "Because I don't like going to see them - they make you wait."

### Box 2 MENS' VIEWS ON THE IMPACT OF CARE PROVIDED: IMPROVEMENTS IN HEALTH

- "Has made me manage my drug use. Helped me with wounds getting them treated and prevented infection."
- "Direction to other services."
- "The service is here for me all the time - they bandage me and ease pain whenever I need it."
- "Compliant with my medication. I haven't missed an injection. I'm always on time."
- "I stop getting nervous & I can walk around in the city more."
- "Through support and proper care."
- "Monitoring how I use my insulin & keeping on top of my general health."
- "Given me more insight into what I'm going through. Feel looked after. Trusted healthcare."
- "Diagnosing the illness. Allowing me to recuperate in the sick bay. Giving me medicines."
- "Medication helped with depression. Talking to mental health nurse helped."
- "Regular prescribed medication, reminding me to do what I must do, and care."
- "It gave me my smile (teeth), my hearing and my eyesight (glasses)."
- "I've lived because of it."