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Homeless Tailored Primary Care and Access to Ongoing Primary Care Services

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NURS 695: Alternate Plan Paper

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Abstract

Homelessness is an increasing problem worldwide. The system for providing medical care to individuals experiencing homelessness is currently a patchwork of multiple different agencies. Many individuals do not utilize routine primary care (PC) services, instead present to emergency departments for nonemergent care. A systematic literature review was conducted using Cochrane Database of Systematic Reviews, CINAHL Plus with Full Text, Consumer Health Complete – EBSCOhost, and PsycINFO from 2014-2019 with the exception of Cochrane which was searched from 2009-2019, to evaluate if tailored PC clinics focused on providing PC services with additional supports to homeless individuals were more effective at engaging homeless individuals in ongoing PC services. A total of 67 articles were reviewed in full, and 23 of those were used to answer the research question. Homeless tailored PC services were found to increase access and improve ongoing PC use, reduce emergency department use for nonemergent reasons, and reduced annual costs for care. Advanced practice registered nurses are well suited to fill the gaps by providing PC services in shelters and in supportive housing facilities. An additional finding within the literature was that stable housing, with or without additional supports, was found to be the most effective intervention for improving access to healthcare and overall health outcomes. Further research and policy need to focus on helping individuals achieve permanent stable housing, and the role of tailored PC services within this housing.

Keywords: homeless, emergency department, primary care, homeless clinic, healthcare for the homeless, homeless tailored, veterans, urgent care, transients, impoverished, respite

care, people in emergency shelter, people in transitional housing, people who are homeless,
community based

Homeless Tailored Primary Care and Access to Ongoing Primary Care Services

After a steady decline over 10 years, homelessness is once again on the rise worldwide (Aldridge et al., 2019; Housing and Urban Development [HUD], 2019; Organization for Economic Co-operation and Development [OECD] Affordable Housing Database, 2020). Individuals who are homeless live with more chronic health conditions, have a lower life expectancy by more than 25 years, and utilize emergency departments and urgent care centers inappropriately or as their only source of healthcare more often than individuals who are stably housed (Canham et al., 2019; Chang et al., 2015; Keogh et al., 2015). Emergency departments and urgent care centers are often easier for individuals who are homeless to use than PC services due to multiple factors including lack of insurance, difficulty keeping scheduled appointments, feeling stigmatized by providers, and lack of reliable transportation (O'Toole et al., 2015b; Petith-Zbiciak, 2016; Sakai-Bismark et al., 2019). This raises the overall cost of healthcare, increases burden on emergency rooms with non-emergent cases, and reduces continuity of care (Petith-Zbiciak, 2016; UnitedHealth Group, 2019). PC clinics tailored to the unique needs of individuals experiencing homelessness were theorized to improve access to PC. A literature review was performed to examine the research pertaining to tailoring primary care services to individuals who are homeless and the impact on ongoing access to PC services.

Background

Scope of the Problem

There are an estimated 567,715 individuals in the United States who are currently homeless on any given night. This number has increased by 14,885 individuals since 2018 (HUD, 2019). Living homeless is defined as without stable permanent housing such as living in cars,

abandoned buildings, shelters, on the streets, or another non-permanent situation such as staying with others but changing locations frequently (National Healthcare for the Homeless Counsel, 2018; European Union [EU], 2013).

Individuals experiencing homelessness are three times more likely to report living with multiple chronic physical and mental health conditions such as diabetes, hypertension, epilepsy, stroke, chronic obstructive pulmonary disease, asthma, substance use disorder (SUD), and depression (Keogh et al., 2015; Krupski et al., 2015; Lewer et al., 2019). They also tend to have more health problems at younger ages, between ages 40-64 years old, compared to housed individuals. Individuals who are homeless have an average life expectancy of 52 years (Aldridge et al., 2019; Hadenfeldt et al., 2017; Maness & Khan, 2014).

Often, for these individuals the only interaction they have with the healthcare system is through the emergency department or urgent care centers (Petith-Zbiciak, 2016). Youth living with asthma who are homeless end up in emergency departments and hospitalized at far higher rates than their housed counterparts, in large part due to lack of ability to access care or keep scheduled primary care appointments (Sakai-Bismark et al., 2019). Amongst women who are pregnant, homelessness is an independent variable associated with a higher incidence of low birthweight (Cutts et al., 2015).

Barriers to accessing PC services for individuals experiencing homelessness include lack of trust of healthcare providers, feeling stigmatized by providers, or feeling that the providers do not understand their unique needs (O'Toole et al., 2015b). Other barriers to accessing PC services include lack of insurance, poor access (cost, transportation, etc.) to clinics and PC providers, or inability to carry out instructions, such as no access to bathroom facilities to

complete preparations for colorectal cancer screenings (Asgary et al., 2014; Baggett et al., 2010; Hauff & Secor-Turner, 2014; O’Toole et al., 2015b).

Clinical Question of Interest

The current system of delivering care to individuals experiencing homelessness is a patchwork of multiple different agencies including (a) government run clinics through the Department of Veterans Affairs, (b) county level initiatives such as Health Care for the Homeless that follow a similar framework in multiple cities and counties across the United States, and (c) private, educational, or religious organizations that provide services and supports and at times partner with larger health systems or organizations (Institute of Medicine, 1988). This review examines whether these types of PC services tailored to individuals experiencing homelessness improves access to ongoing primary care services.

The clinical question guiding this study is: *Amongst individuals experiencing homelessness, how does receiving homeless tailored primary care in nontraditional settings impact access to consistent and comprehensive primary care?*

Methods

An extensive literature search was conducted between the dates of 10/1/2019 and 12/27/2019. Databases searched included Cochrane Database of Systematic Reviews, CINAHL Plus with Full Text, Consumer Health Complete – EBSCOhost, and PsycINFO (see Appendix Table 1 for the search restrictions, publication dates for each specific database along with the general subjects covered within each). Search terms used were “homeless,” “emergency department,” “primary care,” “homeless clinic,” “primary care,” “healthcare for the homeless,” “homeless tailored,” “veterans,” “urgent care,” “transients,” “impoverished,” “respite care,” “people in

emergency shelter,” “people in transitional housing,” “people who are homeless,” and “community based” plus combinations of these terms. See Appendix Table 2 for search terms, combination, and number of hits as well as articles read by each search term.

Searches were limited to peer-reviewed articles, published in English within the past five years, between 2014-2019, with the exception of Cochrane which was expanded to include articles from 2009-2019 allowing consideration of several additional reviews. Any searches that resulted in 20 or fewer hits were further reviewed. Titles and abstracts were initially reviewed for inclusion and exclusion criteria. If inclusion and exclusion criteria could be determined from reading the title or abstract, then the full article was reviewed. Inclusion criteria were articles focused on homeless or unstably housed individuals, homeless tailored care, and offering of primary care services. Exclusion criteria included articles that focused on non-medical services alone such as social work, case management, dental, or optometry that were not included as part of providing medical care. Additional exclusion criteria were articles focused on housed individuals, or articles that did not discuss healthcare services.

The search of the four databases with the search terms resulted 7,525 hits. Of those, 283 titles and abstracts were reviewed for inclusion and exclusion criteria. For those studies meeting inclusion criteria, 67 were read in their entirety and included or excluded from the final review. Of the articles read, 25 were duplicates, 19 were excluded, and 23 studies were included in the final analysis to answer the clinical question. See Appendix Table 3 for the inclusion and exclusion decision and rationale for the 67 articles that were read.

Summary of Literature

Of the 23 papers included in the literature review, there were three level II RTC studies. The majority were level III or IV or lower using the Hierarchy of Evidence (Melnyk & Fineout-Overholt, 2015). The 23 studies are described in more detail in the Appendix Table 4 including each study's purpose, population, settings, design, level of evidence, intervention variables, findings, and implications.

What Works - Tailored Services

Several studies inside the U.S. as well as abroad have concluded that tailoring primary care services specifically to individuals who are homeless, incorporating additional needed services, increases access to and use of PC services (Asanad et al., 2018; Davis et al., 2017; Gundlapalli et al., 2017; Hwang & Burns, 2014; Keogh et al., 2015; O'Toole et al., 2018, 2015b; Zur et al., 2016). Utilizing registered nurses, mental health clinicians, social workers, case managers, and peer mentors as part of the targeted PC clinics improve initial as well as ongoing access, medication adherence, specialty referral, and lead to smoother transitions following hospital discharge (Biederman et al., 2019; Crock, 2016; Jones et al., 2019; Resnik et al., 2017; Roche et al., 2018; Schick et al., 2019). Clinics based where individuals who are homeless are able to easily access them were found to provide better primary care services and reduce inappropriate ED visits in Ireland (Keogh et al., 2015). Providers who are knowledgeable in issues facing individuals experiencing homelessness build more trust and may help to retain these individuals as clients in tailored clinics (Hwang & Burns, 2014). Zur et al. (2016) found that providing medical respite programs within tailored homeless clinics, to aid individuals coming

out of the hospital in transitioning back to the shelter, increased access and follow-up with PC services.

Individuals treated at homeless tailored PC clinics were found to have improvements in physical and mental health, increased medication adherence, and reduction in annual healthcare expenditures (O'Toole et al., 2018). Davis et al. (2017) found that homeless tailored clinics reduced rates of diabetic retinopathy in homeless veterans with diabetes compared to housed veterans with diabetes. Upshur et al. (2015) demonstrated that by providing SUD treatment in a targeted homeless clinic reduced alcohol consumption and increased attendance at SUD treatment. However, they did not find evidence that this alone improved overall health of individuals. In addition, when individuals experiencing homelessness were seen at clinics where care was tailored to their needs they reported greater satisfaction with the clinics due to many factors including ease of access (location in area where homeless individuals live, walk-in hours, etc.), perceived increased communication between care team members, easier access to multiple services at one location, and staff sensitivity to unique needs faced by homeless individuals (Kertesz et al., 2013; Jones et al., 2019). This may explain the increase in use of PC services in those tailored clinics (Hwang & Burns, 2014; Kertesz et al., 2013; Jones et al., 2018; Jones et al., 2019).

What Does Not Work – Creating Access without Tailored Services

Assigning homeless individuals to a PC provider and access to insurance through charity care was not shown to increase use of PC services, rather was associated with an increase in inappropriate emergency department visits (Wang et al., 2015). Caires (2017) found that mobile homeless clinics that traveled to the community to provide easy access to care did not increase

overall access to ongoing PC. The reason is likely that the mobile clinics did not provide stable access to routine care along with additional supports like social work or case management services.

Additional Findings – Housing and PC Access

An additional finding discovered while researching the clinical question is that stable housing seems to play even more of a role in improving ongoing access to PC services than tailored PC clinics (Gabrielian et al., 2014; Gabrielian et al., 2016; Krupski et al., 2015; Schick et al., 2019; Wright et al., 2016). Supportive housing, housing plus case management, on site registered nurses, social work, peer mentors, or tailored PC services were found to improve access to ongoing PC use as well as reduce inappropriate ED use and overall costs (Biederman et al., 2019; Gundlapalli et al., 2017; Hwang & Burns, 2014; Schick et al., 2019; Wright et al., 2016).

Discussion

This body of research is clear that the best intervention to increase PC access and improve the health of individuals who are homeless is stable housing (Gabrielian et al., 2014; Gabrielian et al., 2016; Krupski et al., 2015; Schick et al., 2019; Wright et al., 2016). Access and utilization is further improved when that housing is supported by case management, social work, and access to mental and physical healthcare (Biederman et al., 2019; Schick et al., 2019; Wright et al., 2016). Furthermore, improved access to homeless tailored PC reduces the non-emergent use of costly emergency department services (Gundlapalli et al, 2017; O’Toole et al., 2018). Integrating specific tailored care to individuals who are homeless that includes supports such as case management and providers who are familiar with the needs of individuals who are homeless, broadens access to needed services and encourages ongoing utilization.

Implications for Future

Implications for Future Practice

More needs to be done to house individuals and to integrate tailored clinics with each other and with local hospital systems. This will provide individuals with easier access to follow-up after an emergency room visit or hospital stay, in turn reducing return trips to the hospital. Respite programs with or without housing have been shown to reduce future hospitalizations (Biederman et al., 2019; Zur et al., 2016). Advanced practice registered nurses (APRNs) are well suited to fill the gaps by providing PC services in shelters and in supportive housing facilities (Caires, 2017; Fraino, 2015). In addition, mental health services should be a part of the PC services offered as treating mental health conditions has been shown to improve physical health outcomes (Davis et al., 2017; Hwang & Burns, 2014; O'Toole et al., 2018). APRNs providing homeless care should look for opportunities to partner with social service and mental health professionals among others in order to integrate services.

Implications for Future Research

Future research should continue to explore how to provide stable supportive housing for individuals experiencing homelessness, as well as what aspects of supportive housing and targeted homeless PC services are most effective at improving health outcomes. The literature review demonstrated that using peer mentors and lay persons to conduct outreach to individuals experiencing homelessness can be beneficial. Peer mentors and lay persons may serve to connect homeless individuals to ongoing PC services, improve outcomes, and ongoing access to PC services (Crock, 2016; O'Toole et al., 2015a; Resnik et al., 2017).

Recommendations for Future Policy

Policymakers should consider supporting models of housing such as the “housing first” approach, in which individuals are provided housing first, followed by attention to employment needs, mental health needs, and other medical needs after they are stably housed (National Alliance to End Homelessness, 2016). This was also suggested as a future opportunity for research by Parker et al. (2015). Other considerations may be publicly or privately supported medical respite programs for individuals who would otherwise be discharged from hospital to a shelter or the streets providing stable housing as part of transitioning out of the hospital. These interventions have been shown to reduce inappropriate ED use, hospitalizations, and overall health expenditures (Zur et al., 2016).

Conclusions

Solving the problem of how to best provide ongoing PC services to individuals experiencing homelessness will require a multidisciplinary approach involving stable housing, as well as supports to help people access PC medical and mental health services. Providing individuals with targeted and tailored interventions have all been shown to improve ongoing access to PC services, as well as overall medical and physical health. Tailored interventions include providers who are aware of the unique needs of individuals experiencing homelessness, mental health services, social work services, case management, and perhaps lay persons serving as peer mentors or outreach workers.

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Appendix

Table 1

Database Search Description

Database (or Search Engine)	Restrictions Added to Search	Dates Included in Database	General Subjects Covered by Database
1. Cochrane Database of Systematic Reviews	Peer reviewed, systemic review	2009-2019	Includes all Cochrane reviews and protocols prepared by Cochrane review groups. New and updated reviews and protocols are published continuously when ready.
2. CINAHL Plus with Full Text	English language, research article, peer reviewed	2014 through 2019	Comprehensive source of full text articles for nursing and allied health journals, also includes abstracts only. Access to almost 600 journals.
3. CONSUMER HEALTH COMPLETE - EBSCOHOST	English language, research article	2014 through 2019	Research databases, e-journals, ebooks, magazine subscriptions.
4. PsycINFO	Peer reviewed, scholarly journals, English language	2014 through 2019	Combines research from psychological as well as medical journals.

Table 2

Data Abstraction Process

Date of Search	Key Words	Hits in Cochrane	Hits in CINAHL	Hits in EBSCO	Hits in PsycINFO
10.18.19	"Homeless*"	0 (2014-2019)	1,237	786	2,511
10.18.19	"Homeless*" & "Emergency Department*"	0	87	81	109
10.18.19	"Homeless*" & "Primary Care"	0	100	64	150
10.18.19	"homeless clinic"	0	55	44	87
10.18.19	"homeless clinic" & "emergency department"	0	9 (5)	7 (3)	6 (4)
10.18.19	"homeless clinic" & "primary care"	0	18 (11)	13 (8)	17 (6)
10.20.19	"Healthcare for the Homeless"	1 (1)	256	296	131
10.20.19	"Healthcare for the Homeless" & "primary care*"	0	69	42	30
10.20.19	"Healthcare for the Homeless" & "emergency department*"	0	49	51	24
10.24.19	"Emergency Department*" & "primary care*" & "homeless*"	0	26		
10.25.19	"homeless tailored"	0	22	9 (2)	84
10.25.19	"Homeless tailored" & "primary care*"	0	14 (11) (without filters)	5 (1)	8 (5) (expanded date range 2010-2019)
10.25.19	"Homeless tailored" & "primary care*"	0	3 (with filters) (3)	3 (1)	5 (3)
10.28.19	"Homeless" & "Veterans" & "Primary Care*"	0	12 (7)	11 (4)	

Date of Search	Key Words	Hits in Cochrane	Hits in CINAHL	Hits in EBSCO	Hits in PsycINFO
11.2.19	"homeless*" & "urgent care*"	0	12 (3)	5 (3)	13 (3)
11.2.19	"transients*" & "primary care*"	0	54	91	37
11.2.19	"impoverished*" & primary care*"	0	18 (4)	14 (2)	26
11.2.19	"homeless*" & "respite care*"	0	5 (2)	10 (4)	10 (4)
11.2.19	"people in emergency shelter" & "primary care*"	0	1 (1)	4 (3)	0
11.2.19	"people in transitional housing" & primary care*"	0	1 (1)	1 (0)	0
11.2.19	"people who are homeless" & "primary care*"	0	18 (5)	17 (7)	0
11.15.19	"homeless*" & "community based*"	0	141	91	333
11.15.19	"homeless*" & "community based*" & "healthcare*"	0	19 (4)	21	40
12.16.19	"homeless*"	3 (0) (2009-2019)			
12.21.19	"homeless clinic" & "emergency department"	0	9 (5)	7 (3)	7 (4)
12.21.19	"homeless*" & "respite care*"	0	5 (2)	10 (4)	11 (4)
12.27.19	"Homeless tailored" & "primary care*"	0	15 (11) (without filters)	3 (1)	8 (5) (expanded date range 2010-2019)

***BOLD** = articles reviewed in full for match with systematic review inclusion criteria

Table 3

Characteristics of Literature Included and Excluded

Reference	Included or Excluded	Rationale
Adler, G., Pritchett, L. R., Kauth, M. R., & Mott, J. (2015). Staff perceptions of homeless veterans' needs and available services at community-based outpatient clinics. <i>Journal of Rural Mental Health, 39</i> (1), 46-53. http://doi.org/10.1037/rmh0000024	Excluded	Evaluated needs of rural homeless vet's vs non-rural. Found rural homeless vets were more self-reliant, and unemployment, MH, and SUD were primary causes of rural homelessness in vets. Staff perceived rural VA services had greater availability of HC services for homeless vets. Only a survey of beliefs.
Asgary, R., Garland, V., Jakubowski, A., & Sckell, B. (2014). Colorectal cancer screening among the homeless population of New York City shelter-based clinics. <i>American Journal of Public Health, 104</i> (7), 1307-1313. https://doi.org/10.2105/AJPH.2013.301792	Excluded	Found homeless patients less likely to complete colorectal screening. Suggested that homeless patients need more supports to tailor care specifically to them, including respite place to complete bowel prep and supports getting to and from appointment. No interventions for increasing PC.
Asanad, K., Zheng, J., Chan-Golston, A., Tam, E., Bhetraratana, M., Lan, C.-W., Zhao, M., Abdi, R., Abdi, F., Vasti, E. & Prelip, M. L. (2018). Assessing quality of care through client satisfaction at an interprofessional student-run free clinic. <i>Journal of Interprofessional Care, 32</i> (2), 203-210. https://doi.org/10.1080/13561820.2017.1395827	Included Duplicate	Looked at satisfaction and health outcomes for homeless patients in medical student run clinics. Found high satisfaction and high utilization of other outpatient healthcare resources.
Baker, J., Travers, J. L., Buschman, P., & Merrill, J. A. (2018). An Efficient Nurse Practitioner-Led Community-Based Service Model for Delivering Coordinated Care to Persons with Serious Mental Illness at Risk for Homelessness. <i>Journal of the American Psychiatric Nurses Association, 24</i> (2), 101-108. https://doi.org/10.1177/1078390317704044	Excluded Duplicate	Found mental health NP focused services could increase rates of housing. Focused on mental health NP interventions as they related to housing but not on PC interventions, outcomes, or follow-up.
Biederman, D. J., Douglas, C., Gamble, J., Wilson, S., & Feigal, J. (2019). Health care utilization following a homeless medical respite pilot program. <i>Public Health Nursing, 36</i> (3), 296-302. https://doi.org/10.1111/phn.12589	Included Duplicate	Individuals admitted to a respite program (housing plus case manager) after discharge from hospital had more outpatient primary care visits and fewer hospitalizations after the respite program ended. Also, had more housing and income stability over the next year.
Biederman, D. J. (2016). Transitional care for homeless persons: An opportunity for nursing leadership, innovation, and creativity. <i>Creative Nursing, 22</i> (2), 76-81. https://doi.org/10.1891/1078-4535.22.2.76	Excluded	Discussion article about importance of bridging care using social work. Not a research article and focused on social work.
Cadora, E. (2014). Civics lessons: How certain schemes to end mass incarceration can fail. <i>Annals of the American Academy of Political and Social Science, 651</i> (1), 277-285. http://doi.org/10.1177/0002716213503786	Excluded	Article on how untreated mental illness accounts for many individuals in jail. Suggests targeted outpatient care may help to reduce disparities and jail populations.
Caires, A. L. (2017). Mobile health care for people who are homeless. <i>Creative Nursing, 23</i> (3), 152-157. https://doi.org/10.1891/1078-4535.23.3.152	Included Duplicate	Discussion of set up and services of a mobile healthcare unit that is open 4 times per month targeting homeless individuals. Not a research study, however, shows increased access to PC but not ongoing PC.
Canham, S. L., Davidson, S., Custodio, K., Mauboules, C., Good, C., Wister, A. V., & Bosma, H. (2019). Health supports needed for homeless persons transitioning from hospitals. <i>Health & Social Care in the Community, 27</i> (3), 531-545. https://doi.org/10.1111/hsc.12599	Excluded Duplicate	Review of types of supports needed for homeless individuals coming out of hospital. Discussion about homeless individuals using EDs as PC due to not having access to consistent PCP, discussed role shelter staff play in providing care and their desire to having nursing or PC services available in shelter.
Chen, F. (2014). Developing community support for homeless people with mental illness in transition. <i>Community Mental Health Journal, 50</i> (5), 520-530. https://doi.org/10.1007/s10597-013-9641-3	Excluded	Focused on mental health interventions to help transition from mental health inpatient stays. Interventions by CTI workers, does not discuss PC clinics or interactions with PC providers.

Reference	Included or Excluded	Rationale
Chang, E. T., Wells, K. B., Gilmore, J., Tang, L., Morgan, A. U., Sanders, S., & Chung, B. (2015). Comorbid depression and substance abuse among safety-net clients in Los Angeles: A community participatory study. <i>Psychiatric Services, 66</i> (3), 285–294. https://doi.org/10.1176/appi.ps.201300318	Excluded	Clients with depression and a substance abuse history had significant psychosocial stressors and high rates of service use, which suggests that communitywide approaches may be needed to address both depression and substance abuse. Excluded as not specific to ongoing PC due to no targeted homeless PC services
Christensen, R. C. (2015). An integrated geriatric program for persons experiencing homelessness. <i>Psychiatric Services, 66</i> (5), 555-556. https://doi.org/10.1176/appi.ps.660504	Excluded	Article describing benefits of adding geriatric psych program to an integrated FQHA in Jacksonville. 22 of 40 individuals transitioned to housing, patients satisfied. Not specific to targeted PC. Not a research article.
Cretzmeyer, M., Moeckli, J., & Liu, W. M. (2014). Barriers and facilitators to Veterans Administration collaboration with community providers: The Lodge Project for homeless veterans. <i>Social Work in Health Care, 53</i> (8), 698–713. https://doi.org/10.1080/00981389.2014.930371	Excluded	Focused on housing only and no mention of healthcare amongst homeless veterans.
Crock, E. (2016). Access to healthcare services for people living with HIV experiencing homelessness: A literature review. <i>Australian Journal of Advanced Nursing, 34</i>(1), 42–51. https://www.semanticscholar.org/paper/Access-to-healthcare-services-for-people-living-HIV-Crock/f335f3eab8a00aed709caf7ee8122771d812c750	Included Duplicate	Identified strategies that help people with HIV who are homeless get access to healthcare. Found targeted nursing outreach to get individuals with HIV into clinic and meet people where they were increased access to HIV care and adherence to antiretroviral therapy.
Cummings, J. R., Allen, L., Ko, M., Bonney, L., Hunter-Jones, J., & Cooper, H. (2016). Changes in healthcare access and utilization among participants in a public housing relocation program in Atlanta, Georgia. <i>Health & Place, 42</i> , 63–68. https://doi.org/10.1016/j.healthplace.2016.07.006	Excluded	Found relocating impoverished individuals to less impoverished neighborhoods did not necessarily increase healthcare access. Need to be specific in relocation to neighborhoods with accessible healthcare resources for low income populations. Excluded as not specific to homeless.
Cutts, D., Coleman, S., Black, M., Chilton, M., Cook, J., Ettinger de Cuba, S., Heeren, T. C., Meyers, A., Sandel, M., Casey, P. H., & Frank, D. A. (2015). Homelessness during pregnancy: A unique, time-dependent risk factor of birth outcomes. <i>Maternal & Child Health Journal, 19</i> (6), 1276–1283. https://doi.org/10.1007/s10995-014-1633-6	Exclude Duplicate	Homelessness and pregnant women. Homelessness independent variable for low birth weight. Recommend housing and healthcare as next steps to address this.
Davis, J. A., Tsui, I., Gelberg, L., Gabrielian, S., Lee, M. L., & Chang, E. T. (2017). Risk factors for diabetic retinopathy among homeless veterans. <i>Psychological Services, 14</i>(2), 221-228. http://doi.org/10.1037/ser0000148	Included	VA homeless tailored care for veterans may be why that population has lower rates of diabetic retinopathy compared to vets who are housed. Also utilize more PC and MH services.
Gabrielian, S., Chen, J. C., Minhaj, B. P., Manchanda, R., Altman, L., Koosis, E., & Gelberg, L. (2017). Feasibility and acceptability of a collocated homeless-tailored primary care clinic and emergency department. <i>Journal of Primary Care & Community Health, 8</i> (4), 338–344. https://doi.org/10.1177/2150131917699751	Excluded Duplicate	Assesses clinicians' attitudes and feasibility of setting up a PCC in an ED for homeless individuals. Does not assess outcomes to homeless individuals.
Gabrielian, S., Yuan, A. H., Andersen, R. M., & Gelberg, L. (2016). Diagnoses treated in ambulatory care among homeless-experienced veterans. <i>Journal of Primary Care & Community Health, 7</i> (4), 281–287. https://doi.org/10.1177/2150131916656009	Included	Looked at how housing influenced individuals primary care use. Found once housed had better access to routine PC treatment for multiple chronic conditions.
Gabrielian, S., Yuan, A. H., Andersen, R. M., Rubenstein, L. V., & Gelberg, L. (2014). VA health service utilization for homeless and low-income veterans: A spotlight on the VA Supportive Housing (VASH) program in greater Los Angeles. <i>Medical Care, 52</i> (5), 454–461. https://doi.org/10.1097/MLR.000000000000112	Included	Examined relationships between housed versus non housed veterans and their healthcare utilization. Also looked at VA housing vs non-VA housing effects. Looked at all forms of healthcare utilization, ED, outpatient, inpatient and found homeless veterans had less inpatient, outpatient, and ED use than low income housed veterans. Concluded disparities of housing was also related to disparities to primary care availability.
Gentil, L., Grenier, G., Bamvita, J. M., & Fleury, M. (2019). Satisfaction with health and community services among homeless and formerly homeless individuals in Quebec, Canada. <i>Health & Social Care in the Community, 10</i> (11), 12834. http://doi.org/10.1111/hsc.12834	Excluded	Focused on client satisfaction, found having a family physician correlated with higher satisfaction. Suggests promoting tailored primary care adapted to homeless population with housing supports and case management could improve outcomes while reducing unnecessary services. Also found

Reference	Included or Excluded	Rationale
		QOL not necessarily increased in people with MH and functional disability just because of supportive housing and access to a family physician.
Gundlapalli, A. V., Redd, A., Bolton, D., Vanneman, M. E., Carter, M. E., Johnson, E., Samore, M. H., Fargo, J. D., & O'Toole, T. P. (2017). Patient-aligned care team engagement to connect veterans experiencing homelessness with appropriate health care. <i>Medical Care</i> , 55(9), S104-S110.	Included	H-PACT enrollment increased ongoing use of PC services and decreased avoidable ED visits in homeless vets over period of 6 months to 1 year.
Hadenfeldt, C. J., Darabaris, M., & Aufdenkamp, M. (2017). Frailty assessment in patients utilizing a free clinic. <i>Journal of Health Care for the Poor & Underserved</i> , 28(4), 1423–1435. https://doi.org/10.1353/hpu.2017.0124	Excluded	Looked at frailty amongst people who use free clinic and found they are often frailer at younger age (40-64). Not specific to PC or ongoing care.
Hauff, A. J., & Secor-Turner, M. (2014). Homeless health needs: Shelter and health service provider perspective. <i>Journal of Community Health Nursing</i> , 31(2), 103–117. https://doi.org/10.1080/07370016.2014.901072	Excluded Duplicate	Discusses needs and barriers from HCP and shelter staff perspective to getting medical needs met or good medical care. No evidence that targeted PC does or does not increase ongoing PC.
Hwang, S. W., & Burns, T. (2014). Health interventions for people who are homeless. <i>The Lancet</i> , 384(9953), 1541-1547. http://doi.org/10.1016/S0140-6736(14)61133-8	Included Duplicate	Found tailored PC may be more effective than traditional PC for homeless individuals. Multiple outcomes (PC, mental health, housing, etc.)
Johnson, S. R. (2014). Shelter for convalescence. <i>Modern Healthcare</i> , 44(12), 33. https://www.modernhealthcare.com/article/20140322/MAGAZINE/303229937/shelter-for-convalescence	Excluded	Article only, not a study. Looked only at respite programs and the support they provide to prevent readmission, did not discuss primary care and ongoing care.
Jones, A. L., Hausmann, L. R. M., Kertesz, S. G., Suo, Y., Cashy, J. P., Mor, M. K., Pettey, W. B. P., Schaefer, J. H., Gordon, A. J., & Gundlapalli, A. V. (2019). Providing positive primary care experiences for homeless veterans through tailored medical homes. <i>Medical Care</i> , 57(4), 270-278. https://doi.org/10.1097/MLR.0000000000001070	Included	H-PACT more likely to be female, served in recent military conflict, receive more social service and outreach benefits. Rated care more positively in H-PACT than non-H-PACT facilities. May mitigate factors that affect homeless vets not seeking care.
Jones, A. L., Hausmann, L. R. M., Kertesz, S., Ying, S., Cashy, J. P., Mor, K. M., Schaefer, J. H., Gundlapalli, A. V., & Gordon, A. J. (2018). Difference in experiences with care between homeless and nonhomeless patients with veterans' affairs facilities with tailored and nontailored primary care teams. <i>Medical Care</i> , 56(7), 610-618.	Included	Homeless patients more likely to report more positive vs negative experiences in VA homeless tailored medical clinics than non-homeless tailored medical clinics. H-PACT enrollment increased use of PC services in homeless vets.
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. <i>BMC Health Services Research</i> , 15(1), 58. https://doi.org/10.1186/s12913-015-0716-4	Included Duplicate	Ireland – looked at effects of free healthcare on homeless population. Clinics all based in shelters or food shelves. Found these were more used than another PCP. 25% not homeless but “at risk for homelessness”. People who used these clinics rated their health higher despite it maybe not being. Increased attendance at PC and decreased at ED.
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., Johnson, N. K., Granstaff, U. S., O'Connell, J. J., Golden, J. F., Young, A. S., Davis, L. L., & Pollio, D. E. (2013). Comparing homeless persons' care experiences in tailored versus nontailored primary care programs. <i>American Journal of Public Health</i> , 103(S2), S331-S339.	Included	Homeless tailored PC services delivered better service experience for homeless patients, which may increase their use of PC services.
Krupski, A., Graves, M. C., Bumgardner, K., & Roy-Byrne, P. (2015). Comparison of homeless and non-homeless problem drug users recruited from primary care safety-net clinics. <i>Journal of Substance Abuse Treatment</i> , 58, 84–89. https://doi.org/10.1016/j.jsat.2015.06.007	Included Duplicate	Identifies that housing is an independent variable for substance use programs, medical comorbidities, and chemical dependency treatment programs and frequency of ED use.

Reference	Included or Excluded	Rationale
Lutge, E. E., Wiysonge, C. S., Knight, S. E., Sinclair, D., & Volmink, J. (2015). Incentives and enablers to improve adherence in tuberculosis (review). <i>Cochrane Database of Systematic Reviews</i> , (9). https://doi.org/10.1002/14651858.CD007952.pub3	Excluded	12 RTCs, 3 in homeless adults, TB treatment adherence focus with incentives of cash or food. Does not discuss primary care services, however, did show that certain populations especially homeless individuals were more likely to return to clinics for TB testing/reading if immediate cash incentives or transportation was offered. The intervention is not the healthcare clinic, rather the cash or ride to the clinic.
Lutwak, N., & Dill, C. (2017). Veterans and the national tragedy of suicide. <i>American Journal of Preventive Medicine</i> , 53(4) http://doi.org/10.1016/j.amepre.2017.03.024	Excluded	Commentary article not research. Not homeless or PC focused.
MacWilliams, J., Bramwell, M., Brown, S., & O'Connor, M. (2014). Reaching out to Ray: Delivering palliative care services to a homeless person in Melbourne, Australia. <i>International Journal of Palliative Nursing</i> , 20(2), 83–88. https://doi.org/10.12968/ijpn.2014.20.2.83	Excluded Duplicate	Studied homeless individuals in Australia who were in need of palliative care. Focus is palliative not primary care.
Milne, R., Price, M., Wallace, B., Drost, A., Haigh-Gidora, I., Nezil, F. A., & Fraser, C. (2015). From principles to practice: Description of a novel equity-based HCV primary care treatment model for PWID. <i>International Journal of Drug Policy</i> , 26(10), 1020-1027. http://doi.org/10.1016/j.drugpo.2015.07.009	Excluded	Focused on hepatitis C treatment. Found primary care providers in homeless population best to do both PC and hepatitis C treatment. Not specific to homeless targeted care.
Moczygemba, L. R., Osborn, R. D., & Lapane, K. L. (2014). Adherence to behavioral therapy and psychiatry visits in a safety-net setting in Virginia, USA. <i>Health & Social Care in the Community</i> , 22(5), 469–478. https://doi.org/10.1111/hsc.12102	Excluded Duplicate	Looked at demographics of homeless individuals with MH issues being seen at tailored MH HC facilities to determine what is needed to increase adherence to follow-up. Only MH related.
Moczygemba, L. R., Osborn, R. D., & Lapane, K. L. (2014). Utilization of behavioral health outpatient therapy and psychiatry services among homeless people recently hospitalized for a psychiatric condition. <i>Journal of Ambulatory Care Management</i> , 37(4), 303–313. https://doi.org/10.1097/JAC.000000000000020	Excluded	Studied who was more likely to be hospitalized for MH and who was most likely to be adherent post discharge. Not specific to PC or PC follow-up.
Moore, M., Conrick, K. M., Reddy, A., Allen, A., & Jaffe, C. (2019). From their perspective: The connection between life stressors and health care service use patterns of homeless frequent users of the emergency department. <i>Health & Social Work</i> , 44(2), 113–122. https://doi.org/10.1093/hsw/hlz010	Excluded Duplicate	Homeless individuals are high users of ED. When social workers intervene can steer to other outpatient services. Focused only on social work not PC services.
Noticeboard. (2015). <i>Mental Health Practice</i> , 19(4), 12. https://doi.org/10.7748/mhp.19.4.12.s15	Excluded	Not a study, this was an opinion article from Canada calling on Queen Elizabeth to focus more on mental health needs of homeless.
Nxumalo, N., Goudge, J., & Manderson, L. (2016). Community health workers, recipients' experiences and constraints to care in South Africa: A pathway to trust. <i>AIDS Care</i> , 28, 61–71. https://doi.org/10.1080/09540121.2016.1195484	Excluded Duplicate	Found more tailored care at community-based PCC in SA in poor communities helped build trust and improved outcomes as well as access to care in South Africa. Not homeless focused.

Reference	Included or Excluded	Rationale
O'Toole, T. P., Johnson, E. E., Borgia, M. L., & Rose, J. (2015). Tailoring outreach efforts to increase primary care use among homeless veterans: Results of a randomized controlled trial. <i>JGIM: Journal of General Internal Medicine</i> , 30(7), 886–898. https://doi.org/10.1007/s11606-015-3193-x	Included Duplicate	Targeted and tailored outreach can engage homeless veterans in ongoing PC. Even brief interventions were shown to improve veterans access to ongoing PC compared to standard care.
O'Toole, T. P., Johnson, E. E., Borgia, M., Noack, A., Yoon, J., Gehlert, E., & Lo, J. (2018). Population-tailored care for homeless veterans and acute care use, cost, and satisfaction: A prospective quasi-experimental trial. <i>Previous Chronic Disease</i> , 15. http://doi.org/10.5888/pcd15.170311	Included	Patients in VA system who were seen at homeless tailored clinics had less ED use and were hospitalized at lower rates than those seen in non-homeless tailored clinics. They also had improvements in mental health, medication adherence, and lower annual costs. Individuals also rated their health as better compared to those seen in non-homeless tailored clinics.
O, Toole. T. P., Johnson, E. E., Redihan, S., Borgia, M., & Rose, J. (2015). Needing primary care but not getting it: The role of trust, stigma and organizational obstacles reported by homeless veterans. <i>Journal of Health Care for the Poor & Underserved</i> , 26(3), 1019–1031. https://doi.org/10.1353/hpu.2015.0077	Excluded	Survey of homeless vets who were not accessing PC about reasons why they were not getting it when needed. Most were interested in PC but did not trust HC providers, felt stigmatized, or had difficulty with the care process. Having depression or a medical condition was associated with receiving care, not being involved in care decisions associated with not receiving care. Assessed homeless veterans about why they did not see PC, found top reason was not being involved in care decisions. Stigma and inflexible care were reasons to not seek available PC.
Palmer, B. (2016). Veterans' Health Administration nurses...Be proud! <i>MEDSURG Nursing</i> , 25(4), 211–214.	Excluded	Editorial, focused on RNs role at VA working with all veterans. Not homeless specific.
Parker, R., Regier, M., Brown, Z., & Davis, S. (2015). An Inexpensive, interdisciplinary, methodology to conduct an impact study of homeless persons on hospital based services. <i>Journal of Community Health</i> , 40(1), 41–46. https://doi.org/10.1007/s10900-014-9892-0	Excluded Duplicate	Looked at data of homeless persons and their use of hospital-based healthcare services in the U.S. Looked a lot at costs. Discussed future research needed that looks at a different model for addressing health of these individuals that is targeted toward their needs.
Petith-Zbiciak, C. (2016). Closing the gap in health care services for homeless persons on Maui. <i>Closing the Gap in Health Care Services for Homeless Persons on Maui</i> , 1. http://hdl.handle.net/10125/51526	Excluded	Identified gaps including lack of primary care and overuse of ED for primary care in homeless in Maui. Did not study effects of establishing any type of specialized targeted care toward homeless individuals or how that affected their ongoing primary care access/use.
Resnik, L., Ekerholm, S., Johnson, E. E., Ellison, M. L., & O'Toole, T. P. (2017). Which homeless veterans benefit from a peer mentor and how? <i>Journal of Clinical Psychology</i> , 73(9), 1027-1047. http://doi.org/10.1002/jclp.22407	Included	Found having a peer mentor beneficial for ongoing PC in homeless vets being seen in targeted homeless PC clinics. Focused on the peer mentor as part of the targeted homeless PC.
Roche, M. A., Duffield, C., Smith, J., Kelly, D., Cook, R., Bichel-Findlay, J., Saunders, C., & Carter, D. J. (2018). Nurse-led primary health care for homeless men: A multimethods descriptive study. <i>International Nursing Review</i> , 65(3), 392–399. https://doi.org/10.1111/inr.12419	Included	Nurse led care increased referrals to ongoing PC or specialists, follow-up in PC, and avoidance of ED visits in homeless men.

Reference	Included or Excluded	Rationale
Sakai-Bizmark, R., Chang, R.-K. R., Mena, L. A., Webber, E. J., Marr, E. H., & Kwong, K. Y. (2019). Asthma hospitalizations among homeless children in New York state. <i>Pediatrics</i> , <i>144</i> (2), 1–10. https://doi.org/10.1542/peds.2018-2769	Excluded Duplicate	Demonstrates poorer outcomes with asthma (higher hospitalization and ED visits) amongst homeless youth compared to housed youth. Nothing about primary care. “Lack of a permanent address may hamper a patient’s ability to access care or maintain scheduled appointments with providers.”
Sarango, M., der de Groot, A., Hirschi, M., Umeh, C. A., & Rajabiun, S. (2017). The Role of Patient Navigators in Building a Medical Home for Multiply Diagnosed HIV-Positive Homeless Populations. <i>Journal of Public Health Management & Practice</i> , <i>23</i> (3), 276–282. https://doi-org.ezproxy.mnsu.edu/10.1097/PHH.0000000000000512	Excluded Duplicate	Studied what role and responsibilities patient navigators had in targeted patient care medical home amongst homeless vets to improve access to HIV PC and MH care. Focused on patient navigators and what they reported doing within the tailored PC clinics. Did not independently study if this was helpful to increasing ongoing PC, rather was just to evaluate what role they reported playing as part of the team.
Schick, V., Wiginton, L., Crouch, C., Haider, A., & Isbell, F. (2019). Integrated Service Delivery and Health-Related Quality of Life of Individuals in Permanent Supportive Housing Who Were Formerly Chronically Homeless. <i>American Journal of Public Health</i>, <i>109</i>(2), 313–319. https://doi-org.ezproxy.mnsu.edu/10.2105/AJPH.2018.304817	Included	Evaluated the effect of stable housing and a coordinated healthcare team including primary care where everyone worked on the same care plan and the reduction in ED visits. Found coordinated care model most effective.
Simmons, M. M., Fincke, B. G., Drainoni, M.-L., Kim, B., Byrne, T., Smelson, D., Casey, K., Ellison, M. L., Visher, C., Blue-Howells, J., & McInnes, D. K. (2017). A two-state comparative implementation of peer-support intervention to link veterans to health-related services after incarceration: a study protocol. <i>BMC Health Services Research</i> , <i>17</i> , 1–10. https://doi-org.ezproxy.mnsu.edu/10.1186/s12913-017-2572-x	Excluded	Intervened with social support to veterans being released from prison trying to keep them connected to healthcare. This is a clinical trial, no published results.
Simmons, M. M., Gabrielian, S., Byrne, T., McCullough, M. B., Smith, J. L., Taylor, T. J., O’Toole, T. P., Kane, V., Yakovchenko, V., McInnes, D. K., & Smelson, D. A. (2017). A Hybrid III stepped wedge cluster randomized trial testing an implementation strategy to facilitate the use of an evidence-based practice in VA Homeless Primary Care Treatment Programs. <i>Implementation Science</i> , <i>12</i> , 1–10. https://doi-org.ezproxy.mnsu.edu/10.1186/s13012-017-0563-2	Excluded Duplicate	Focused on how to integrate substance abuse treatment within VA targeted homeless treatment clinics. Not specific to ongoing care based on access to tailored clinics.
Stergiopoulos, V., Gozdzik, A., Nisenbaum, R., Durbin, J., Hwang, S. W., O’Campo, P., Tepper, J., & Wasylenki, D. (2018). Bridging Hospital and Community Care for Homeless Adults with Mental Health Needs: Outcomes of a Brief Interdisciplinary Intervention. <i>Canadian Journal of Psychiatry</i> , <i>63</i> (11), 774–784. https://doi-org.ezproxy.mnsu.edu/10.1177/0706743718772539	Excluded	Focused on MH care only in MH clinics but showed supports that decreased hospital readmission and mental health symptoms.
Stevenson, E., & Purpuro, T. (2018). Homeless people: Nursing care with dignity. <i>Nursing</i> , <i>48</i> (6), 58–62. https://doi-org.ezproxy.mnsu.edu/10.1097/01.NURSE.0000531009.47966.19	Excluded	Explores barriers to HC for homeless individuals. Nothing about tailored PC services.
Stolte, O., & Hodgettes, D. (2015). Being healthy in unhealthy places: Health tactics in a homeless world. <i>Journal of Health Psychology</i> , <i>20</i> (2), 144-153. https://doi-org.ezproxy.mnsu.edu/10.1177/1359105313500246	Excluded	Focused on one person and his health strategies. Did not discuss primary care or targeted interventions that may improve primary care
Teunissen, E., Van Bavel, E., Van Den Driessen Mareeuw, F., Macfarlane, A., Van Weel-Baumgarten, E., Van Den Muijsenbergh, M., & Van Weel, C. (2015). Mental health problems of undocumented migrants in the Netherlands: A qualitative exploration of recognition, recording, and treatment by general practitioners. <i>Scandinavian Journal of</i>	Excluded	Discussed mental health care provided by PCP to undocumented migrants in the Netherlands. No discussion of increased access to PC or homeless population.

Reference	Included or Excluded	Rationale
<i>Primary Health Care</i> , 33(2), 82–90. https://doi-org.ezproxy.mnsu.edu/10.3109/02813432.2015.1041830		
Tunzi, M. (2016). Home. <i>Hastings Center Report</i> , 46(2), 3–4. https://doi-org.ezproxy.mnsu.edu/10.1002/hast.538	Excluded	Opinion piece on the importance of consistent primary care versus team approach. Author believes individuals need to see same provider. Not focused on individuals who are homeless or targeted homeless clinics.
Upshur, C., Weinreb, L., Bharel, M., Reed, G., & Frisard, C. (2015). A randomized control trial of a chronic care intervention for homeless women with alcohol use problems. <i>Journal of Substance Abuse Treatment</i> , 51, 19–29. https://doi-org.ezproxy.mnsu.edu/10.1016/j.jsat.2014.11.001	Included Duplicate	Targeted PCP services with supportive case management for homeless women to reduce alcohol consumption. PCP in homeless clinics with or without additional supports reduced overall alcohol consumption but did not improve health overall. PCP with support from case management had higher engagement with substance use programs.
Van den Berk-Clark, C., & McGuire, J. (2014). Trust in Health Care Providers: Factors Predicting Trust among Homeless Veterans over Time. <i>Journal of Health Care for the Poor & Underserved</i> , 25(3), 1278–1290. https://doi-org.ezproxy.mnsu.edu/10.1353/hpu.2014.0115	Excluded	Continuity of care with providers increased trust over 18 months. Not homeless specific or about homeless targeted care clinics.
Wang, H., Nejtek, V. A., Zieger, D., Robinson, R. D., Schrader, C. D., Phariss, C., Ku, J., & Zenarosa, N. R. (2015). The role of charity care and primary care physician assignment on ED use in homeless patients. <i>American Journal of Emergency Medicine</i> , 33(8), 1006–1011. https://doi-org.ezproxy.mnsu.edu/10.1016/j.ajem.2015.04.026	Included Duplicate	Assessed if having an assigned PCP would reduce ED use and increase PC use instead. Found about 50% of those with a PCP assigned still inappropriately used the ED.
Weisz, D., Gusmano, M. K., Wong, G., & Trombley II, J. (2015). Emergency Department Use: A Reflection of Poor Primary Care Access? <i>American Journal of Managed Care</i> , 21(2), e152-60. https://search-ebscost-com.ezproxy.mnsu.edu/login.aspx?direct=true&db=rzh&AN=103782747	Excluded	Found overuse of ED amongst people with no PCP or health insurance. Highlights poor access to community-based PCPs. Comparative Study. Not homeless specific.
White, B. M., Jones, W. J., Moran, W. P., & Simpson, K. N. (2016). Effect of the Economic Recession on Primary Care Access for the Homeless. <i>Journal of Health Care for the Poor & Underserved</i> , 27(3), 1577–1591. https://doi-org.ezproxy.mnsu.edu/10.1353/hpu.2016.01043	Excluded	Looked at economic recession as barrier to accessing primary care services in individuals who were homeless and housed. Recession was barrier to accessing primary care for homeless. Did not discuss targeted interventions.
White, B. M., & Newman, S. D. (2015). Access to Primary Care Services Among the Homeless: A Synthesis of the Literature Using the Equity of Access to Medical Care Framework. <i>Journal of Primary Care & Community Health</i> , 6(2), 77–87. https://doi-org.ezproxy.mnsu.edu/10.1177/2150131914556122	Excluded	A quasi-systematic review of the literature was conducted using the PubMed, CINAHL, and PsycINFO databases identified barriers to PC for homeless.
Wright, B. J., Vartanian, K. B., Hsin-Fang Li, Royal, N., & Matson, J. K. (2016). Formerly Homeless People Had Lower Overall Health Care Expenditures After Moving Into Supportive Housing. <i>Health Affairs</i> , 35(1), 20–27. https://doi-org.ezproxy.mnsu.edu/10.1377/hlthaff.2015.0393	Included	Cannot ignore role of supportive housing in increasing access to primary care providers and reducing ED use.
Zuccaro, L., Champion, C., Bennett, S., & Ying, Y. (2018). Understanding the surgical care needs and use of outpatient surgical care services among homeless patients at the Ottawa Hospital. <i>Canadian Journal of Surgery</i> , 61(6), 424–429. https://doi-org.ezproxy.mnsu.edu/10.1503/cjs.001317	Excluded Duplicate	Surgical outpatient care focus to determine rates of OP surgical care use by homeless individuals. Found low rates of keeping appointments and of follow-up. Concluded may not have correct services in place to meet this need. Only focused on surgical care and surgical follow-up.

Reference	Included or Excluded	Rationale
Zur, J., Linton, S., & Mead, H. (2016). Medical Respite and Linkages to Outpatient Health Care Providers among Individuals Experiencing Homelessness. <i>Journal of Community Health Nursing</i> , 33(2), 81–89. https://doi-org.ezproxy.mnsu.edu/10.1080/07370016.2016.1159439	Included Duplicate	Explore processes, challenges, and success of linking patients to OP providers while in targeted PC medical respite program. Targeted toward homeless patients while in respite to help transition to OP PCP.

Table 4

Literature Review Table of All Studies Included

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
Asanad, K., Zheng, J., Chan-Golston, A., Tam, E., Bhetraratana, M., Lan, C.-W., Zhao, M., Abdi, R., Abdi, F., Vasti, E. & Prelip, M. L. (2018). Assessing quality of care through client satisfaction at an interprofessional student-run free clinic. <i>Journal of Interprofessional Care</i> , 32(2), 203–210. https://doi.org/10.1080/13561820.2017.1395827	Identify potential areas of improvement for student run medical clinic in LA	N = 1062 n = 194	Cross sectional survey Level IV	Demographics: gender, age, sources of medical care, 1 st visit to clinic Satisfaction Health outcomes	N/A	Clinic serves primarily male clients. Around 20% of clients each day are new to clinic. 61% get care solely from this clinic. 78/96 who were given outside referrals said this clinic was helpful in improving their access. 133/153 prefer this clinic to other OP clinics, 147/164 prefer this clinic to ED	Student run targeted medical clinic for homeless successful in connecting homeless individuals to ongoing PC.
Biederman, D. J., Douglas, C., Gamble, J., Wilson, S., & Feigl, J. (2019). Health care utilization following a homeless medical respite pilot program. <i>Public Health Nursing</i> , 36(3), 296–302. https://doi.org/10.1111/phn.12589	Evaluate a homeless medical respite pilot program to determine if it increased health care utilization and improved income, housing, and HC resources	N=29	Quantitative descriptive pre-/post-program evaluation Level IV	Demographics: age, sex, race, ethnicity. Connection to PC, mental health, substance abuse services, income, insurance, housing.	Housing and nursing case management	Individuals admitted to a respite program (housing plus case manager) after d/c from hospital had more outpatient primary care visits and fewer hospitalizations after the respite program ended. Also, had more housing and income stability over the next year.	Housing, along with targeted interventions specific to guiding individuals who are homeless toward PC services, effectively improved long-term access to primary care services.
Caires, A. L. (2017). Mobile health care for people who are homeless. <i>Creative Nursing</i> , 23(3), 152–157. https://doi.org/10.1891/1078-4535.23.3.152	Describe the planning and implementation of a mobile health care clinic for individuals who are homeless.	n/a	Expert opinion Level VII	n/a	n/a	Discussion of set up and services of a mobile healthcare unit that is open 4 times per month. Not a research study, shows increased access to PC however not ongoing PC.	Providing mobile care increases access to PC services in real time, however not long term.
Crock, E. (2016). Access to healthcare services for people living with HIV experiencing homelessness: A literature review. <i>Australian Journal of Advanced Nursing</i> , 34(1), 42–51. https://www.semanticscholar.org/paper/Access-to-healthcare-services-for-people-living-HIV-	To identify strategies which can improve access to HIV treatment and care to individuals who are homeless	n/a	Literature review Level V	n/a	n/a	Identified strategies that help people with HIV who are homeless get access to healthcare. Found targeted outreach with peer support and nursing HIV specialists to get individuals with HIV into clinic and meet people where they were	Nursing targeted outreach can increase adherence to antiretroviral therapy for HIV positive individuals who are homeless.

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
Crock/f335f3eab8a00aed709caf7ee8122771d812c750						increased access to HIV care and adherence to antiretroviral therapy	
Davis, J. A., Tsui, I., Gelberg, L., Gabrielian, S., Lee, M. L., & Chang, E. T. (2017). Risk factors for diabetic retinopathy among homeless veterans. <i>Psychological Services, 14</i> (2), 221-228. http://doi.org/10.1037/ser0000148	Compare rates of diabetic retinopathy between homeless and housed veterans and identify predictors of these rates	N = 20,192 homeless veterans	Secondary database analyses Level IV	Dependent variable – receiving treatment for diabetic retinopathy Independent variables – age, gender, race, ethnicity, marital status, substance use d/o, mental illness Enabling variables – housing status, copay status	N/A	Targeted primary care services and interventions focused on reducing health disparities in veterans with DM1 or DM2 as well as screening for diabetic retinopathy reduced rates of diabetic retinopathy in homeless veterans compared to housed. Homeless diabetics were more likely to have received PC and made more PC visits.	Targeted clinics for homeless veterans can improve outcomes for DM retinopathy by being more available to homeless veterans and offering mental health services which have been shown to improve diabetic management
Gabrielian, S., Yuan, A. H., Andersen, R. M., & Gelberg, L. (2016). Diagnoses treated in ambulatory care among homeless-experienced veterans. <i>Journal of Primary Care & Community Health, 7</i> (4), 281–287. https://doi.org/10.1177/2150131916656009	Compared diagnoses treated at VA ambulatory care between formerly homeless now house vets case managed through VA supported housing and those who are currently homeless.	N = 3631 n (housed) = 1904 n (homeless) = 1727	Secondary database analysis Level IV	VA supportive housing, homeless	VA supportive housing	Found housing an independent variable for access to ongoing PC and improvement in health. Looked at how housing influenced individuals primary care use. Found once housed had better access to routine PC treatment for multiple chronic conditions	Stable housing is essential for improving health care access and overall health in homeless population.
Gabrielian, S., Yuan, A. H., Andersen, R. M., Rubenstein, L. V., & Gelberg, L. (2014). VA health service utilization for homeless and low-income veterans: A spotlight on the VA Supportive Housing (VASH) program in greater Los Angeles. <i>Medical Care, 52</i> (5), 454–461. https://doi.org/10.1097/MLR.0000000000000112	Compare health care utilization between housed and non-housed veterans.	N = 62,459 greater Los Angeles	Secondary database analysis Level IV	Homeless, housed, veterans, medical services, surgical services, mental health services, inpatient, outpatient, ED use	n/a	Examined relationships between housed versus non housed veterans and their healthcare utilization. Also looked at VA housing vs non-VA housing effects. Looked at all forms of healthcare utilization, ED, OP, inpatient and found homeless veterans had less inpatient, OP, and ED use than low income housed veterans. Concluded disparities of housing was also related to disparities to primary care availability.	Individuals without housing have less access to PC services.

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
Gundlapalli, A. V., Redd, A., Bolton, D., Vanneman, M. E., Carter, M. E., Johnson, E., Samore, M. H., Fargo, J. D., & O'Toole, T. P. (2017). Patient-aligned care team engagement to connect veterans experiencing homelessness with appropriate health care. <i>Medical Care</i> , 55(9). S104-S110.	Examine the effect of a patient-aligned care team model tailored to homeless veterans on frequency and type of ED visits in VA medical centers	n (enrolled in H-PACT) = 3981 n (not enrolled in H-PACT) = 24,363 n (12 nonH-PACT sites) = 23,542	Systemic analysis Level IV	ED and urgent care visits, Emergent ED visits	H-PACT enrolment	Found homeless veterans enrolled in H-PACT clinics had fewer inappropriate ED visits and over a 12-month period more stable PCP and MHCP visits.	Targeted homeless clinics with supports increase long term primary care utilization
Hwang, S. W., & Burns, T. (2014). Health interventions for people who are homeless. <i>The Lancet</i> , 384(9953), 1541-1547. http://doi.org/10.1016/S0140-6736(14)61133-8	To provide a narrative outline of interventions to improve the health of people who are homeless	N = 21	Literature Search Level V	N/A	N/A	Coordinated services that also include mental health and substance abuse services as well as housing services benefitted homeless individuals. Tailored PCP are more familiar with guidelines specific to homeless individuals.	PCC programs specifically tailored to homeless individuals might be more effective than standard care, also more likely to achieve higher patient-rated quality of care. Medical respite programs reduce risk of readmission to hospital and number of days spent in hospital
Jones, A. L., Hausmann, L. R. M., Kertesz, S. G., Suo, Y., Cashy, J. P., Mor, M. K., Pettey, W. B. P., Schaefer, J. H., Gordon, A. J., & Gundlapalli, A. V. (2019). Providing positive primary care experiences for homeless veterans through tailored medical homes. <i>Medical Care</i> , 57(4), 270-278. https://doi.org/10.1097/MLR.0000000000001070	Determine if H-PACT delivers more satisfying patient experience	n = 251 (H-PACT enrolled) n = 1527 (standard PC with H-PACT available) n = 10,079 (facilities without H-PACT)	Retrospective cohort study Level IV	H-PACT, traditional clinic, surveys	H-PACT facilities	H-PACT users more likely to be female, served in recent military conflict, receive more social service and outreach benefits. Rated care more positively in H-PACT than non-H-PACT facilities. May mitigate factors that affect homeless vets not seeking care.	Tailored care seen by individuals experiencing homelessness as more positive, which may increase use of PC clinics
Jones, A. L., Hausmann, L. R. M., Kertesz, S., Ying, S., Cashy, J. P., Mor, K. M., Schaefer, J. H., Gundlapalli, A. V., & Gordon, A. J. (2018). Difference in experiences with care between homeless and nonhomeless patients with veterans' affairs facilities with tailored and nontailored primary care teams. <i>Medical Care</i> , 56(7), 610-618.	To assess experiences of homeless veterans receiving PC in H-PACT vs non-H-PACT clinics	n = 10,148 (non-H-PACT homeless) n = 309,779 (non-H-PACT nonhomeless)	Retrospective cohort study Level IV	Access, communication, office staff, provider rating coordination, shared decision making, self-management support	H-PACT facilities	Found homeless veterans were more satisfied with clinics tailored to meet their needs versus regular PC clinics, this in turn increased use of PC services.	Tailored clinics lead to higher satisfaction and more use.

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
		n = 2022 (H-PACT homeless) n = 20,941 (H-PACT nonhomeless)					
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. <i>BMC Health Services Research</i> , 15(1), 58. https://doi.org/10.1186/s12913-015-0716-4	To investigate the health and use of healthcare services of a homeless population in Dublin who access the Safetynet services.	n = 105	Observational cross-sectional study Level IV	N/A	Safety net clinics in Dublin opened	A majority of homeless people in this study (70%) had at some point received a mental health diagnosis. 82% were current smokers. 33% were active drug users. 60% did not use condoms with new partners. 81% took Rx medication. Majority used Safetynet GP's more than other GPs. Majority said they would have gotten no services during last illness if Safetynet not available. Use of GP services has increased since introduction of Safetynet clinics.	Free clinics increased access to PC in homeless adults in Ireland. Individuals who are homeless have more health problems than the general population.
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., Johnson, N. K., Granstaff, U. S., O'Connell, J. J., Golden, J. F., Young, A. S., Davis, L. L., & Pollio, D. E. (2013). Comparing homeless persons' care experiences in tailored versus nontailored primary care programs. <i>American Journal of Public Health</i> , 103(S2), S331-S339.	Compare homeless patients' experiences of care in tailored vs non-tailored PC clinics	N = 601 / 5 sites across the country, 4 VA and 1 HCH	Survey based comparison Level III	Residential status, health status, psychiatric symptoms The Primary Care Quality Homeless Survey	Homeless tailored PC services	Homeless tailored PC services delivered better service experience for homeless patients.	Tailoring provides better service experience, providing better services experience may increase use of PC services.
Krupski, A., Graves, M. C., Bumgardner, K., & Roy-Byrne, P. (2015). Comparison of homeless and non-homeless problem drug users recruited from primary care safety-net clinics. <i>Journal of Substance Abuse Treatment</i> , 58, 84-89. https://doi.org/10.1016/j.jsat.2015.06.007	Study socio-demographics, health status, service utilization, and criminal justice involvement in homeless non-	N = 866	Secondary analysis of an RCT Level II	Drug use, alcohol use, psychiatric status, family/social relations, legal involvement, homelessness Drug Abuse Screening Test, Addiction	Brief interventions for SUD in PC clinics	Homeless drug users use ED services more frequently than PC services compared to housed drug users, have higher rates of mental illness, and lower rates of treatment for mental illness. Identifies housing as an independent variable for substance	Stable housing plus services that connect homeless individuals with ongoing MH and ongoing substance treatment and supports are needed.

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
	treatment seeking problem drug users			Severity Index Lite, Treatment Services Review		use, health conditions, and ongoing healthcare.	
O'Toole, T. P., Johnson, E. E., Borgia, M. L., & Rose, J. (2015). Tailoring outreach efforts to increase primary care use among homeless veterans: Results of a randomized controlled trial. <i>JGIM: Journal of General Internal Medicine</i> , 30(7), 886–898. https://doi.org/10.1007/s11606-015-3193-x	Increase health seeking behavior and receipt of healthcare amongst veterans	N = 185 Providence, RI & New Bedford, MA	RCT Level II	Age, gender, veteran status, homeless, insurance, type of housing, income, health status, mental health condition, SUD, trauma history	Outreach that included a personal health assessment and brief intervention or clinic orientation	Brief intervention plus clinic orientation group had the highest rate (88%) of engaging in PC, followed by the clinic orientation only then the brief intervention only. Both were superior to standard care in engaging homeless veterans in ongoing PC.	Small interventions can be used to engage homeless previously resistant/avoidant individuals in ongoing care
O'Toole, T. P., Johnson, E. E., Borgia, M., Noack, A., Yoon, J., Gehlert, E., & Lo, J. (2018). Population-tailored care for homeless veterans and acute care use, cost, and satisfaction: A prospective quasi-experimental trial. <i>Previous Chronic Disease</i> , 15. http://doi.org/10.5888/pcd15.170311	Examine impact of enrollment in VA homeless-tailored PC on health service use, cost, and satisfaction	N = 266 n = 183 (H-PACT) n = 83 (PACT) VA health facilities in San Francisco, CA and Providence, RI	Quasi-experimental Level III	Healthcare use, homeless, veterans, gender, race, HC use	Homeless tailored primary care clinic	Patients in VA system who were seen at homeless tailored clinics (H-PACT) had less ED use and were hospitalized at lower rates than those seen in non-homeless tailored clinics (PACT). They also had improvements in mental health, medication adherence, and lower annual costs. Individuals also rated their health as better compared to those seen in non-homeless tailored clinics.	Homeless tailored care can improve PC access and reduce ED use while also improving health outcomes of individuals.
Resnik, L., Ekerholm, S., Johnson, E. E., Ellison, M. L., & O'Toole, T. P. (2017). Which homeless veterans benefit from a peer mentor and how? <i>Journal of Clinical Psychology</i> , 73(9), 1027-1047. http://doi.org/10.1002/jclp.22407	Describe homeless veterans' perceptions of value and characteristic of benefits for peer support services	n = 23 (Qualitative subsample) N = 102 (quantitative subsample) n = 101 intervention n = 101 no intervention	Mixed methods approach (qualitative and quantitative) Level III	Homeless, race, gender, depression, PTSD, mental health diagnosis, age, years education, SUD history, prior incarceration	Peer mentor	Found having a peer mentor beneficial for ongoing PC in homeless vets being seen in targeted homeless PC clinics. Focused on the peer mentor as part of the targeted homeless PC.	Peer mentors are one factor that make homeless targeted primary care clinics more effective than non-targeted PC clinics.
Roche, M. A., Duffield, C., Smith, J., Kelly, D., Cook, R., Bichel-Findlay, J., Saunders, C., & Carter, D. J. (2018). Nurse-led primary health care for homeless men: A multimethods descriptive study. <i>International Nursing Review</i> , 65(3), 392–399. https://doi.org/10.1111/inr.12419	To explore the primary healthcare needs and health service use of homeless men in inner Sydney.	Cross sectional n = 40 administrative data = 2707	Cross-sectional data survey Level IV	N/A	Nurse led clinic located in a homeless shelter in Australia	Nurse led care increased referrals to ongoing PC and specialty care, follow-up in PC, and avoidance of ED visits in homeless men.	Nurses have a positive role in targeted PC clinics at guiding homeless individuals to use more PC services and reduce inappropriate ED use.

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
Schick, V., Wiginton, L., Crouch, C., Haider, A., & Isbell, F. (2019). Integrated Service Delivery and Health-Related Quality of Life of Individuals in Permanent Supportive Housing Who Were Formerly Chronically Homeless. <i>American Journal of Public Health, 109</i> (2), 313–319. https://doi-org.ezproxy.mnsu.edu/10.2105/AJPH.2018.304817	Assess the impact of collaborative care on health-related QOL individuals in permanent supportive housing	N = 323 n = 210 intervention group n = 113 comparison group	Natural experiment Level III	Sociodemographic data (gender, age, race), health data, insurance, severe mental illness, depression, ED use Health related quality of life	Coordinated care model (onsite RN, case manager, community health workers) combined with housing Dedicated PC services with shared CP/EHR	Evaluated the effect of stable housing and a coordinated healthcare team including primary care, case manager, RN where everyone worked on the same care plan and the reduction in ED visits. Found coordinated care model most effective compared to housing only.	Coordinated care models with RN embedded in housing to coordinate medical and mental health appointments within a specific system of care where everyone works on same care plan decreases ED use and improves ongoing access to PC services.
Upshur, C., Weinreb, L., Bharel, M., Reed, G., & Frisard, C. (2015). A randomized control trial of a chronic care intervention for homeless women with alcohol use problems. <i>Journal of Substance Abuse Treatment, 51</i> , 19–29. https://doi-org.ezproxy.mnsu.edu/10.1016/j.jsat.2014.11.001	Determine if alcohol screening and interventions in primary care homeless clinic would reduce alcohol consumption and improve overall health and housing stability.	N = 82 Homeless clinic	RCT Level II	Homeless, alcohol use, age, race, employment status, marital stats, parenting status, insurance, Comorbid health conditions. Motivation AUDIT-C tool	Project RENEWAL (alcohol education materials, links to treatment/support)	Targeted PCP services with supportive case management for homeless women to reduce alcohol consumption. PCP in homeless clinics with or without additional supports reduced overall alcohol consumption but did not improve health overall or housing stability. PCP with support from case management had higher engagement with substance use programs.	Homeless tailored PC services with extra supports like case management increased access to ongoing substance abuse treatment over period of 6 months.
Wang, H., Nejtek, V. A., Zieger, D., Robinson, R. D., Schrader, C. D., Phariss, C., Ku, J., & Zenarosa, N. R. (2015). The role of charity care and primary care physician assignment on ED use in homeless patients. <i>American Journal of Emergency Medicine, 33</i> (8), 1006–1011. https://doi-org.ezproxy.mnsu.edu/10.1016/j.ajem.2015.04.026	1. how often homeless patients inappropriately use ED. 2. does providing homeless pts charity care insurance reduce inappropriate ED use versus no insurance 3. see if patients assigned to PCP clinic continue inappropriate ED use	n = 867	Retrospective chart review Level III	Patient characteristic: age, sex, race, ED dx, mode of arrival, status of PCP assignment, weekday/weekend visits, total # ED visits within collection period, insurance type	N/A	No stat sig difference between homeless individuals on charity care vs no insurance, however average number of inappropriate -ED visits in pts with charity care greater than those without Patients with PCP assignment had more inappropriate ED use than those without.	Just assigning a PCP not effective alone at reducing inappropriate ED visits

Citation	Study Purpose	Pop (N)/ Sample Size (n) /Setting(s)	Design/ *Level of Evidence	Variables/ Instruments	Intervention	Findings	Implications
Wright, B. J., Vartanian, K. B., Hsin-Fang Li, Royal, N., & Matson, J. K. (2016). Formerly Homeless People Had Lower Overall Health Care Expenditures After Moving into Supportive Housing. <i>Health Affairs</i> , 35(1), 20–27. https://doi-org.ezproxy.mnsu.edu/10.1377/hlthaff.2015.0393	Evaluate the effect of supportive housing for people who were formerly homeless on medical expenditures.	N = 98 Bud Clark Commons permanent supportive housing facility in Oregon	Retrospective longitudinal panel study Level III	Gender, age, insurance status, housing status, SUD, assault history, incarceration history, health status	Supportive housing	Supportive housing improves access to primary care, reduces ED and inpatient visits, and improved subjective health outcomes. Supportive housing reduces overall health care expenditures.	Supportive housing improves access to primary care and subjective health measures.
Zur, J., Linton, S., & Mead, H. (2016). Medical Respite and Linkages to Outpatient Health Care Providers among Individuals Experiencing Homelessness. <i>Journal of Community Health Nursing</i> , 33(2), 81–89. https://doi-org.ezproxy.mnsu.edu/10.1080/07370016.2016.1159439	To explore processes, challenges, and successes of linking clients to outpatient providers.	n = 14 clients n = 8 staff members	Qualitative study using applied pragmatic tradition Level VI	Semi structured in depth interviews	N/A	Six themes emerged related to linking clients to OP providers: warm handoffs, support in navigating HC system, ability to address barriers, relationships between client and providers, client’s openness to receiving behavioral health treatment, and clients prior service use.	PC medical respite programs within targeted PC clinics for homeless individuals increase access and follow-up to PC services

*Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-Based Practice in Nursing & Healthcare: A Guide to Best Practice* (3rd ed.).

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