

A PATIENT-CENTERED MEDICAL HOME MODEL FOR

A PATIENT- CENTERED MEDICAL HOME MODEL FOR  
IMPROVEMENT OF HEALTHCARE FOR THE HOMELESS  
POPULATION: AN INTEGRATIVE REVIEW

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Dale Ellen Strickland

Liberty University

Lynchburg, VA

May 2019

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**ABSTRACT**

The homeless population is surrounded by many obstacles while trying to obtain the essentials of life including food, water, shelter, clothes, medical care, and safety. In many areas of the United States and other countries homelessness is becoming an increasing problem. Compared to standard healthcare, the Patient-Centered Medical Home Model is offering a better experience for homeless patients. This integrated review provides a selection of published studies and information on the homeless population and the beginning of the Patient-Centered Medical Home Model to improve access and healthcare to many homeless patients. As the model is accepted by more medical professionals, coordination of healthcare for the homeless may improve.

*Keywords: Homeless, Patient-Centered Medical Homes, discharged homeless, Emergency Department and homeless, homeless healthcare, Medical Homeless, hospitals and homeless*

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**LIST OF ABBREVIATIONS**

Patient-Centered Medical Home (PCMH)

Emergency Department (ED)

Doctor of Nursing Practice (DNP)

Institutional Review Board (IRB)

Health Center (HC)

Homeless Patient Aligned Care Team (H-PACT)

Health Resources and Services Administration (HRSA)



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### **A Patient-Centered Medical Home Model for Improvement of Healthcare for the Homeless Population: An Integrative Review**

#### **Introduction**

The Patient-Centered Medical Home (PCMH) model has been adopted to serve the homeless population. It is a model of care that focuses on the delivery of healthcare to children, adolescents, and adults. A Patient-Centered Medical Home is not a place but a model of delivery of health care for a population. Patients are involved with relationships with a certain chosen health provider who coordinates services for the patients and arranges care and assistance for community resources. According to Behl-Chadha et al. (2017) little is known about patient-centered medical home care for the homeless population. The patient-centered medical home model is becoming more popular despite this lack of understanding of the model.

Homelessness is defined with three conditions: rooflessness (living in shelters or without shelter), houseless (living in shelters or long-term arrangements including prisons), or inadequate housing (unfit or overcrowded) (Jego et al., 2018). The homeless population has high use of the emergency departments in the United States, low utilization of primary care settings, and poor follow-up health care. Patient-centered medical homes (PCMH) can decrease the use of acute care facilities and improve their overall follow-up health care (Gabrielian et al., 2017). The PCMH can decrease costs and improve the efficiency and overall quality of healthcare for the homeless. The model is based on providing care for patients by incorporating multi-disciplinary teams, removing barriers to care, improving clinical outcomes, involving the patients in their care, improving experiences for the patients, and increasing staff involvement. It includes a multi-disciplinary team comprising providers for acute and chronic physical needs, behavioral health, social services, and other community-based services. (Black & Davich, 2017). The

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homeless population seldom receives primary care and their visits to a primary care giver are infrequent and fragmented. They frequently have high rates of visits to the emergency department without referrals after discharge for chronic illnesses including diabetes, hypertension, mental illness, and substance abuse issues. According to Jones et al. (2017) a study of homeless and non-homeless patients discharged to a patient-centered medical home model of care demonstrated greater positive experiences for the patients observed than those referred to other types of caregivers. The homeless have complicated health needs and without nighttime shelter, the health needs can be handled more efficiently if organized within a PCMH. The health conditions of the homeless that reside in shelters (over 46%) are also complicated by mental illness and substance abuse problems (Jones et al., 2017).

The homeless have an age adjusted mortality that is 3.5 times higher than their peers. Their continual need for food supplies, shelter, and clothing plus social isolation increases their use of acute care inpatient facilities and emergency departments for their chronic needs (Jones et al., 2017). According to Jones et al. (2017) emergency departments do not strive to collocate with interdisciplinary patient-centered medical homes. The Department of Veteran Affairs has made great strides in ending veteran homelessness. In 2011, the Veterans Administration began the H-PACT (Homeless Patient Aligned Care Team), a patient-centered medical home for homeless veterans. There are H-PACTs across the country for homeless patients without traditional primary care. According to Jones et al. (2017) different model types are found. The patient-centered medical home has been “referred to as a fundamental building block for a high-value health care system” (Behl-Chadha et al., 2017). The type of patient care that is provided is more personable and integrated for both the patient and families and includes communities and whole populations. Patient-centered care and primary care are the base of

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PCMH. Projects across the country have started using the patient-centered medical home model including the Veterans Administration and medical clinics (Behl-Chadha et al., 2017).

### **Background Information**

#### **Initiation of Patient-Centered Medical Home Model**

In 1967, the American Academy of Pediatrics invented the patient-centered medical home model to fit the needs of middle-class special needs children. The model was adopted in 2007, according to Health Resources & Educational Trust (2017), by the American College of Physicians (ACP), American Academy of Family Physicians (AAFP), and American Osteopathic Association (AOA). The patient-centered medical home describes organizational methods for developing primary care and to provide high quality health care. The National Center for Quality Assurance (NCQA) developed standards for recognition. Many states have adopted the model and included it in Medicaid and Medicare programs (Health Resources & Educational Trust, 2017).

In 2009, the Affordable Care Act (ACA) promoted the patient-centered medical home (PCMH) model in community centers. These centers are supported by the Health Resources and Services Administration (HRSA). The beginning of health centers (HCs) was in the 1960's, and they were created for the medically-underserved regions of the United States. Homelessness in the United States is steadily rising, with an estimated 2.5 million homeless population in the United States and a population of 4 million in the European Union each year according to Jago et al. (2018). The increase in the homeless population creates an increase in the number of homeless seeking medical care.

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### **Patient-Centered Medical Home Model and Health Outcomes**

Homeless patients that are referred after discharge to a Patient-Centered Medical Home model of care in the outpatient setting have fewer acute care visits and more primary care visits to meet their healthcare needs. According to Jones et al. (2017), the ED-HPACT study was the first to explore co-location of an ED and a primary-care clinic for homeless patients. The acceptability by ED clinicians to co-locate with a Patient-Centered Medical Home model is mixed. ED clinicians may support colocation which may serve their most challenging and complicated cases (Jones et al., 2017).

### **Patient-Centered Medical Homes and Homeless Health Care**

The homeless population needs healthcare that is often complex and unattainable. According to Jegou et al. (2018), the homeless suffer from multiple acute and chronic health conditions that often go untreated. They also have higher rates of more than 50% for substance abuse and 60% of mental conditions compared to the general population. The mortality rate is also higher among the homeless. They have difficulty accessing healthcare, with barriers to healthcare including lack of insurance or Medicaid, lack of transportation, bad experience of care, and lack of shelter and food. Their high use of hospitals and emergency departments has healthcare leaders looking for ways to cut healthcare costs. Patient-centered medical homes and primary care has improved healthcare for the homeless, but there are only a few high-quality studies that focus on PCMH and primary care (Jegou et al., 2018).

### **Problem Statement**

Methods for providing adequate healthcare to the homeless population need to be addressed in all areas of the United States. Emergency departments and acute care facilities must examine the issue in all communities and strive to coordinate services and referrals to health care

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professionals. Individual communities must see the need to tackle this problem. Homeless patients are often discharged from emergency departments and acute care facilities without referrals to community clinics and follow-up care.

### **Purpose of Scholarly Project**

The purpose of this Integrated Literature Review is to describe how the Patient-Centered Medical Home Model can improve the quality and coordination of healthcare for the homeless population compared to the standard practice of discharge from an emergency department or hospital with referrals to local clinics and without assistance with follow-up care. The medical care of the homeless with chronic diseases including diabetes, hypertension, heart disease, mental illness, and substance abuse may be treated more effectively. Emergency Departments and acute care facilities can decrease frequent homeless patient visits and overall costs.

### **Clinical Questions**

This Integrative Literature Review will address the following clinical question: Do the homeless receive healthcare more often when connected and referred to a Patient-Centered Medical Home (PCMH) model of care compared to standard care from an acute care facility emergency department or hospital? It will also examine three follow-up questions:

1. How is the Patient-Centered Medical Home Model utilized with the homeless population?
2. In what type of settings has the PCMH been established for the homeless population?
3. What are the advantages of the Patient-Centered Medical Home model compared to standard healthcare provided after discharge from a hospital or emergency room?

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### Methods

The reviewer completed a comprehensive integrated literature search using search terms: homeless, homeless healthcare, patient-centered medical homes, discharged homeless, Emergency Departments and homeless, hospitals and homeless, and medical home. Computer-assisted searches took place in the Cumulative Index of Nursing and Allied Health Literature (CINAHL), MEDLINE, PubMed, ProQuest, Google Scholar, and the Joanna Briggs Institute from January 2014 – April 2019. The reviewer excluded literature that was unpublished manuscripts (abstracts and dissertations) and limited resources to five years old. To explain all important information about patient-centered medical homes for the homeless population, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was utilized. Melnyk's Hierarchy of Evidence was also used as a tool to list the Levels of Evidence (Melnyk & Fineout-Overholt, 2011).

### Protocol Framework

The framework of this Integrative Review was supported by Whittemore's and Knafl's (2005) modified framework for research reviews. According to Whittemore and Knafl (2005) the Integrative Review method has greater potential for evidence-based practice for nursing and is the only approach for allowing diverse methodologies including experimental and non-experimental research, for example. Complete integrative reviews present the purpose review, search of the literature, evaluating data from primary sources, and the presentation of results.

**PRISMA Framework.** Preferred Reporting Items for Systematic Reviews and Meta-Analysis or PRISMA is used for reporting in systematic reviews and meta-analyses. The statement consists of a 27-item checklist and a four-phase flow diagram. The reviewer used the item checklist and the four-phase flow diagram for reporting out the information. (See Appendix

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A for PRISMA flow diagram). The PRISMA flow diagram identifies the number of records reviewed, the number of inclusions and exclusions, and exclusions reasoning. The PRISMA improves the reports of various types of health research and is an evidence-based method of items for reporting research (Liberati, 2009).

**Polit and Beck.** According to Polit and Beck (2012) research is crucial for discovering evidence for nursing practice. High quality evidence is produced by a researcher's decision to conduct and continue a study. Systematic literature reviews are considered by many to be the turning point for evidenced-based practice (EBP) in nursing. The reviewer utilized published guidelines on systematic reviews by Polit & Beck (2012) for guidance for this literature review.

**Cooper, Whittemore, and Knafl.** Whittemore and Knafl (2005) reviewed the difference of the integrative review method from other review methods. The methodological strategies to follow for an integrative review are presented in order to increase the process rigor. The integrative review allows for diverse methodologies which may include experimental and non-experimental research. This integrative review of the patient-centered medical home model and the relation of homeless patients and their healthcare followed the five steps suggested by Cooper (2001) and Whittemore and Knafl (2005): purpose review, literature search, data evaluation, data analysis, and presentation of results. This integrative review presents the patient-centered medical home model and the coordination of primary healthcare for the homeless population.

### **Problem Formulation Stage**

This stage focuses on the review process after defining parameters. The problem is clearly identified, and variables are defined. The problem of interest in this integrative review includes the patient-centered medical home model and its development in various health care

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settings for the homeless patients. Variables of interest included the initial development of a patient-centered medical home model in the community, communication with the homeless patient for referral when available, the support of the PCMH by the ED physicians, and the patient outcomes after development locally.

### **Information Sources**

The reviewer carried out a thorough and comprehensive electronic literature search utilizing multiple databases and keywords. The search included using the keywords and the search engines Cumulative Index of Nursing and Allied Health (CINAHL) from EBSCO Publishing and Medical Literature Analysis and Retrieval System online (MEDLINE) from the United States National Library of Medicine (NLM). Other databases used to enhance the search for literature and studies on the patient-centered medical home model for the homeless included Google Scholar, ProQuest, and PubMed, and Joanna Briggs Institute. Melnyk's Matrix of Levels of Evidence was used to categorize the literature in Levels I-VII. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) was used to analyze each study (Cooke, 2017). The literature search was limited from January 2014 – April 2019.

### **Eligibility Criteria**

Transparency of integrated literature reviews and systematic reviews is a characteristic of how they are conducted according to Holly et al. (2017). Transparency is achieved by allowing for pre-specification of the inclusion and exclusion criteria, which allows a study to be included in the review criteria determining the types of studies to be reviewed and the parts of the review. Certain types of interventions, parts of interest, and outcome types are determined for eligibility criteria (Joanna Briggs Institute (JBI), 2009).



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Eligibility criteria is defined by including a target audience, setting, and inclusion and exclusion criteria. The target audience for this integrative review includes an integrated team of registered nurses, advanced practice nurses, and others working as part of the patient-centered medical homes model along with other providers of care including case managers, social workers, and physicians. Settings include clinics, community shelters and resources, Emergency Departments, hospitals, and mobile clinics. The population included is the homeless of all ages living on the streets or shelters and without any permanent housing. The data collection followed the inclusion and exclusion criteria (See Table 1). Publications from January 2014 to April 2019 were included and reports written in the English language and in full text.

### **Search/Study Selection**

The reviewer conducted multiple expansive literature searches using various search engines including Cumulative Index of Nursing and Allied Health (CINAHL), MEDLINE, ProQuest, PubMed, Google Scholar, and Joanna Briggs Institute. Keywords used for the search included patient-centered medical home model, homeless, homeless healthcare, discharged homeless, Emergency Department and homeless, hospitals and homeless, and medical homes. Data searches included primary literature or original work.

The most current literature on the patient-centered medical home model and the homeless population was selected for review. This included studies on the origination of the patient-centered medical home model and its development by the American Academy of Pediatrics, American Physician Association, and American Osteopathic Association. The Institutional Review Board (IRB) of Liberty University approved the Integrated Literature Review as exempt (See Appendix B: Liberty IRB letter of approval).

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There is a total of 22 research articles included in this review (See Table 2). Included are the following types of design and selected research articles:

### **Data Collection Process**

Data was collected utilizing literature searches through multiple data sources. Initial assistance with literature searches included help from multiple librarians. The reviewer collected data from articles explaining patient-centered medical home model (PCMH) and expanded to include the homeless population. The collection of data was complex, with the largest volume of studies focusing on the patient-centered medical home model and fewer studies related to the homeless population. A librarian consult was completed prior to the literature search and databases and search terms defined and clarified. The databases CINAHL, MEDLINE, PubMed, ProQuest, Joanna Briggs, and Google Scholar were searched to find articles related to (PCMH) and the homeless population. The Veterans Health Administration has conducted multiple studies including the homeless population and patient-centered medical homes with positive results. The original search included articles greater than five years but finalized to limit articles five years or less.

### **Data Items**

The first step after collecting multiple articles from the databases and saving them as references is to conduct data reduction by dividing them in categories based on inclusion and exclusion criteria, subject, type of article, or study. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISM) diagram was used as a tool to divide the number of articles found per database. Articles were screened for relevance to the research question and included if related to patient-centered medical home model, homeless, or low-income and vulnerable populations.

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### **Risk of Bias in Individual Studies**

According to Holly et al. (2017), bias addresses believing that the findings and quality are focused on whether a study was carried out with the highest standard. A study can be carried out with a high standard while simultaneously including bias. Each study was assessed for risk of bias and internal validity and rigor by appraising reliability, worth (value), and importance (relevance) (Holly et al., 2017).

### **Summary Measures**

The integrated literature review was conducted to research the literature about the patient-centered medical home model and clarification of its definition, its use to support the homeless population, and how it has improved the health status of the homeless. The review revealed the beginning of the patient-centered medical home model and its use for development of multiple programs throughout the United States to integrate healthcare among multiple disciplines.

### **Synthesis of Results**

The literature supports that the homeless patient population faces many challenges in receiving care. The coordination by providers of services is also very challenging. According to Behl-Chadha et al. (2017), there need to be more research and systematic reviews on the patient-centered medical home model. The model is popular, but there need to be more studies of the model in primary care settings serving the homeless.

## **Results**

### **Study Selection**

The integrative review includes 22 research studies. The types of designs include: one systematic review and meta-analysis (van den Berk-Clark et al., 2018); and one scoping

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literature review written by mental health policy researchers (Canham et al., 2018). A scoping review differs from a systematic review because it is broader and begins with a research question that is less focused. It also identifies all relevant literature but does not assess evidence quality. Also included are three systematic literature reviews (White et al., 2015), (Jego et al., 2018), (Ontario Health Technology Assessment Series, 2016); one randomized control study: (Ku et al., 2014); twelve cohort studies: (Gabrielian et al., 2017), (Jones et al., 2015), (Jones et al., 2018), (Jones et al., 2019), (O'Toole et al., 2016), (Sarango et al., 2017), (Shi et al., 2017), (Steward et al., 2016), (Timbie et al., 2017), (Wu et al., 2018), (Behl-Chadha et al., 2017), and (Cline, 2018); and three case studies: (Gao et al., 2015) and (Moffett et al., 2018); one case report: (DiPietro et al., 2014) and one background information: (Reike & Boyer, 2018). All studies were completed from January 2014 to May 2019.

### **Results of Individual Studies**

A systematic review focused on interventions to improve primary care for the homeless (Ontario Health Technology Assessment Series, 2016). The systematic review identified studies from January 1, 1995 - July 8, 2015. Interventions for improvement with a primary care provider versus usual care were compared among homeless people. Five eligible studies included one randomized controlled trial and four observational studies. In the randomized trial the homeless without mental illness had improved access to a primary care provider compared to the homeless with usual care. One observational study showed no difference with primary care access compared to usual care, and one study showed improvement in access to primary care if they also received supportive care and housing services. The clinic orientation and the outreach combined, and clinic orientation alone provided moderate level of quality evidence and very low for other interventions.

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A study by Gao et al., (2016) concluded that Electronic Health Records (EHR) improved a patient-centered medical home capability. Other supports for patient-centered medical homes include a greater number of types of financial performance incentives, more hospital/Health Center affiliations, and state level financial support. 1,278 Health Resources and Services Administration (HRSA) in 2014 supported a Health Center Program serving 22.9 million patients, many from the vulnerable population. HRSA supports the patient-centered medical home model (Gao, et al., 2016).

Gabrielian et al., (2017) completed a study with the objective of studying the feasibility and acceptability to collocate a homeless-tailored PCMH with an emergency department. 281 patients were screened, and 172 screened positive for homelessness. The data concluded that it is feasible to recruit homeless patients in a primary care clinic collocated with the emergency department but the acceptability by the clinicians is not always positive.

Jones et al., (2019) completed a study to determine if the Veterans Administration Homeless Patient Aligned Teams (H-PACT) improved care processes and homeless patient outcomes. The study concluded that the homeless experienced better care from H-PACT compared to the standard care provided at the VA.

### **Discussion**

#### **Summary of Evidence**

Patient experience with patient-centered medical home model of care was higher than the comparison group on self-management support and behavioral health integration. Areas of improvement include communication, front desk staff, and timely appointments. The patient-centered medical home model of care is becoming more popular within the VA Administration. (Behl-Chadha et al., 2017) and in health clinics across the United States.

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The PCMH model is encouraged for implementation by the Affordable Care Act, but there are multiple approaches for implementation of the model. More studies need to be implemented to measure patient outcome and care processes. Mental health patients with a designated provider are more likely to receive a mental health visit with a PCMH than those not enrolled with a PCMH (Jones et al., 2015).

### **Limitations**

According to Behl-Chadha et al., (2017) there may have been confusion with the homeless being in a comparison group instead of a homeless group, which may have changed the sample size. Little is known about the PCMH in primary care settings caring for the homeless. There are limited studies of the development and coordination of care using the PCMH model. It was difficult to locate articles focusing on the homeless as a single group and the PCMH model. The PCMH included other population categories including other vulnerable population groups.

### **Implications for Research**

Additional research can focus on the homeless population and the benefits of having a provider within a patient-centered medical home providing mental health referrals or services. Many of the homeless have mental health problems compounded by substance abuse. Studies related to the Veterans Administration H-PACT research can be increased in the homeless non-veteran population to evaluate the prevalence of patient-centered medical homes locally. Co-location of emergency departments and PCMH can be surveyed in both small and urban communities to measure the number of PCMH, satisfaction by homeless, decreased costs from fewer visits to ED and hospital admissions, and staff efficiency.

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### **Implications for Practice**

There are numerous implications for the practice of a DNP and involvement with a PCMH. Education is a major area to disseminate information about the homeless and the PCMH and primary care. Publishing an article, developing posters, and providing current information to emergency departments, hospitals, local clinics, and shelters can be a new beginning for a new DNP graduate. The PCMH model is unknown to many health professionals involved with caring for the homeless population. Understanding communication and coordination of healthcare for the homeless will produce studies for evidenced-based practice in the future.

### **DNP Essentials**

#### **Essential I: scientific underpinnings for practice**

The first essential in the DNP Essentials is the Scientific Underpinnings for Practice. This integrative review focuses on the positive actions that can be taken by the DNP to assess the health needs of the homeless population and plan and implement actions to improve their healthcare. By developing a patient-centered medical home model of care to integrate and organize the delivery of healthcare for the homeless, the nursing care of the homeless will be improved, and the outcomes of the quality of healthcare can be enhanced (AACN, 2006).

#### **Essential III: clinical scholarship and analytical methods for evidence-based practice**

According to the DNP Essential III, scholarship and research are the basics of doctoral education. Research has been viewed as the major essential of scholarly activity. The concept of utilizing the patient-centered medical home model has been discovered to form an organized, efficient, and less costly method of caring for the homeless person and treating acute and chronic diseases including heart disease, diabetes, substance abuse, and mental disorders. The

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DNP has been taught “to design, direct, and evaluate quality improvement methodologies to promote safe, timely, effective, equitable, and patient-centered care” (AACN, 2006). The integrative literature review provided successful practices following the patient-centered medical home model including the Veterans Administration and health clinics throughout the United States. The review used critical appraisal methods to analyze the literature after an extensive data collection.

### **Essential IV: information systems/technology and patient care technology for the improvement and transformation of health care**

The integrative literature review required the ability to utilize literature research of information and studies related to the homeless patient and the patient-centered medical home model and the relation to patient care. Programs of care and outcomes of care were discovered and evaluated. The data collected by information systems and data searches enabled the review of success, failures, and costs, and the improvement of patient care for the homeless (ANA, 2006).

### **Essential VI: interprofessional collaboration for improving patient and population health outcomes**

Effective communication and collaborative care are important for the development and implementation of practice models including patient-centered medical homes. The integration of care among the health professionals requires excellent leadership and communication skills. Caring for the homeless population is very complex due to communication issues, chronic diseases, and mental health issues (ANA, 2006).

### **Essential VII: clinical prevention and population health for improving the nation’s health**



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Clinical prevention and health activities of the population is the main emphasis to improve the health of the United States. The health care of the homeless population is a focus that is often avoided and neglected. The number of homeless individuals is increasing and more visible. The integrative literature review analyzed the homeless population health and the development of a model of care to improve the delivery of healthcare (ANA, 2006).

### **Conclusion**

In a Health Care for the Homeless approved center the Health Care for the Homeless (HCH) model is aligned with the Patient-Centered Medical Care Model, focusing on the needs and desires of the patients when developing a treatment plan. Behavioral health, primary care, medication adherence, transportation, and housing can be addressed by a group of experienced professionals including physicians, nurses, case workers, pharmacists, and social workers. The type of care is beyond the traditional medical care. (Rieke & Boyer, 2019).

The Patient-Centered Medical Home model of care has been developed to improve the healthcare of the population including homeless and non-homeless. The benefits of adopting the PCMH model to care for the homeless population has been successful in the Veterans Administration health system and in Health Care for the Homeless approved centers across the United States. This literature review provided studies supporting the successes of implementing the PCMH model and the need for additional studies for the PCMH model and the homeless and implementation strategies.

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**References**

- Agency for Healthcare Research and Quality. Patient centered medical home resource center. (2014). <http://pcmh.ahrq.gov/>. *Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless* (Doctoral dissertation). Retrieved from <https://search-proquest-com.ezproxy.liberty.edu/central/docview/1613219525/preview/PDF>.
- American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practice*. Washington, DC.
- American Academy of Pediatrics. National Resource Center for Patient/Centered Medical Home. (2018). <https://medicalhomeinfo.asp.org/overview/Pages/Whatisamedicalhome.aspx>
- Behl-Chadha, B., Savageau, J. A., Bharel, M., Gagnon, M., Lei, P., & Hillerns, C. (2017). Comparison of patient experience between a practice for homeless patients and other practices engaged in a patient-centered medical home initiative. *Journal of Health Care for the Poor and Underserved*, 28, 1151-1164. <http://dx.doi.org/10.1353/hpu.2017.0103>
- Black, C., & Davich, J. A. (2017). Building a Medical Home for Multiply Diagnosed People: Experiencing homelessness and living with HIV/AIDS [Supplemental material]. In (pp. 1-33).
- 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. *Health & Social Care in the Community*, 27(3), 531-545. doi:10.1111/hsc.12599
- Cline, E., & Sweeney, N. L. (2018, February). Medical home models reducing cost, increasing care, and improving outcomes for uninsured, chronically ill patients. *Nursing Economics*, 35(1).

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

Cooper, H. (2001). *Synthesizing research: A guide for literature reviews* (3rd ed.).

Thousand Oaks, CA: Sage Publications.

Gabrielian, S., Chen, J., Minhaj, B., Manchanda, R., Altman, L., Koosis, E., & Gelberg, L.

(2017, April 1). Feasibility and acceptability of a colocated homeless-tailored primary care clinic and emergency department. *Journal of Primary Care and Community Health*.

<http://dx.doi.org/10.1177/2150131917699751>

Holly, C., Salmond, S., & Saimbert, M. (2017). Comprehensive Systematic Review for

Advanced Practice Nursing, Second Edition. Retrieved April 18, 2019, from

<https://www.amazon.com/Comprehensive-Systematic-Advanced-Practice-Nursing/dp/0826131859>

Jego, M., Abcaya, J., Stefan, D., Calvet- Montredon, C., & Gentile, S. (2018, February 10).

Improving health care management in primary care for homeless: A literature review.

*International Journal of Environmental Research and Public Health*, 15.

<http://dx.doi.org/10.3390/ijerph15020309>

Jones, A., Cochran, S., Leibowitz, A., Wells, K., Kominski, G., & Mays, V. (2015, June 03).

Usual Primary Care Provider Characteristics of a Patient-Centered Medical Home and Mental Health Service Use. Retrieved April 18, 2019, from

<https://link.springer.com/article/10.1007/s11606-015-3417-0>

Jones, A. L., Thomas, R., Hedayati, D. O., Saba, S. K., Conley, J., & Gordon, A. J. (2018).

Patient predictors and utilization of health services within a medical home for homeless persons. *SKOR*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/29412071>

Jones, A. L., Hausmann, L. R., Kertesz, S. G., Suo, Y., Cashy, J. P., Mor, M. K., . . . Gundlapalli,

A. V. (2019). Providing Positive Primary Care Experiences for Homeless Veterans

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

- Through Tailored Medical Homes: The veterans health administration's homeless patient aligned care teams. *Medical Care*, 57(4), 270. doi:10.1097/MLR.0000000000001070
- Kertesz, S. G., Pollio, D. E., Jones, R. N., Steward, J., Stringfellow, E. J., Gordon, A. J., . . . Holt, C. L. (2014). Development of the Primary Care Quality-Homeless (PCQ-H) Instrument: A practical survey of homeless patients' experiences in primary care. *Medical Care*, 52(8), 734-742. doi:10.1097/MLR.0000000000000160
- Ku, B. S., Fields, J. M., Santana, A., Wasserman, D., Borman, L., & Scott, K. (2014). The urban homeless: Super-users of the emergency department. *Population Health Management*, 17(6), 366-371. <http://dx.doi.org/10.1089/pop.2013.0118>
- Liberati, A., Altman, D., Tetzlaff, J., Mulrow, C., . . . . . Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analysis of studies that evaluate health care interventions. Explanation and elaboration. *Annals of Internal Medicine*, 151(4). Doi:10.1371/journal.pmed.1000100
- Lin, W., Bharel, M., Zhang, J., O'Connell, E., & Clark, R. (2015, Nov). Frequent emergency department visits and hospitalizations among homeless people with Medicaid: Implications for Medicaid expansion. *American Journal of Public Health, Washington*, 105(S5), S716- S722. <http://dx.doi.org/10>
- Melnyk, B. & Fineout-Overholt, E. (2011). *Evidence-based practice in nursing and healthcare: A guide to best practice*. Philadelphia: Lippincott, Williams & Wilkins.
- Moffett, M., Kaufman, A., & Bazemore, A. (2017, July 10). Community health workers bring cost savings to patient-centered medical homes. *Journal of Community Health*, 43, 1-3. <http://dx.doi.org/10.1007/s10900-017-0403-y>

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

National Council on State Boards of Nursing. (2011). Transition to practice: Nursing toolkit.

Retrieved from <https://www.ncsbn.org/EBP-HierarchyofEvidence.pdf>

Interventions to improve access to primary care for people who are homeless: A systematic review. (2016). *Ontario Health Technology Assessment Series, 16(9)*, 1-50. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC483209>

O'Toole, T. P., Johnson, E. E., Aiello, R., Kane, V., & Pape, L. (2016). Tailoring Care to Vulnerable Populations by Incorporating Social Determinants of Health: The Veterans Health Administration's "Homeless Patient Aligned Care Team" Program. *Preventing Chronic Disease, 13*, E44.

Piney, J., Keyes, V., VanHassett, M., & McCall2015, N. (2015, 2015). Emergency department and inpatient \hospital use by Medicare beneficiaries on patient-centered medical homes. *American Emergency Medicine, 65(6)*.  
<http://dx.doi.org/10.1016/annemergmed.2015.01.002>.

Polit, D. & Beck, C. (2012). *Nursing Research Generating and Assessing Evidence for Nursing Practice* (9<sup>th</sup> ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.

Rieke, E., & Boyer, A. (2018). *Health care for the homeless model of care* [Lecture notes]. Retrieved from <http://centralcityconcern>

Sarango, M., de Groot, A., Hirschi, M., Anthony, C., & Rajabiun, S. (2017, May/June). The role of patient navigators in building a medical home for multiply diagnosed HIV-positive homeless populations. *Journal of Public Health Management and Practice, 23*, 276-282.  
<http://dx.doi.org/10.1097/PHH.00000000000000512>

Sarango, M., Hohl, C., Gonzalez, N., Palmeros, A., Powell, M., & Hirschi, M. (2018). Strategies to build a patient-centered medical home for multiply diagnosed people living with HIV

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

who are experiencing homelessness or unstable housing. *American Journal of Public Health*, 108, S519-S521. <http://dx.doi.org/10.2105/AJPH.2018.304675>

Savage, M., Hohl, C., Gonzalez, N., Palmeros, A., Powell, M. L., & Hirschi, M. (2018).

Strategies to build a patient centered medical home for multiply diagnosed people living with HIV who are experiencing homelessness or unstable housing [Entire issue].

*American Journal of Public Health*, 108(S7).

<http://dx.doi.org/10.2105/AJPH.2018.304675>

Shi, L., Lee, D., Chung, M., Liang, H., Lock, D., & Sripipatana, A. (2017, June). Patient-

Centered medical home recognition and clinical performance in U.S. community health centers. *HSR: Health Services Research*, 52(3), 984-1003.

<http://dx.doi.org/10.1111/1475-6773.12523>

Timbie, J. W., Setodji, C. M., Kress, A., Lavelle, T. A., Friedberg, M. W., Mendel, P. J., . . .

Kahn, K. L. (2017). Implementation of Medical Homes in Federally Qualified Health Centers. *The New England Journal of Medicine*, 377(3), 246-256.

doi:10.1056/NEJMsa161604

Van den Berk Clark, C., Doucette, E., Rottnek, F., Manard, W., Prada, M. A., Hughes, R., . . .

Schneider, F. (2018). Do patient-centered medical homes improve health behaviors, outcomes and experiences of low-income patients? A systematic review and meta-analysis [Review]. *HSR: Health Services Research*, 53(3), 1777-1798. doi:10.1111/1475-677,12737

White, B., & Newman, S. (2015). Access to primary care services among the homeless: A

synthesis of the literature using the equity of access to medical care framework. *Journal of Primary Care and Community Health*, 6(2), 77-87.

<http://dx.doi.org/10.1177/2150131914556122>

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

Whittemore, R. & Knafl, K. (2005). Methodological issues in nursing research: The integrative review- updated methodology. *Journal of Advanced Nursing*, 52(5), 546-553.

Wu, F. M., Rubenstein, L. V., & Yoon, J. (2018). Team functioning as a predictor of patient outcomes in early medical home implementation. *Health Care Management Review*, 43(3), 238-248. doi:10.1097/HMR.000000000000196

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**TABLES****Table 1***Inclusion and Exclusion Criteria*

<b>Inclusion</b>	<b>Exclusion</b>
Publication from 2014 - 2019	Publications prior to 2014
Related to Patient-Centered Medical Home Model	Not related to Patient-Centered Medical Home
Research articles	Non-research articles including commentaries, editorials, fact sheets, briefings, unpublished articles.
Published in English language	Published in language other than English
Full text articles	Abstract only articles
Adult and pediatric homeless persons	Non-Homeless persons



## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

**Table 2****Evidence Table**

<b>Focus of Article, Author/year</b>	<b>Level of Evidence/Source</b>	<b>Medical Home Model/Background</b>	<b>Conclusion/ Practice Implication Recommendation</b>
1. Comparison of patient experience between a practice for homeless patients and other practices engaged in a patient-centered medical home initiative. Behl-Chadha, B., Savageau, J., Bharel, M., Gagnon, M., Lei, P., Hillerns, C. (2017).	Level IV	Objective was to understand how homeless patients in a Patient-Centered Medical Home differed from others participating in the same statewide. Study population included 194 homeless patients and compared 1868 patients from other practices.	Homeless practice scored higher than the comparison group in self-management and equivalent on communication, timely appointments, and front desk staff.
2. Health supports needed for homeless persons transitioning from hospitals. Canham, S., Davidson, S., Custodio, K., Mauboules, C., Good, C., Wister, A., Bosma, H. (2018)	Level II	A scoping review of relevant literature written by mental health policy researchers. Reported primary findings on the types of health supports needed for homeless patients leaving from the hospital.	The types of health supports needed when a homeless patient leaves the hospital were divided into six themes including: a respectful and understanding attitude toward care, housing need assessments, communication and coordination of after-care, medical management, medication assistance, and basic needs and transportation.
3. Medical home model: Reducing	Level IV	Retrospective descriptive study	The number of admissions and

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

<p>cost, increasing care, and improving outcomes for uninsured, chronically ill patients. Cline, E. (2018).</p>		<p>aimed to determine outcomes after implementation of a patient-centered medical home for chronically ill uninsured patients. The number of visits, hospitalizations, and readmissions to acute care facility were studied.</p>	<p>readmissions to the hospital were statistically reduced however the number of emergency department visits were reduced but not significantly. The costs of ED visits, hospitalizations, and overall costs would be reduced for 93 chronically ill patients if a medical home was implemented.</p>
<p>4. Early impacts of the Medicaid expansion for the homeless population. DiPietro, B., Artiga, S. (Nov 2014).</p>	<p>Level VII</p>	<p>The Affordable Care Act (ACA) expanded important opportunities and increased coverage for the homeless. An analysis that assessed the impact of the expansion for homeless providers and patients.</p>	<p>Medicaid access has increased coverage for the homeless and improved access to care and benefits.</p>
<p>5. Feasibility and acceptability of a collocated homeless-tailored primary care clinic and emergency department. Gabriellan, J., Chen, J., Minhaj, B., Manchanda, R., Altman, L., Koosis, E., Gelberg, L. (2017).</p>	<p>Level III</p>	<p>A quality study was completed to assess the feasibility and acceptability of a pilot initiative to collocate a homeless Patient-Centered Medical Home with an Emergency Department. The number of patients were screened for homelessness, unique patients, and primary care visits.</p>	<p>172 of 215 screened for homelessness, 112 (65.1%) of positive screens were seen over 215 visits. 90.3% supported expansion of the homeless-tailored clinic and a minority agreed collocation worked well. Quality improvement needs include the need to increase</p>

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		After triage the homeless patient with low acuity chose between a collocated PCMH or the ED. A 32-question survey was also sent to ED clinicians (physicians, nurses, and social workers, to measure clinician attitudes and acceptability of homeless screening.	acceptability among ED physicians.
6. Characteristics associated with patient-centered medical home capability in health centers: A cross-sectional analysis. Gao, Y., Nocon, R., Gunter, K., Sharma, R., Ngo-Metzger, Q., Casalino, L. Chin, M. (2016)	Level IV	Patient-Centered Medical Home (PCMH) model is being initiated in health centers providing primary care to vulnerable populations. A cross-sectional analysis was completed. PCMH capability was scored using the Commonwealth Fund National Survey of PQHC's through the Safety Net Medical Home Scale with 0 the worst and 100 the best.	Electronic Health Records (EHR) probably played a role in the improvement of Health Centers' role in improving PCMH's.
7. Improving health care management in primary care for homeless people: A literature review. Jago, M., Abcaya, J., Stefan, DE, Calvert-Montredon, C., Gentile, S. (2018)	Level II	A literature review of articles describing and evaluating homeless people and primary care programs.	Most primary care programs used included team-based approaches, multidisciplinary and /or integrated care. Some effective characteristics include clinic

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

			orientation, tailored primary care system for the homeless multidisciplinary team-based models which include primary care physicians and clinic nurses, and co-located social services.
8. Usual primary care provider characteristics of a patient-centered medical home and mental service use. Jones, A., Cochran, S., Leibowitz, A., Wells, K., Kominski, G., Mays, V. (2015)	Level IV	Qualities of a usual provider that align with patient-centered medical home goals of access, understanding, and patient-centered care and to evaluate if the primary care provider provides mental health services.	Access to a routine repeated provider is associated with receiving needed mental health services and mental health counseling. Patients without a routine provider were less likely to receive any mental health referrals. Referrals after visiting a primary provider were greater and visits to a patient-centered medical home provider were greater than a routine primary provider.
9. Providing positive primary care experiences for homeless veterans through tailored medical homes: The veterans' health administration's homeless patient aligned teams.	Level IV	A retrospective cohort study of homeless patients in urban VHA facilities and their experiences of receiving primary care.	The number of homeless patients that were sampled for the PCMH was 57,517 and 13,344 (23%) responded to the survey. VHA facilities with PCMH approaches

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(Jones, A., Hausmann, R., Kertesz, S., Suo, Y....Gundlapalli, A. (2019).			provide better experiences for homeless Veterans than other VHA experiences.
10. Patient predictors and utilization of health services within a medical home for homeless persons. Jones, A., Thomas, R., Hedayati, D., Saba, S., Conley, J., Gordon, A. (2018).	Level IV	Veterans' Health Administration (VHA) developed a patient-centered medical home for homeless veterans called Homeless Patient Aligned Care Team (HPACT). The purpose of this service was to decrease hospital use and promote primary care use. A quantitative study.	Patients were more likely to visit HPACT 0-6 months after starting visits compared to before and less likely to visit emergency rooms up to one year of attending HPACT or be admitted to the hospital.
11. The urban homeless: Super-users of the emergency department. Ku, B., Fields, J., Santana, A., Wasserman, D., Borman, L., Scott, K.(2014)	Level IV	Study examined the characteristics and costs of Emergency Department visits by the homeless population who are known frequent ED users.	ED visits by the homeless are very costly. 64% of homeless were discharged back to street. ED discharge planning needs to assist with providing interventions to prevent ED frequent visits by the homeless.

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<p>12. Community health workers bring cost savings to patient-centered homes. Moffett et al., (2018)</p>	<p>Level V</p>	<p>Published literature was used to estimate the impact of Patient-Centered Medical Homes and Community Health Worker (CHW) models on cost containment.</p>	<p>The Patient-Centered Medical Home (PCMH) model and CHW demonstrates improvement in processes of care and unnecessary care including Emergency Departments visits and hospitalizations which can be reduced along with costs of care with better coordination.</p>
<p>13. Interventions to improve access to primary care for people who are homeless: A systematic review. Ontario Health Technology Assessment Series. (2016).</p>	<p>Level II</p>	<p>A systematic review to identify studies in English from January 1, 1995 – July 8, 2015 comparing interventions to improve access to primary care provider with usual care for the homeless person.</p>	<p>Various interventions were identified to improve primary care access by addressing the barriers that the homeless population faces. An orientation to clinic services improves access to a primary care provider by a homeless person without serious mental illness and living in urban areas.</p>

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<p>14. Tailoring care to vulnerable populations by incorporating social determinants of health: The Veterans Health Administration's Homeless Patient Aligned Care Team Program. O'Toole, T., Johnson, E., Aiello, R., Kane, V., Pape, L. (2016).</p>	<p>Level IV</p>	<p>Less is known about the role of health care systems in improving clinical and social outcomes for the homeless. Homeless medical homes in the Veterans Health Administration (VHA) was implemented and assessed for health outcomes with characteristics of high performing sites.</p>	<p>Greater than 96% of patients enrolled were receiving homeless services. 19% showed reduction in emergency department use and 34.7% had reductions in hospitalizations. Services included hygiene care, transportation, on-site clothes pantry, and food pantry, on site meals, or other food assistance.</p>
<p>15. Description of key characteristics of the homeless model of care (HCH) and how it is implemented. Specific health needs of the homeless are identified. Rieke, E. &amp; Boyer, A. (2016).</p>	<p>Level VI</p>	<p>Described the Homeless Model of Care and an Old Town Clinic, Central City Concern. The HCH Model of Care is beyond traditional medical care. A Homeless person is defined as a person without housing or primary residence during the night or is a resident in transitional housing.</p>	<p>1,262,961 homeless persons served by Health Centers in U.S. in 2016. Homelessness causes health problems and health problems causes homelessness. Treatment and recovery are complicated by homelessness.</p>
<p>16. The role of patient navigators in building a medical home for multiply diagnosed HIV-positive homeless populations. Sarango et al., (2017).</p>	<p>Level IV</p>	<p>The Patient-Centered Medical Home (PCMH) is described as a model of care that promotes accessible and coordinated patient care with high quality for</p>	<p>It is necessary to change the PCMH model and utilize patient navigators to make appointments, develop care plans, create</p>

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

		homeless individuals with HIV positive and mental and substance abuse disorders. Purpose of study was to characterize responsibilities of patient navigators in order to create a patient-centered medical home. Qualitative data was collected from staff across various centers.	strong relationships with providers in and out of health care systems, increase support for self-management, and stabilize housing.
17. Patient-centered medical home recognition and clinical performance in U.S. community health centers. Shi, L., Lee, D., Chung, M., Liang, H., Lock, D., Sripipatana, A. (2017).	Level IV	Study was focused on the clinical performance of health centers (HC's) and the Patient-Centered Medical Home (PCMH) model. Data was collected from 2012 Uniform Data System (UDS) and surveys of Health Centers (HC's). Health Centers with PCMH accreditation performed higher in clinical indicators than non-accreditation HC's.	Data was collected in 2012 and future research is needed. The study findings indicate that PCMH accreditation supports higher performance on clinical indicators. Sample size was large and a national study.
18. Priorities in the primary care of persons experiencing homelessness: convergence and divergence in the views of patients and	Level IV	Qualitative study asking 26 homeless patients and ten providers to rank 18 aspects of primary care. 26 homeless patients were recruited from across the country.	Accessibility and perception of care are high priorities of the homeless patient and the provider.



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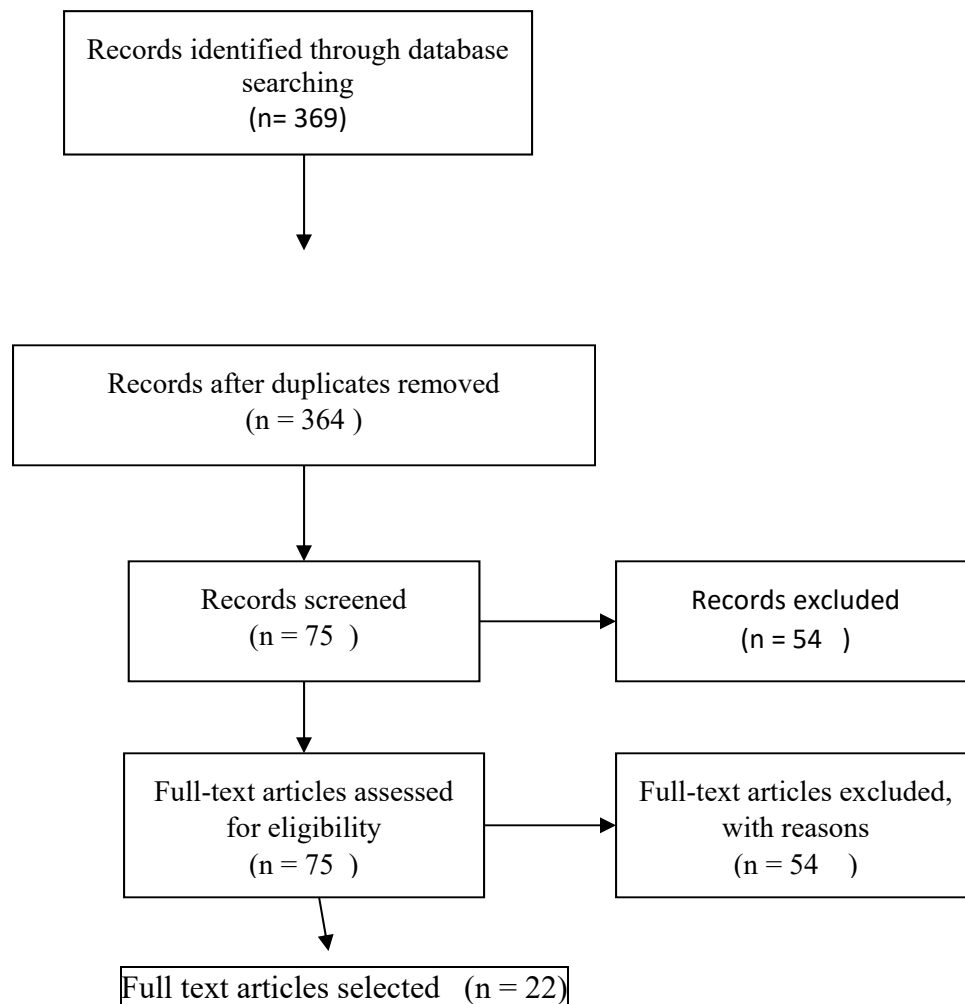
provider/experts. Steward, J., Holt. C., Austin, E., Johnson, N., Gordan, A., Kertesz, S. (2016).			
19. Implementation of medical homes in federally qualified health centers (Timbie, J. et al., 2017).	Level IV	503 federally qualified health centers from 2011 through 2014 were provided care management fees and technical assistance from the Federally Qualified Health Center Advanced Primary Care Practice Demonstration to help them achieve the highest award level 3 from the National Committee for Quality Assurance in order to improve processes of access, continuity, and coordination.	70% of demonstration sites and 11% of comparison sites received the Level 3 recognition.
20. Access to primary care services among the homeless: A synthesis of the literature using equity of access to medical care framework. White, B., & Newman, S. (2015)	Level II	Barriers and facilitators to primary care access for the homeless and recommendations to improve health of the homeless. Equity of Access to Medicare Care Framework was used as a reference.	Multiple barriers were identified by the study.
21. Do patient- centered medical homes improve health behaviors, outcomes, and experiences of low-	Level I	A systematic review and meta-analysis to assess what elements of patient- centered medical homes are provided	Evidence was shown that the PCMH model can increase health outcomes with the low- income

## A PATIENT-CENTERED MEDICAL HOME MODEL FOR

<p>income patients? A systematic review and meta-analysis. van den Berk Clark, F. et al., (2018).</p>		<p>to low-income populations and to determine if PCMHs improve health behaviors, and experiences including outcomes for low-income populations.</p>	<p>populations. PCMH has been a major intervention to lower healthcare costs and improve quality of care in primary care settings.</p>
<p>22. Team-functioning as a predictor of patient outcomes in early medical home implementation. Wu, F. M., Rubenstein, L. &amp; Yoon, J. (2018). Team- functioning as a predictor of patient outcomes in early medical home implementation.</p>	<p>Level IV</p>	<p>Retrospective longitudinal cohort analysis. Studied patient outcomes after patient-centered medical home (PCMH) implementation at Veterans Health Administration.</p>	<p>No previous study that PCMH team functioning was assessed related to patient outcomes. High team functioning resulted in lower mortality rates among all patients, fewer ER visits and all cause admissions among vulnerable populations (homeless, mentally ill, and dementia)</p>

## APPENDIX A

## Project Leader's PRISMA Flow Diagram



*From:* Moher, D. Liberati A., Tetzlaff J., Altman DG. The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6 (7): e10000097. Doi 10.1371/journalpmed1000097

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**Appendix B**

## Citi Training Certificate



Completion Date 04-Feb-2018  
Expiration Date 03-Feb-2021  
Record ID 21160495

This is to certify that:

**Dale Strickland**

Has completed the following Citi Program course:

**Biomedical Research - Basic/Refresher** (Curriculum Group)  
**Biomedical & Health Science Researchers** (Course Learner Group)  
**1 - Basic Course** (Stage)

Under requirements set by:

**Liberty University**

**CITI**  
Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?wace11ae9-5da3-4761-85f1-8389d2de332c-21160495](http://www.citiprogram.org/verify/?wace11ae9-5da3-4761-85f1-8389d2de332c-21160495)

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**Appendix C**

April 12, 2019

**LIBERTY UNIVERSITY**  
INSTITUTIONAL REVIEW BOARD

Dale Ellen Strickland

IRB Application 3798: In the Homeless Population Does the Use of a Patient-Centered Medical Home Model Improve Patient Health Outcomes: An Integrative Review

Dear Dale Ellen Strickland,


The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because evidence-based practice projects are considered quality improvement activities, which are not considered “research” according to 45 CFR 46.102(d).

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application’s status, please email us at [irb@liberty.edu](mailto:irb@liberty.edu).

Sincerely,

  
*Administrative Chair of Institutional Research***Research Ethics Office****LIBERTY**  
UNIVERSITY*Liberty University | Training Champions for Christ since 1971*