2014

Development And Testing Of The Primary Care Homeless Organizational Assessment Tool (Pc-Hoat) To Evaluate Primary Care Services For The Homeless

Jocelyn Louise Steward
University of Alabama at Birmingham

DEVELOPMENT AND TESTING OF THE PRIMARY CARE HOMELESS ORGANIZATIONAL ASSESSMENT TOOL (PC-HOAT) TO EVALUATE PRIMARY CARE SERVICES FOR THE HOMELESS

by

JOCELYN LOUISE STEWARD

ROBERT WEECH-MALDONADO, COMMITTEE CHAIR
LARRY HEARLD
AMY YARBROUGH LANDRY
STEFAN KERTESZ
DAVID POLLIO

A DISSERTATION

Submitted to the graduate faculty of The University of Alabama at Birmingham,
in partial fulfillment of the requirement for the degree of Doctor of Philosophy

BIRMINGHAM, ALABAMA

2014

DEVELOPMENT AND TESTING OF THE PRIMARY CARE HOMELESS ORGANIZATIONAL ASSESSMENT TOOL (PC-HOAT) TO EVALUATE PRIMARY CARE SERVICES FOR THE HOMELESS

JOCELYN LOUISE STEWARD

ADMINISTRATION-HEALTH SERVICES

ABSTRACT

The purpose of this dissertation is to develop and test an organizational assessment tool that can used to evaluate primary care services for the homeless. The research evaluates the importance, feasibility, reliability, and validity of organizational processes and structures of primary care services for the homeless. The final product is the validated *Primary Care Homeless Organizational Assessment Tool* (PC-HOAT). This tool provides stakeholders with information regarding the organizational structures and processes associated with greater quality of primary care for the homeless. This tool will help managers better understand their organization's strengths and weaknesses, guide discussions regarding operations, and provide information to inform future strategies.

The researcher conducted a mixed-method study of key informants and organizations receiving federal health care for the homeless funding. The study used eight key informants to refine the initial PC-HOAT. The researcher distributed the final instrument through a web-based survey to determine reliability and validity of the PC-

HOAT. Data analysis included descriptive statistics, factor analysis, and regression analysis.

The study yielded a 7-factor scale, 34-item tool focused on evaluation and delivery of primary care services, organizational structures relevant to effective delivery of care, and patient and family centeredness. In particular, the scale describing access and quality of care provided a positive statistical association with the proportion of patients with controlled hypertension. The study yielded results that provide a better understanding of the vital organizational characteristics that contribute most appropriately to the design of health care for the homeless organization.

Keywords: homeless, primary care, organizational assessment, reliability, validity, factor analysis

DEDICATION

This dissertation is dedicated to my parents who have loved and supported me through the entire process. Thank you for your tireless dedication, understanding, and love.

ACKNOWLEDGEMENTS

I would like to thank all the members of my committee, Drs. Weech-Maldonado, Kertesz, Pollio, Hearld, and Yarborough-Landry. Your guidance, understanding and dedication have been invaluable.

I would like to thank my classmates who have partaken this voyage along with me, the Nerd Herd. Because of you, the journey through the program resulted in an immense amount of joy and I will always cherish the memories of our time together.

I would like to thank Caroline West for her willingness to listen to me and help to guide me in the right directions when I needed it. I would like to thank Diane McNaron who reminded me that life is enjoyed best when you have a passion that you share with others.

I would like to thank my family and friends who have encouraged me along the way. You have provided sources of relief and inspiration and have always been there for me. To my mom and dad, thank you for always cheering me on to finish. To my immediate family of sister, brothers, in-laws, nieces, and nephews, your love and support can never be discounted and I look forward to the future endeavors we will make together. Last, I want to thank Sophie who has provided me endless joy and comfort.

TABLE OF CONTENTS

Page

TABLE OF CONTENTS (continued)

CHAPTER *Page*

TABLE OF CONTENTS (continued)

CHAPTER *Page*

TABLE OF CONTENTS (continued)

CHAPTER *Page*

TABLE OF CONTENTS (continued)

Page

TABLE OF CONTENTS (continued)

Page

LIST OF TABLES

Table *Page*

LIST OF TABLES (continued)

Table *Page*

LIST OF TABLES (continued)

Table *Page*

LIST OF TABLES (continued)

Table *Page*

LIST OF FIGURES

Figure *Page*

LIST OF ABBREVIATIONS

BPHC	Bureau of Primary Care
CCM	Chronic Care Model
CHC	community health centers
CMAT	Clinical Microsystem Assessment Tool
CMS	Center for Medicare and Medicaid Services
ED	emergency department
FQHC	federally qualified health center
HCH	Health Care for the Homeless
HCHV	Health Care for Homeless Vets
HIPAA	Health Insurance Portability and Accountability Act
H-PACT	Homeless Patient Aligned Care Team
HRSA	Health Resource and Services Administration
HUD	Department of Housing and Urban Development
HUD-VASH	Housing and Urban Development – VA Supported Housing
IOM	Institute of Medicine
OLS	ordinary least squares
PCA	principal component analysis
PC-HOAT	Primary Care Homeless Organizational Assessment Tool
PCMH	patient centered medical home

LIST OF ABBREVIATIONS (continued)

PPACA	Patient Protection and Affordable Care Act
VA	Veterans Affairs
VHA	Department of Veterans Health Administration
VISN	Veterans Integrated Service Networks
UDS	Uniform Data System

CHAPTER ONE

INTRODUCTION

The purpose of this dissertation will be to design and test an organizational assessment tool that will identify an optimal service delivery model for providing primary care services for the homeless the Primary Care Homeless Organizational Tool (PC-HOAT). The tool will use information from key informant interviews and a survey of primary care for the homeless organizations to determine the tool's reliability and validity.

Background

Homelessness is an issue that affects the United States and its health care system. Unfortunately, due to inconsistencies in the definition of homelessness and the often-chaotic living situation of homeless persons, the exact number of homeless individuals is difficult to determine. In its most recent (January 2013) single-night, count of the U.S. homeless population, conducted the last ten days of every January, the Department of Housing and Urban Development (HUD) reported that 610,042 individuals were homeless on a single night with 394,698 in homeless shelters and 215,344 in unsheltered locations. California, New York, Florida, Texas, and Massachusetts accounted for more than half of the homeless population (Henry, Cortes, & Morris, 2013). Locally, the

homeless population has increased by 11.5% in Alabama and 8% in Birmingham from 2008 to 2009 among both single and family (mostly female-headed) households. Although the primary cause of this increase is unclear, it is hypothesized to be recent problems in the economy resulting from the latest recession (Gray, 2010).

When adapting and delivering care to a specific population, several factors must be considered, such as the best means of adapting traditional service delivery models and which outcomes best reflect success (Fennell & Flood, 1998). When deciding on the types of services to offer, organizations must closely examine their clients' needs and develop appropriate strategies. As health service organizations provide care to a population with unique health needs, such as women and children, the homeless, individuals on dialysis, and veterans, whose health is affected by the quality of health services available to them (van Wijk, Van Vliet, & Kolk, 1996), these organizations must deliver care geared toward the unique needs of the target populations. Health service organizations must also consider that the needs of the patients within these populations vary, depending on age, gender, race, and their most pressing health issues (D'Aunno & Vaughn, 1995). For example, women often experience higher incidences of mood and anxiety disorders, physical and emotional issues related to sexual assault, and issues related to reproductive health which should be taken into account when delivering health care (Miranda, Azocar, Komaromy, & Golding, 1998). Understanding these needs, as well as the relationship among the service delivery models, patient needs, and quality of care, will help organizational leaders choose appropriate strategies and structures based on theory and practical applications for day-to-day operations.

This dissertation focuses on homeless persons, their health care needs, and the optimal design of health services based on the understanding that the operations of the organization must change as the needs of the population changes (Leatt, Shortell, & Kimberly, 1997). This study will contribute to the organizational literature by (a) providing better understanding of the delivery of primary care services to the homeless, (b) identifying optimal means of designing and assessing health services for organizations that serve the homeless and, (c) providing insights into designing health services for other special populations.

Homelessness in America

Individuals who are homeless in the United States represent a diverse population characterized according to a variety of characteristics. As the population includes individuals, families with children, and single-parent households (Cousineau, 2010) it can be characterized by family type. Moreover, as this population ranges from those who lack conventional housing (i.e., individuals living in shelters, streets, abandoned buildings, or cars) to those marginally housed (i.e., individuals living with family and friends and those residing in short-term hotels) (Argeriou, McCarty, & Mulvey, 1995; Kleinman, Freeman, Perlman, & Gelberg, 1996; Martell et al., 1992; Rosenheck & Seibyl, 1998), it can be characterized by current living situation. The length of the homelessness episode has also been used as a factor for classification, with short-term homelessness characterized as an episode of homelessness less than 12 months and long-term homelessness characterized as an episode of homelessness 12 months or longer

(Wenzel, Gelberg, Bakhtiar, & Caskey, 1993). Health service organizations identify individuals as homelessness with a V60 code, which is a classification in the International Classification of Disease (ICD-9), used to describe the general health situation and other characteristics of a patient. The V60 code is divided into the multiple codes listed in Table 1 (C. J. Buck, 2011).

Table 1. 2011 ICD-9 V60 Codes

Code	Definition
V60.0	Lack of housing
V60.1	Inadequate housing
V60.2	Inadequate material resources
V60.3	Person living alone
V60.4	No other household member able to render care
V60.5	Holiday relief care
V60.6	Person living in residual institution
V60.8	Other specified housing or economic circumstances, including foster care
V60.9	Unspecific housing or economic circumstance

Among the codes listed in Table 1, V60.0 and V60.1 represent the closest description of conventional homelessness. Unfortunately, there is little consensus regarding which definition organizations use to classify their patients as homeless, which makes tracking the real number of homeless patients seeking care particularly difficult (Tsai, Gee, Weintraub, & Kushel, 2005).

The Homeless Veteran

In the January 2013 point in time count, there were 57,949 homeless U.S. veterans representing a little over twelve percent of all homeless adults in the U.S. (Henry et al., 2013). A U.S. veteran is an individual who actively served in the military, naval, or air service and was honorably discharged or released from service or who is/was a Reservist or National Guard member that was called to active duty by a Federal Order and completed the full call-up period (Department of Veterans Affairs, 2009). The Department of Veterans Health Administration (VHA) mandates legal provisions to provide medical services to veterans and provides care to veterans at Veterans Affairs (VA) medical facilities based on priority levels. Among veterans, those classified as low income, suffering from service-connected conditions, particularly those classified as highly vulnerable due to conditions as spinal cord injury or post-traumatic stress disorder, and homeless persons are considered the highest priority, with other veterans provided care on a space-available basis (Gronvall, 1987; Kizer & Dudley, 2009).

The VA has established multiple initiatives to provide care to homeless veterans through the VHA Grant and Per Diem program, Health Care for Homeless Vets (HCHV), housing vouchers, and compensated work therapy. Despite the establishment of these programs and VA's Secretary Shinseki's commitment to eliminate homelessness among veterans within five years (Department of Veterans Affairs, 2009), there remains considerable uncertainty regarding whether optimal mechanisms are being developed and used to engage and service this population.

The Health of Homeless Persons

The homeless endure biomedical, social, and environmental challenges that affect their health, including high rates of (a) chronic and infectious diseases; (b) substance abuse and mental illnesses (Fischer & Breakey, 1991); (c) mortality, whose rates among homeless persons are three to four times that of the non-homeless population (Barrow, Herman, Cordova, & Struening, 1999; Cheung & Hwang, 2004; Hibbs et al., 1994; Hwang, 2000; McMurray-Avila, Gelberg, & Breakey, 1999; Nordentoft & Wandall-Holm, 2003; O'Connell, 2005); and (d) high rates of HIV (T. W. Kim, Kertesz, Horton, Tibbetts, & Samet, 2006). Moreover, homeless persons face the stigma associated simply with being homeless (Gelberg & Linn, 1988).

Despite their often-acute need for treatment, homeless persons face barriers to obtaining adequate health care, including high costs of and inadequate funding to cover services, uncertainty of where to obtain services, inability to obtain transportation, and lack of time to see a provider (M. M. Kim et al., 2007). A local study in Birmingham, AL found that barriers to care among homeless persons increased between 1995 and 2005, with cost and transportation among the most significant barriers (S. G. Kertesz, Hwang, Irwin, Ritchey, & Lagory, 2009). Health service organizations must consider the means of overcoming these barriers to care when designing services for the homeless (Gelberg, Gallagher, Andersen, & Koegel, 1997).

Homelessness itself, not surprisingly, negatively affects the health of the individuals. Homeless individuals face unique challenges, often not faced by the non-homeless population, such as the need to obtain food and shelter and ensure safety on a

daily basis, which are often more pressing concerns than health care needs (Gelberg et al., 1997). Either issues caused or complicated by lack of housing, i.e., increased exposure to communicable diseases while housed in shelters and difficulties with chronic disease management further complicates a homeless persons' health. The inadequacy of housing exacerbates health complications, such as the difficulty to store and take medication, apply wound care, and recuperate. Further complicating care of homeless persons is that medical records often do not include information on housing status (Tsai et al., 2005), thus making the necessary modifications to health care to accommodate their situation difficult. It is apparent that the state of homelessness has negative consequences to maintaining viable health.

Homeless persons have barriers to care due to lack of insurance, both public and private, as they are unable to afford private health insurance and they are oftentimes ineligible for public programs that provide funding for medical care (Post, 2001). For example, to qualify for Medicaid, the primary program providing health care funding for low-income individuals, an individual must have a stable address and proper identification, which many homeless patients do not have (Elvy, 1985). A survey of the homeless population conducted in 76 geographic areas found that only 30% of those surveyed received Medicaid (Burt et al., 1999).

Due to their lack of health insurance, the homeless rely heavily on access to the hospital emergency department (ED) for their medical care (Lang et al., 1997), with studies finding that many homeless individuals are not one-time but repeat ED patients (Mandelberg, Kuhn, & Kohn, 2000; Okin et al., 2000) often due to unintentional injuries and assault (Brickner et al., 1986; Padgett, Struening, Andrews, & Pittman, 1995; Padgett

& Struening, 1992). A national study found that homeless persons that used the ED were older, arrived by ambulance more often, and had higher incidences of psychiatric or substance abuse problems compared to non-homeless person who used the ED (Ku, Scott, Kertesz, & Pitts, 2010). Other reasons for increased use of the ED include inadequate health insurance (Baker, Stevens, & Brook, 1996), lack of transportation and access to a telephone (Rask, Williams, Parker, & McNagny, 1994), poor access to primary care (Baker, Stevens, & Brook, 1994; Gill, Mainous III, & Nsereko, 2000; Grumbach, Keane, & Bindman, 1993), inner-city residence (Tyrance Jr, Himmelstein, & Woolhandler, 1996), minority status (Baker et al., 1994), chronic drug and alcohol use (Cherpitel, 1999; McGeary & French, 2000), and mental illness (Padgett et al., 1995). These factors are reflected in the statistics; whereas, 1% of all patients rely on the ED as the source of primary care but 33% of homeless patients do so (Walls, Rhodes, & Kennedy, 2002). The homeless population's reliance on and high utilization of the ED not only results in overcrowding and straining of the health care system but also results in patients not receiving proper primary care to manage their illnesses (Tyrance Jr et al., 1996). Other studies indicate that homeless persons have poorer health and higher rates of morbidity when they receive care in the ED (Brickner et al., 1986; Hibbs et al., 1994; Hwang, 2000; Hwang et al., 2010; Hwang, Orav, O'Connell, Lebow, & Brennan, 1997).

In conclusion, homeless persons have poor access to health care, often forcing them to rely on the ED as their source of both emergency and primary care services, and suffer from high rates of chronic illness, untreated substance abuse, and mental health illnesses. Appropriately addressing these challenges may decrease disease burden as well as misuse or overuse of services, resulting in an improvement in patient health outcomes

and a decrease in the use of costly health care services. These results may, in turn, lead to achievement of the ultimate goals of obtaining stable housing for the homeless and decreasing health care costs for government and society.

Providing Health Care Services to Homeless Persons

The two organizations most active in the delivery of health care for the homeless are the Veterans Health Administration (VHA) that operates the Health Care for Homeless Vets program and the Health Resource and Services Administration (HRSA)'s that operates the Health Care for the Homeless Program.

The Veterans Health Administration (VHA)

The VHA is a federally financed health care system under the Department of Veterans Affairs that currently provides health care to approximately 8.3 million veterans (Bagalman, 2014). The VHA's main goal is to increase quality of care for its veteran population by providing care in the largest integrated health care system in the United States (Kizer, Fonseca, & Long, 1997). The VHA also acts as a "safety-net" provider for homeless veterans and two million either uninsured or underinsured veterans. The VHA operates 21 Veterans Integrated Service Networks (VISNs); 152 medical centers; 800 community-based outpatient clinics; 135 Community Living Centers; 48 Domiciliaries; 278 Vet Centers; 135 nursing homes; 48 residential rehabilitation treatment programs; and 90 comprehensive home-based care programs. In addition, the VHA provides funding for research and is the largest single provider of health professional training with

medical school affiliations (Kizer & Pane, 1997; Veterans Affairs, 2011; VHA Media Management, 2014).

The VHA's Health Care for Homeless Veterans (HCHV) Program, established in 1987, consists of 132 HCHV programs providing services and linkages within the community. The goal of the HCHV Program is to assist mentally ill homeless veterans with limited resources by connecting them with VHA and non-VHA services, such as health, housing, social services, and substance abuse treatment programs. To achieve this goal, the HCHV Program engages in (a) outreach and case management, (b) linkage of medical and psychiatric services, and (c) community contracted rehabilitation for mentally ill homeless veterans with limited resources (Desai, Rosenheck, & Kasprow, 2003; McGuire, Rosenheck, & Kasprow, 2003; Perl, 2013).

Within the VHA, historically there was no systematic national or network-wide directive to change the primary care service configuration for homeless persons. The VHA's formal array of homeless programs, which includes the Veterans Domiciliary Care and HCHV Programs (Kasprow, Rosenheck, DiLella, Cavallero, & Harelik, 2009), are classified as mental health services. As such they focus on treatment of mental and addictive disorders, work training, and expedited access to housing (Rosenheck, Kasprow, Frisman, & Liu-Mares, 2003) , and until 2012 it did not include primary health care. One such program, the Homeless Patient Aligned Care Team (H-PACT) provides both primary health care and housing assistance in the same setting (Bamberger, 2014). Therefore, although there are initiatives to assist the homeless and meet their needs, more research needs to focus on optimal approaches to care within a primary care setting that are customized for homeless persons (O'Toole et al., 2010). This lack of focus on

primary care has led to deficits in knowledge regarding the best means of organizing primary care services for homeless persons within the VHA

The HRSA Health Care for the Homeless Programs

In July 22, 1987 the passage of the Stewart B. McKinney Homeless Assistance Act, the first major federal legislation focusing on providing services to the homeless, marked the beginning of the formalization of the provision of resources and services for the homeless, including food, shelter, housing, and primary care. The Act initially provided $1 billion in funding to state, local, and private non-profit organizations. Under the (now called) McKinney-Vento Act, funds are appropriated to multiple agencies, such as the Housing and Urban Development and the Health and Human Services, to establish federally funded programs throughout the United States to provide health care for homeless persons and grants for housing and shelter (Foscarinis, 1996).

Under the U.S. Department of Health and Human Services, the HRSA Bureau of Primary Care (BPHC) provides funding for the operation of federally qualified health care centers (FQHC) in underserved communities by providing comprehensive primary care to vulnerable populations at sliding fees. Among the many programs that the HRSA supports, this dissertation focuses on examining the Healthcare for the Homeless Programs, which are designed to provide primary care and substance abuse services, assist with emergency care, and provide outreach to homeless persons (HRSA, 2011).

Interestingly, federal programs for homeless services have not seen government budget cuts and these programs consistently received increase in funding over five years.

Between FY 02-07, there was an increase in homeless assistance funding for HUD homeless assistance (+413 million); VA expenditure on homeless services (+106 million); projects for assistance in transition from homelessness (+14 million); healthcare for the homeless (+56 million); and education for homeless children and youth (+12 million) (Leginski, 2007). Despite these increases, organizations must remain aware of the possibility of future budget cuts that could threaten their survival and must use resources most effectively.

Among several studies that have examined the population that uses Health Care for the Homeless (HCH) services, one found that HCH clinics serve a variety of populations with complex health needs, including transgender patients, children, the homeless, and those with no health insurance. These populations have been found to have characteristics indicating poorer health status compared to the non-homeless population, such as higher rates of morbidity, and chronic illnesses (i.e., asthma, diabetes, hypertension, and HIV) and lower rates of preventative care utilization (Zlotnick & Zerger, 2009). Another study that examined the use of HCH services by interviewing 941 homeless individuals at 52 soup kitchens found that 43% had received neither HCH nor other health care services, 25% had received care at an HCH clinic, and 32% visited a non-HCH organization. Those who had received care at an HCH clinic reported their most common reason using a HCH clinic was lack of insurance (Han, Wells, & Taylor, 2003). In addition, research has indicated that individual seeking care at FQHC have difficulty accessing services due to its location and FQHC are inconsistent in the type of services that are offered such as the type of contraception offered (S. G. Kertesz et al., 2014; Wood et al., 2014) Therefore, while there are existing services available to meet

the needs of homeless persons, these services appear to be underutilized. With the complex issues and needs of the homeless population, it is imperative to understand the barriers and problems faced by homeless persons and explore the best ways to deliver health care to this population.

Primary Health Care

Primary care is central to many aspects of health care, including providing an entry into healthcare, delivering care focused on general health care issues, serving as a gatekeeper to specialty care, and providing care based on elements of continuity (Engström, Foldevi, & Borgquist, 2001). The goal of primary care is to meet the health needs of a population by providing individualized care for a multitude of conditions over time; delivering multiple services, including diagnostic, preventative, and acute- and chronic-diseases; and overseeing prevention efforts for conditions such as smoking, obesity, and other risky behaviors (Hung et al., 2006). Primary care providers, who may be primary care physicians, family physicians, internal medicine physicians, general practitioners, pediatricians, or a team of providers can include social workers and nurses (Starfield, 1986), deliver accessible service by well-trained and equipped providers (Engström et al., 2001), and provide continuity of care and referral to specialists (Hung et al., 2006). Although often organized similarly to other clinics, primary care clinics may require different configurations in accordance with the services provided.

Primary care is a potentially important avenue of access and care for the homeless, who often consider it a more approachable and less stigmatizing venue for

receiving health services. Although there are numerous specialties in which health care can be delivered to the homeless, primary care appears to provide the most parsimonious way of improving health and social outcomes among the homeless population (M. M. Kim et al., 2007). The literature related to the delivery of primary care services for the homeless primarily focuses on examining whether care for the homeless should be delivered in mainstream primary care practices or through specialized homeless primary care practices and the types of services that should be offered, such as preventive services and treatment for substance abuse, sexual health, and mental illness (Wright & Tompkins, 2006; Wright, Tompkins, Oldham, & Kay, 2004). Results from the literature has supported the notion for specialized homeless primary care services and has found patients seen in specialized clinics had better chronic care disease outcomes (i.e., hypertension and diabetes), higher use of primary care services, lower hospitalizations (O'Toole et al., 2010) and patients self-reported greater patient-clinician relationship and patients reporting worse experiences in access and coordination of services when seen outside a customized homeless health care setting (S. G. Kertesz et al., 2013). Therefore, it is imperative, to identify the most favorable ways to organize primary care service for the homeless in order to improve health outcomes.

The Homeless and Cardiovascular D**i**sease: Hypertension and Diabetes

When designing optimal service delivery models, it is important to use health outcomes relevant to the population. Cardiovascular disease is a major cause of morbidity in the homeless population. The causes of cardiovascular disease is related to

smoking, difficulty in controlling hypertension, and consumption of diets high in saturated fats, cholesterol, and inadequate essential nutrients (Lee et al., 2005) which are commonly found in the homeless population. Therefore, using cardiovascular disease as an outcome is plausible when evaluating health care services for the homeless.

One of the most common cardiovascular diseases found in the homeless population is hypertension, specifically uncontrolled hypertension. Uncontrolled hypertension is a worldwide health problem with surveys indicating that less than 25% of those with hypertension have controlled hypertension. Besides alcohol abuse, hypertension is the most common chronic physical ailments for homeless patients, with 14-25% of the homeless population experiencing hypertension. The management of hypertension is complicated by improper dietary management; high rates of alcohol abuse; difficulty in storing and administrating medication; the cost of medication; and the asymptotic nature of hypertension making motivation for disease management difficult (Kinchen & Wright, 1991).

Another common health problem in the homeless population is uncontrolled diabetes. Diabetes is the fifth leading cause of death in the US. Diabetic patients have increased morbidity due to heart disease, blindness, and amputation. The most common type of diabetes in the homeless population is Type 2 (Wilk, Mora, Chaney, & Shaw, 2002). Of those who were homeless with diabetes, 72% indicated difficulties in managing their diabetes mainly due to diet and logistics of managing their care (Hwang & Bugeja, 2000). Additional complications are inadequate housing; unreliable transportation; poor diets; and the inability to receive medically necessary supplies to monitor their illness (Wilk et al., 2002).

Studies have shown a positive association between primary care and controlling hypertension and diabetes. Interventions in primary care found to be significant in the reduction of blood pressure including appropriate drug therapy (Fahey, Schroeder, & Ebrahim, 2005), simplifying dosing regimens increased prescription drug adherence (Schroeder, Fahey, & Ebrahim, 2004). Studies have also shown a positive association between primary care and controlled diabetes from interventions such as patients receiving half-day visits with members of a primary care team (e.g., nurses, physician, and pharmacists), group education (Wagner et al., 2001) and physicians receiving web-based information including clinical data, treatment recommendations, and links to relevant resources (Meigs et al., 2003). Overall chronic disease management improved with provider and patient education and reminders and financial incentives for patients (Weingarten et al., 2002).

Statement of the Problem

Providing health care to the homeless population requires overcoming complex and unique challenges. According to Torrey, "Homelessness has evolved from being a homogeneous, sphinx-like problem to being a heterogeneous cluster of interrelated problems for which many of the solutions are known. The mystery no longer is what to do, but rather why we do not do it" (Torrey, 1991, pg. 34). Overcoming these challenges require organizational leaders to identify and implement optimal method of delivering comprehensive, quality care to the homeless. As the design of a health service organization are based on the needs of the population it serves, a wide range of service

delivery models, from detailed integrated comprehensive organizations to organizations that have limited or no deviation from care delivered to non-homeless population, must be evaluated as options.

As the population changes, the means by which the health care system delivers care will continue to change, ensuring continued interest in how changes in systems related to health care will affect health care for the homeless (Mares, Greenberg, & Rosenheck, 2008). In particular, the transition to a Patient Centered Medical Home (PCMH) which focuses on providing comprehensive, patient-centered care within the context of the patient, family, and community appears to be new model of care (Berenson et al., 2008).

Deciding on the most advantageous means to deliver health care services to homeless persons requires the implementation of best practices that reflect the specific needs of the population. Common elements that appear to be successful are having (a) a holistic approach, (b) outreach services, (c) an empathetic staff, (d) a multidisciplinary approach, (e) case management and coordination of services, (f) continuity of services, and (g) availability of a wide range of services (Institute of Medicine, 1988). Traditional service delivery models often do not take into account the situation of homeless persons, specifically their daily struggles with issues such as finding shelter and meals, rapid illness progress, and a reliance on the ED. Therefore, it has been argued that organizations must transition from traditional models of primary care service delivery in order to design their services to meet the health care needs of homeless persons (O'Connell, 2004).

Organizational leader and policy makers must be prepared to design health care services based on reliable empirical data to foster needed changes to the existing service delivery models. There is a need to not only collect empirical evidence but to also gain adequate understanding of the characteristics of organizations that fulfill the most pressing needs of the populations they serve. Doing so requires conducting high-quality research (D'Aunno & Vaughn, 1995) into factors relating to the structures (i.e., staffing and size) and processes (i.e., practice arrangement) that can facilitate or hinder quality improvement (Flood, 1994) and affect health care costs (Rosenthal, 2008). Understanding the organizational structures and processes associated with quality of care and other outcomes can help in monitoring care delivery, identifying areas of improvement and the most effective systems of care (Keating et al., 2004), and managing performance to provide consistently high-quality services; thus, implementing these best possible organizational delivery models can improve organizational performance (Merrill, Keeling, & Gebbie, 2009).

There is a need to determine the approaches that will lead to the best patient outcomes, especially in services where there is variability in outcomes (S.M. Shortell et al., 1994). To identify the ideal models to use in organizing services, leaders must apply the principles of strategic management in determining a plan of action that will ensure organizational survival (Henderson, 1989). As such, organizations should engage in the process of assessing their total performance as well as performance of each component. Evaluating services provides multiple purposes such as (a) assessing performance of the organization in relation to its task and (b) monitoring staff activities within the organization (Hasenfeld & Richard, 1974).

As organizations differ in many ways, what works for one organization may not work for another, and thus the success of a new approach to organizing services is contingent on other variables. Experts agree there is no one best way to organize services and recognize that analysis and comparison of different organizational models is necessary to identify aspects that provide the opportunity for providers to practice evidence-based medicine, for leaders to ensure organizational survival, and for patients to receive the highest quality of care. Particular challenges, such as the distinctive and complex features of health services, make determining which model of care is most effective a difficult task (Hasenfeld, 1992). Some health service organizations design all clinics in a similar manner, assuming that all health service clinics function the same way and disregarding the need to customize models of care (Tallia et al., 2003). Customizing care requires identifying services that are most appropriate and responsive to the target patient population and that reflect relevant performance measures, an endeavor that has yet been undertaken in the homeless population. Researchers believe that knowledge of how to best organize health services for the homeless exists, yet has not been supported with evidence-based practice management (Leginski, 2007).

Currently, organizational leaders have access to a variety of guidelines to assist them with organizing primary health care services. Researchers will continue to augment guidelines as they pursue their interest in determining the best ways to organize health care services, including primary care, for the homeless. Nevertheless, general change in the health care industry is slow, and changes in reimbursement practices that shift the focus from inpatient to outpatient care entail a shift in the importance of primary care to ensure quality, increase access, and conserve scarce financial resources. Health care

leaders must gain knowledge to organize their organizations to be beneficial and cost-effective. To garner this knowledge, leaders require access to models that best describe optimal ways to organize health services. Leaders must also recognize that organizations will continue to change as the environment changes and tweaking is required to adapt to the constraints and needs of the environment. As new models continue to be used in the VA (such as the H-PACT) and FQHC transition into patient-centered medical homes, there requires a need for better understanding of how to design an organizational service delivery model that uses resources most efficiently and provides the best primary care services to the homeless population.

Outline of the Dissertation

The purpose of the dissertation is to identify optimal organizational domains in the delivery of primary care for homeless persons. In this dissertation, a domain refers to a set of concepts with specific characteristics, grouped and defined into an overarching theme and that represent a variety of organizational structures and processes. The first step will be to develop an organizational assessment tool that will be referred to as the *Primary Care for the Homeless Organizational Assessment Tool* (PC-HOAT) by identifying relevant domains and related concepts through a thorough literature review which will consists of researching seven relevant texts, models, and a provider's perspective. The second step will be to conduct interviews with key informants who are involved in primary care services for the homeless to receive feedback on the existing PC-HOAT and to determine the feasibility and importance of the operationalized

concepts. The third step is to test reliability and validity by using the tool to survey Health Care for the Homeless organizations throughout the U.S. This will involve administering a survey to obtain information about the operationalized concepts in existence and comparing it with quality of care data.

The dissertation will collect reliable data that will benefit the homeless population and those that serve them. Specifically, it will collect data that allows researchers to understand which organizational domains best correlate with health care quality; allow health service managers and providers to identify the service delivery model that optimally delivers quality primary care; and allow health care leaders to best organize their services to provide care to the homeless. Gaining understanding of these factors may lead stakeholders to make changes that increase the access of the homeless to primary-level health services, and perhaps increase the likelihood of obtaining permanent housing. Therefore, the dissertation will provide important information to health care leaders who seek ways to improve care of the homeless by developing a tool that allows them to gain better understanding of their organization's strengths and weaknesses and provide them with data useful for future strategies.

While developing the tool, this dissertation will examine the hypothesis that organizations that possess certain organizational characteristics as defined through multiple domains (i.e., access, information systems, and patient-centered care) have better quality of care indicators regarding their patient population, i.e., control of hypertension and diabetes. Therefore, the research objectives for this dissertation are as follows:

Research objective #1: Through literature review, define organizational domains and operationalized concepts used to design the Primary Care for the Homeless Organizational Assessment Tool (PC-HOAT).

Research objective #2: Use data collected from key informant interviews to confirm, refine, and explore the domains in the PC-HOAT and determine the most feasible and most important aspects of the PC-HOAT.

Research objective #3: Administer a survey to determine validity and reliability of the PC-HOAT.

CHAPTER TWO

LITERATURE REVIEW

Chapter two of the dissertation describes the development of the *Primary Care for Homeless Organizational Assessment Tool* (PC-HOAT). First, the chapter identifies eight domains that define the PC-HOAT and reflects optimal organizational characteristics of primary care services for the homeless. Second, the conceptual model describes the PC-HOAT based on Donabedian's theory of structure, process, and outcomes. Finally, the chapter reviews additional empirical and conceptual literature relevant to the relationship between organizational characteristics and quality of care.

Background

Organizational researchers seek to understand why some organizations thrive and others flounder. The most successful organizations combine principles of standard operating procedures and incorporate changes that improve efficiency and performance. As the environment changes, the organization should also change and embrace new norms, roles, and models of organizational design. Hence, organizations with leaders most attuned to the effects of environmental changes are more likely to succeed (Keats & O'Neill, 2005).

Although most decisions regarding organizational strategy have usually been the responsibility of top executives, other constituents – i.e., front-line supervisors, middle,

and upper managers – have had increased involvement in the formulation and execution of organizational strategy. Organizations that fail to use all available knowledge and resources may experience decreased performance and may even ultimately fail (Keats & O'Neill, 2005). Therefore, there is a need for organizational research to guide leaders to understand optimal ways to organize services for effectiveness and, ultimately, survival.

The focus of this dissertation is to identify the key organizational structures and processes (characteristics) related to effective outcomes as defined in terms of quality and efficiency of care (S.M. Shortell, Rousseau, Gillies, Devers, & Simons, 1991) in primary care services for the homeless. Existing literature provides some guidance on the optimal design of health services organizations for primary care and for homeless health services. Additionally, empirical papers provide evidence regarding the associations between organizational characteristics and performance. This literature review will use multiple resources to develop the organizational domains that will serve as the foundation of the *Primary Care for the Homeless Organizational Assessment Tool* (PC-HOAT). A comprehensive model of primary care for the homeless is essential because much of the existing literature related to the organization of primary care services does not address the multidimensional problems associated with homelessness. In addition, due to the lack of knowledge regarding existing optimal organizational characteristics, it is difficult to compare models and systems (Krumholz et al., 2006) in regards to their success in delivery quality health care.

Literature Review

The literature review begins by determining an optimal way to develop a framework to define and operationalize domains (Vacek, Ashikaga, Mabry, & Brown, 1978) relevant to primary care services for the homeless. A domain is a set of concepts with specific characteristics grouped and defined into an overarching theme representing a variety of organizational structures, processes, and outcomes.

Figure 1 shows the characteristics used to determine the inclusion of the seven core references (i.e. specific publications in the literature of special importance to the framework) used in the development of the domains for the PC-HOAT.

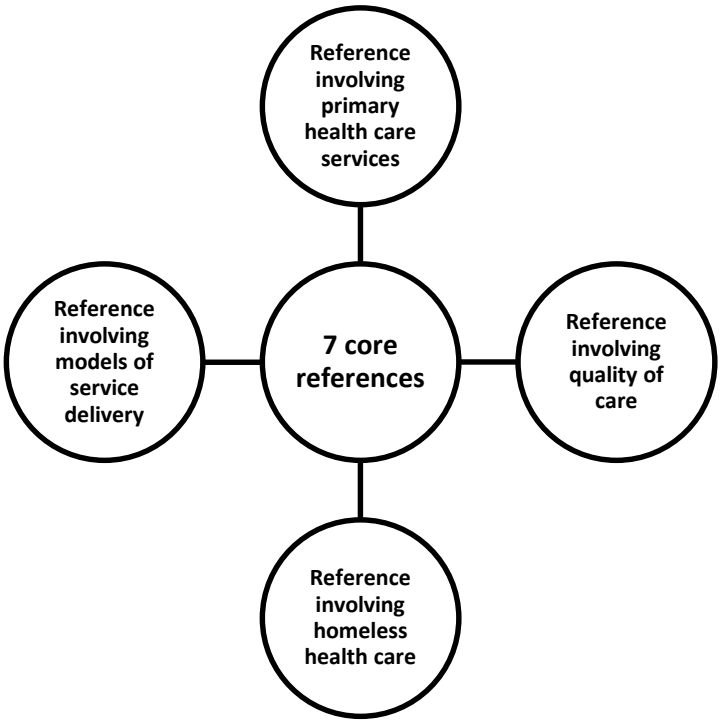

Figure 1. Characteristics of the Seven Core References Used to Develop the Domains of the PC-HOAT

To begin, The PC-HOAT developed from seven core references that represented one or more characteristics needed to assist in developing a list of organizational domains relevant to the PC-HOAT. Because of the wide range of resources available that could influence the design of organizations, this study used methods found in similar studies (Jacobson & Neumann, 2009; Van den Hombergh, Grol, Van Den Hoogen, & Van Den Bosch, 1998). The dissertation began by identifying domains (Goldstein, Elliott, & Guccione, 2000) relevant to primary care services for the homeless. Domains were identified that were measurable, relevant to the homeless and primary care, and from reliable originators. In the end, seven texts, models, and a homeless provider's perspective provided the most relevant and useful information: two Institute of Medicine reports (Corrigan, Donaldson, Kohn, Maguire, & Pike, 2001; Donaldson, Yordy, Lohr, & Vanselow, 1996), the Clinical Microassessment Tool (Nelson et al., 2002), a homeless provider's perspective (S. G. Kertesz, 2008), the Chronic Care Model (T. Bodenheimer, Wagner, & Grumbach, 2002), Starfield's manuscript on primary care (Starfield, 1998), and a book by the National Homeless for Health Care Council (McMurray-Avila, 2001). The seven core references provide (a) multi-dimensional perspectives, (b) information extensively cited in the literature, (c) information specific to primary care, and (d) information specific to the homeless.

Institute of Medicine: Crossing the Quality Chasm – IOM: QC

The Institute of Medicine's (IOM) report (Corrigan et al., 2001), the second report published by the Committee on the Quality of Health Care in America, focused on optimal strategies to organize high-quality health care systems. The dissertation focuses on information in *Chapter 2 – Improving the 21st Century Health Care System* and *Chapter 3 – Formulating New Rules to Redesign and Improve Care* to develop the PC-HOAT.

Institute of Medicine Primary Care – IOM: PC

This IOM report (Donaldson et al., 1996) focused on the state of primary health care in America. It recognized that the delivery of primary care requires multi-dimensional perspectives versus a single guideline. The dissertation focuses on recommendations found in *Chapter 5 – The Delivery of Primary Care* to develop the PC-HOAT.

The Chronic Care Model – CCM

The Chronic Care Model (CCM) (T. Bodenheimer et al., 2002) provides recommendations to improve chronic illness management by focusing on the interactions between the patients and their provider(s) that promote the delivery of high-quality health care. The dissertation focuses on information regarding CCM's clinical information

systems, decision support, delivery system design, self-management support, and organizational leadership to develop the PC-HOAT.

Barbara Starfield's Primary Care – Starfield

In Barbara Starfield's manuscript (Starfield, 1998), the author provides a definition of primary care, discusses ways to organize services, and offers scientific evidence to further the understanding of primary health care. The book describes a domain labeled '*capacity'* that is used to develop the PC-HOAT.

A Homeless Provider's Perspective

Stefan G. Kertesz, MD (S. G. Kertesz, 2008; S. G. Kertesz et al., 2013) offers a homeless provider's perspective evolved from years of multi-disciplinary experiences, including policy and direct medical care. Kertesz suggests customizing organizational attributes to support the delivery of primary care services to homeless persons. He includes attributes such as quality initiatives, education, clinical information systems, and decisions support. The dissertation focuses on his hypothesized model to develop the PC-HOAT.

Organizing Health Services for Homeless People – NHCHC

Published by the National Health Care for the Homeless Council, this book describes strategies for organizing health services for the homeless. It focuses "on the necessary elements of each health care for homeless service component and the rational

for why these elements are keys to the effective delivery of services to people who are homeless" (McMurray-Avila, 2001, pg. 67). The dissertation focuses on the chapters from part three of the book, focusing on a framework for the design of health care services for the homeless to develop the PC-HOAT.

Clinical Microsystem Assessment Tool - CMAT

A clinical Microsystem focuses on a subpopulation of patients and their health professionals who interact in clinical care and information exchange (Berwick, 2002; Nelson et al., 2002; Quinn, 1992). The dissertation focuses on the ten successful characteristics of high performing Microsystems outlined in the CMAT focus on areas such as leadership, staff, and patient-centered care to develop the PC-HOAT.

These seven core references described provide varying views of how to organize health services. These references were included for multiple reasons. First, during the subsequent literature review, many articles used these resources to guide their research models. Second, the core references focus on health care organizations and on smaller Microsystems, both relevant to primary care. Third, taken in combination, they provide information based on multiple perspectives. Last, they cover the terrain of both homeless and primary care services. Table 2 provides a key to abbreviations used in subsequent tables that describe the domains and sub-domains of the PC-HOAT.

Table 2. Key to Abbreviations of the seven core texts, models, and a provider's perspective

Abbreviation	Source
IOM: PC	Institute of Medicine Primary Care: America's Health in a New Era
CMAT	Clinical Microsystem Assessment Tool
CCM	The Chronic Care Model
IOM: QC	Institute of Medicine: Crossing the Quality Chasm: A New Health System for the 21st Century
A Provider's Perspective	A Homeless Provider's Perspective
NHCHC	National Health Care for the Homeless Council's Organizing Health Services for Homeless People: A Practical Guide
Starfield	Barbara Starfield's Primary Care: Balancing Health Needs, Services, and Technology

Eight Domains of the PC-HOAT

Similar to other research (S. M. Shortell et al., 2005), that developed domains to assess high-performing medical groups, the dissertation developed eight domains relevant to primary care service for the homeless. The domains reflect multidimensional perspectives including providers, organizational leaders, and patients and provide a framework for assessment. Domains emerged if each met the following conditions: (a) found in two or more of the seven core references, (b) provided information regarding how organizations should design services to meet patients need, (c) relevant to management principles, and (d) are able to be operationalized. It was decided that the most important and relevant principles are mentioned in more than one of the seven core references.

After the review was completed, eight domains emerged: Health information systems; Accessibility; Performance and Quality improvement; Primary care services

delivery; Integration of medical, behavioral, and social services; Human resources; Leadership, Governance, and Financial Stability, and Patient-centered care. The domain, *health information systems*, describes the use of how information systems in the delivery and evaluation of primary care services for the homeless. The domain *accessibility*, and two sub-domains, describes how an organization helps patients to access primary care services. The domain *performance and quality improvement* describes multiple evidence-based methods used to evaluate the performance of the organization and its providers. The domain *primary care services delivery* describes the primary care services offered to homeless persons. The domain *integration of medical, behavioral, and social services* describes the integration of these entities within a single organization. The domain *human resources* describe the human resources functions that are necessary to deliver primary care to the homeless. The domain *leadership, governance, and financial stability* describe functions necessary to delivery primary care to the homeless. The domain *patient-centered care* describes the delivery of care in which the patient is forefront in the decisions related to his or her own health care. Table 3 shows the eight domains and an 'X' indicates which of the seven core reference the domain emerged. Interestingly, only one of the core references, a provider's perspective, provided information used in all eight domains.

Table 3. Eight domains of the PC-HOAT and the Seven Core References

	IOM: QC	CMAT	NHCHC	A provider's perspective	Starfield	CCM	IOM: PC
Health information systems	X	X	X	X	X		
Accessibility				X	X	X	
Performance & Quality Improvement		X		X		X	X
Primary Care Services Delivery			X	X		X	
Integration of medical, behavioral, and social services			X	X			
Human Resources		X	X	X	X	X	
Leadership, Governance, and Financial Stability		X	X	X	X	X	
Patient-centered care	X		X	X	X	X	

Domain – Health Information Systems

The domain, *health information systems*, describes how information systems assist in the delivery and evaluation of primary care services for the homeless. No sub-domains were developed, but operationalized statements include information regarding (a) the use of information systems in provider-to-provider and patient-to-provider communication (Corrigan et al., 2001; Nelson et al., 2002); (b) the need to design and use information systems to assist in evaluating patient care (McMurray-Avila, 2001); and (c) the sharing and tailoring of information to capture homeless status (S. G. Kertesz, 2008). Table 4 provides the sub-domains (if any) and the relevant references used to develop the domain health information systems.

Table 4. Sub-domains and Relevant References for Health Information Systems

Domain	Sub-domains	Reference
Health Information Systems	N/A	IOM: QC CMAT NHCHC A Provider's Perspective Starfield

Health information systems refer to the comprehensive management of health information across computerized systems and the exchange of information between necessary entities such as consumers, providers, and insurers. Health information systems are considered a promising means by which to improve quality, decrease costs, improve safety, provide better coordination of care, increase efficiency, decrease mortality, increase caregiver interactions, decrease length of stay, and improve access to patient data (Chaudhry et al., 2006; Corrigan et al., 2001; Fiscella & Geiger, 2006; Starfield, Simborg, Johns, & Horn, 1977). Electronic medical records have assisted medical providers with providing health care to homeless persons. The greatest benefits discovered was the ability of providers to access necessary medical information when patients are seen at multiple locations and to access data to evaluate clinical outcomes (Blewett, Barnett, & Chueh, 1999; Health Care for the Homeless Clinicians' Network, 2002).

Many of the issues related to providing care to the homelessness, such as providing care in shelters and seeing multiple providers in multiple locations, create problems in accessing consistent medical records (Cavacuiti & Svoboda, 2008; Chueh & Barnett, 1994; S.M. Shortell et al., 1994). For example, the homeless can provide some

information regarding their medical history, but they may not be able to recall or produce complex medical or personally sensitive information such as the receipt of health services (Gelberg & Siecke, 1997). In such, adequate health information systems may circumvent challenges caused by the nature of homelessness.

Health information systems can also connect the homeless to health services in unique ways. For example, mobile phones have been used as an intervention tool to collect data related to homeless crack cocaine addicts in a treatment program (Freedman, Lester, McNamara, Milby, & Schumacher, 2006). Interventions over the telephone have also been feasible in providing patients with personalized counseling concerning lifestyle changes such as smoking cessation, diet and exercise, alcohol use, and sun protection (Bonevski, Baker, Twyman, Paul, & Bryant, 2012). In addition, if privacy concerns can be surmounted, mobile phones can be used to increase communication between patient and providers through messages, reminders, and information about lab results or they can be combined with other health related devices and applications relevant to primary health care (Patrick, Griswold, Raab, & Intille, 2008). In conclusion, the use of health information systems can assist in the treatment of a disengaged population, such as the homeless.

Domain - Accessibility

The domain *accessibility*, and its two sub-domains, describes how an organization provides the ability to access primary care services. One sub-domain describes how health care services can eliminate barriers to access by locating services in areas

accessible by the homeless, providing outreach services and case management, and providing transportation assistance (T. Bodenheimer et al., 2002; S. G. Kertesz, 2008; McMurray-Avila, 2001; Starfield, 1998). Another sub-domain describes increasing accessibility by offering patients the ability to see different types of providers and services, such as behavioral and medical caregivers, in one visit and working in a multidisciplinary team to provide care to a single patient in multiple locations (T. Bodenheimer et al., 2002; S. G. Kertesz, 2008). Table 5 provides the sub-domains (if any) and the relevant references used to develop the domain accessibility.

Table 5. Sub-domains and Relevant References for Accessibility

Domain	Sub-domains	Reference
Accessibility	A. Eliminate barriers B. Use of multiple disciplines	Starfield (A) CCM (A/B) A Provider's Perspective (A/B) NHCHC (A)

In order to make primary care services accessible, the delivery system should maximize access for the population it serves. Organizational changes can occur to ensure access is achieved while maintaining quality of care which can have positive results, such as a decrease in wait time for appointments (Armstrong, Levesque, Perlin, Rick, & Schectman, 2005). Barriers to accessibility in the homeless population include inadequate childcare, long waits for appointments, cost and transportation issues, and inadequate knowledge of available services (McGuire et al., 2003; Weiss, Haslanger, & Cantor, 2001). Homeless persons that frequently have difficulty obtaining basic needs such as shelter, food, clothing, shower, and bathroom facilities were less likely to have an

ongoing source of health care and to go without medical treatment (Gelberg et al., 1997) frequent difficulties in obtaining. Therefore, organizations may need to use alternate models of service deliver to provide access to the health care services homeless patients need.

Organizations can enhance access through multiple means such as transportation assistance, outreach, and case management. Research has demonstrated that transportation is a significant barrier to accessing health services. Through proven demonstrations, provisions of transportation assistance improved patient retention in a substance abuse treatment program (Guidry, Aday, Zhang, & Winn, 1997) and improved health outcomes (Hillson, Katz, & Dowd, 1994). Unfortunately, primary care programs, most likely, are not typically able to provide transportation assistance (Friedmann, D'Aunno, Jin, & Alexander, 2000).

The goal of outreach is to connect patients to medical and social services and re-enter disengaged clients (Rosenheck & Seibyl, 1998). Research has demonstrated that patients who had contact with outreach workers had an increase in the number of visits to a clinic and greater medical and behavioral health outcomes (Tommasello, Gillis, Lawler, & Bujak, 2006). In regards to case management, a study indicated that the availability of a case manager had a positive association with outcomes and reduced incidences of homelessness (Chinman, Rosenheck, & Lam, 2000). For the above reasons, it is necessary to provide services not normally found in primary clinic, such as transportation assistance, outreach, and case management.

Domain – Performance and Quality Improvement

The domain *performance and quality improvement* describes multiple evidence-based methods used to evaluate the performance of the organization and its providers. The domain also describes how organizations actively use performance data to field quality improvement within its area of work. One sub-domain describes how the organization and its providers are to be measured or evaluated in terms of evaluation of competency and performance evaluations based on accessibility to care, costs, quality, and patient satisfaction (T. Bodenheimer et al., 2002; Donaldson et al., 1996; Nelson et al., 2002). Another sub-domain describes distributing and using performance results inside and outside the organization which can drive organizational change (Donaldson et al., 1996; Nelson et al., 2002). The third sub-domain describes how the organization uses or improves quality or performance by using evidence-based practice standards (T. Bodenheimer et al., 2002; Donaldson et al., 1996; Nelson et al., 2002). Table 6 provides the sub-domains (if any) and the relevant references used to develop the domain performance and quality improvement.

Table 6. Sub-domains and Relevant References for Performance and Quality Improvement

Domain	Sub-domains	Reference
Performance and Quality Improvement	A. Measurement and evaluation of performance B. Internal use of performance results C. Improve quality or performance	IOM: PC (A/B/C) CMAT (A/B/C) A Provider's Perspective (A) CCM (A/C)

Performance is an important component to quality management and encompasses clinical outcomes, population health, and financial performance (Crampton et al., 2004). Studies evaluating organizational performance typically focus on hospitals or large multi-specialty units, but the use of Microsystem can overcome deficiencies when trying to transfer performance measurements to smaller organizations, i.e., primary care (Orzano, Tallia, Nutting, Scott-Cawiezell, & Crabtree, 2006). Primary care performance evaluation requires a review of measures across multiple settings such as hospitals, nursing homes, and ambulatory care (Zinn & Mor, 1998) to best understand how organizational characteristics affect health outcomes.

When evaluating performance and quality improvement, it is important to look at those attributes of the organization that are associated with high incidences of quality of care. These attributes require input from patients, providers, and organizational leaders (Dudley et al., 2000). Research has demonstrated a positive association between organizational characteristics and positive health outcomes. For example, research has found an association between higher levels of staffing by registered nurses and lower rates of urinary tract infections (Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002; Silber, Rosenbaum, Schwartz, Ross, & Williams, 1995). In primary care practice settings, research has found an increase in quality of care in patents with depression and other comorbidities when the organization valued teamwork and had a provider devote a significant amount of clinical time to providing mental health (Menear, Duhoux, Roberge, & Fournier, 2014). Using multiple perspectives ensure that performance indicators fit within the necessary framework needed to improve patient outcomes and decrease health inequality. In health care, disease-focused outcomes, benchmarks,

satisfaction, and cost-effectiveness are common measures of performance. Research suggest that when designing quality indicators, the population of interested should be surveyed to understand their issues with access, functionality, disease management, and trust along with disease-specific outcomes (Ensign, 2004).

Although improving physical health is an important outcome, the satisfaction of a population is an important indicator of outcomes for patients. Satisfaction can help an organization better understand how to modify its care to meet patients' expectations. Patient satisfaction may be considered an important factor in the outcome of the homeless population with research indicating that the homeless population have expectations that are not so dissimilar from those found in the non-homeless population, and have a strong desire to relieve physical pain and to obtain better health and are satisfied when these goals are accomplished. Homeless patients also substantiated a desire to have providers that were respectful and empathetic, trust that their information would be kept confidential, and to be involved in their medical decisions (Macnee & McCabe, 2004). Qualitative research has indicated that homeless individuals desire providers who understand the homeless situation and are sensitive to how homelessness affects an individual's daily life. Although the homeless population may have an inherent distrust of the health care system, providers can continue to try to understand the homeless situation and build better relationships with the population. This can be accomplished by being non-judgmental and improving patient-provider communication (Ensign, 2004).

Domain – Primary Care Services Delivery

The domain *primary care services delivery* describes the core primary care services offered to homeless persons. These core services, divided into four sub-domains, describe essential, diagnostic, auxiliary, well-child, perinatal, family planning, and complementary services. This domain also describes the necessity for linkages between the organization and the community to ensure patients receive necessary medical services outside the primary care organization (T. Bodenheimer et al., 2002; S. G. Kertesz, 2008; McMurray-Avila et al., 1999). Table 7 provides the sub-domains (if any) and the relevant references used to develop the domain primary care services delivery.

Table 7. Sub-domains and Relevant References for Primary Care Services Delivery

Domain	Sub-domains	Reference
Primary Care Services Delivery	A. Essential primary care services B. Diagnostic services C. Auxiliary services D. Well-child, perinatal, and family planning services E. Complementary primary care services F. Referrals and linkages	NHCHC (A/B/C/D/E/F) A Provider's Perspective (E/F) CCM (F)

Although there have been initiatives to provide medical, behavioral, and social services in the same facility (McGuire, Gelberg, Blue-Howells, & Rosenheck, 2009; O'Toole et al., 2010) some organizations will need to offer referrals and establish linkages to other organizations so that patients receive all the services they need. There are many advantages related to linkage between multiple organizations, including the ability to gain competitive advantage, better innovation, superior flexibility in market

changes, the ability to access needed resources, share financial risk, and share the costs of goods and technology. However, challenges to establishing linkages include increased costs, bureaucratic decision making, and communication and coordination issues (Kaluzny, Zuckerman, & Rabiner, 1998).

Primary care services for the homeless should, at the minimum, ensure treatment of chronic and infectious diseases (Gelberg et al., 1997; Gelberg & Linn, 1989; Levy & O'Connell, 2004) and substance abuse and mental illnesses (Fischer & Breakey, 1991). Some publicly-funded Health Care for the Homeless organization offer special services not often found in primary care settings such as respite programs (Institute of Medicine, 1988) and oral health (King & Gibson, 2003). A study examining how respite care impacts hospitalized homeless patients indicates that those receiving respite care had 58% fewer inpatient days and 49% less hospital admission (Buchanan, Doblin, Sai, & Garcia, 2006).

Another need in the homeless population is oral health services. The inability to receive needed dental care is most often due to lack of funds (i.e., insurance) and inability to obtain transportation to clinics. Dental care is the third-most unmet need identified by homeless patients. Lack of proper dental care results in high incidences of tooth decay, which lead to pain, infection, and the possible loss of teeth, which-in-turn hinders the attainment of adequate nutrition and loss of self-esteem. (King & Gibson, 2003).

Domain – Integration of Medical, Behavioral, and Social Services

The domain *integration of medical, behavioral, and social services* describes the integration of these entities within a single organization. One sub-domain describes the inclusion of mental health providers co-located in the primary care clinic and patients having access to both in-patient and out-patient substance abuse treatment programs (S. G. Kertesz, 2008; McMurray-Avila, 2001). Another sub-domain describes using both medical doctors (MD) and non-MD providers to deliver health care and having multiple disciplines reporting to a homeless-health-care department chair (S. G. Kertesz, 2008). Table 8 provides the sub-domains (if any) and the relevant references used to develop the domain integration of medical, behavioral, and social services.

Table 8. Sub-domains and Relevant References for Integration of Services

Domain	Sub-domains	Reference
Integration of medical, behavioral, and social services	A. Integration of medical, behavioral, and social services B. Relationship of multiple disciplines	A Provider's Perspective (A/B) NHCHC (A)

Many individuals who suffer from mental health disorders receive a significant portion of their mental health care in a primary care setting. In fact, a high proportion of visits to primary care involve a medical condition with related psychological symptoms or a psychological precipitant and primary care physicians have seen a significant increase in the rate of patients seeking mental health treatment in a primary care setting (Olfson, Kroenke, Wang, & Blanco, 2014). However, severe psychological disorders

such as schizophrenia, manic depressive, and major depressive disorders require strategies outside the primary care setting (Mechanic, 1997).

Oftentimes, primary care is almost the exclusive source of care for psychological issues and many primary care providers see numerous individuals who have a mental disorder with physical complaints manifested by underlying psychological disorders. Most primary care practitioners have little or limited expertise in the delivery of mental health care and will refer patients to mental health professionals practicing in separate organizational settings. These referrals, although appropriate, increase the likelihood that the patient may delay care, due to barriers such as transportation problems, increasing the fragmentation of the health care system for patients. In order to increase the integration of mental health and primary care, there needs to be more information regarding how to integrate primary and mental health care (S. H. McDaniel et al., 2014; Roberts, Robinson, Stewart, & Smith, 2009).

Research on health care for homeless persons focuses heavily on mental health issues and is relatively weak on the treatment of general medical issues. As Leutz (1999) observed, extreme, subgroups (i.e., the homeless) with limited resources, an inability to adhere to self-guidance, and are affected by unstable conditions requiring interventions from multiple resources best accomplished through integration. Research on the integration of behavioral and medical care comprises a significant body of research on vulnerable patient populations suggesting that on-site or referral-based linkages of care (Samet, Friedmann, & Saitz, 2001), while insufficient (Saitz, Larson, Horton, Winter, & Samet, 2004)**,** could improve both access and outcomes. The complexity of patient needs, coupled with the vagaries of health care funding arrangements, have typically

made it difficult for one organization to always deliver psychiatry, housing, employment, and substance abuse services (Provan, Sebastian, & Milward, 1996). There could be advantages of an integrative primary care clinic including increased health and satisfaction for patients (Bower, Campbell, Bojke, & Sibbald, 2003).

Some organizations do attempt to integrate medical, behavioral, and social services. For example, the Veterans Affairs Greater Los Angeles Healthcare System (GLA) recognized the problems of fragmentation of health services delivery and developed a model of co-located medical, mental health, and homeless services. GLA also created an access center for homeless veterans to conduct screening, assessment, and referrals where patients receive medical, mental health, substance abuse, and housing services in one day (Blue-Howells, McGuire, & Nakashima, 2008). Results from the integrated delivery model resulted in greater access to primary care and enhanced receipt of prevention services (McGuire et al., 2009). Additionally, the VA internal medicine primary clinic in Seattle, Washington, created a mental health primary care unit by forming a multidisciplinary team that provides clinical support to primary care providers. With this integrated team, patients have fewer referrals to specialty mental health care providers, better access to staff for advice, and greater patient satisfaction from the ability to receive their care within a primary care clinic versus going to a mental health clinic (Felker et al., 2004).

Domain – Human Resources

The domain *human resources* describe the human resources functions that are necessary to deliver primary care to the homeless. No additional sub-domains were developed for this domain, but operationalized statements include having relevant hiring practices, offering incentives to ensure a strong work force; hiring expert providers in the field of homeless health care (S. G. Kertesz, 2008); offering continued education, training, and cross-training to increase knowledge specific for the homeless population (T. Bodenheimer et al., 2002; S. G. Kertesz, 2008; McMurray-Avila, 2001; Nelson et al., 2002; Starfield, 1998). Table 9 provides the sub-domains (if any) and the relevant references used to develop the domain human resources.

Table 9. Sub-domains and Relevant References for Human Resources

Domain	Sub-domains	Reference
Human Resources	N/A	A Provider's Perspective CMAT Starfield NHCHC CCM

Published research provides support for the positive association between human resources and performance (i.e., health risk assessment, referral to community programs). The results found that high staff participation enhanced the association between good work relationships and receipt of preventative services; thus, involving staff in practice initiatives does not detract from high-quality preventative service delivery (Hung et al., 2006). Another study examining the association of hospital structure, physician

characteristics, and medical staff organization on quality of care outcomes, i.e., acute myocardial infarction and appendicitis indicate a significant relationship in medical staff organizations. Staff organization include staff president involvement with the board, physician involvement with decision making, the frequency of committee meetings, and the percentage of active staff physicians strongly) which result in higher quality of care outcomes (S.M. Shortell & LoGerfo, 1981).

Finally, due to the complex nature of the homeless population, special attention must be given to the successful recruitment and retention of staff and providers who are comfortable working with the homeless (Taylor, Blue, & Misan, 2001). Research has indicated that delivering care to certain groups with special cultures requires hiring staff from among the group that is being served (Sue, 1977; Sue, Fujino, Hu, Takeuchi, & Zane, 1991) which may result in a decrease in turnover rate which can cost as much as 3.4 – 5.8% of an organization's annual operating budget (Waldman, Kelly, Aurora, & Smith, 2004). Thus, it is evident that appropriate human resource functions are necessary for the survival for primary care services for the homeless.

Domain – Leadership, Governance, and Financial Stability

The domain *leadership, governance, and financial stability* describe functions necessary to delivery primary care to the homeless. Two sub-domains describe specific roles of leadership and governance such as senior leaders being transparent in regards to performance measurement and the governing body being active in the organization (T. Bodenheimer et al., 2002; McMurray-Avila, 2001; Nelson et al., 2002; Starfield, 1998).

An additional sub-domain describes leadership, staff, and governance roles to ensure financial stability such as obtaining revenue from multiple sources and actively seeking funding (McMurray-Avila, 2001). Table 10 provides the sub-domains (if any) and the relevant references used to develop the domain leadership, governance, and financial stability.

Table 10. Sub-domains and Relevant References for Leadership, Governance, and Financial Stability

Domain	Sub-domains	Reference
Leadership, Governance, Financial Stability	A. Role of leadership B. Role of governance C. Ensure financial stability	CMAT (A) NHCHC (A/B/C) CCM (A) Starfield (B) A Provider's Perspective (B)

While it is difficult to design a research agenda that adequately captures the complexity of a leader's roles and characteristics (Sashkin, 1989), insufficient health care leadership can results in a lack of quality health care (Ferlie & Shortell, 2001). Limited research exists examining the relationship between leadership and patient outcomes. One literature review found limited empirical data (4.4% of articles reviewed) related to the association between leadership and outcomes (Vance & Larson, 2002), while another review found evidence of a positive association between leadership (i.e., leadership style and leadership behavior) and better patient outcomes (i.e., satisfaction, mortality) (Wong & Cummings, 2007). In regards to practice management and financial arrangement and its effects on quality of care, a study by Keating et al. (2004) evaluating 652 patients with diabetes mellitus and 399 physicians in 135 practices, found that only 5% of the variation

in quality of care scores (i.e., clinical values of hemoglobin A1c, low-density lipoprotein, cholesterol, blood pressure control, assessment neuropathy, and foot disease, and retinopathy) were attributed to characteristics of physician practices (i.e., use of e-mail to communicate with patients and providers; use of electronic medical records; use of summary sheet to document diabetes; routinely recommend patients to see a dietitian). The only results found statistically significantly related to better outcomes was financial fee for services. Therefore, there exists limited and conflicting data, regarding any positive association between leadership and quality of care.

In addition to leadership, the responsibility to deliver health care has increasingly fallen upon community health centers a subset of which receive federal funding status as FQHC awarded "look-alike" status based on meeting an extensive set of federal criteria. Community health centers are, by law, required to serve these individuals regardless of their ability to pay. However, the increase in the number of uninsured, financial constraints, and fluctuating federal funding strain their ability to continue to offer these services. Research has found that community health centers, such as those programs providing health care for the homeless, do turn to state, local, and private grants to supplement revenue with fundraising being a profitable alternative to these grants (McAlearney, 2002).

The governing body thus has multiple roles within the organization, such as being a fundraiser, an ambassador, a supplier of needed special skills, and a protector of the community all the while ensuring compliance, assessing performance, and evaluating the organization's strategic plan (Masaoka & Allison, 1995). Organizations have started to focus on obtaining the input of consumers to help develop organizational structures and

policies. Some organizations have begun including homeless individuals within the governing body in such capacities as consumer advisors (D. S. Buck, Rochon, Davidson, & McCurdy, 2004) and those that receive funding from HRSA are required to have the majority of their governing body composed of individuals served by the organization (Bureau of Primary Health Care, 2014).

Domain – Patient-Centered Care

The domain *patient-centered care* describes the delivery of care in which the patient is forefront in the decisions related to his or her own health care. Sub-domains focus on (a) discussing patients' values and preference and being respectful of the homeless population (T. Bodenheimer et al., 2002; Corrigan et al., 2001; S. G. Kertesz, 2008; McMurray-Avila, 2001; Nelson et al., 2002; Starfield, 1998) and (b) ensuring continuity of care with the provider and the organization (T. Bodenheimer et al., 2002; McMurray-Avila, 2001). Two additional sub-domains describe (a) organizational attributes used to ensure patient-centered care such as reviewing health information to ensure that it meets the literary level of the population (T. Bodenheimer et al., 2002; S. G. Kertesz, 2008; McMurray-Avila, 2001; Starfield, 1998), and (b) measuring patient-centered care through patient satisfaction surveys that evaluate the organization, the staff, and providers (Donaldson et al., 1996; Nelson et al., 2002). Table 11 provides the sub-domains (if any) and the relevant references used to develop the domain patient-centered care.

Table 11. Sub-domains and Relevant References for Patient-centered Care

Domain	Sub-domains	Reference
Patient-centered Care	A. Care geared toward the patient	IoM: QC (A/D)
	B. Continuity of care	Starfield (A/C)
	C. Organizational attributes for patient-centered care	CCM (A/B/C) A Provider's Perspective (A/C)
	D. Measuring patient-centered care	NHCHC (A/B/C)

Patient-centered care is a value growing in the health care community and relies on already-existing standards of performance and quality, staffing, continuity of care, and transparency of organizational performance (Barr, 2006). Patient-centered care focuses on providing care by providers that are responsive to a patient's preferences. The concept describes a key dimension via a biopsychological perspective that focuses on the patient as a person, shared responsibility and power within the patient's care, focuses on the patient and provider relationships, and personal traits of the provider (Mead & Bower, 2000). Patient-centered care philosophically conceptualizes care from the patients' perspective and organizes care in ways to enhance patient involvement (Bensing, 2000; Gerteis, Edgeman-Levitan, Daley, & Delbanco, 1993). There is growing research concerning how primary care is both central to the patient-centered medical model and can provide better quality of care, "incentives for patients and physicians are not aligned to encourage a strong primary care infrastructure in the United States" (Rittenhouse, Casalino, Gillies, Shortell, & Lau, 2008, pg. 1246) even though it is central to the patient-centered medical model

Conceptual PC-HOAT Model

Based on the literature presented, a model using the Donabedian model of process, structure, and outcomes (Donabedian, 1966) will be used to examine the relationship among the domains for the PC-HOAT. The PC-HOAT consisted of eight domains considered relevant to the delivery of primary care services for the homeless. The domain, *health information systems*, describes how information systems assist in the delivery and evaluation of primary care services for the homeless. The domain *accessibility*, and two sub-domains, describes how an organization assist patients in accessing primary care services. The domain *performance and quality improvement* describes multiple evidence-based methods used to evaluate the performance of the organization and its providers. The domain *primary care services delivery* describes the type of primary care services offered. The domain *integration of medical, behavioral, and social services* describes the integration of these entities within a single organization. The domain *human resources* describe the human resources functions that are necessary to deliver primary care to the homeless. The domain *leadership, governance, and financial stability* describe functions necessary to delivery primary care to the homeless. The domain *patient-centered care* describes the delivery of care in which the patient is forefront in the decisions related to his or her own health care.

The Donabedian model defines structure as an organization's static resources, processes that support actions between provider and patient, and outcomes which are used to measure an organization's performance measures (Donabedian, 1966; Yano, 2008). Furthermore, process includes characteristics related to access, utilization, and

continuity. Structure includes characteristics such as patient and provider characteristics and outcomes are input variables (S.M. Shortell, Richardson, LoGerfo, Diehr, & Weaver, 1977).

Current literature evaluating outcomes of care oftentimes evaluate the relationship between organizational structures and outcomes or processes and outcomes thus leaving a gap in the literature to examine the relationships among structures, processes, and outcomes in a single study (Hammermeister, Shroyer, Sethi, & Grover, 1995). There is an abundance of literature on process as outcomes but the focus on structure is limited. Donabedian structures are the driving force for process and outcome, but the organization's characteristics and management capabilities that drive quality have still been under-researched. Thus the objective of this dissertation is to look at organizational structure domain and process evaluating physical characteristics, board commitments, organization design, and information (Glickman, Baggett, Krubert, Peterson, & Schulman, 2007). Figure 2 conceptualizes how the eight domains appropriately fit within the structure and process elements of the Donabedian model.

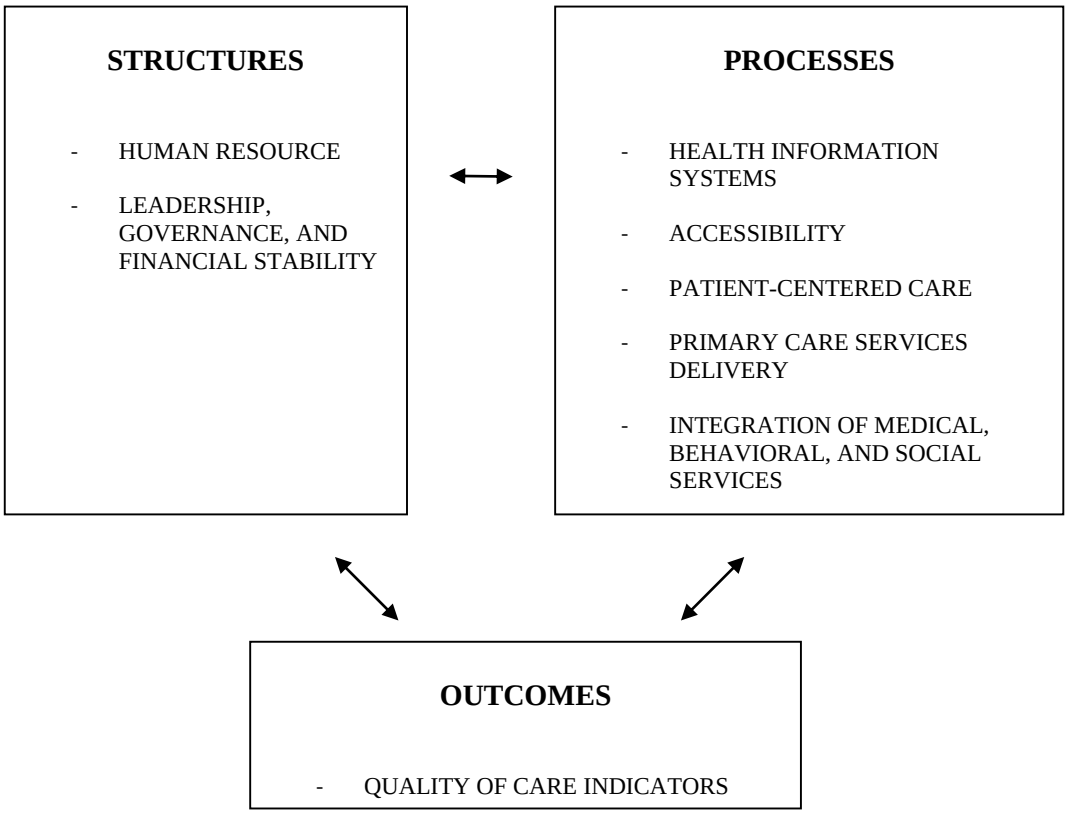

Figure 2. Primary Care Homeless Organizational Assessment Tool Conceptual Model

Additional Empirical Research

Organizations respond to resource constraints and seek to protect the core function by decreasing the amount and variety of supplementary services. Health service organizational leaders and public policy makers should design evidence-supported, data-driven health services. One way to evaluate health services is to examine the outcomes of their patients. As early as the 1970s, there has been an interest in determining which organizational characteristics are associated with outcomes of care (Hulka & Cassel, 1973). However, most of the literature focuses on organizational structures such as size

and location, with few focusing on processes, which are more difficult to evaluate using common secondary data. Empirical data will lead to continued support or changes to the existing service design. The desire for empirical evidence, based on the needs of the population, can vary depending on the population the organization serves.

The literature on the health care for the homeless generally fall under the following categories: thought pieces based primarily on experiences and observations of providers (O'Connell, 2004), population health assessments using census and survey methods (Gelberg et al., 1997; Gelberg & Linn, 1989; Kleinman et al., 1996), meta-analysis (Beijer, Wolf, & Fazel, 2012; Fazel, Khosla, Doll, & Geddes, 2008; Schumacher et al., 2007), and extensive studies of health service utilization (Howe, 2009; Hwang et al., 2010; T. W. Kim et al., 2006; Ku et al., 2010; Kushel, Vittinghoff, & Haas, 2001). Furthermore, research focused on homeless persons has also involved randomized controlled trials, especially in interventions involving housing and case management (Basu, Kee, Buchanan, & Sadowski, 2012; Culhane, Metraux, & Hadley, 2002; Larimer et al., 2009; Mares & Rosenheck, 2011; Tsemberis, Gulcur, & Nakae, 2004) and cohort studies (Buchanan et al., 2006; Cheung & Hwang, 2004; Hibbs et al., 1994). There has also been an increase in research related to primary care for the homeless (Blue-Howells et al., 2008; S. G. Kertesz et al., 2013; McGuire et al., 2009; O'Toole et al., 2010; O'Toole et al., 2013). Yet, as previously described, there is a lack of empirical evidence demonstrating the association of organizational structures, processes, and outcomes in organizations that deliver primary care services to the homeless.

Empirical research has explored ways to deliver services in the VA and found evidence to support the need to work in teams and to understanding the customer's

viewpoint (Vestal, Fralicx, & Spreier, 1997). There is also empirical evidence focused on the association on organizations and quality of care outside of the healthcare setting (Casalino et al., 2003; Gillum & Johnston, 2001; Pronovost et al., 1999; S.M. Shortell et al., 1994; Solberg, Asche, Pawlson, Scholle, & Shih, 2008). Research has supported correlations between facility organizations, leadership, staffing, and health outcomes (Bean-Mayberry, Yano, Caffrey, Altman, & Washington, 2007; Jackson et al., 2005; Yano, Simon, Lanto, & Rubenstein, 2007; Zinn & Mor, 1998). Specifically there have been positive association with organization structure and policies (e.g., ability for the staff to have authority to change clinical policies, greater staffing authority, the use of electronic health diabetic reminders (Jackson et al., 2005) and with rewards and recognition for quality, academic affiliation, and coordination (Goldzweig, Parkerton, Washington, Lanto, & Yano, 2004).

Additional studies relevant to the association between structure and quality have found that having multifunctional electronic health records and frequent staff meetings resulted in greater Healthcare Effectiveness Data and Information Set (HEDIS) quality measurement (Friedberg et al., 2009). Another study examining stroke patients in forty-two academic medical centers found that some organizational characteristics resulted in less mortality in vascular neurology with the most important characteristics being having an independent neurological administration, a dedicated stroke team, a dedicated neurological intensive care unit, and a stroke unit (Gillum & Johnston, 2001). It is apparent that the structure of the organization is an important aspect of quality of care, but the knowledge of this structure in the homeless health care community is not available.

Summary

The literature review has demonstrated that there is continued interest in defining optimal ways to organize health care services, including primary care. The literature review has also demonstrated three gaps in the literature that the dissertation will address. First, articles have focused on a conceptual framework, but many of these frameworks have not been empirically tested. Second, the articles have demonstrated associations between organizational characteristics and quality of care indicators or outcomes, but there is a lack of research focused on the homeless. Last, when examined independently, there is limited research examining multiple domains within the same research study. Mainly, the literature focuses on one aspect of the organization; even those that looked at multiple perspectives tended to focus on the structure on the organization to the detriment of the significance of processes.

It is necessary to develop a better comprehensive model of primary care for the homeless because many of the studies relevant to the organization of primary care services typically are multidimensional. In addition, inadequately established organizational attributes create difficulty in comparing models and systems (Krumholz et al., 2006). In relation to the design of homeless primary care services, there is an absence of information available, especially regarding empirical evidence. Despite the varying degrees of research related to homelessness, primary care, and the combination of the two, there is insufficient empirical evidence indicating how best to design primary care services for the homeless (Shortt et al., 2008). An organizational assessment tool can amend this significant gap, which this dissertation will develop.

This dissertation will examine the most important domains of health care delivery specifically for the homeless. In addition, the dissertation will provide the most pertinent information to individuals or entities that design and manage homeless primary care services and will use empirical research to compare structure, processes, and outcomes in a single study. This chapter provided the necessary literature needed to complete Aim #1 of the dissertation: Instrument development of the primary care homeless organizational assessment tool (PC-HOAT). The next chapter of the dissertation will describe the methodology to explore Aim #2: Item refinement of the primary care homeless organizational assessment tool and Aim #3: Evaluate validity and reliability of the primary care homeless organizational assessment tool (PC-HOAT).

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

The purpose of the study is to identify operationalized organizational characteristics for the homeless organizations and develop an instrument called the Primary Care Homeless Organizational Assessment Tool and evaluate the reliability and validity of the instrument. Although the development of such an instrument may be applicable across multiple health care organizational settings, the initial purpose is to understand better those organizational processes and structures that are relevant to the field of primary care and homeless health care.

This chapter reviews the research methodology used to explore the proposed research aims. First, it presents a discussion of the research aims, objects, and research design. Second, it reviews the literature related to mixed methodology. Third, it explains the research design by the three aims, including sampling framework, timeframe, data collection procedures, data sources, analysis, and a discussion of variables.

Research Aims and Questions

The study established the following aims as the basis for instrument development and establishing validation and reliability of the tool. The research aims are as follows:

> Aim #1: Instrument development of the primary care homeless organizational assessment tool (PC-HOAT).
>
> Aim #2: Item refinement of the primary care homeless organizational assessment tool PC-HOAT.
>
> Aim #3: Evaluate validity and reliability of the primary care homeless organizational assessment tool (PC-HOAT).

The tool used information from key informant interviews and a survey of managers of primary care for the homeless organizations to determine the tools feasibility, reliability, and validity. The researcher used a Donabedian framework that tests a research model of a set of structure and process domains in relation to the primary care services for the homeless. In accordance with the research aims of this study, it poses the following research questions:

1. What, if any, organizational domains and its operationalized concepts are most feasible?
2. What, if any, organizational domains and its operationalized concepts are most important?
3. What, if any, organizational domains and its operationalized concepts are most associated with higher quality primary care for the homeless?

The presented research aims and objectives was analyzed using a three-stage approach in which stage 1 provides items generation, stage 2 provides item reduction, and stage 3 tests reliability and validity (Guyatt, Bombardier, & Tugwell, 1986; Streiner & Norman, 2008). The final anticipated results is an organizational assessment tool that

organizational leaders will use to understand their organization's strengths and weaknesses, guide discussion regarding operations, and provide information to inform future strategies.

The overarching purpose of this dissertation is to find a comprehensive model to evaluate health services. However, the current state of health services strategy is primarily developed from antiquated sources, the use of the wrong statistical method and analysis, and an inherent failure to provide managers with relevant and practical information to do their job best (Bettis, 1991). Therefore, the researcher used a mixed-method approach to develop the instrument and analyze the results to identify characteristics most important to primary health care services. Table 12 provides a synopsis of data collection, analysis, and anticipated outcomes.

Table 12. Synopsis of the Methodology and Outcome of Data Collection

Aims	Process	Description	Sample Population	N	Data Analysis	Outcome
1	Instrument development	Use relevant literature to develop the PC-HOAT	n/a	n/a	n/a	Initial design of the PC-HOAT
2	Key informant review	Provide key informants organizational the PC-HOAT and assessment tool and ask opinions regarding variables defined in the PC-HOAT.	Providers, managers, policy makers, and researchers	10	Discussion of results from Survey	Determination of the most important and most feasible operationalized domains
3	Web-based survey	Reliability and validity of the proposed PC-HOAT	HRSA – HCH grantees	208	Cronbach's Alpha; Factor analysis; Regression analysis	Test of reliability & validity of the PC-HOAT.

Mixed Methodology

The study used mixed methodology that consists of both qualitative and quantitative methods within a single study. Mixed methodology provides a better understanding of a research problems than if either method is used use alone. It is not enough to use qualitative and quantitative methods at the same time but rather to use them both to form better connections and understanding in the research project (J.W. Creswell & Clark, 2007). Mixed methods allow the collection of multiple forms of data that are complementary, thus increasing strengths and limiting weaknesses inherently found in when using quantitative and qualitative methods alone (Johnson & Onwuegbuzie, 2004).

In this study, the mixed methods used quantitative methods first, followed by qualitative methods, then quantitative methods to assist in exploring concepts that are then operationalized and tested (Padgett, 2008). Figure 3 shows the design of the study using mixed-methods. This type of mixed-methods design is exploratory and is used when the results of the qualitative data helps to develop or inform the quantitative method. This is especially useful when developing an instrument where there is uncertainty and the literature or other data sets can't explain the phenomenon in question or fail to answer questions such as if the variables are important or if the variables are explained correctly (J.W. Creswell & Clark, 2007).

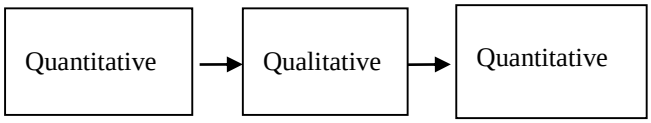

Figure 3. Design of Study using Mixed Methods

There has been an increased interest in using qualitative data because of dissatisfaction with quantitative techniques such as complexity in analysis, restrictions of methods, requirements of large size, and difficulty in understanding and interpreting data (Chinman et al., 2000). Qualitative research provides more in-depth understanding of naturalistic settings, the importance of understanding context, and the complexity of implementing social change (S.M. Shortell, 1999). Qualitative methods are used when (a) the topic is complex and the researchers are unsure what questions to ask, (b) for data reduction, and (c) to understand how groups are related to each other (Howard, 2007). Qualitative methods are also used when (a) meanings are subjective, (b) the logistics are implicit, (c) to differentiate or create trends in data that can then be quantified, and (d) to lead to propositions about the relationship among variables (Argyris, 1979).

Research in strategic management can benefit from the use of quantitative and qualitative research within a single project because it leads to better measureable results and thus a superior research project (Hitt, Gimeno, & Hoskisson, 1998). Using qualitative methods may help settle problems in organizational science such as mending the gap between theoretical constructs and the data used to test theories (Van Maanen, 1979).

Based on the previous information, it was determined that the most appropriate qualitative method to use in this study will involve interviews. Organizational research tends to focus on empirical research while ignoring qualitative interviews, which can provide intimate knowledge, expertise, and ideas for a research study. Qualitative interviews involve asking loosely, structured questions, allowing the interviewee to discuss topics of interest within the goals of the research project. Even if there is a clear framework to guide survey development, the most effective way to develop a framework is through open discussion about relevant issues (Alvesson, 2003).

Research Design by Aims

This section describes the research design used in this study categorized by research aims. The description of the research design are explained with discussion of the sample, analysis, and variables used in the study. To review, the following are the research aims of the study:

> Aim #1: Instrument development of the primary care homeless organizational assessment tool (PC-HOAT).
>
> Aim #2: Item refinement of the primary care homeless organizational assessment tool PC-HOAT.
>
> Aim #3: Evaluation of validity and reliability of the primary care homeless organizational assessment tool (PC-HOAT).

Aim #1: Instrument Development of the PC-HOAT

The first step in the instrument development had two objectives: (a) to determine appropriate organizational characteristics to evaluate primary care services for the homeless and (b) to develop measureable items. As described in chapter two, the development of the PC-HOAT involved a literature review of seven relevant texts, models, and a provider's perspective described. This information helped develop 8 domains and 82 operationalized items: health information systems (N = 7); accessibility (n = 11); performance and quality improvement (n = 15); primary care services delivery (n = 17); integration of medical, behavioral, and social services (n = 9); human resources (n = 5); leadership, governance, and financial stability (n = 6); and patient-centered care (n = 12). Next, the mixed methodology refined the PC-HOAT and evaluated the validity and reliability of the tool. Items were developed using standardized scale development by taking into consideration the length of the survey and the length of each question, the ability of the question to measure only one item, the ability of the question to be understood by the intended audience, and consistency in positive wording (Fowler, 2014; Worthington & Whittaker, 2006).

Aim #2: Item Refinement of PC-HOAT

Key informant interviews

Key informant interviews helped the researcher explore and refine the PC-HOAT. Key informants provide information on a topic and chosen based on their

possession of specialized knowledge of the culture and structure of the society of interest. Key informants may also provide definition to concepts that allow for the use in the society's own terms. Key informants provide important information because of their roles in the community, their first-hand knowledge, their willingness to participate, and their ability to communicate effectively and be impartial. As with any research method elements, key informants do have their disadvantages, such as the risk that the information obtained through key informant interviews may not be generalizable (Tremblay, 1957). Appendix A includes the pre-recruitment letter requesting participation in the study. Appendix B includes the letter sent to individuals that agreed to participate in the study with further instruction. Appendix C includes the telephone consent to participate in the interview. Appendix D includes the interview guide.

Sample

Identifying key informants can involve multiple methods. The most common method is to identify and create a list of informants from diverse backgrounds (Tremblay, 1957). Another option is the snowball method in which the researcher makes initial contacts and asks the informants to refer people who are easily accessible and can provide relevant information for the study (Howard, 2007). The researcher and the team developed a list of names of individuals who had experience managing or providing health care services for the homeless, particularly primary care. These individuals have had previous contact or working relationships with someone from the research team. We contacted ten key informants to participate. Telephone interviewing is appropriate and

has been conducted with medical directors (Laine, Lin, Hauck, & Turner, 2005) administrative directors, and clinical supervisors to provide information related to organizational factors (Friedmann, Alexander, & D'Aunno, 1999).

Timeframe

The timeframe for aim 2 was June and July 2012.

Data collection procedures

The data collection for aim 2 occurred in two separate phases. The first phase of the study involved asking key informants to complete a web-based survey rating the feasibility and importance of each item found within the PC-HOAT. This provided information regarding items that needed to be deleted or refined. A follow-up telephone interview with each individual provided further exploration of the results of the study. The second data collection involved using key informants to pilot test the final version of the tool. The same methods previously described provided the framework to complete the pilot study.

Analysis

Feedback was open-ended exploration of the organizational characteristics important to the delivery of primary care for the homeless. Analysis involved open-ended questions to explore the concepts that key informants believe is important and exploration of the items previously developed. Because the researcher sought to have

detailed, specific information crucial to understanding the culture, she was careful not to reveal too much information to bias the interviewee's responses. When interviewing, structured interview guide is acceptable as long as there is encouragement for spontaneity and the volunteering of information that is meaningful (Angrosino, 2006).

Response method

Choosing the correct response based on item response theory should be designed to evaluate the intended responses within the context of the study. Aim 2 of the study involved item refinement by reducing the number of items to develop the final survey that can administered to various health care for the homeless organizations. Adhering to similar research standards, the researcher chose items that could be adminiterested to the intended population over a web-based survey and contained few skip patterns to minimize the number of missing values in the final data (Rothgeb, Willis, & Forsyth, 2001).

The initial survey asked for a feasibility and importance score based on a Likert 10-point scale. Because the researcher was interested in how feasible and how important an item was, a continous scale was used for the first survey. This allowed for an understanding of the degree of how important or unimportant or how feasible or unfeasible the items were. Items that had a extremelly high or low scores indicated items that should be included or items that needed additional evaluation. Because organizations have limited resources, it is important to determine which items are considered the most feasible to implement in the delivery of primary care services for the

homeless. Providing recommendations that are not feasible would not provide any relevant assistance for the organization.

The final tool administered during the pilot test and the final phase of the study used dichotomous (true or false) responses. The researcher used dichotomous variables because she was interested in whether or not the organization had the particular item at their organization; therefore, a dichotomous response was appropriate.

The second aim of the study provided more information regarding the developed tool in which some items were added, deleted, or refined. Based on information from the literature review and key informant feedback, a web-based survey was developed and used for reliability and validity analysis.

Aim #3: Evaluate Validity and Reliability of the PC-HOAT

Survey

To determine validity and reliability of the PC-HOAT, individuals working at primary care services for the homeless organizations completed the survey. Previous research paralleled the methods described, such as the use of health outcomes or quality of care indicators to determine association between organizational structure and health outcomes (Friedberg et al., 2009), and surveying providers, directors, and supervisors to examine organizational structure and processes (Friedberg et al., 2009; Friedmann et al., 2000).

Sample

Data collected was cross-sectional, which is consistent with studies examining the association between organizational structure and outcomes (Friedberg et al., 2009; Gillum & Johnston, 2001; Solberg et al., 2008). Cross-sectional data consist of a sample of participants taken at a given point in time. A web-based platform, Survey Monkey, was used to administer the survey. Web-based surveys have been used as replacements for traditional mail surveys and is the most economical way to administer surveys. Web-based surveys are easy to administer and are completed at a time convenient for the participant. Random samplings is not appropriate because the sample sought are from a specific population (Groves, Fowler, Couper, Lepkowski, & Singer, 2009) and there is a small number of organizations to pull from (n=208) for the survey. The sample population are the Health Care for the Homeless programs listed with the U.S. Bureau of Primary Health Care under the Health Resources and Services Administration (HRSA).

Data collection complications occurred due to the mechanisms in which organizations are identified under HRSA. HRSA identifies one major grantee site, which receives multiple sources of funding, including migrant health, community-based, school-based, homeless health, and public housing. Under each grantee, numerous organizations exist that provide varying levels of services including, administrative, clinical, and sub-contract sites. There are currently 2,864 individual sites that are health care for the homeless HRSA grantees, contractors, sub-recipient, service delivery sites, and administrative delivery sites. Unfortunately, there lacks information in determining which organization are a homeless health care site and lack of contact information for

each site. Only the main grantees contacts (e-mail, fax, telephone, and address) are easily available. While attempts were made to determine which 2,864 sites provided primary care services for the homeless, due to the nature of the study was not feasible. Therefore, the main grantee for the 208 organizations was contacted and requested to distribute the survey on the researcher's behalf (Health Resources and Services Administration, 2012).

Timeframe

Data collection occurred February and March 2013.

Data collection procedure

The HRSA Data Warehouse extracts information about the health centers that is available for download from its website. This information was used to collect contact information used for data collection. Because of the issues described previously, a pre-recruitment letter requesting that a subsequent e-mail they receive housed the individual survey link be forwarded to administrators of their health care for the homeless programs that provide primary care services, or, if there were multiple sites, to its largest homeless program. See Appendix E for pre-recruitment letter. This also provided the opportunity to determine the feasibility of the e-mail addresses before administration of the survey. A cover letter to respondents informing them of the survey has been previously used for this type of study (Friedmann et al., 1999). The individuals contacted first were the executive directors of the 208 grantee sites followed by the clinical directors, as needed. In addition, some individuals provided e-mail addresses to those who were best suited to

complete the survey and a pre-recruitment letter was sent to them. Pre-recruitment survey letters were sent in February 2013.

Survey distribution

Survey distribution involved multiple methods of contact using the tailored design method that has shown to increase response rates. The initial contact with participants involved one of two methods: e-mail or fax to inform the respondent that they will be receiving the survey. See Appendix F for letter containing the survey link. The second contact to participants was made one week after the initial contact, again using either fax or e-mail. If there was no completed survey after the second contact, the medical directors were sent a link to the survey through e-mail. An additional contact to the medical directors were sent a week after the initial contact (Dillman, 1978, 2007). See Appendix G for follow-up contact letter.

Validity

Validity refers to the adequacy of an instrument to support the underlying theory used in the development of that instrument (Messick, 1990). Multiple ways to test validity was used in this study, including content, construct, and predictive validity (Cronbach & Meehl, 1955). Content validity was evaluated using face validity. Construct validity was evaluated using discriminant and convergent validity and factor analysis. We assessed predictive validity of the PC-HOAT scales by regressing each scale on two quality measures, discussed below.

Content Validity

Content validity is a non-statistical method to evaluate validity by relying on expert judgment to determine how well the items adequately represent what the researcher is interested in studying (Anastasi & Urbina, 1997; Cronbach & Meehl, 1955; Stapleton, 1997). In this study, the research team evaluated the instrument for content validity to determine how well the items found within the factor match the objectives of the factor analysis.

Face Validity

Face validity was used to determine content validity. The purpose of face validity is to determine how appropriately each items relates to the other items found in the same factor. Face validity is established if examination of the items leads to the conclusion that the items are measuring what they are supposed to be measuring (Nevo, 1985; Stapleton, 1997).

Construct Validity

An instrument is considered to have construct validity if it measures the theoretical, non-observable construct (Cronbach & Meehl, 1955; Stapleton, 1997). In this study, construct validity was tested using discriminant validity, convergent validity, and factor analysis.

Discriminant Validity

Discriminant validity, a form of construct validity, examines whether the factors are distinct and unrelated. Evaluating discriminant validity in factor analysis can be accomplished in two ways. One method is to examine the pattern matrix and evaluate how the items load on the factors that emerged from the data. Items should load on only one factor and items that cross-load on more than one factor could indicate violations of discriminant validity. If items do cross-load, the difference between the loadings should be greater than 0.20 (Chin, 1998; Farrell, 2010; Heinzl, Buxmann, Wendt, & Weitzel, 2011). Another method to test for discriminant validity is to examine the factor correlation matrix, which has been used in previous studies to evaluate discriminant validity (Zimet, Dahlem, Zimet, & Farley, 1988). If the correlation between factors is greater than 0.70, there is a majority of shared variance (Campbell & Fiske, 1959; John & Benet-Martinez, 2000) and thus a violation of discriminant validity.

Convergent Validity

Convergent validity refers to whether items within a construct that should be related are indeed related. Convergent validity focuses on determining how the items within a single factor are correlated, with high correlations being optimal (Campbell & Fiske, 1959). Convergent validity was determined by how many items at a common threshold, 0.70, load onto a factor (Chin, 1998; Heinzl et al., 2011). Research has indicated that sufficient factor loadings should take into account the sample size (Guadagnoli & Velicer, 1988; Krebsbach, 2014).

Factor Analysis

Factor analysis is another statistical method to evaluate to test the construct validity of a questionnaire (Bornstedt, 1977; Rattray & Jones, 2007). The goal of factor analysis is to allow a small number of factors to convey similar information that would be present in a large number of items. The use of factor analysis evaluates whether certain items form distinct domains and permits the use of few items to represent many items (Jaeger, 1990). Factor analysis determines if a number of underlying factors can explain certain patterns in the data collected (Streiner, 1994). Two different types of factor analysis will be used to test construct validity: principal component analysis (PCA) and confirmatory factor analysis (CFA).

Principal Component Analysis

PCA is a statistical procedure that converts a set of items into a set of possibly correlated items. The goal of PCA is to determine the number of factors that emerge from the proposed data. A PCA identifies a small number of common factors that account for the majority of variance. PCA has been demonstrated to be effective when one is attempting to evaluate the subscale structures of an instrument (Dahlem, Zimet, & Walker, 1991).

Factor rotation

Factor rotation assists in evaluating the data by improving the interpretation of the factor loadings in which a pattern of loadings is represented because an unrotated factor analysis can be difficult to interpret. It helps to show which items load most strongly on one factor and weakly on other factors by moving certain items toward some items and away from others. Factor rotation can be either orthogonal or oblique (Child, 1990; Field, 2009). Because the underlying theory assumes that the factors are correlated, oblique rotation was used in the study (Costello & Osborne, 2005).

Number of factors to retain

Each factor should have a minimum of two items with significant factor loadings. How to decide the number of number of factors to retain has been evaluated in numerous studies (de Winter, Dodou, & Wieringa, 2009). Methods of making this decision include Kaiser's stopping rule, evaluation of the scree plot, the number of nontrivial factors, and a prior criterion (Brown, 2009).

Kaiser's stopping rule is the most common way to determine the optimal number of factors to retain (Zimet et al., 1988; Zwick & Velicer, 1986). Kaiser's stopping rule determines that factors with eigenvalues over 1.00 should be retained (Brown, 2009; Jaeger, 1990). Eigenvalues indicate how much variation is accounted for by each of the factors. In PCA, the items are ordered so that the first few factors retain most of the variance present in the original items (Abdi & Williams, 2010; Wold, Esbensen, & Geladi, 1987).

A second method to determine the optimal number of factors to retain is to evaluate the scree plot. A scree plot is a graphical display that shows the variance of each factor in the dataset, thereby displaying the number of factors that explain the highest percentage of variation. Scree test criteria for extraction entail observing the point at which the line bends at the elbow. Those factors found above the elbow should be retained, and those below it should be eliminated (Brown, 2009; Cattell, 1966; Costello & Osborne, 2005).

A third method is the number of nontrivial factors, which is determined by looking for factors with two or more items loading above the cutoff point. Research indicates that loadings of 0.71 or greater are excellent, 0.63 is very good, 0.55 is good, 0.45 is fair, and 0.32 or below is poor. Trivial factors are those that do not have at least two items with loadings above the defined cutoff point (Brown, 2009; Comrey & Lee, 1992; Field, 2009; Jaeger, 1990; S.M. Shortell et al., 1991).

A fourth method to evaluate the number of factors to retain to use an a priori criterion, i.e., the number of factors defined in the original questionnaire. This is appropriate because researchers most often develop a model based on a preconceived idea of how the items are related (Brown, 2009; Costello & Osborne, 2005; Floyd & Widaman, 1995).

Confirmatory Factor Analysis

CFA is used to explore interrelationships among items and confirm that items can be grouped within underlying, predetermined domains. The use of CFA identifies model

factors, also known as latent variables, which are not directly measured but account for an underlying common theme among a set of measurements. CFA is deductive in nature, focusing on the association of the pattern of the observed data with the pattern of the proposed model. There are certain requirements for conducting a CFA, including independence of observation and normal distribution. There is no set rule regarding sample size, but a minimum of four subjects per parameter is generally recommended. The use of CFA requires that models be specified in advance (Fox, 2010; Harrington, 2008; Hoyle, 2000).

Fit indices

Fit indices are used in CFA to test whether the model is plausible given the items and factors defined in the model. Numerous fit indices are reported in a CFA, including Tucker-Lewis index (TLI), comparative fit index (CFI), relative noncentrality index (RNI), standardized root mean square (SRMR), nonnormed fit index (NNI), normed fix index (NFI), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), and chi-square. Fit indices have recommended cutoff values that indicate good model fit. Recommended cutoff values have been suggested for the following fit indices: TLI, CFI, RNI, NNI, NFI, and GFI, 0.90 or greater; SRMR, 0.08 or less; RMSEA, 0.06 or less; and chi-square, close to zero (Hu & Bentler, 1998; Marsh & Balla, 1994; Suhr, 2006).

In this study, fit indices appropriate for small sample sizes was used. The normed and nonnormed fit indices have been suggested as appropriate goodness-of-fit measures

that are not influenced by sample size (Bentler & Bonett, 1980), but other research has shown that nonnormed fit measures are indeed influenced by sample size (Bollen, 1986). A flaw of the RMSEA is the rejection of model fit when sample size is small (Hu & Bentler, 1998), although additional studies have found that improvement in the RMSEA as the sample size increases (F. F. Chen, 2007). The SRMR can be evaluated independent of sample size (F. F. Chen, 2007). The CFI is independent of sample size and often yields appropriate results with small sample sizes (Hu & Bentler, 1998; Marsh & Balla, 1994). Chi-square is one of the commonly used goodness-of-fit indices; in a good model it will not deviate relative to the sample size, but poorer models require a larger sample size (Marsh & Balla, 1994). The GFI is also independent of sample size (Marsh & Balla, 1994). Therefore, it is appropriate to use a variety of fit indices to determine model fit, even with a small sample.

Predictive Validity

Predictive validity measures the extent to which the instrument predicts the score on the outcome measure. The higher the association between the predictor variable and the outcome variable, the more valid the predictive variable is (Jaeger, 1990). Ordinary least squares (OLS) regress was used to model the relationship between the scales and the quality measures, controlled diabetes and controlled hypertension.

Regression analysis is used to examine the relationship among a defined group of variables, with the objective of predicting the independent variable based on values of the dependent variable. Multiple regression is used when there is more than one independent

variable (Jaeger, 1990). The use of multiple regression analysis allows for the inclusion of multiple variables and enables controlling for additional variables that simultaneously affect the dependent variable. Because multiple regression models can accommodate many dependent variables that may be correlated with each other, it can be used to infer causality in cases where simple regression analysis would be misleading. Through adding more variables to the model that are useful for explaining the dependent variable, a greater amount of variation in the dependent variable can be explained; therefore, multiple regression analysis can be used to build better models (G. Walker, 1997; Wooldridge, 2009).

Regression analysis can be used to test a hypothesis regarding the relationship between the independent and dependent variables and therefore to draw inferences as to whether the independent variable has an influence on the dependent variable. Regression analysis allows for the estimation of a coefficient showing how changes in an independent variable affects the dependent variable. It entails basic assumptions as follows: (a) the dependent variable is continuous, (b) the independent variables are uncorrelated with each other, (c) the independent variables are uncorrelated with the error terms, (d) the error term has a mean of zero, (e) the variance is constant, and (f) errors are uncorrelated with each other. Even if there are violations of assumptions, regression analysis is fairly robust as long as the violations are small (Toutkoushian, 2005).

Dependent Variables

Two dependent variables or quality of care indicators were used in this study, controlled hypertension and controlled diabetes. These are represented by the number of overall patients who have controlled diabetes and hypertension divided by the number of total patients who have diabetes and hypertension. The data were obtained from HRSA's Uniform Data System (UDS) by request under the Freedom of Information Act. The UDS data are maintained by the Bureau of Primary Care, which is used by all grantees of the following primary care programs: community health centers, migrant health centers, health care for the homeless, public housing, and primary care. UDS data provide the number of patients with controlled hypertension and the number with controlled diabetes; the latter is defined as those patients with hemoglobin A1c levels at or below 7.0.

Quality of care indicators can be used to infer judgments about the care that patients receive. Indicators do not provide definitive answers, regarding the quality of care a patient receives but can suggest potential problems. They are chosen depending on the research question and the stakeholders of interest—for example, health professionals (i.e., health outcomes, efficiency), patients (i.e., clinical perforamnce), and managers (e.g., efficiency, accessibiltiy, outcomes)—as each group may value different indicators. Quality of care indicators may also be related to outcomes (i.e., mortality, health status, morbidity), processes (e.g., treatment, referrals), and structures (i.e., personnel, finance, availability of appointment). Outcomes need to be feasible, reliable, sensitive to change, and valid. Quality-of-care indicators that work in the general population may not work as well for special populations (Stewart, Hays, & Ware Jr, 1988). Often quality of care is

defined based on the experience of a particular disease, as some diseases may be of more interest than others (Dudley et al., 2000).

Independent Variables

For the OLS, the independent variables were the composite scores of each scale. Two options to compute composite scales are the mean scores or sum scores of each scale. Mean scores are calculated by adding the values of each items within a scale, and then dividing the sum by number of items in the scale (Suhr, 2005).

Reliability

The final test of the PC-HOAT was to examine its reliability, i.e., whether it consistently produces similar results under consistent conditions. One way to test for reliability is to examine internal consistency, that is a high correlation among items in a scale and that those items behave together as if they were a single measure. Assessing correlation coefficients allows testing for reliability; the higher the correlation coefficient, the higher the reliability. Because the data used for the dissertation were collected on only one occasion, it is best to use the internal consistency method (Jaeger, 1990) to test for reliability.

Cronbach's alpha is a widely used measure for reliability and is appropriate because of the assumptions of this tool are as follows: (a) elements will reflect the same domain, (b) measures are expected to be independent, and (c) the measure uses multi-item responses for a domain. Higher Cronbach's alpha indicates higher reliability

(Groves et al., 2009; Jaeger, 1990). Cronbach's alpha has been frequently used in reliability testing (Cronbach, 1951) and is generally used to test the internal consistency of a questionnaire (Field, 2009). There is difference of opinion as to what level of reliability is considered acceptable, with views ranging from 0.60 to 0.90 (Clark & Watson, 1995).

Conclusion

Chapter 3 has described the methodology used in this study. First, the purpose of the study and the research aims were reviewed. Next, the data sources, collection, and analyses were described within a mixed-methods framework. The results from the study will be reported in chapter 4 and discussed in chapter 5.

CHAPTER 4

QUALITATIVE ANALYSIS

Chapter 4 provides the results of the study, using the procedures described in chapter 3. The chapter has two sections, the first focusing on the qualitative analysis and the second on the quantitative analysis. The purpose of the qualitative data was to evaluate the PC-HOAT in terms of feasibility and importance of the operationalized concepts, survey refinement, and further exploration into the processes and structures of primary care services for the homeless, not discovered in the initial literature review. The qualitative methodology, separated into four phases, are discussed in further detail. The qualitative portion of the study was completed in August and September 2012.

After the measurement tool was developed, it was distributed to a sample of eight key informants. These individuals provided a diversity of perspectives based on their work in primary care services for the homeless, including multiple years involved in homeless health care, behavioral and clinical expertise, and managerial experience and research experience. Highlights of the interviews are discussed Table 13 provides demographic information on the key informants who were interviewed.

Table 13. Key Informant Demographics

KI	Group	Primary Job Description	Amount of influence of organization's operations	Gender	Racial/Ethnic Group	Length of time in homeless health care
Alpha	1	MD Provider; Research; Executive management; Policy/Advocacy; Behavioral Health Provider	A lot	Male	White Non-Hispanic	10+ years
Beta	1	Nurse; Contract Monitoring	A lot	Female	White Non-Hispanic	10+ years
Gamma	1	Non MD-Medical provider; Program director	A lot	Female	White Non-Hispanic	10+ years
Delta	1	MD Medical provider; Research	A lot	Male	Asian/Pacific Islander	10+ years
Epsilon	2	MD Medical provider; Research	A little	Female	White Non-Hispanic	10+ years
Zeta	3	MD Medical provider; Non-Executive Management	A lot	Female	White Non-Hispanic	1–2 years
Eta	3	MD Medical Provider; Non-Executive Management	A lot	Female	White Non-Hispanic	5–10 years
Theta	4	MD Medical provider; Research	A little	Male	White Non-Hispanic	10+ years

First Phase of Key Informant Interview

In the first phase, five participants completed a web-based survey. The results were analyzed and follow-up telephone interviews with each person was performed. Four of the interviews occurred within two weeks of the survey, and the fifth interviewee participated in the fourth phase of the qualitative analysis, discussed later in this chapter. After the first four interviews, the survey was evaluated and revised based on the information received. The survey took participants approximately 30 minutes to complete online, and each interview lasted about 60 minutes.

Individuals taking the web-based survey were asked to rate each survey item using a 10-point Likert scale on importance and feasibility. Items that received low

average scores (I and F) and a high difference scores (between I and F) were identified as potential questions to explore during the interview. In addition, questions that were difficult to operationalize were identified a priori as potential questions to explore during the interview. Due to the size of the instrument and the limited time available, not every question identified as problematic was discussed during each interview. Finally, questions that received a score of not applicable were identified as problematic and flagged as potential questions to explore during the interview.

The focus of the interview was on exploring the nature of the questions and determining whether the way in which the question was written was problematic, or whether the item itself was not feasible or not important enough to include. Instead of arbitrarily omitting questions that received potentially problematic ratings, the researcher chose to evaluate the questions first to determine if the problems were due to flaws in the question design. Questions determined to be problematic in wording were rewritten, and those receiving low feasibility or importance scores were reevaluated to determine their appropriateness within the instrument. To facilitate discussion, each interviewee received in advance an e-mail detailing the questions that might be asked during the interview.

Qualitative Analysis, Phase 1

This section describes the first round of key informant interviews with four participants, referred to as Alpha, Beta, Gamma, and Delta. Alpha has a variety of experiences in homeless health care; including research, direct medical and behavioral care, executive management, and policy. Alpha has been involved in homeless health

care for more than 10 years. Beta, a trained nurse, focuses on contract monitoring, and has been involved in homeless health care for over 10 years. Gamma, a trained nurse, had multiple duties at the organization, including providing medical care, serving as program director, and participating in health care for the homeless for 25 years. Delta is a medical provider and researcher in a non-U.S. health care system.

Summary of Feasibility and Importance Scores

The results of the evaluation of the feasibility and importance scores are summarized in two different ways. First, the items that had low or not-applicable scores with regard to both feasibility and importance are discussed. Next, the items that had a wide difference between the average feasibility and importance scores are addressed. Finally, a brief review of the significant findings is presented.

Items with low average feasibility scores included the following (the scores are in parentheses): (a) "patients can receive same-day/next-day referrals to specialists" (3), (b) "organizational performance is measured in terms of accessibility to care" (4.4), (c) "organizational performance is measured in terms of patient costs" (5), and (d) "patient satisfaction is used to assess performance" (4.8). Items with low average importance scores included the following: (a) "organizational performance is measured in terms of patient costs" (4) and (b) "patient satisfaction is used to assess staff performance" (6.6). Low feasibility and importance scores were most dominant in the domain "Organizational Performance and Quality Improvement."

Items with a wide difference between the average importance and average feasibility scores included the following: (a) "patients can receive same-day/next-day referrals to specialists" (difference of 5.2); (b) "housing services are under the same reporting structure as primary care services" (5.6); (c) "patients have access to on-site inpatient substance abuse treatment programs" (4.2); (d) "organizational performance is measured in terms of quality" (3.0); (e) "providers and staff are checked for competency through the use of test, exercises, and competency guidelines specific to the job description" (3.6); and (f) "clinic uses relevant incentives (financial and nonfinancial) to retain homeless health care providers" (3.2). There was one item, "organizational performance is measured in terms of patient costs" (-1) that received a higher average feasibility score than the importance score. The differences between the importance and feasibility scores provided an opportunity to determine where organizations have difficulty implementing important organizational structures and processes. It is important to understand the nature of the organization to understand what is causing this disconnect.

In summary, the majority of the issues raised by the feasibility and importance scores were related to performance evaluation. Interestingly, the scores for importance were consistently higher than the feasibility scores. Therefore, it appeared that understanding what is feasible in an organization could provide more information for shaping the measurement instrument than inquiring about what organizational structures and processes are considered important. Subsequent qualitative interviews were designed to provide further insight into the issues that arose from the survey findings. The following summary of the interviews are divided into the domains under which the

questions fell. Because of the exploratory nature of the interviews, some of the domains are not explored in the summary.

Summary of Findings from Key Informant Interviews

Health Information Systems

According to interviewees, the most important concern related to health information systems is that electronic medical records are produced on different platforms and are often incompatible. Alpha, Beta, and Delta discussed how several information systems, including electronic medical records, scanning devices, and mobile devices, are often not able to communicate with each other, making it difficult to access the appropriate patient information. This problem is especially relevant for organizations serving homeless individuals, who frequently see providers at multiple locations. In addition, Delta stated that inpatient and outpatient facilities often have different systems, making retrieval of important information impossible. Unfortunately, this study does not focus on the compatibility of information systems due to the focus on the internal environment of the organization but should be considered relevant in future research.

As the Health Insurance Portability and Accountability Act (HIPAA) requires that patients have access to their medical records (Dwyer III, Weaver, & Hughes, 2004; Ross & Lin, 2003), interviewees discussed the importance of this availability. Delta stated that patients almost never request access to their medical records; therefore, although this service is required by law, it may be unimportant to the patient. This observation

supports research that indicates the greatest potential for patient's having access to their medical records is greater provider-patient communication, that is modest at best (Ross & Lin, 2003). In contrast, accessibility of medical records to providers appears to be more pertinent; specifically, Alpha spoke of the importance of integrating both medical and behavioral health records. Therefore, modifying the question to include behavioral and medical records would be beneficial. In addition, because organizations by law, are required to provide patients access to their medical records, this should be considered for deletion.

Accessibility

The most problematic issue with regard to accessibility was the ability to phrase questions regarding same-day or next-day referrals to specialists. As researchers develop questionnaires, they must carefully understand how each question will be asked and how it might be interpreted. Subtle nuances often make the question problematic; therefore, it is beneficial to ask individuals who would be answering the question to provide insight and offer ways to avoid problems of which the researcher may be unaware. With regard to this same-day/next-day referrals to specialists, Alpha had concerns with the word "specialists," because the focus is on primary care and, according to the American Medical Association, primary care is itself considered a specialty. The focus, Alpha suggested, should be on subspecialties.

Concerning the timeframe, a time delay in seeing specialists is widely acceptable even for the general population (for example, waiting a few weeks or months to see a

surgeon or endocrinologist). What is more important is the ability for patients to see subspecialists quickly when they have acute issues. In addition, Beta stated that some facilities might not have a complete network available to complete referrals; thus, Beta considered the same-day/next-day wording troublesome. Therefore, this question requires significant modification in terms of describing sub-specialties and developing a more realistic expectation in regards to period.

The statement regarding ability to access primary care services offsite was also problematic. Gamma described problems finding individuals who were willing to see the clinic's patients. Establishing connections with cooperative fellow providers is important as some organizations are overwhelmed and cannot see patients outside the clinic. Often the facility cannot offer services within and outside the primary clinic because finances, including grants, have been reduced. In addition, Beta noted that, when services are offered offsite, patients can fall through the cracks more easily and fail to access services, and that the exchange of information is inconsistent. Although, the question, itself, does not appear problematic, it could be an item that can used to highlight how well an organization has established linkages within the community for patients to get the care they need.

Performance and Quality Improvement

Although cost would appear to be an important factor to study, it did not prove to be an important aspect to focus on based on the scores from the survey and the interviews. In addition, Alpha found the question, "At my clinic, organizational

performance is measured in terms of patient cost," hard to interpret because it was not clear whether the question referred to patient costs or cost to the organization. This concern provided a reminder that questions must be free of ambiguity to be effective. In any case, both Gamma and Alpha emphasized that outcomes are better measures of performance than costs. Therefore, it is reasonable to delete items based on the relationship between organizational performance and cost.

Using patient satisfaction as a performance measure was problematic for several of the interviewees. Alpha stated that, although patient satisfaction is important, there are complex issues underlying what would constitute satisfaction for this population. For example, satisfaction for a patient may mean receiving the narcotics requested, and dissatisfaction may be the result of not receiving such medication. Beta's organization did not use patient satisfaction as a measure but did feel that it was important. Delta stated that satisfaction surveys are often based on the care provided in a hospital and can be problematic when translated into a primary care clinical setting. In addition, Gamma discussed whether patients are good at judging appropriate interventions and whether their ability to discuss satisfaction with their care may be limited. Due to the issues described, the question would need modification on the appropriate use of patient satisfaction surveys.

Two additional issues discussed with the interviewees were evaluating staff and providers competence and the need to provide performance data outside the organization. Alpha stated that staff were not checked for competence but were evaluated using performance reviews. Delta stated that checking staff and provider competence is difficult in the field of health care and may not be undertaken as thoroughly as in other

industries. It appears that evaluating the staff's competency is not as important as evaluating the provider's competency and should be considered for deletion. In addition, further research needs to be conducted to understand common procedures used to evaluate providers within a primary care setting.

In regards to the clinic providing the organization's performance data to outside entities, Gamma commented that no one ever asks for her organization's performance data, and that performance data are frequently available only for hospitals and not for individual clinics. In addition, Delta stated that although his organization did not publish performance data, the organization was attempting to establish a practice of doing so. Therefore, although this does not appear to happen as often in primary care settings, there is no strong indication from the results of the survey or the interview that this question should be eliminated.

Primary Care Service Delivery

Although primary care centers strive to provide comprehensive care, often financial constraints make it impossible to provide all the needed services. Services that are important but not feasible should not be ignored; rather, referrals should take place through established linkages to ensure that patients receive the care they need. Both Alpha and Beta related how providing laboratory and radiological services are important but often unfeasible for smaller primary care clinics. Similarly, Alpha stated that onsite inpatient substance abuse treatments are not feasible, and that instead organizations should focus on linking patients to other providers within the community. Delta made a

similar comment about dental and oral health providers. With the issues previously discussed regarding patient's inability to receive services when they are referred outside the organization, it would be important for primary care services for the homeless to provide those services at the clinic to affect the outcomes of a patient's health care.

Community outreach is important in a disenfranchised community, especially the homeless community. As discussed in Chapter 1, problems of access prevent many such individuals from receiving proper care. To reach these individuals, many organizations have providers delivering care at various locations in the community, such as mobile units and shelters. Two questions, "Providers are available as consultants" and "Providers are called upon to help in the community," were posed to demonstrate how well the organization is performing community outreach. Unfortunately, funding limits providers' ability to carry out such service delivery. Beta stated that community outreach is an important service to provide and that many providers wish to offer it but are unable to do so. Therefore, this question appears to have issues with feasibility but the importance of community outreach warrants it to be included in the survey.

Integration of Medical, Behavioral, and Social Services

Integration of medical, behavioral, and social services within a primary clinic, although important, maybe not be feasible given the environment in a clinic serving the homeless. When these services cannot be provided in a single setting, establishing linkages in the community to provide care is imperative. As Gamma stated, the most important linkages needed in the homeless population are for substance abuse and dental

clinics. If there are insufficient linkages, such as in the case of Gamma's clinic, patients without public insurance, such as Medicaid, which many homeless patients do not qualify for, are unable to receive secondary and tertiary care services. Therefore, this domain appears to be important in the delivery of primary care to the homeless.

It is of vital importance that the homeless receive assistance with obtaining housing. This assistance can be delivered through the primary care clinic, but it is often difficult to employ an individual specializing in housing assistance within the clinic. Beta and Delta stated that housing assistance services are provided when needed and can be found in shelters but are not integrated within the primary care clinic. This conversation should not be ignored in that some organizations may not have the financial means to hire a separate housing assistance person, but there needs to be a dedicated person who is knowledgeable in the housing options in the community.

Another important aspect of integration is the value of having mental health providers co-located in the primary care clinic, especially in view of the high prevalence of mental health needs in the homeless population. However, Beta stated that mental health services have to be referred out but are oftentimes delivered by the primary care provider. As discussed in Chapter 1, many mental health care services are offered in a primary care setting, but more challenging mental health needs require referral to dedicated mental health specialists. In addition, offering mental health services within a primary care setting has more positive benefits for patients. Therefore, this question, albeit challenging for some organizations, should be included in the final survey.

Human Resources

Issues arise in regards to hiring and retaining staff at a clinic serving patients with multiple issues, such as the homeless. Issues such as inability to maintain good hygiene can be unappealing to providers, and financial incentives are usually modest, or even prohibited, due to limited funding or the funding stream. It is important for primary care organizations serving the homeless to hire providers who can handle working with patients with various needs, as well as to provide sufficient incentives to retain them. With regard to relevant incentives, either financial or nonfinancial, to retain homeless health care providers, Beta stated that financial incentives were not allowed in the organization; however, some organizations, such as Beta, provide excellent benefits. Gamma stated that enjoying what one does for a living and being surrounded with good staff and support are important nonfinancial incentive; however, such items are hard to define and measure. Therefore, it appears that the focus on non-financial incentives and understanding which ones are most relevant to providers should be the focus on workforce retention.

In addition, hiring persons who have familiarity and previous work experience with the homeless was identified through a homeless provider's perspective to be relevant. Yet, Alpha identified other relevant characteristics, such as interest in, training with, and experience working with individuals who are underserved or in a not-for-profit setting, and not necessarily experience with the homeless. Limiting staff selection to people who have previously worked with the homeless can prove problematic. As Delta stated, finding providers who are both familiar with and interested in serving the

homeless population is not easy. There appears to be a balance in the hiring of providers to work with the homeless that should be explored further.

Patient-centered Care

Health information and health literacy are important in order for patients to be involved in their health care as informed consumers. However, the importance of these factors in primary care services for the homeless was not clear. Alpha indicated the existence of a delicate balance in offering materials because of the varying degrees of literacy in the homeless population. If the patient's level of literacy is high, he or she may be offended by material presented to them that assumes a low level of literacy and the literature presented to the patient is thus not useful. Having time to discuss available materials and health care issues with patients is most importance. In addition, both Alpha and Delta noted that written materials are often not of interest to patients. There two questions regarding health information material should be considered for deletion and revision

Summary of Findings from the First Round of Interviews

The first round of interviews provided important information regarding various problems to resolve. It demonstrated that varying degrees of importance and feasibility were accorded to particular aspects of clinic activity. In addition, linkages within the community appear to be extremely important. Understanding how care is delivered and provider-patient relationships are important in designing or evaluating any health care

organization. Moreover, organizations must develop policies that are relevant to their patient base and have the greatest potential benefit. For example, developing a system by which patients can receive their medical records can be costly and time-consuming for providers, but law requires some form. On the other hand, quality of service depends on access to electronic medical records by all relevant providers.

After the interviews were completed, the instrument was evaluated and items that were problematic due to wording were revised, new questions were added, and irrelevant items were removed. Table 14 highlights the major revisions in survey items that occurred after the first round of interviews; these major revisions were the foundation of the interviews for phase 2 of the key informant interviews.

Table 14. Major Revisions to Survey Items after Phase 1 of Qualitative Interviews

Q	OLD	NEW
1	At my clinic, health information systems (i.e. medical records and mobile devices) facilitate coordination of care between providers.	Screener: At my clinic, we use electronic medical records If yes: At my clinic electronic medical records (i.e. medical records and mobile devices) facilitate coordination of care between providers.
2	At my clinic, providers have access to all their patients' medical records.	At my clinic, providers can access their patients' health records regardless of where the records are housed.
3	At my clinic, patients can receive same-day/next-day referrals to specialists.	At my clinic, if a patient needs a referral to another provider (i.e., physical therapy, podiatry, cardiology), we provide the date and time for the appointment immediately.
4		At my clinic, when a patient needs to see another provider (i.e., physical therapy, podiatry, cardiology), it happens within 30 days
5	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes and safety).	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes, safety, mortality rates, readmission rates).
6	At my clinic, providers are checked for competency through the use of test, exercises, and competency guidelines specific to the job description.	At my clinic, providers are checked for competency through the use of standardized patients, direct observations, peer assessment, and audits of medical records, specific to the job description.
7	At my clinic, meetings are conducted monthly to review patient cases.	At my clinic, interdisciplinary meetings are conducted monthly to review patient cases
8	My clinic provides treatment for acute medical illnesses (i.e. burns, cuts, and fractures).	My clinic provides treatment for acute medical illnesses (i.e. burns, cuts, headaches, and fevers).
9	At my clinic, housing assistance services are co-located within the primary care clinic.	At my clinic, case managers are co-located within the primary care clinic to assist with social services (i.e., housing and mild behavioral issues).
10	My clinic hires providers (primary, behavioral, and social) that are experts in homeless health care. My clinic uses relevant hiring practices (i.e., familiarity with the homeless, previous work experience, and internal promotion) to ensure that providers hired have an interest in the homeless population.	My clinic hires providers that have an interest in the homeless, the underserved, or in not for profit organizations.

Qualitative Analysis, Phase 2

The second phase of the qualitative portion of the study involved one participant who acted as an intermediary between phase 1, the initial review of the instrument, and phase 3, the pilot testing. This individual had both clinical and research experience in primary care for the homeless; she therefore provided a needed bridge between the survey items being developed and structures and processes at the organizational level.

Interviewee Epsilon, a female MD provider, although currently has limited control over what occurs in her own organization, her multifaceted role as both provider and researcher enabled her to offer unique insights. Due to time constraints, Epsilon was not able to take the survey, but she agreed to evaluate the modified questions and evaluate if the new questions were superior to the original questions with regard to overcoming issues discussed during phase 1 of the qualitative analysis especially addressing ambiguities and problems related to translating theory into practice. Key findings from the interview with Epsilon are provided below, arranged by topic as were the findings from phase 1.

Health Information Systems

Because of the findings in phase 1 regarding the use of electronic medical records, a screening question was added to the survey: "At my clinic, we use electronic medical records" and, if yes, "At my clinic, electronic medical records facilitate coordination of care between providers." Epsilon warned that she did not know how many organizations have electronic medical records; she pointed out that respondents from organizations

without this capacity might skip the questions, resulting in a large amount of missing data. Epsilon pointed out the challenge of accessing medical records due to the different platforms. She stated that, due to these issues, she had to rely on patients to provide their own medical history. Epsilon continues to discuss the previous issue regarding incapability among electronic medical platforms that will not be addressed in this survey. Although, Epsilon provided some trepidation regarding how many organizations have medical records, the question itself does not appear problematic.

To address issues regarding accessing behavioral and medical records, a new question was introduced: "Providers can access their patients' health records regardless of where they are housed." Unfortunately, it was discovered that the modification made the question unclear; Epsilon stated that she did not understand whether it was referring to a provider accessing the clinic's records or accessing records at another clinic. This new question was developed to address the issues of providers accessing their patients' behavioral and medical records but the new question did not result in a clearer question and therefore, needs to be revised to make the statement clearer, by specifically stating behavioral and medical records.

Accessibility

Two questions within the domain of accessibility required modification after the first round of interviews. These were addressed during the interview with Epsilon: "At my clinic, if a patient needs a referral to another provider (i.e., physical therapy, podiatry, and cardiology), we provide the date and time for the appointment immediately" and "At

my clinic, when a patient needs to see another provider (i.e., physical therapy, podiatry, and cardiology), it happens within 30 days." In this instance, Epsilon suggested separating ancillary (physical therapy and podiatry) from specialty health care (cardiology), with an additional recommendation of including neurology. Although it is important to note all types of providers, it was necessary to reevaluate the nature of the question by focusing on the aspects that were most important. Acute conditions require more immediate assistance, but immediately and within 30 days can be too restrictive for organizations. Lastly, accessibility is not always within the control of the clinicians in a primary care clinic, but they can usually arrange the availability of a suitable provider to give patients the care they need. Therefore, the question needs to be revised based on the interview.

Performance and Quality Improvement

Multiple items were discussed with Epsilon in the area of performance and quality improvement. The first question related to the use of the word *safety* in regard to organizational performance measured in terms of quality. Epsilon suggested using a more concrete word such as *medical error*, which is a facet of patient safety, to prevent the respondent from becoming confused by ambiguous wording. The question about how providers are checked for competence was suggested to go through additional revisions. Epsilon provided clearer language for the question, such as changing "specific to the job description" to "scope of practice."

Finding out if interdisciplinary meetings were held monthly was considered an important concept to explore. Epsilon revealed that there are multiple layers to the question, including (a) whether organizations hold meetings at all, (b) whether they hold interdisciplinary meetings, and (c) how often the meetings are held. Therefore, multiple layers of questions are needed to ensure that the item adequately captures the varying levels of meetings that occur in primary care settings.

Primary Care Service Delivery

The question regarding acute medical illnesses, which were defined in terms of burns, cuts, headaches, and fever, was problematic in the first round of interviews and continued to be problematic after revision. Specifically, Epsilon stated that the inclusion of cuts and burns needed to be evaluated, because the clinic's ability to care for these acute conditions depends on the severity of the cut and the burn. The word cuts and burns were thus removed from the question.

Another question Epsilon was asked to evaluate was, "At my clinic, case managers are co-located within the primary care clinic to assist with social services (i.e., housing and mild behavioral issues)." Epsilon raised several issues with the question, relating to the use of the words *case manager* and *co-located*. *Case manager* could refer to a very specific individual, or to someone who does the work of a case manager but would refer to himself or herself with a different title, such as social worker. In addition, Epsilon said that participants might not be familiar with the word *co-located* and instead

suggested “located within the same clinic.” Therefore, this question needed another round of revisions.

Summary of Findings

This second phrase of qualitative interviews revealed the need to ensure that items within the instrument were simple, avoided unfamiliar jargon, and effectively translated concepts from theory into practice. Having someone who would be using the survey—in this case, a clinician—evaluate the questions was an important component of developing an effective survey.

Qualitative Analysis, Phase 3

After the previously described interviews with five key informants, the revised survey was distributed to two individuals for pilot testing. The survey was rewritten to fit how the final version would be distributed, replacing references to feasibility and importance with a true-or-false response. As in phase 1, participants were asked to take the survey and then participate in a telephone interview to discuss the results.

Summary of True-False Responses

The true-false responses are summarized in two different sections. The first includes questions that received false answers on both surveys. The second includes questions for which one person indicated false and the other person indicated true. A false statement indicated that the organizational process or structure was not found in the

organization, and a true statement indicated that the organizational structure or process was found in the organization. A brief review of the significant findings is presented below.

Questions that received a false response in both surveys included the following: (a) "When a patient needs a referral to another provider, they are able to see a provider within 30 days" and (b) "There is a designated person who focuses on homeless health care issues." Further evaluation was required to determine if the question itself was problematic or if the question did capture a false response; therefore, the organizational process or structure failed to exist in the organization

Sixteen questions received a false response on one but not both of the surveys. A sample of these questions include: (a) "We use electronic medical records," (b) "Patients can access primary care services offsite," (c) "Organizational performance data are available to entities outside the organization," and (d) "There is a designated person to assist with housing issues." It appears from the data that the tool is able to distinguish different types of organizations based on the processes and structures that exist in their organization.

The two persons who took the pilot survey (Zeta and Eta) were then interviewed. Both are medical doctors and female providers. They had 1–2 and 5–10 years of homeless health care experience, respectively. Significant comments from their interviews are presented in the following sections.

Health Information Systems

Zeta indicated that her organization did not have electronic medical records. At Zeta's clinic, paper medical records are still used to house medical information. Prior to organizational restructuring, electronic medical records were available from a larger system. The loss of this access to electronic records demonstrates the need for organizational leaders to be proactive, as it can be difficult for a clinic to establish its own electronic medical system, particularly when the clinic does not produce a significant amount of revenue from patient care services and relies heavily on grants and other non-patient revenues. Therefore, this question appears to adequately capture if an organization has electronic medical records.

Accessibility

The questions regarding referrals to providers that were analyzed and revised after phases 1 and 2 required another round of review after the third set of interviews, particularly those issues pertaining to the disconnection between the referrals provided at the primary care clinic and to the subspecialty clinics. Zeta described how referrals are initiated at the clinic, stating that follow-up phone calls and required paperwork are completed within a week. However, how long it takes patients to be seen depends on the clinic receiving the referral. In addition, a long waiting list for free subspecialty clinics appears to be common.

Both Zeta and Eta described how the inability to receive subspecialty services can be attributed to the patients' lack of health insurance. Those able to obtain Medicaid, as

Eta stated, had a better opportunity to see specialists. Zeta described how some clinics, such as in ophthalmology and orthopedics, had a one- to two-year wait. On a positive note, Zeta said that most patients in the clinic could get a referral to some type of service the patient needed, and some could get free care. On the other hand, those who could not get free care relied on the hospital to provide subspecialty care.

Another barrier to patients receiving care, as Zeta pointed out, was that many individuals do not have long-term addresses or cell phones, hindering completion of necessary referrals. Following up with the patient to provide information regarding the referral may be problematic, as organizations have to wait for the patient to call for the information. As patients have other pressing needs and tend to view housing and food as top priorities, they may not contact the clinic in a timely fashion. When available, some specialists come to clinics, like Eta's, therefore patients do not need a referral, but waits can be long and these specialists are often booked for months in advance. Charity care is heavily needed in organizations that have limited revenue from patient services, and linkages within the community are important in order for patients to access the variety of health care services that they require.

Overall, there appears to be no clear solution to the problems around accessibility and referrals found in the survey as many of these organizations will differ in their ability to make meaningful connections within the community. Therefore, although this survey attempts to address these issues, the complexity of referrals, in the health care for the homeless, may require significant exploration outside the scope of this study.

Patient-centered Care

Patients' ability to see a provider of their choosing is an important attribute of patient-centered care, but it can be problematic in certain settings. Eta stressed that offering patients a choice of providers becomes difficult when a clinic has only one or two providers. Therefore, an organization may indicate false, not because they do not support this ideology, because they lack the labor to provide more than one or two providers. Eta also pointed out that a "provider of choice" is often one who will give patients what they want. Eta stated that providers who prescribed narcotics and Xanax were in high demand, but this type of care is frequently counterproductive. All organizations should ensure that providers are giving patients the right type of care, not simply what the patient wants. Therefore, organizations allowing patients to see a provider of their choosing may indicate false, not because they do not allow patients, but sometimes patients will not be able to choose. This question could then be problematic in a dichotomous response rate where clarification of a response is not permitted.

Summary of Findings

Understanding what a primary care clinic can and cannot do was a continuous theme throughout the interviews. As patients need referrals to see subspecialty services, Zeta and Eta, along with others, stated that referrals are provided when possible. However, when or whether the patient receives an appointment at a subspecialty clinic is beyond the primary care clinic's control. Zeta, like other interviewees, described the challenges involved in getting patients to be seen at subspecialty clinics, especially when

patients lack insurance. Those who do not have insurance will either go without care or go to the hospital for care. Studies cited in chapter 1 show that the homeless and others lacking insurance often seek care at a hospital emergency department, whether their health need is an emergency or not.

In regards to survey refinement and pilot testing, the key informants indicated that the survey was not too taxing in regards to their time and the level of information requested and the instructions and items were understandable. Most of the questions that were given false responses and subsequently discussed during the interview were due to the nature of the organization (not having that item presence) and not because of a flaw in the manner in which the item was written. Only one question, "At my clinic, when a patient needs a referral to another provider (e.g. cardiology, neurology, and urology) they are able to see a provider within 30 days," required modification after the interviews. Therefore, based on the results of the interview, the survey was viable and ready for distribution.

Qualitative Analysis, Phase 4

Phase 4 of the qualitative analysis requested one individual, Theta, who took the survey during phase 1, to evaluate the newly modified survey and determine how well the modified version circumvented problems present in the initial survey. Theta was unable to complete the interview during phase 1 because his schedule prevented him from being available until after the first three rounds of interviews were completed. Taking advantage of the information that could be provided by Theta required modification of

how the evaluations were done. The researcher reviewed the results of Theta's survey and found a relatively large number of not applicable answers. Therefore, the interview focused on whether the modified questions would have enabled Theta to give a response, as well as to review any other issues requiring resolution prior to final data collection. This method allowed the items to be redistributed to at least one member of the original group (McKenzie, Wood, & Kotecki, 1999) with subsequent evaluation to ensure that the modified question did not change the initial theory-based question. Theta has a dual role as a physician and researcher and has been involved in homeless health care issues for over 10 years. The following sections describe the important information learned from the interview with Theta.

Accessibility

Because of the recurring issues regarding referrals to subspecialists, this topic was readdressed with Theta. Theta described how his organization triaged referrals. If someone needed a nonemergency referral, it could be given within a day or a week; others with more pressing needs receive referrals while in the office. Theta reaffirmed the issues found in prior interviews with regard to receiving care at subspecialty clinics, in that a few subspecialists came to the clinic and patients who needed care at some clinics could not get appointments at all. Therefore, it appears that all attempts have been made, within the context of the study, to write the question considering the problems discussed in the previous interviews.

Performance and Quality Improvement

With regard to evaluating providers based on the effectiveness of providing care to the homeless, Theta stated he stumbled on the word effectiveness in the survey and requested further exploration of the term during the interview. Such uncertainty is problematic in questionnaire writing, as researchers do not want people to have to think about what the question is asking of them or to feel that they must interpret the question themselves before answering. In addition, Theta found the phrase "organization performance is used to making changes in the organization's operations" too vague; he wanted to know more precisely what the statement was referring to, such as volume or patient satisfaction. This example, again, showed the importance of concise writing when developing the questions.

Integration of Medical, Behavioral, and Social Services

Theta highlighted the problem of using umbrella questions in the hope that the question will catch a range of issues. Such questions can result in additional problems as the interviewee has to interpret the question. For example, in the statement "There is a designated person to assist with housing issues," the term *housing issues* is confusing, as it could refer to some or all of a variety of concerns such as locating housing or completing applications. Theta said that the questions that were concrete and precise were most helpful.

Summary

Theta worked in a highly specialized organization for the homeless, and his input provided insight into how an organization with adequate resources and a specialized mission can offer more information than smaller organizations that rely on a parent entity for resources. Overall, when Theta originally took the survey during phase 1, he had concerns about some of the questions and goals of the survey and needed additional information. Theta also pointed out that he was unable answer some questions because of his role as a clinician, not an administrator. It is imperative that surveys are administered to people who have adequate knowledge to answer the questions successfully.

The interview with Theta offered an opportunity to reexamine the questions with someone who had answered the original version of the instrument. Theta's subsequent review ensured that the newly developed questions had not changed so much as to alter or obscure the underlying theory defining the question. The interview allowed the researcher to affirm that the modified question was superior to the original question but had not been changed so much as to fail to achieve the original intent.

Summary of Qualitative Analysis

Overall, the qualitative interviews provided numerous, unique insights regarding the developed survey. Responses received from the participants reaffirmed that the instrument provided relevant organizational constructs pertinent to primary care services for the homeless. In addition, information gained from the interviews provided relevant

feedback that would otherwise have been lost such as understanding how primary health for the homeless is delivered. Another important lesson learned from the qualitative interviews is the reiteration that researchers, preparing questionnaires, must ensure that questions are simple, avoid unfamiliar jargon, and are clearly written. Last is the importance in the ability to adequately translate questions from theory into practice. Understanding the nature of the practice is important, as often it is not possible to obtain broad feedback from relevant users regarding the components that would make a survey most effective.

Final Survey

Appendix H provides a summary of the changes that occurred from the initial PC-HOAT to the final version that was used during the quantitative phase of the study. The goal of the qualitative phase of the study was to reduce the number of items, to evaluate the clarity of the questions in the study, and to make necessary modifications. Figure 4 provides a diagram of how the key informant interviews were used to refine the survey.

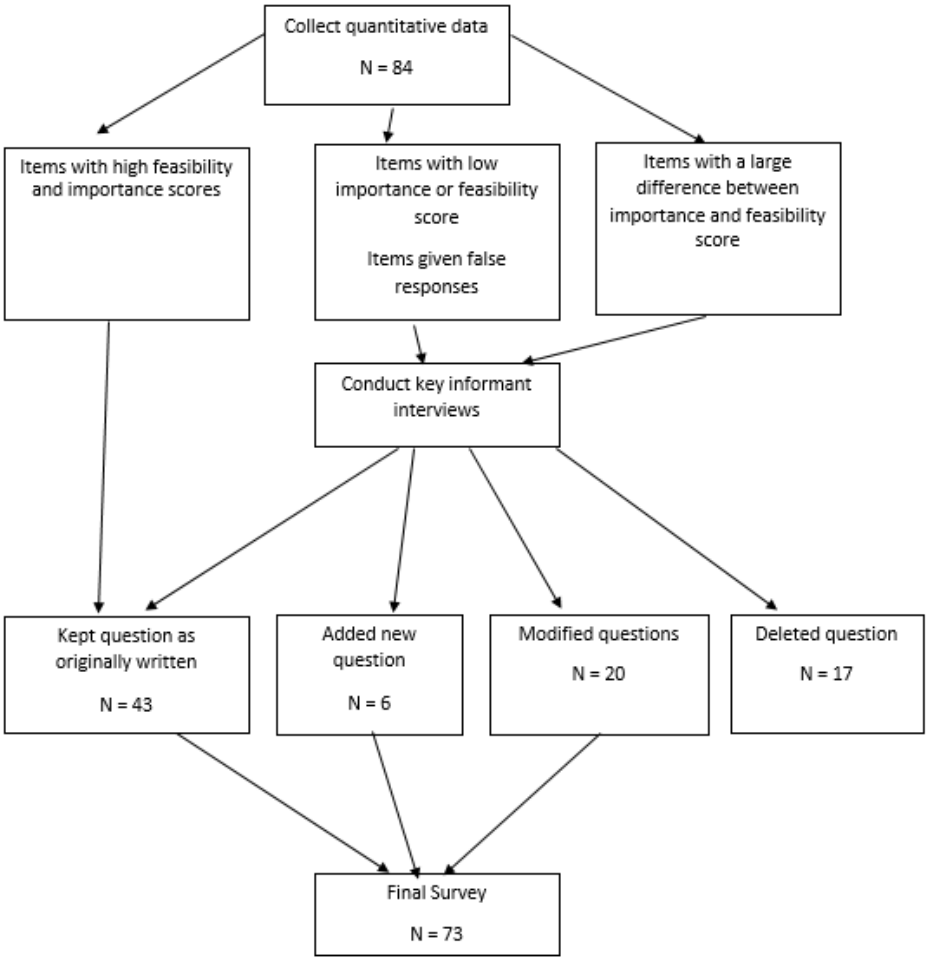

Figure 4. Diagram of Steps for Survey Item Refinement

To summarize, the quantitative data was collected to determine which items should be discussed during the interview. Those items that received high feasibility and importance scores during the first round of interviews were determined to be fit for the final survey and was kept as originally written. Items during the first round of interviews

that had low importance or feasibility scores or, items that had a large difference between importance and feasibility scores and or items during the third round of interviews that were given false responses were identified as items that needed to be discussed during the key informant interviews. Based on the responses received during the interview, the items were either deleted, modified, kept as originally written, or new items were added. The original survey's 84 items were reduced to 73 items. Overall, the researcher added 6 new questions, deleted 17 questions, modified 20 questions, and moved 4 questions from one domain to another domain. See Appendix I for the items and its description of the items in the final PC-HOAT.

QUANTITATIVE ANALYSIS

The second analytical phase of the study used the final PC-HOAT, refined from the first phase of the study, to examine validity and reliability. This was accomplished using multiple statistical methods including factor analysis, Cronbach's alpha, and regression analysis. The second phase of the study, as described in chapter 3, consisted of contacting 208 organizations that receive HRSA funding in the category of health care for the homeless. A survey administration site, Survey Monkey, distributed the survey and collected the data electronically.

Survey Collection

Along with the use of Survey Monkey for ease of data collection, incentives (four $50 Visa gift cards, randomly awarded) were offered to encourage participation. The final number of participants was 68, for a response rate of 33%.

Data Analysis

Data were compiled and exported from the survey software and entered into an Access database. The data from the PC-HOAT was merged with the UDS datasets described in chapter 3. Data were imported into SAS version 9.3 and was reviewed by the researcher to identify potential problems. Appendix J provides descriptive statistics regarding the organizations that the respondents represent and table 15 provides a sample of those statistics. The organizations came from all four U.S. Census geographic regions, with the West (35%) representing the highest portion. The organizations generally see

either a large (76-100% of total patients) or a small (1-25%) portion of homeless patients, with 41% falling into each category. Organizations also provide a wide variety of services besides primary care, with the highest percentage being mental health and social services (both 90%), while no organization provides spiritual services.

Table 15. Sample Descriptive Statistics of the Organizations Represented

Characteristic	Percent
Geographic Distribution	
Northeast	26%
Midwest	22%
South	16%
West	35%
What percentage of your patients are homeless?	
1-25%	41%
26-50%	9%
51-75%	7%
76-100%	41%
What other types of services, besides primary care, can patients receive at your organization?	
Pharmaceuticals	78%
Public health	38%
Shelter/temporary housing	15%
Laboratory	83%
Mental health	90%
Substance abuse	61%
Dental	78%
Respite	21%
Social services (i.e., case management, food assistance, government program assistance, housing assistance)	90%
Domestic violence	15%
Subspecialty medical care (e.g., surgery, rheumatology, endocrinology, podiatry, optometry)	50%
Wellness	64%
Geriatric services	24%
Spiritual	0%

Appendix K provides the demographics of the survey respondents; Table 16 provides a sample of this information. Most of the individuals who responded were female (60%), had 11 or more years (43%) of involvement in health care for the homeless, and have a significant amount of influence over the organization's operation (67%).

Table 16. Sample Descriptive Statistics of Survey Respondents

Characteristic	Percentage
Gender	
Female	60%
Male	40%
How long have you been involved in homeless health care?	
1-2 Years	4.6%
3-4 Years	18.8%
5-10 Years	32.8%
11+ Years	43.7%
How much influence do you have over your organization's operations?	
None	3%
A little	3%
Some	16%
A lot	67%
All	10%

Appendix L provides the percentage of respondents who responded "true" to certain items in the PC-HOAT. Although most items received a "true" response from at least 90% of the respondents, a few items did deviate from those common responses. Four items had a 100% "true" responses: (a) "medical records allow providers to access information needed to evaluate the care provided"; (b) "primary care services are located in areas accessible to the homeless"; (c) "patients can be referred to outpatient substance abuse treatment programs"; and (d) "patients receive care that is respectful to the culture of the homeless."

Two statements received less than half-positive responses: "at my clinic, providers are evaluated on their patients' adherence to standard practice guidelines for

self-management of illness" (46%) and "providers from multiple disciplines report to a homeless health care department chair/director" (30%). Three others statements had responses of "true" slightly more than half the time: (a) "when a patient needs a referral to another provider (e.g., cardiology, neurology, and urology), they are able to see a provider within 30 days" (54%); (b) "providers are available as homeless health care consultants to other health organizations (e.g., hospitals and other health care clinics) in the community" (58%); and (c) "we use relevant nonfinancial incentives (e.g., flexible work schedules, awards, and formal recognitions) to retain homeless health care providers" (56%). Next, the statistical analysis used to evaluate non-response bias, validity, and reliability are discussed.

Nonresponse Bias

In surveys, researchers need to evaluate nonresponse bias in the data. Nonresponse bias occurs when the answers of the respondents differ from the potential answers of those that did not answer the survey (Singer, 2006). To determine if there is a difference between the sample that completed the survey and those who did not, the researcher used the *t*-test to examine the size of the organization, as represented by the total number of patients seen and the total number of sites that the organization operates.

To test for the continuous variable of size of the organization (represented by the total number of patients seen and total number of sites that the grantee covers) we used *t*-test statistics to examine the null hypothesis that there is no difference between the average scores on the defined items of those who answered the survey and those who did

not (Jaeger, 1990). The researcher found the *p*-value for the equality of variance as 0.1006 and 0.5785, for total number of patients seen and total number of sites that the clinic operates, respectively. These *p*-values are greater than the alpha level (0.05) and so the researcher assumed equal variances and performed a pooled *t*-test, finding a probability of 0.3697 and 0.7941 respectively. Since the *p*-value is greater than the alpha level of 0.05, it can be concluded that the size of organizations that did not respond is not significantly higher than that of those that did respond to the survey. Therefore, there is no significant difference between respondents and non-respondents and we can assume that the data collected adequately represent the interested population.

Last, to determine what type of organization was more likely to answer the survey, the researcher used stepwise logistic regression to look at those that completed and did not complete the survey. Logistic regression was used because the dependent variable is discrete (0 = did not respond, 1 = did respond) and not continuous. The model was examined with regard to the percentage of homeless patients served, the size of the organization (represented by the total number of clinics within the grantee and total number of patients served), the proportion of patients with controlled hypertension and controlled diabetes, and the financial cost for medical, other clinical, enabling programs, and overhead. The likelihood ratio of 11.1611 and *p*-value of 0.0248 indicate that the model as a whole fits significantly better than an empty model and is statistically significant. The only items contained in the stepwise regression model were the total number of patients seen, the percentage of patients who were homeless (1-25%) and the financial cost. The odds ratio (OR) of the proportion of patients with controlled diabetes was the only significant item, with an OR of 0.189 and confidence limits of 0.046 and

0.774. Thus, facilities with a higher proportion of patients who have controlled diabetes were 81.1% less likely to complete the survey.

Principal Component Analysis

Initial Principal Component Analysis

The first analysis performed to determine validity of the instrument was principal component analysis (PCA) with promax oblique rotation. PCA was used to determine the optimal number of factors to retain from the data. The methods described in chapter 3 were used; including Kaiser's stopping rule, scree plot, number of nontrivial factors, and a priori criteria. No method is considered superior and researchers should examine multiple methods to determine the optimal number of factors to retain (Brown, 2009).

Depending on the method used, a 15-, 9-, or 8-factor solution emerged. The initial rotation presented a 15- factor solution with 91.38% of the variance explained. In addition, the Kaiser stopping rule suggested a 15-factor solution. The scree plot also presented a 15-factor solution. Reliance on the original design of the PC-HOAT (an a priori method) presented an 8-factor solution. The number of nontrivial factors indicated a 9-factor solution. Table 17 shows the total variance explained for the initial PCA and the eigenvalues for the initial PCA.

Table 17. Total Variance Explained by the Initial Rotation Solution of the PC-HOAT

Factor	Initial Eigenvalues		
	Total	% of variance	Cumulative %
1	6.14668812	0.1254	0.1254
2	5.40416366	0.1103	0.2357
3	4.53839994	0.0926	0.3284
4	4.38958633	0.0896	0.4179
5	3.54121127	0.0723	0.4902
6	3.42940689	0.0700	0.5602
7	3.00203588	0.0613	0.6215
8	2.57749946	0.0526	0.6741
9	2.45991001	0.0502	0.7243
10	2.03861147	0.0416	0.7659
11	1.80756620	0.0369	0.8028
12	1.66188390	0.0339	0.8367
13	1.53832045	0.0314	0.8681
14	1.16183082	0.0237	0.8918
15	1.07874936	0.0220	0.9138

Based on the findings, the researcher decided to evaluate all three options by running a PCA with 15-, 9-, or 8- factors retained. Results found that 15-factors appeared to be too large and 9-factors resulted in items that double- and triple-loaded onto multiple factors and multiple negative loading scores. Based on this information, the 8-factor solution would be the optimal number to retain from the PCA.

Second Principal Component Analysis

A second PCA was performed with eight factors retained, for the purpose of evaluating how each item loaded onto the factors. The rotated factor produced loading scores sufficient at the 0.40 level, but yielded several items that did not reach the minimum threshold (Loading scores for AS_6 is 0.12523 and PC_6 is -0.3222) and multiple factors that did not load on any factor (IS_4; IS_5; IS_7; AS_1; AS_5; PF_2; PF_9; PF_12; PF_13; PC_1; PC_3; PC_4; PC_8; PC_11; INT_3; INT_7; PCC_3). All previously described items with insufficient loading scores were removed from the model and the factor analysis was repeated. Table 18 provides the item name and description of the previously mentioned items.

Table 18. Name and Description of Items Removed from Second PCA

Item	Description
AS_6	At my clinic, transportation assistance is available to patients.
PC_6	My clinic provides radiological services.
IS_4	At my clinic, medical records allow providers to access information needed to evaluate the care provided.
IS_5	At my clinic, providers inside the organization share medical records.
IS_7	At my clinic, medical records indicate homeless status.
AS_1	At my clinic, primary care services are located in accessible areas to the homeless.
AS_5	At my clinic, patients are able to obtain walk-in appointments.
PF_2	At my clinic, we collect patient satisfaction surveys.
PF_9	At my clinic, organizational performance data is used to make changes in the organization's operations.
PF_12	At my clinic, we use uniform standards to deliver care based on evidence-based practices (i.e., avoiding injury or error and providing effective and efficient care).
PF_13	My clinic conducts meetings to review patient cases.
PC_1	My clinic provides primary care services (e.g., physical medical exams and routine check-ups).
PC_3	My clinic provides treatment for acute medical illnesses (e.g., colds, the flu, headaches, and fevers).
PC_4	My clinic provides treatment for chronic medical illnesses (e.g., asthma, diabetes, and hypertension).
PC_8	My clinic provides health education and health promotion services.
PC_11	At my clinic, there are established linkages with other agencies in the community to provide services patients need (e.g., specialists, substance abuse, dental, and social services) that are not provided at the organization.
INT_3	At my clinic, patients can be referred to out-patient substance abuse treatment programs.
INT_7	Does this person have a management role? Based on answer from previous item At my clinic, there is a designated person who focuses on homeless health care issues.
PCC_3	At my clinic, patients receive care that is respectful to the culture of the homeless.

Third Principal Component Analysis

A third and final, PCA was performed with eight factors retained and the items with insufficient loading scores removed. Table 19 shows the total variance explained by the final eight-factor solution.

Table 19. Total Variance Explained by the Final Eight-Factor Solution of the PC-HOAT

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6.14005134	0.1306	0.1306
2	5.40130483	0.1149	0.2456
3	4.53140397	0.0964	0.3420
4	4.35244261	0.0926	0.4346
5	3.53523394	0.0752	0.5098
6	3.26834589	0.0696	0.5794
7	2.98937084	0.0636	0.6430
8	2.57257772	0.0547	0.6977

After the final PCA, the results were examined to look for items that could be problematic (those that loaded onto more than one factors, those that did not load at the 0.40 level, and those that had negative loading scores). Six items loaded onto more than one factor (PC_14, INT_4 LEAD_4, LEAD_3, PC_12, and INT_8). Although double-loaded items can be removed, it was decided to retain the item in the factor on which it loaded highest. There was one item, PC_7 that had a loading score of 0.36443. Although this score did not quite attain the optimal 0.40 level, it was still considered significant enough to be included in the final model. Table 20 provides the name and description of the items previously mentioned.

Table 20. Name and Description of Items with Double Loadings and Low Threshold

Item	Description
PC_14	At my clinic, providers are called upon to help in the community to provide care for the homeless.
INT_4	At my clinic, there is a designated person to assist with housing issues.
LEAD_4	At my clinic, the governing board of the organization has a sitting homeless or formerly homeless patient.
LEAD_3	At my clinic, the governing board of the organization is active in the organization (e.g., volunteering and fund-raising).
PC_12	At my clinic, case managers are available to link patients with community resources.
INT_8	At my clinic, providers from multiple disciplines report to a homeless health care department chair/director.
PC_7	My clinic provides pharmaceutical services.

Thus, a final eight-factor scale was used for further analysis. Each scale is composed of individual items that measure the underlying construct of the PC-HOAT. The initial scale consisted of 49 items grouped into eight factors. Factor one contains nine items, factor two contains seven items, factor three contains seven items, factor four contains seven items, factor five contains five items, factor six contains six items, factor seven contains four items, and factor eight contains four items. Appendix M contains the factor loadings from the final PCA.

Reliability Testing

The evaluation of the reliability of the PC-HOAT is important in order to demonstrate a successfully developed model. The PC-HOAT contains factors (henceforth called scales) that measure the underlying constructs of the PC-HOAT. Cronbach's alpha can be used to evaluate if an item should be retained or deleted. If the alpha score increases, the item should be considered for deletion.

The researcher analyzed each of the scales independently and as a whole using Cronbach's alpha, which is consistent with the literature (Zimet et al., 1988). Multiple scales required modification based on the alpha score; subsequently, items that appeared to improve the alpha scores were removed and the reliability testing was repeated to determine the new alpha score. Table 21 shows the results of the deletion of problematic items and their subsequent alpha score. The process resulted in the decision to delete eight items and retain two items from the model.

Table 21. Results of the Deletion of Items Indicated to be removed

Scale	Alpha Score	Remove problematic item	Item	New Alpha Score	Decision
1	0.78443	PC_7	My clinic provides pharmaceutical services.	0.795101	Remove
2	0.69945	INT_4	At my clinic, there is a designated person to assist with housing issues.	0.689419	Keep
3	0.61605	PC_5	My clinic provides laboratory services.	0.624032	Remove
4	0.65532	LEAD_4	At my clinic, the governing board of the organization has a sitting homeless or formerly homeless patient.	0.660309	Remove
5	0.44139	N/A	N/A	N/A	N/A
6	0.61412	INT_5	At my clinic, MD and non-MD primary care providers work together to see patients.	0.654428	Remove
6	0.61412	PF_8	At my clinic, providers are checked for competency specific to their scope of practice (e.g., standardized patients, peer assessment, and audits of medical records).	0.774648	Remove
7	0.60707	PC_10	At my clinic, dental and oral health providers are located within the primary care clinic.	0.613301	Remove
7	0.60707	INT_8	At my clinic, providers from multiple disciplines report to a homeless health care department chair/director.	0.56922	Keep
8	0.39686	AS_7	At my clinic, if a patient needs a referral to another provider (e.g., cardiology, neurology, and urology) we arrange an appointment immediately.	0.550625	Remove

After the removal of the problematic items, the final scales had the following alpha scores: scale one = 0.795101; scale two = 0.69945; scale three = 0.61605; scale four = 0.660309; scale five = 0.44139; scale six = 0.77648; scale seven = 0.613301; scale eight = 0.628685. A full model, using the reduced items, had an alpha score of 0.782577 with no additional items being indicated to improve the model. Due to the poor

reliability score of scale five, it was determined that this scale lacked reliability and thus it was removed from the final PC-HOAT. With the elimination of this scale, it appears that the PC-HOAT has internal consistency and is a reliable instrument. Tables 22 to 29 show Cronbach's alpha for the full model and the seven scales of the PC-HOAT. The name provided for each scale represents the relationship of items within the scale. Subsequent discussion of face validity provides further explanation of the scale names.

Table 22. Internal Consistency to Estimate Reliability of the 34-item Scale

Item	Internal Consistency	
	Correlation with total	Alpha if item deleted
AS_2	0.230539	0.755687
PC_2	0.230539	0.755687
PF_10	0.244586	0.755003
INT_1	0.216136	0.756385
AS_4	0.534653	0.740514
INT_2	0.312541	0.751674
PF_11	0.596814	0.737313
PF_15	0.448189	0.744909
HR_1	0.552870	0.739579
AS_3	0.230563	0.755685
PC_14	0.448046	0.744916
IS_6	0.465796	0.744019
HR_2	0.376430	0.748508
PC_13	0.237219	0.755362
INT_4	-0.063338	0.769603
PCC_5	0.156636	0.759254
PCC_6	0.259786	0.754262
INT_6	0.050449	0.764300

IS_1	0.295242	0.752525
PF_6	0.346321	0.750004
PCC_4	0.111728	0.761399
PF_5	0.174645	0.758389
PF_4	0.174645	0.758389
PF_3	0.161052	0.759042
PCC_2	0.305447	0.752023
LEAD_3	0.475251	0.743541
AS_8	0.174866	0.758378
LEAD_1	0.135660	0.760258
LEAD_2	0.182318	0.758020
PC_9	0.223255	0.756040
IS_3	0.063343	0.763692
INT_8	0.189485	0.757674
PF_1	-0.065462	0.769701
AS_9	0.221577	0.756122

Note: Cronbach's alpha for the PC-HOAT scale is 0.760051.

Table 23. Internal Consistency to Estimate Reliability of Scale 1: Evaluation and the Delivery of Primary Care Services

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
AS_2	At my clinic, patients can access primary care services onsite (e.g., stand-alone clinic and hospital-based clinics)	0.696251	0.741116
PC_2	My clinic provides preventative services (e.g., cancer screening, pelvic examinations, diabetes and hypertension screening)	0.696251	0.741116
PF_10	At my clinic, organizational performance data are available to individuals within the organization (i.e., patients, providers, and staff)	0.514112	0.770644
INT_1	At my clinic, mental health providers are located within the primary care clinic	0.409275	0.786749
AS_4	At my clinic, schedules are flexible so patients can receive health care without interfering with obtaining other needed services (e.g., shelter, meals, and employment)	0.593304	0.750851
INT_2	At my clinic, patients can be referred to inpatient substance abuse treatment programs	0.396853	0.788616
PF_11	At my clinic, organizational performance data are available to entities outside the organization (i.e., other provider organizations and the public)	0.371343	0.792421
PF_15	Do the meetings ever include interdisciplinary members (e.g., social, medical, and behavioral)?	0.369580	0.792682

Note: Cronbach's alpha for the scale is 0.795101.

Table 24. Internal Consistency to Estimate Reliability of Scale 2: Provider and Organizational Flexibility in Providing Health Care to the Population

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
HR_1	My clinic hires providers that have experience/expertise with the homeless	0.556312	0.580939
AS_3	At my clinic, patients can access primary care services offsite (e.g., mobile vans, streets, and shelters)	0.348740	0.642642
PC_14	At my clinic, providers are called upon to help in the community to provide care for the homeless	0.485632	0.602637
IS_6	At my clinic, providers can access their patients' behavioral and medical records	0.229770	0.675319
HR_2	My clinic uses relevant nonfinancial incentives (e.g., flexible work schedules, awards, and formal recognitions) to retain homeless health care providers	0.478255	0.604860
PC_13	At my clinic, providers are available as homeless health care consultants to other health organizations (e.g., hospitals and other health care clinics) in the community	0.397766	0.628616
INT_4	At my clinic, there is a designated person to assist with housing issues	0.176205	0.689419

Note: Cronbach's alpha for the scale is 0.669456.

Table 25. Internal Consistency to Estimate Reliability of Scale 3: Organizational Structures Relevant to Effective Delivery of Care

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
PCC_5	My clinic ensures that patients have an ongoing relationship with the same provider	0.501624	0.520257
PCC_6	My clinic encourages patients to see a provider of their choosing	0.300887	0.601187
INT_6	At my clinic, there is a designated person who focuses on homeless health care issues	0.271893	0.612148
IS_1	At my clinic, we use electronic medical records (i.e., a computerized medical record created in an organization that delivers care that allows storage, retrieval, and modification of records)	0.323001	0.592706
PF_6	At my clinic, providers are evaluated on the effectiveness of providing care to the homeless (e.g., patient interviews, surveys, and evaluations)	0.422143	0.553374
PCC_4	My clinic offers care in a facility that is physically comfortable for the patients	0.319871	0.593913

Note: Cronbach's alpha for the scale is 0.624032.

Table 26. Internal Consistency to Estimate Reliability of Scale 4: Patient- and Family-Centeredness

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
PF_5	At my clinic, patient satisfaction is used to assess provider performance (e.g., communication, respect, and spending adequate time with the patient)	0.550727	0.557934
PF_4	At my clinic, patient satisfaction is used to assess staff performance (e.g., courtesy and respect)	0.455015	0.594275
PF_3	At my clinic, patient satisfaction is used to assess organizational performance (e.g., condition of facility and accessibility of services)	0.383527	0.60246
PCC_2	My clinic encourages patients to involve their family and friends in their health care	0.415573	0.608726
LEAD_3	At my clinic, the governing board of the organization is active in the organization (e.g., volunteering and fund-raising)	0.241973	0.668819
AS_8	At my clinic, when a patient needs a referral to another provider (e.g., cardiology, neurology, and urology), they are able to see a provider within 30 days	0.304867	0.647697

Note: Cronbach's alpha for the scale is 0.660309.

Table 27. Internal Consistency to Estimate Reliability of Scale 6: Leadership Transparency

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
LEAD_1	At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate to their employees the organization's performance evaluations	0.632184	.
LEAD_2	At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate to their employees the organization's goals and expectations	0.632184	.

Note: Cronbach's alpha for the scale is 0.774648.

Table 28. Internal Consistency to Estimate Reliability of Scale 7: Care Coordination

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
PC_9	My clinic provides family planning services	0.565998	0.292399
IS_3	At my clinic, medical records facilitate coordination of care between providers	0.453261	0.467649
INT_8	At my clinic, providers from multiple disciplines report to a homeless health care department chair/director	0.269625	0.718839

Note: Cronbach's alpha for the scale is 0.613301.

Table 29. Internal Consistency to Estimate Reliability of Scale 8: Access and Quality of Care

Item	Description	Internal Consistency	
		Corrected item Total Correlation	Alpha if item deleted
PF_1	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes, mortality rates, readmission rates)	0.458455	.
AS_9	At my clinic, patients can access multiple providers/services in one visit (e.g., mental health, social services, and primary care services)	0.458455	.

Note: Cronbach's alpha for the scale is 0.628685.

Validity

Multiple methods of testing the validity of the PC-HOAT were analyzed. Content validity was evaluated using face validity. Construct validity was evaluated using discriminant and convergent validity and confirmatory factor analysis. Predictive validity was evaluated using OLS regression analysis.

Face validity

The purpose of face validity is to determine how appropriately each item relates to the other items found in the same scale (Nevo, 1985). This was accomplished by exploring how the items in each of the seven scales related to each other. In addition, the researcher sought to identify an appropriate description for each scale, looking for trends

in the items found in the data that could be used to explain the underlying construct. The evaluation of the face validity for each scale is described.

Scale one originally contained nine items from the PC-HOAT. Although the low loading score of PC_7 (My clinic provides pharmaceutical services) appears to fit well with the other items in the scale, the reliability testing determined that the item decreased the alpha score when included with the other items, and it was removed from the final model. These items had multiple and relatable characteristics focused on delivery of patient care. Part of the scale focuses on the type of services that patients can receive (on-site, preventative, mental health, substance abuse referral, and medical care) that do not interfere with other needs. Another aspect focuses on the processes that the organization undertakes to examine its operations and the services offered, such as having performance data available to individuals outside and inside the organization and holding meetings that include interdisciplinary members (social, medical, and behavioral providers). Table 30 provides a list and description of each item. Scale one will be described henceforth as "Evaluation and the delivery of primary care services."

Table 30. Scale 1: Evaluation and the Delivery of Primary Care Services

Item	Description
AS_2	At my clinic, patients can access primary care services onsite (e.g., stand-alone clinic and hospital-based clinics)
PC_2	My clinic provides preventative services (e.g., cancer screening, pelvic examinations, diabetes and hypertension screening)
PF_10	At my clinic, organizational performance data are available to individuals within the organization (i.e., patients, providers, and staff)
INT_1	At my clinic, mental health providers are located within the primary care clinic
AS_4	At my clinic, schedules are flexible so patients can receive health care without interfering with obtaining other needed services (e.g., shelter, meals, and employment)
INT_2	At my clinic, patients can be referred to inpatient substance abuse treatment programs
PF_11	At my clinic, organizational performance data are available to entities outside the organization (i.e., other provider organizations and the public)
PF_15	Do the meetings ever include interdisciplinary members (e.g., social, medical, and behavioral)?

Scale two contains nine items from the PC-HOAT. These items had multiple and relatable characteristics focused on characteristics of the providers and the organization in their focus on providing care to the homeless population. One aspect of the scale focuses on the unique nature of delivering of care to the homeless population. Serving the homeless involves responsibilities not usually found in primary care, including providing care and consultation in the community; providing care offsite (e.g., in mobile vans, on the streets, or in shelters); accessing both behavioral and medical records; and providing housing assistance. In addition, human resource aspects are included in the scale, addressing the need to focus on hiring and retaining physicians who have experience in working with the homeless and are willing to accept nonfinancial incentives. A double-loaded item, PC_14 (At my clinic, providers are called upon to help

in the community to provide care for the homeless), is included in this scale and appeared to fit well with the other items; it was thus considered a valid item in the scale. Table 31 provides a list and description of each item. Scale two will be defined henceforth as "Provider and organizational flexibility in providing health care to the population."

Table 31. Scale 2: Provider and Organizational Flexibility in Providing Health Care to the Population

Item	Description
HR_1	My clinic hires providers that have experience/expertise with the homeless
AS_3	At my clinic, patients can access primary care services offsite (e.g., mobile vans, streets, and shelters)
PC_14	At my clinic, providers are called upon to help in the community to provide care for the homeless
IS_6	At my clinic, providers can access their patients' behavioral and medical records
HR_2	My clinic uses relevant nonfinancial incentives (e.g., flexible work schedules, awards, and formal recognitions) to retain homeless health care providers
PC_13	At my clinic, providers are available as homeless health care consultants to other health organizations (e.g., hospitals and other health care clinics) in the community
INT_4	At my clinic, there is a designated person to assist with housing issues

Scale three originally contained seven items from the PC-HOAT. During reliability testing, PC_5 (My clinic provides laboratory services) was shown to reduce the alpha score of the scale and was removed from the scale. The six items remaining had multiple and relatable characteristics focused on considerations in providing care to the homeless and on the resources that organizations need in order to deliver adequate care to the homeless. One aspect focuses on how the organization provides care to the homeless, such as having a physically comfortable clinic, continuity of care, and choice of

providers. Other aspects focus on ways in which the organization can structurally make its clinic more conducive to the delivery of care to the homeless, such as ensuring there is a designated person devoted to homeless health care issues, using electronic medical records, and evaluating providers based on their effectiveness in providing care to the homeless. Table 32 provides a list and a description of each item. Scale three will be defined henceforth as "Organizational structures relevant to effective delivery of care."

Table 32. Scale 3: Organizational Structures Relevant to Effective Delivery of Care

Item	Description
PCC_5	My clinic ensures that patients have an ongoing relationship with the same provider
PCC_6	My clinic encourages patients to see a provider of their choosing
INT_6	At my clinic, there is a designated person who focuses on homeless health care issues
IS_1	At my clinic, we use electronic medical records (i.e., a computerized medical record created in an organization that delivers care that allows storage, retrieval, and modification of records)
PF_6	At my clinic, providers are evaluated on the effectiveness of providing care to the homeless (e.g., patient interviews, surveys, and evaluations)
PCC_4	My clinic offers care in a facility that is physically comfortable for the patients

Scale four originally consisted of nine items from the PC-HOAT. During reliability testing, LEAD_4 (At my clinic, the governing board of the organization has a sitting homeless or formerly homeless patient) was shown to reduce the reliability of the scale and was removed from analysis. The eight remaining items had multiple and relatable characteristics focused on involving patients in the organization and in their own care and actively ensuring that patients receive the care they need. One aspect of the scale focuses on how the organization confirms that it is meeting patient needs, such as

by using patient satisfaction surveys to evaluate the performance of staff, providers, and the organization. In addition, the scale considers whether the organization allows the involvement of family and friends in a patient's care, whether it has an active governing board, and whether it establishing linkages in the community for patients to receive care within a timely manner. Table 33 provides a list and a description of each item. Scale four will be defined henceforth as "Patient- and family-centeredness."

Table 33. Scale 4: Patient- and Family-Centeredness

Item	Description
PF_5	At my clinic, patient satisfaction is used to assess provider performance (e.g., communication, respect, and spending adequate time with the patient)
PF_4	At my clinic, patient satisfaction is used to assess staff performance (e.g., courtesy and respect)
PF_3	At my clinic, patient satisfaction is used to assess organizational performance (e.g., condition of facility and accessibility of services)
PCC_2	My clinic encourages patients to involve their family and friends in their health care
LEAD_3	At my clinic, the governing board of the organization is active in the organization (e.g., volunteering and fund-raising)
AS_8	At my clinic, when a patient needs a referral to another provider (e.g., cardiology, neurology, and urology), they are able to see a provider within 30 days

Scale five was determined to reduce the reliability of the instrument and was thus removed from validity testing.

Scale six originally consisted of four items from the PC-HOAT. During reliability testing, both INT_5 (At my clinic, MD and non-MD primary care providers work together to see patients) and PF_8 (At my clinic, providers are checked for competency specific to their scope of practice (e.g., standardized patients, peer assessment, and audits of medical records) reduced the alpha score of the scale and were removed from the scale. The two remaining items focus on how senior leadership

communicates with employees regarding organizational performance and organizational goals and expectations. Table 34 provides a description of each item. Scale six will be defined henceforth as "Leadership transparency."

Table 34. Scale 6: Leadership Transparency

Item	Description
LEAD_1	At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate to their employees the organization's performance evaluations
LEAD_2	At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate to their employees the organization's goals and expectations

Scale seven originally consisted of four items from the PC-HOAT. During reliability testing, PC_10 (At my clinic, dental and oral health providers are located within the primary care clinic) was found to reduce the alpha score of the scale and was removed from the final model. The remaining items had characteristics relevant to the homeless population, including family planning, the ability of medical records to coordinate care between providers, and a homeless health care chair/director. These are special processes that are important when dealing with patients who are disenfranchised from the health care community, especially when subspecialist services may not be available. In addition, homeless patients often need to see multiple providers (medical, behavioral, and social services) which calls for a senior leader dedicated on the homeless population. Table 35 provides a list and description of the items in scale seven, which will henceforth be referred to as "Care coordination."

Table 35. Scale 7: Care Coordination

Item	Description
PC_9	My clinic provides family planning services
IS_3	At my clinic, medical records facilitate coordination of care between providers
INT_8	At my clinic, providers from multiple disciplines report to a homeless health care department chair/director

Scale eight originally consisted of four items from the PC-HOAT. During reliability testing, PCC_1 (At my clinic, providers discuss with patients their values and preferences) and AS_7 (At my clinic, if a patient needs a referral to another provider (e.g., cardiology, neurology, and urology) we arrange an appointment immediately) were found to reduce the alpha score of the model and were thus removed. The remaining two items had relevant characteristics focused on best practices for quality of care. Particularly relevant are the measurement of quality (i.e., clinical outcomes, mortality rates) and patients' ability to access multiple providers in one visit, so that they can receive quality care for multiple needs. Table 36 provides a list and description of the items in scale eight, which will henceforth be referred to as "Access and Quality of Care."

Table 36. Scale 8: Access and Quality of Care

Item	Description
PF_1	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes, mortality rates, readmission rates)
AS_9	At my clinic, patients can access multiple providers/services in one visit (e.g., mental health, social services, and primary care services)

In summary, the face validity of the scales has been examined and appropriate names were given to each scale. The names purposely omitted the use of the word *homeless* so that the survey can be used across multiple types of organizations, especially those that provide care to other unique subpopulations such as recent immigrants, non-English speakers, and refugee patients. With the removal of some items as described above, it can be concluded that the PC-HOAT has face validity.

Construct Validity

In this study, construct validity has been tested using discriminant, convergent, and confirmatory factor analysis.

Discriminant Validity

Discriminant analysis examines whether the factors in the PC-HOAT are distinct and unrelated and therefore each item should load on only one factor. When cross-loadings exist, the difference between the loading scores should be greater than 0.2. Two items did load significantly on two factors, PC_14 (At my clinic, providers are called upon to help in the community to provide care for the homeless) and PC_12 (At my clinic, case managers are available to link patients with community resources), with difference between the two factors of 0.20144 and 0.05951, respectively. Therefore, the only item that is problematic in regards to discrimination validity is PC_12.

Another method to determine discriminant validity is the examination of the factor correlation matrix (Zimet et al., 1988). A correlation between factors greater than

0.70 indicates a majority of shared variance. The correlation matrix is presented in Table 37. There are no violations of this validity assumption. Therefore, based on the two methods described, it can be concluded that the PC-HOAT has discriminant validity and is a valid instrument.

Table 37. Correlation matrix of the PC-HOAT

Factors	1	2	3	4	5	6	7	8
1	1.00000	0.04013	-0.09897	-0.08852	-0.16156	0.12440	0.15996	0.06055
2	0.04013	1.00000	-0.03153	0.01587	-0.08808	0.12860	0.15545	0.08471
3	-0.09897	-0.03153	1.00000	0.04110	0.06646	0.05557	-0.09910	-0.00272
4	-0.08852	0.01587	0.04110	1.00000	-0.10144	-0.01449	0.09143	0.07122
5	-0.16156	-0.08808	0.06646	-0.10144	1.00000	-0.14916	-0.09640	-0.06674
6	0.12440	0.12860	0.05557	-0.01449	-0.14916	1.00000	0.17809	0.04307
7	0.15996	0.15545	-0.09910	0.09143	-0.09640	0.17809	1.00000	0.27559
8	0.06055	0.08471	-0.00272	0.07122	-0.06674	0.04307	0.27559	1.00000

Convergent validity

Convergent validity was evaluated by looking at the number of items found in each factor that reached a minimum loading score threshold. Evaluation of the loading scores indicated that each factor had at least two items with significant loading scores at 0.50 (Hsu & Chiu, 2004). Table 38 shows the factors and the number of significant loadings scores at and above 0.50. Because all eight factors contained at least two items

with a sufficient loading score of 0.50, it can be estimated that the PC-HOAT has convergent validity.

Table 38. Test for Convergent Validity

Factor	Number of items with loadings > 0.50	Number of items within the factor
1	8	8
2	7	7
3	6	6
4	4	6
6	2	2
7	2	3
8	2	2

Confirmatory factor analysis

CFA was used to validate the factor structures obtained from the PCA (Van Prooijen & Van Der Kloot, 2001). Table 39 displays the fit indices for each factor and for the full model. Fit indices used to evaluate the model were chi-square, SRMR, GFI, AFGI, NFI, and CFI. Each factor had good fit indices, but factors six, seven, and eight had fit indices that could be considered problematic. Factor one (evaluation and delivery of primary care services) had good model fit indices for Pr > chi-square (0.5041), GFI (0.9092), and CFI (1). Factor two (provider and organizational flexibility in providing health care to the population) had good model fit indices for Pr > chi-square (0.6424), SRMR (0.0568), GFI (0.9664), AGFI (0.9221), and CFI (1). Factor three (organizational structures relevant to effective delivery of care) had good model fit indices for Pr > chi-square (0.6625) and GFI (0.9405). Factor four (patient- and family-centeredness) had

good model fit indices for Pr > chi-square (0.2372) and GFI (0.9405). Factor six (leadership transparency) had perfect model fit indices for SRMR (0), GFI (1.00), and NFI (1.00) and either no value or nonfit with the other indices, suggesting problematic issues with the factor. Factor seven (care coordination) had perfect model fit indices for SRMR (0), GFI (1.00), NFI (1.00), and CFI (1.00) and either no value or nonfit with the other indices, again suggesting problems. Factor eight (access and quality of care) had perfect model fit indices for SRMR (0); GFI (1.00); and NFI (1.00) and either no value or nonfit with the other indices, suggesting problems with the data.

Table 39. Fit indices of the confirmatory factor analysis

	Factors							
	1	2	3	4	6	7	8	Full model
Pr > chi-square	0.5041	0.6424	0.6624	0.2372	.	.	.	1.000
SRMR	0.0889	0.0568	0.0585	0.0861	0.00	0.00	0	0.1343
GFI	0.9092	0.9664	0.9666	0.9405	1.00	1.00	1.00	0.5779
AGFI	0.8365	0.9216	0.9221	0.8612	.	.	.	0.5311
NFI	0.7958	0.8354	0.7467	0.7332	1.00	1.00	1.00	0.3950
CFI	1.00	1.00	1.000	0.9089	0.9360	1.00	0.8635	.

In addition to evaluating each factor, the full model was evaluated using CFA. The full model had no significant fit indices. Previous factors (6, 7, and 8) that appeared problematic from the individual CFA were removed from the full model and CFA was re-run. The results of the reduced full model showed improvement with better fit indices of

Pr > chi-square (0.04577) and CFI (1.00). Some of the criteria indicate an acceptable model fit while others are close to meeting values for acceptable fit. The researcher concludes that, although the PC-HOAT satisfies some construct validity tests, it lacks full construct validity.

Regression Analysis

Regression analysis was used to evaluate the predictive validity of the instrument. The final independent variables used were the items considered reliable based on the Cronbach's alpha scores presented earlier in the chapter. These items are dichotomous, with either responses of "true" or "false." The dependent variables, controlled hypertension and controlled diabetes, will be used in two separate models and are presented in terms of proportion (number of patients with controlled diabetes or hypertension divided by the number of patients with diabetes or hypertension). This format was necessary because each site sees a different number of patients and the data used for the regression analysis had to be standardized. Because of the nature of the dependent variable, OLS regression is the most appropriate form of regression analysis for the data.

OLS Regression Analysis

A composite score for each scale was calculated by adding the item values in each scale and calculating the mean. Ordinary least regression was used to analyze how each scale predicts the proportion of patients with controlled hypertension (Hutcheson, 2011). Each individual scale was regressed on the dependent variables. The results of

the seven OLS on controlled hypertension are presented in table 40. The relationship between scale 8 (Access and Quality of Care) and controlled hypertension is marginally significant and positive, indicating that a higher mean score on Access and Quality of Care is associated with an increase in the proportion of patients with controlled hypertension. No scales were found statistically significant for controlled diabetes.

Table 40. Results of OLS for each scale of the PC-HOAT on controlled hypertension

Scale	Beta Coefficient	Std. Error	p-value
Evaluation and the delivery of primary care services	0.178	0.168	0.294
Provider and organizational flexibility in providing health care to the population	-0.010	0.115	0.933
Organizational structures relevant to effective delivery of care	0.093	0.151	0.540
Patient and family centeredness	0.003	0.130	0.984
Leadership transparency	0.042	0.117	0.718
Care coordination	0.129	0.138	0.353
Access and quality of care	0.221*	0.120	0.072*

*p<0.10 **p <0.05 ***p <0.001

Summary

In conclusion, evaluation of the proposed Primary Care Homeless Organizational Assessment Tool results in varying degrees of reliability and validity. The proposed instrument appears to be reliable and valid, but analysis demonstrated some flaws in the data that preclude definitive reliability and validity of the instrument. The most probable cause of the issues related to reliability and validity in the PC-HOAT is the small sample size used for analysis.

Conclusion

The second phase of the study (quantitative analysis) aimed to evaluate reliability and validity of the developed PC-HOAT that was refined in the first phase of the study (qualitative analysis). The analysis of the actual administration of the PC-HOAT yielded a seven-factor scale solution. The final PC-HOAT was found to have inconsistencies with regard to reliability and validity, resulting mostly from the small sample size. Nevertheless, useful results and information were obtained that can lead to relevant discussion and guide further research. Discussion of the results is presented in Chapter 5.

CHAPTER 5

DISCUSSION AND CONCLUSION

This dissertation has focused on the development of an organizational assessment tool to evaluate primary care services for the homeless. This study contributes to the organizational literature by providing a better understanding of the delivery of primary care services to the homeless and by identifying an effective means of assessing health services in regards to important and feasible organizational processes and structures. Chapter 5 discusses the findings of the study, related to each of the study's three aims; its limitations; implications for managers, policy, and researchers; and recommendations for future research.

Summary of the Study

First, the researcher conducted an extensive literature review to establish the model for health services delivery based on Donabedian's process, structure, and outcome model (Donabedian, 1966). The developed model, with eight defined domains, is called the Primary Care Homeless Organizational Assessment Tool (PC-HOAT). Next, a mixed-methods approach was used to refine the instrument and evaluate the reliability and validity of the PC-HOAT. The study used quantitative and qualitative methods to explore the importance and feasibility of the conceptual elements of the

domains by interviewing eight key informants, who provided important insights that assisted in refinement of the PC-HOAT. Subsequently, the instrument was distributed to a sample of 208 organizations, with 68 organizations responding to the survey, providing health care for the homeless. Data from these survey responses were analyzed in various ways, including principal component analysis, Cronbach's alpha, confirmatory factor analysis, and regression analysis, to evaluate the reliability and validity of the PC-HOAT. The final version of the PC-HOAT is a seven-factor scale, 48-item instrument that represents the structures and processes of primary care for the services for the homeless.

No empirically tested model has been available to evaluate how health care organizations can design their services to meet the needs of the homeless. Studies have been conducted on the relationship between limited organizational characteristics and outcomes in health services for the homeless (Blue-Howells et al., 2008; S. G. Kertesz et al., 2013; McGuire et al., 2009; O'Toole et al., 2010; O'Toole et al., 2013) , or evaluating intervention strategies for particular needs such as chronic illnesses, substance abuse, and mental illness (Blount, 2003; Mueser, Bond, Drake, & Resnick, 1998; Wright & Tompkins, 2006) but these studies did not yield comprehensive strategies for deploying the full range of services found in primary care for the homeless. This study appears to be the first study of its kind to develop a tool that can be used to empirically examine the association between structure, process, and outcomes in primary care services for the homeless. This study was undertaken due to the need for better tools to explain differences in practices and thus quality of health care for a specific target population (S.M. Shortell et al., 1991). The study has followed the methods used in other efforts to

develop a new survey instrument (Copeland & Hewson, 2000; Fick et al., 2003; Fleming, Silver, Ocepek-Welikson, & Keller, 2004).

Findings Related to Aim 1

The study developed a framework called the PC-HOAT, which included eight domains and 84 conceptual elements for evaluating primary care for the homeless, using Donabedian's model of process, outcomes, and structures. Literature from seven relevant texts, models, and a provider's perspective provided the framework. The eight domains defined are as follows: health information systems; accessibility; performance and quality improvement; primary care service delivery; integration of medical, behavioral, and social services; human resources; leadership, governance, and financial stability; and patient-centered care. The domains developed were similar to those found in other organizational assessment models both inside and outside of the health care including performance,(Lukas et al., 2007) health information systems, integration, and human resources (H. Walker, Symon, & Davies, 1996), and leadership (Manser, 2009). The domains developed were also similar to those found in the Primary Care Assessment Survey and the General Practice Assessment Survey, albeit regarding patient perspectives, including accessibility, continuity, comprehensiveness, integration, clinical interaction, and interpersonal treatment (Ramsay, Campbell, Schroter, Green, & Roland, 2000; Safran et al., 1998). The developed model was then used in the work related to Aim 2 of the study so as to further explore and refine the instrument.

Findings Related to Aim 2

Aim 2 of this study was to refine the PC-HOAT by identifying those items that were most feasible and most important. The researcher asked eight key informants to rate each item in the PC-HOAT with regard to its importance and feasibility. After this survey was completed, telephone interviews were conducted to explore the responses further. In addition, pilot testing of the PC-HOAT was also conducted with two key informants. Interviews were semi-structured to allow individuals the opportunity to provide additional information regarding organizational processes and structures that were not discovered during the literature review.

The following information will reflect on multiple issues regarding the findings related to Aim 2. The first provides support for the use of qualitative methods in the study, in particular its relevance to organizational literature. Additional information is provided that discusses the similarities and dissimilarities in the methods used in Aim 2 and other studies that used qualitative methods. Next, post-analysis discussion is provided in regards to items from the original survey that may needed to be deleted and an alternative method of determining feasibility and importance of each item. Last, discussion is offered concerning items that received either high importance and low feasibility scores or high feasibility and low importance scores. In regards to items with high importance and low feasibility scores, discussion is provided to understand alternative approaches in which an organization may offer items that are important but is considered less feasible. In addition, items that were given low importance but high feasibility scores are discussed in particular why these items are not only feasible (as

indicated by the respondents) but are in fact important to the delivery of primary care services to homeless persons. These items were in fact deleted but may needed to be included. The last discussion is provided to strengthen the results of the PC-HOAT that the items developed do in fact reflect processes and structures that are relevant to homeless health care organizations.

Quantitative methods still dominate efforts to determine what constitutes optimal care, and qualitative and mixed-methods approaches are often overlooked (Cochrane et al., 2007). This research study was enhanced through the qualitative information presented by insiders with regard to the PC-HOAT. Qualitative interviews to explore an organization's current practice and unmet needs are an established research practice (LaPelle, Luckmann, Simpson, & Martin, 2006). In this case, the qualitative interviews uncovered emerging needs not identified in the literature. For example, it was noted that organizations need to have electronic medical records accessible across multiple platforms. In addition, it was found that organizations have difficulty getting patients to be seen at subspecialty clinics due to lack of health insurance.

A stakeholder group not interviewed in this study are patients of HCH programs. These individuals could have provided insights relevant to optimal strategies of delivering care (Curran, Mukherjee, Allee, & Owen, 2008) and were included in developing an instrument to assess patient perception of care (S. G. Kertesz et al., 2013; S. Kertesz et al., in press). Patients may not be able to influence how an organization operates, but including their voice can shed light on what strategies in an organization are most beneficial to the patients.

Subsequent analysis of the qualitative information highlighted some important aspects that should have been considered. First, some items that were consistently ranked high in both importance and feasibility could have been considered for elimination, because it could have been expected that they would consistently receive "true" responses from the organizations surveyed. These items were as follows, with the item name and percentage of true responses indicated in parenthesis:

> At my clinic, providers inside the organization share medical records (IS_5) (98%).
>
> At my clinic, patients can access primary care services onsite (i.e., stand-alone clinic and hospital-based clinics) (AS_2) (98%).
>
> At my clinic, patients are able to obtain walk-in appointments (AS_5) (92%).
>
> My clinic provides primary care services (i.e., physical medical exams and routine checkups) (PC_1) (98%).
>
> My clinic provides treatment for chronic medical illnesses (i.e., asthma, diabetes, and hypertension) (PC_4) (98%).

When the questionnaire was developed, it seemed important to include these items because they cover basic services that every primary care for the homeless organization should have, and because the lack of these services could indicate serious flaws in the organization's service delivery model. These questions might have been more beneficial if less established organizations had been surveyed. In any case, the results still provide information as to the core basic organizational processes and structures that primary care services for the homeless should offer.

An alternative to using a Likert scale to determine the feasibility and importance of the items in the PC-HOAT was to have asked key informants to rank each item in each

domain from most to least important and feasible with subsequent rank sum or mean rank scoring (S. G. Kertesz et al., 2013; S. Kertesz et al., in press; Macario, Weinger, Carney, & Kim, 1999; Steinhauser et al., 2000). Generally, the use of either a ranking or rating scale will provide effective results (Bartlett, Heermann, & Rettig, 1960) and thus the decision to use a ranking versus a rating scale requires one to determine if one method is better than the other. The biggest motivation for the use of a ranking system is the ability to force each item to have a unique value thus reducing the high number of high responses that most items received (Alwin & Krosnick, 1985), but it is not without its inherent problems such as being more mentally taxing on the responding and taking longer to the complete the ranking task (Munson & McIntyre, 1979). Therefore, there is no strong evidence to support the use of a rating versus a ranking method in this study.

Subsequent analysis should also be performed of items with high importance scores but low feasibility scores. Organizations should be compared to examine the difference in patient outcomes between those that do in fact have an item frequently considered important but not feasible and those that do not. This analysis could enable a more effective use of resources by demonstrating which important items an organization should consider adding to its structures and processes. Interviewee Beta observed that differences between importance and feasibility scores are often due to the existing financial infrastructure. Therefore, better understanding of the financial infrastructure could be important. Items given high importance scores but low feasibility scores were the following:

At my clinic, patients can receive same-day/next-day referrals to specialists.

At any clinic, providers outside of the organization can access our medical records when needed.

At my clinic, housing services are under the same reporting structure as primary care services.

At my clinic, providers are checked for competency through the use of tests, exercises, and competency guidelines specific to the job description.

At my clinic, staff are checked for competency through the use of tests, exercises, and competency guidelines specific to the job description.

My clinic provides medical respite care

Items given high importance but low feasibility scores are assumed to be important to primary care services homeless persons, but due to internal and external factors can be problematic, or unfeasible. Because of this, some of the items were deleted from the survey: (a) providers outside of the organization can access our medical records when needed; (b) housing services are under the same reporting structure as primary care services; (c) staff are checked for competency through the use of tests, exercises, and competency guidelines specific to the job description; and (d) my clinic provides medical respite care. It is important that organizations are given recommendations that are feasible to implement; yet, it is not sufficient to state that because it isn't feasible it should be ignored. Evaluation is needed to evaluate items to determine if its importance outweighs its unfeasibility.

An organization can desire to offer services it thinks are important and research studies, such as the current study, can suggest organizations offer particular services, but if it is not feasible then it is not relevant to the person using the information. The

literature has demonstrated, to some extent, than when primary care services are designed to take into account the complexity of homelessness, homeless patients had better improvement in chronic disease outcomes and reduction in hospitalization rates (O'Toole et al., 2010). But, modifications to service delivery models (such as the VA's H-PACT and the Center for Medicare and Medicaid Services (CMS) provisions for payment to Accountable Care Organizations (Bamberger, 2014; Centers for Medicare and Medicaid Services, 2011) and may require adjustments that are possibly inconvenient and at odds with service delivery models found in traditional primary care practices. These adjustments may be considered unfeasible but may be extraordinarily important if health care services with to provide the most appropriate care for homeless persons.

Items given high importance and low feasibility scores should be re-evaluated to determine the level of importance to primary care services for the homeless, why it is not feasible, and if there are ways organizations can provide these services. A discussion of some of these items follows. It will address why they are important to the delivery of primary care services and offer suggestions on how to increase their feasibility.

Referrals to Specialists

The ability for patients receiving same-day/next-day referrals to specialists generated a significant amount of discussion in the qualitative interviews. Most of the discussion strayed away from the period in which a patient can receive a referral and focused more on the ability of the patient to access specialty services outside the primary care clinic. Accessing services outside primary care services for the homeless is

obviously important, especially because patients need to access services through referrals. Still, as the interviews and surveys reveal, patients cannot access those services outside the primary care clinic and therefore the item is considered important and sometimes not feasible. Even when patients receive referrals to services, they have problems accessing those services outside the primary care clinic (Nickasch & Marnocha, 2009). Suggestions on how increase the feasibility of patients receiving services outside the primary care clinic follow.

One important avenue organizations should explore the establishment of a network of providers to strengthen the connection with academic medical centers. Because many homeless and academic medical centers are in urban facilities, the academic medical center should be included as a viable connection to increase access to specialty services. Academic medical centers should take an active role in meeting the needs of the nation's underserved communities. They can build more community connections, outreach, social support, training, research, and a commitment to service those that are disadvantaged. Successful programs have found great improvement to the population's health when extending they extend primary care service to the community by including academic medical centers, medical students, and physician residents (Foreman, 1994; Levine et al., 1994). In addition, programs that engage medical students in their community result in students expressing a commitment to serving in their community and students expressing a desire practice in underserved communities post-graduation (Jones, Blinkhorn, Schumann, & Reddy, 2014).

Therefore, organizations need to access those resources found in the community to provide comprehensive health care to patients. Active leadership will be the key to

providing these services. Organizational leaders should continue to evaluate and seek external resources to assist in providing health care services its organization is unable to offer.

Housing Services under Primary Care

There is no doubt that the lack of housing has a negative relationship regarding health outcomes and primary care services can be an avenue in which to address these needs. Primary care services for the homeless often provide multiple ancillary services not found in other primary care organizations such as mental health, substance abuse, transportation, case management, and housing assistance (McMurray-Avila, 2001; O'Toole et al., 2010). With the low feasibility score of including housing services under primary care, it may be assumed that other ancillary services are provided more often than housing services. Nevertheless, relevant studies have demonstrated that providing housing assistance versus other ancillary services may provide a consistent, positive outcome in health care for patients. These include increasing access and retention to health care services (Aidala, Lee, Abramson, Messeri, & Siegler, 2007; Conover & Whetten-Goldstein, 2002; Conviser & Pounds, 2002), fewer inpatient days and ED visits (Sadowski, Kee, VanderWeele, & Buchanan, 2009). But, on the other hand, providing housing assistance has been show to result in a higher usage of inpatient, outpatient, ED services (Gabrielian, Yuan, Andersen, Rubenstein, & Gelberg, 2014).

Programs, such as supported housing, have been beneficial to the outcomes of homeless patients. Supported housing programs are those that integrate clinical and

housing services. Supported housing has been successful in HUD and VA with its HUD-VASH (HUD-VA Supported Housing). Being able to offer those services can result in housing a greater number of individuals. Twenty-five percent more individuals in a HUD-VASH are housed than those without HUD-VASH. Although, this is a unique relationship between HUD and the VA, which non-VA organizations may not have access to, the ability to offer clients a person who can facilitate housing assistance is important.

Although organizations should strive to provide all the ancillary services needed for homeless patients, financial constraints will limit the ability of an organization to provide all the services its patients need. Yet, organizations should not offer services that are easiest to provide but provide services that are most beneficial to patients. Therefore, if organizations are limited to the type of ancillary services to offer, housing assistance is in the forefront of services offered.

Providers Access the Organization's Medical Records

When medical records are paper-based, providers outside the organization that need to access a patient's medical records have to rely on the transfer of information with a person at the organization. This occurs most often through telephone or fax. Besides the laws governing patient privacy, providers have to communicate with an individual present at the facility. Therefore, accessing medical records outside of normal business hours is limited. With the implementation of electronic medical records, providers should be able to access a patient's medical record, within the confines of the law, to

receive the necessary information to provide health care. Yet, electronic medical records have not circumvented this issue in the ability of a provider outside of an organization to access a patient's medical records. This is mainly due to the inability of providers to access another organization's electronic medical system.

Homeless individual do access services across multiple health care departments. A study of 2,974 homeless individual found 62.8% had one or more outpatient and 32.2% emergency department visits and 23.3% had been hospitalized in the previous year (Kushel et al., 2001). Therefore, with patients receiving health services at multiple sites, and at different organizations, providers will be unable to access the medical history of its patients to provide the best care for the patient. With the inability to access medical records, a higher number of medical errors can occur relevant to issues regarding medical records. In particular, when a patient uses inpatient, outpatient, and ED service, the most common errors are medication continuity, test follow-up and work-up errors. Thus often occurs when a patient is discharged from an inpatient or ED visit and instructed to follow-up at their outpatient physicians and instructions such as medication given at discharge and test results are not found in the outpatient records (Moore, Wisnivesky, Williams, & McGinn, 2003).

To bypass these issues, electronic medical records are touted as a way to overcome these common errors, especially when patients are seen in outpatient and inpatient settings (Hillestad et al., 2005). However, as discussed in the key informant interviews, the different platforms continue to impede communication. Electronic medical records need to allow primary care providers the opportunity to reduce documentation to allow other service providers to accept and integrate clinical data from

external resources. They need to allow the ability to view, download, and translate information. There needs to be electronic medical records that increase coordination across all clinical sites by establishing more accessible platforms (Krist et al., 2014). Better access, perhaps through a web-based electronic health system, can allow providers to access patients records in multiple settings to decrease medical errors (Ash & Bates, 2005; Tarczy-Hornoch et al., 1997)

In addition, it is important to evaluate organizational performance by comparing what is important to the patient to what is important to the provider or manager. When evaluating primary care services for the homeless, it has been shown to be beneficial to include perspectives from both providers and patients when developing an instrument to evaluate primary care services (S. G. Kertesz et al., 2013).

Moreover, it is important to evaluate which structures and processes appear to be consistently maintained by an organization but are not significant with regard to providing quality care. The allocation of resources that do not yield positive results indicate a system that lacks innovation and that simply does what has always been done, rather than focusing on processes and structures that can yield significant results. Information from the key informants can provide information by evaluating items that were given higher feasibility scores than importance scores that were the following:

At my clinic, organizational performance is measured in terms of patient cots

My clinic provides health education and health promotion services.

Survey items given higher feasibility scores than important scores are likely to be feasible but much less important in primary care of homeless persons. Scores indicate these two items can be offered at the clinic but not important. Because of the results, these two items were eliminated from the final survey. These items should be re-evaluated to determine if they are more important than suggested and the removal of the items from the survey may not have been appropriate. What follows is a discussion of these two items to determine their importance in the delivery of primary care to the homeless. Because these two items were the only two items that received a lower feasibility than importance score they were immediately identified as items for removal. The discussion from the interviews also support this conclusion.

For the item, organizational performance is measured in terms of patient costs; the information gained from the key informant interviews determined that the score the items received was most likely due to the financial infrastructure in which the organization receives its funding. Because the individuals interviewed work at facilities that have significant amount of government funding, patients typically do not bear any costs for their services and, therefore, measuring patient costs is feasible but not important. Yet, there is the assumption that patients receive care only at federally-funded organizations and does not take into account that they could receive care at other organizations, mainly from those that do not receive federal funds such as the 1,200 free and charitable clinics found across the U.S. (National Association of Free & Charitable Clinics, 2014).

Patient costs could be an issue in evaluating processes and structures because of the limited funds homeless individuals have to spend on their health care services. For example, individuals, not particularly homeless, who had gone without medical service

stated it was because they had to spend their money on other pressing issues such as food, shelter, or clothing (Diamant et al., 2004) In another study evaluating access of care for women veterans found that 41% cited the most common reason for not obtaining health care was not being able to afford medical care (Washington, Bean-Mayberry, Riopelle, & Yano, 2011). Patient costs include the full range of services needed to ensure their wellness such as prescription drugs, mental health, home health, medical equipment, and supplies (Himmelstein & Woolhandler, 1995). Organizations can best serve its patients by assisting in covering patients' medical needs either through grants, additional funding, or through free care in the community.

An alternative to a physician-managed clinic, a nurse-managed clinic could be offered to provide care to the homeless, especially in those organizations that do require payment for services (Savage et al., 2006). In particular, cost incurred to the patient can be less in a nurse-managed clinic. For example, a study compared the cost to patients at nurse-managed and other facilities and found that patients that received care at a nurse-managed clinic cost patients $62.71 compared to the health department's community clinic at $84.71, a general clinic at $92, and an ED at $213.27. Therefore having more nursing-managed clinics decreases the cost of services to the homeless (Hunter, Ventura, & Kearns, 1998). Besides patient cost, a nurse-managed clinic can overcome accessibility issues because nurse-managed clinics may be more willing to serve in areas outside the primary care setting (Pulliam, 1991). Other research has found that nurse practitioners spent more time with patients (Horrocks, Anderson, & Salisbury, 2002).

For the item, my clinic provides health education and health promotion services. Health education is also essential when promoting good health and preventing disease in

a population (Thomas Bodenheimer, Lorig, Holman, & Grumbach, 2002) Homeless individuals, although they have more limited resources for taking care of their health, need to be offered health education and promotion in relevant areas. In particular, providers need to identify areas of health education and promotion that are deficient in the population and address these needs (Wilson, 2005).

The previous information provides support to the view that there may have been items removed from the survey that were and removed because of their low importance scores and suggest that there are also other items deleted from the survey that may be important to the survey. A possible explanation for the score these two items received is that they could be considered items that are more appropriate for a patient to evaluate than a provider or a manager of primary care services for homeless person. But, this information does not lessen the strength of the survey, but reiterates the need to provide adequate analysis and reflection when developing survey instruments. In addition, it strengthens the argument that using multiple views, including management, providers, and patients, when developing organizational assessment tools can strengthen its viability and significance.

Findings Related to Aim 3

Aim 3 of the study evaluated the reliability and validity of the PC-HOAT and if there were organizational processes and structures that were positively associated with higher quality of care indicators (percent of patient with controlled diabetes and hypertension. Reliability and validity were tested using principal component analysis,

international reliability, confirmatory factor analysis, and multiple regression. The final result was a 7-factor scale model that indicated reliability of each scale and of the full model and an increasingly valid model with all 4 factors having sufficient fit indices; but nonetheless the full model did not attain full validity.

Discussion of Results from OLS

Our results indicated a positive association between Factor 8 (Access and Quality of Care) and controlled hypertension. The two variables found within this factor are, "Organizational performance is measured in terms of quality" and "Patients can access multiple providers/services in one visit." As such, our findings suggest that initiatives such as the H-PACT which have medical, behavioral, and social services housed within the clinic (Bamberger, 2014) may be associated with better hypertension outcomes. In addition, our findings highlight the need to evaluate organizational performance on quality measures, such as clinical outcomes. Further research is needed to determine what quality of care indicators are valid and reliable, easily measurable (Donabedian, 1988), and relevant to the homeless population.

Interpreting Mixed Methods

This section integrates the results from the qualitative and quantitative phases of the study and addresses the study meta-inferences, which involve drawing inferences at the end of an integrated study (Teddlie & Tashakkori, 2003). The quantitative results will be discussed first, followed by consideration of how these results were better

understood based on the qualitative findings. The next section explores the overarching mixed-methods research question: How does the using the information from the qualitative data analysis help to explain the information derived from the quantitative data regarding processes and structures within a primary care for the homeless organization?

Strengths and Weaknesses of Mixed Methods

The use of a mixed-methods approach has strengths and weaknesses. Key issues in mixed methods revolve around the ability to obtain findings that are credible, dependable, and confirmable (Onwuegbuzie & Johnson, 2006). Among the weaknesses of this approach is that it can be difficult for a single researcher to carry out both approaches in a single study; such studies tend to be more time-consuming; and interpreting both qualitative and quantitative results can be a challenge. On the other hand, mixed methods can provide more complete answers to the research question and stronger evidence for the conclusions of the study (Johnson & Onwuegbuzie, 2004).

Another issue with mixed methods is the ability to adequately design a mixed method study where the methods are integrated rather than parallel. The goal of mixed-methods research is to use qualitative and quantitative methods within a single study, not multiple related studies (Johnson & Onwuegbuzie, 2004). In addition, simple qualitative analysis followed by quantitative analysis or quantitative analysis followed by qualitative analysis provide a disadvantage in that multiple levels of mixed-method work cannot be

employed (Yin, 2006). This study used an integrated multi-level mixed-method model of quantitative → qualitative → quantitative.

There are similarities and dissimilarities in previous studies and the current study that used mixed methods to evaluate primary care organizations. One article looked at five studies that used mixed methods to investigate primary care services (John W Creswell, Fetters, & Ivankova, 2004) and found various types of mixed methods used. Like one of the previous five works (Baskerville, Hogg, & Lemelin, 2001), the present study applied mixed methods to provide a clearer understanding of the research question (Baskerville et al., 2001). Similar to several of the studies, the quantitative portion included the use of a structured questionnaire (Baskerville et al., 2001; Kutner, Steiner, Corbett, Jahnigen, & Barton, 1999; Nutting et al., 2002). The use of interviews was common to all studies (Baskerville et al., 2001; Kutner et al., 1999; McIlvain, Backer, Crabtree, & Lacy, 2002; McVea et al., 1996; Nutting et al., 2002) and the current. Parallel to three of the prior studies, this one followed a sequential process of using the qualitative data to inform the quantitative data (Kutner et al., 1999; McIlvain et al., 2002; Nutting et al., 2002). In regards to dissimilarities found in the previous five studies, this study did not use key informant interviews to develop the survey, as did Kutner et al. (1999). It also did not use observations at the facility or a review of medical records (McIlvain et al., 2002; McVea et al., 1996). Moreover, unlike two of the prior works, this study was not a concurrent study in which the qualitative and quantitative analyses were performed at the same time (Baskerville et al., 2001; McVea et al., 1996).

In addition to better defining the final PC-HOAT, the mixed-methods approach provided better understanding of the findings from the final survey. In particular, the

researcher was interested in understanding the phenomena behind those items in the PC-HOAT that obtained had a high percentage of "false" responses, indicating that the characteristic was not found in the organization. Mixed-methods research allows the researcher to better understand why an organization would have indicated "false," i.e., if there were flaws in item development or if the items are not feasible within the context of health care for the homeless.

Flaws in Item Design

Two of the questions in the survey could indicate flaws in the item design: "At my clinic, providers are evaluated on their patients' adherence to standard practice guidelines for self-management of illness" (to which 53% responded "false") and "My clinic has guidelines for operations based on modified clinical guidelines that are homeless-specific" (to which 34% responded "false"). The data from the survey of key informant interviews found that (on a rating scale of 1 to 10) self-management of illness received an average importance score of 9.25 and an average feasibility score of 6. Modified clinical guidelines received an average importance score of 9.2 and an average feasibility score of 8. These two statements were not consistently discussed during the first phase of the study, because of their high importance and moderately high feasibility scores. However, the high rate of "false" responses to these two questions is striking. Perhaps many of the "false" responses were given because the respondent was unfamiliar with modified guidelines or with how evaluation of self-management of illness is done. These possible misunderstandings should receive further exploration.

Items Not Feasible within the Context

A few statements may fall into the category of not being feasible in the context of a primary care for the homeless. The statement, "My clinic provides radiological services" received 70% false responses and the statement, "At my clinic, dental and oral health providers are located within the primary care clinic" received 40% false responses. These questions were discussed during the interviews with the focus that providing radiological and dental services is important but oftentimes not feasible. The informants gave an average importance score (out of 10) of 8.75 and an average feasibility score of 4.75 for radiological services, and scores of 9.4 and 6.6, respectively, for dental services. These findings lead the researcher to conclude that radiological services and dental services, although important, often cannot be provided. This fact raises concern when combined with the significant amount of discussion, during the interviews, about problems with enabling patients to gain access or referrals to services outside the clinic. It may be more important to focus on the patient's ability to receive these services somewhere, regardless of ability to pay and less important to focus on the clinic's ability to offer these services in-house. In addition, dental care was identified as the third most frequently unmet health care need (King & Gibson, 2003). Therefore, primary care service organizations may be unable to provide some of the health care needs that patients most require.

pMultiple Issues Raised by One Statement

The item stating, "At my clinic, when a patient needs a referral to another provider (e.g., cardiology, neurology, and urology), they are able to see a provider within 30 days," received 41% false responses and also provoked considerable discussion during the key informant interviews. During feasibility and importance scoring, it received an average importance rating of 8.2 and a feasibility rating of only 3.0. Although the design of the question is important and future research should be conducted on this point, it appears possible that this question raises two separate issues: whether the organization enables timely referrals to such specialists, and whether the question has too restrictive a timeline. Getting appointments at a sub-specialty clinic is different from primary care and that the appointment is often triaged in regards to urgency and whether or not there is a shortage of physicians in a particular specialty (Gupta & Denton, 2008). Safety-net organizations that have established linkages to sub-specialists through the use of an electronic referral system were found to decrease wait time for specialists, such as rheumatology from 126 to 29 days for urgent cases (A. H. Chen, Kushel, Grumbach, & Yee, 2010). There may need to be a better understanding of how and when patients can get referrals and how the 59% of organizations that responded "true" to the question can accomplish this goal.

Findings Regarding Frequency of "True" Responses

Four of the statements described in chapter 4 received 100% "true" responses. One of these four statements is that medical records allow providers to access needed

information; this is a core function of a medical record and one would not imagine that many organizations would continue to use a medical record format that did not provide this function. The fact that 90% of organizations reported using electronic medical records indicates that electronic records are useful internally; however, informants in the qualitative interviews pointed out that compatibility of such systems outside the organization can be problematic. There should be an easier way to be able to access a patient's health information both inside and outside an organization.

Two of the four statements that received 100% "true responses," were, regarding whether services are accessible to the homeless and whether care is respectful to the homeless, should be evaluated with caution. It is possible that organizations answered "true" to these statements even though the statements do not actually represent the reality that the patients experience. There needs to be a systematic way to compare perception and reality within an organization. It is imperative to determine whether what an organization considers to be the case is actually true for the patients. Addressing this question requires additional analysis. In hindsight, it would have been beneficial to separate out questions that could be viewed differently by management, providers, and staff and from patients, given that this study did not pursue input from patients.

Implications for Research

There is a greater need for the literature to provide theory-driven applications to examine health care organizations' performance (S. M. Shortell et al., 2005) and there have not existed any applications specifically relevant to primary care services for the

homeless. Many of the studies evaluating organizational characteristics have relied heavily on existing data and models (Jackson et al., 2005; Lowe et al., 2005; Pronovost et al., 1999; Russell et al., 2009; Safran et al., 2000) rather than data specific to the population served. This limits the ability to develop new conceptual and theoretical models to look at the association between organizational structure, process, and outcomes. Interviewee Delta, both a researcher and a practitioner, pointed out that the research in homeless health care focuses on interventions and fails to adequately address issues such as which health care system or which organizational design is best.

An important observation arising from the qualitative portion of the study was the need for a sound item development process and review process (Burns et al., 2008; Hinkin, 1998; Rattray & Jones, 2007). One emphasis resulting from the key informant interviews was an effort to ensure that questions were simplified and avoided jargon or words that might be unfamiliar to respondents. Another concern central to survey development was the importance of adequately translating a question from theory to practice. Having someone who would be using the survey evaluate the questions is essential. Understanding the nature of the practice is also important, because often the literature does not allow for a complete understanding of the service delivery setting in which the instrument will be tested.

In addition, when developing questions one must understand the political and financial climate in which the organization operates. One such phenomenon that raised these issues is the nature of providing immunization as a form of preventative services. Immunizations for adults, unlike immunizations for children, are not covered by major federal programs. Without adequate health insurance, there is sparse funding to

immunize patients (Hinman, Orenstein, & Rodewald, 2004). Yet, even outside homeless health care, primary care providers often do not follow established guidelines for immunization delivery (Szilagyi et al., 1994). It appears that some basic preventative and public-health needs have been ignored due to the funding structure.

Another concept that proved problematic is to understand what services are offered under a particular survey item. For example, with regard to offering acute medical care, the original statement on the PC-HOAT included burns, cuts and fractures. Subsequent research found that the most common illnesses evaluated in primary care are as follows: (in order of frequency) (a) hypertension, (b) acute upper respiratory tract infection, (c) general medical examination, (d) diabetes mellitus, (e) ischemic heart disease, (f) acute sprains and strains, (g) degenerative joint disease, (h) acute lower respiratory tract infection, (i) obesity, (j) depression and anxiety, and (k) acute and chronic sinusitis (Stafford et al., 1999). Therefore, the original question was not representative of the services commonly offered in a primary care setting and was thus poorly designed.

The 7-factor scale, shown in Figure 5, models addressed the issues regarding studies that evaluated either organizational structure or process but did not evaluate both in the same study and thus demonstrated that successful models can include structures and processes when evaluating primary care services for the homeless. In this study, a scale under process elements, access and quality, was found to be significant in the association between process, structure, and outcomes.

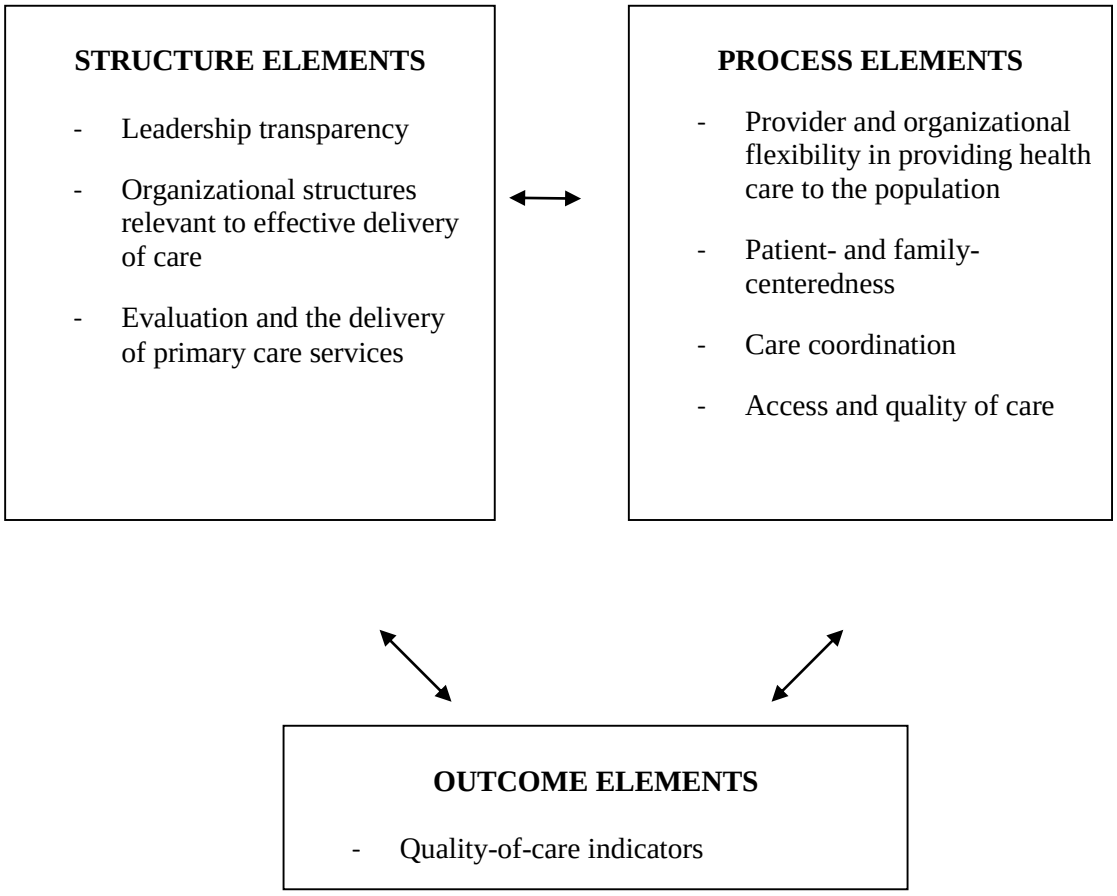

Figure 5. Primary Care Homeless Organizational Assessment Tool Scale after Validity and Reliability Testing

Implications for Managers

The findings from this study provide practitioners and managers on organizational processes and structures that have a positive association with quality of care. This information will allow responsible individuals to make the necessary changes to address deficits in their own organization, and it offers insight into the strategies that the organizations may consider undertake. It is imperative that managers understand the most important aspects of service delivery and determine through their own analysis

which factors enable the population that they serve to receive health care in an optimal environment.

One important aspect that managers need to understand is determine the appropriate electronic medical record to be used within their organization and should evaluate how useful these medical records are to providing health care. Research on experiences with electronic medical records, barriers to full implementation, or the cost involved (Scott, Rundall, Vogt, & Hsu, 2005), often fail to expose the faults of these systems (Boonstra & Broekhuis, 2010; Denomme, Terry, Brown, Thind, & Stewart, 2011; Scott et al., 2005). Most electronic medical records systems are used in-house and do not provide the ability to access records outside the facility (Blewett et al., 1999). One alternative is an open-source platform, but many users are dissatisfied with this option (Goldwater et al., 2014), which also does not resolve problems with accessing medical records housed at large organizations such as hospitals. Interviewees Delta and Beta confirmed that electronic medical records housed in a hospital are often contained in different systems that are not compatible with each other. It appears that this is a significant problem that id oftentimes not explored in research studies.

A significant issue that managers need to understand and address is patients' inability to receive health care services outside the primary care organization. An alternate to referrals would be to offer more subspecialty services at the clinic. However, interviewee Theta indicated that few subspecialists visit the clinic to provide care, and that therefore the clinic must rely heavily on referrals. In a study on the ability of 89 community health centers to obtain outside mental health services for uninsured patients, every respondent indicated some difficulty in enabling patients to receive services, with

referrals for psychotherapy and psychologist services the most difficult to obtain (Rust et al., 2005). As patients have competing needs and priorities, providing subspecialty services within the clinic would be beneficial. An active governance and leadership making necessary connections in the community would be beneficial to those that patients who have a tendency to get lost in the system when a referral is necessary. A better culture of connection and support is needed (Baxter & Mechanic, 1997).

The tool designed in this study will be most useful to organizations with limited institutional resources, higher needs, and unsatisfied staff who are more likely to engage in organizational change (Courtney, Joe, Rowan-Szal, & Simpson, 2007). In addition, it is important that individuals continue the connection between research and practice. Yet, as interviewee Beta related, changes in organizations generally do not occur unless there is a big problem, as organizations tend to be reactive and not proactive in their operations.

The Operations Manual for the PC-HOAT

The rapid changes that occur in the health care environments necessitates that primary care services adapt how they deliver health care. It is not enough to understand how, why, or if the organization has the particular items in the PC-HOAT within its organization, an organization also must be able to make improvements based on the information gained from using the tool. Multiple models exist suggesting strategies for organizational changes but they are limited to large health care organizations and are not easily incorporated in smaller practices, such as primary care, and in unique practices,

such as homeless health care (S.M. Shortell, Bennett, & Byck, 1998; S.M. Shortell et al., 2001). Therefore, we need to use and develop more models that are specific to the understanding of primary care and particular primary care services for the homeless (Cohen et al., 2003; R. R. McDaniel & Driebe, 2001; Miller, Crabtree, McDaniel, & Stange, 1998).

In particular, key stakeholders need to be motivated to make changes and must be on board to make these changes. Resources for change, such as infrastructure, communication, and leadership, need to be adequate. The opportunities for change need to be identified; external systems and outside motivators need to be understood (Cohen et al., 2003). Any change in an organization needs to align with the mission, vision, values, and decision-making process of the organization (Tallia et al., 2003). Therefore, the PC-HOAT provides an evaluation method to determine what changes need to be made within the organization.

Although the study provides important implications for managers, policy makers, and researchers, we developed the tool for the most important stakeholders: those individuals who work in primary care services for the homeless, particularly those that have the ability to influence the organization's operations. It is important to provide to them an easy way to use the information found in the PC-HOAT. Therefore, we provide an operations manual to answer the question, "What organizational structures and processes should primary care services organizations have to ensure that homeless patients are receiving adequate primary care?" The operations manual provides the reader a concise understanding of the organizational domains and operationalized

concepts that emerged from the data considered the most feasible and important in the context of the quality of primary care for the homeless.

The operations manual uses the items found in the PC-HOAT and can be found in Appendix N. The PC-HOAT determines the most feasible, relevant, and statistically significant organizational processes and structures needed to service homeless patients in a primary care setting. The PC-HOAT is a 50-item checklist assessing the following areas: core organizational services, evaluation and delivery of primary care services, provider and organizational flexibility in providing health care to the population, organizational structures relevant to effective delivery of care, patient and family centeredness, leadership transparency, care coordination, access, and quality of care.

To use the PC-HOAT, an individual who is most intimate with the workings of the organization, should evaluate if the organization has the organizational processes and structures found in the checklist. The PC-HOAT should be used to foster discussions with the staff and patients of the organizations. Organizations should strive to include as many processes and structures found in the PC-HOAT. Organizations should also use the tool to re-evaluate if they should reallocate structures and processes found in the facility but not in the PC-HOAT.

When developing the manual, we included items found in Table 39, which are considered core organizational services that primary care for the homeless should offer. We removed these items from the final PCA because they did not have a loading score on any factor. Their low scores was likely due to the high percentage of true responses they received. In other words, they are probably found within most primary care facilities for the homeless. In addition, most items received an average feasibility and importance

score of 8.0 or higher (indicated with an X). Items that have N/A are those that were significantly changed in the final survey, where an importance and feasibility score is not available. Items that have (-) for importance and feasibility score are those that did not receive an average 8.0 or higher. Therefore, in addition to the higher percentage of true responses from the survey, most items included in Table 41 received high scores of importance and feasibility. These items should be grouped together and considered the core organizational services that primary care services for the homeless should offer.

Table 41. Core organizational services

Item	Description	Receive 8.0 (I)	Receive 8.0 (F)	% true from survey
IS_4	At my clinic, medical records allow providers to access information needed to evaluate the care provided.	X	X	100
IS_5	At my clinic, providers inside the organization share medical records.	X	X	98
IS_7	At my clinic, medical records indicate homeless status.	X	X	93
AS_1	At my clinic, primary care services are located in accessible areas to the homeless.	X	X	100
AS_5	At my clinic, patients are able to obtain walk-in appointments.	X	X	92
PF_2	At my clinic, we collect patient satisfaction surveys.	N/A	N/A	95
PF_9	At my clinic, organizational performance data is used to make changes in the organization's operations.	-	-	96
PF_12	At my clinic, we use uniform standards to deliver care based on evidence-based practices (i.e., avoiding injury or error and providing effective and efficient care).	X	-	92
PF_13	My clinic conducts meetings to review patient cases.	N/A	N/A	82
PC_1	My clinic provides primary care services (e.g., physical medical exams and routine check-ups).	X	X	98
PC_3	My clinic provides treatment for acute medical illnesses (e.g., colds, the flu, headaches, and fevers).	X	-	98
PC_4	My clinic provides treatment for chronic medical illnesses (e.g., asthma, diabetes, and hypertension).	X	X	98
PC_8	My clinic provides health education and health promotion services.	X	X	98
PC_11	At my clinic, there are established linkages with other agencies in the community to provide services patients need (e.g., specialists, substance abuse, dental, and social services) that are not provided at the organization.	X	X	98
INT_3	At my clinic, patients can be referred to out-patient substance abuse treatment programs.	N/A	N/A	100
PCC_3	At my clinic, patients receive care that is respectful to the culture of the homeless.	X	X	100

What makes the manual unique is that it pulls together a wide variety of resources from the seven core references that helped to develop the PC-HOAT and provides those items that went through reliability and validity testing. Organizational leaders now have very concise, concrete list of items that are easily measured and implemented. In addition to the PC-HOAT, organizations should use additional resources, such as

simulation models, to test how changes in an organization can affect patient care (J. Reynolds, Zeng, Li, & Chiang, 2010).

Implications for Policy

Interviewee Alpha pointed out that the most prominent policy effecting the delivering of health care to homeless persons is the Patient Protection and Affordable Care Act (PPACA). In addition, Alpha discussed the uncertainty of how the PPACA will affect organizations and the care they provide to its patients. In fact, implementation of the PPACA may make some of the items in the survey obsolete. Comparative analysis pre- and post-PPACA may yield significant information regarding the effectiveness of the PPACA in making affordable care available. Yet the ability to obtain services relies on the ability to have health insurance, which the PPACA now requires. Even under the PPACA, an estimated 23 million out of the 57 million currently uninsured people are anticipated to still be uninsured (Foster, 2010; Patient Protection and Affordable Care Act, 2010).

Homeless patients are exempt from the law requiring US citizens to purchase health insurance, may still be left out of Medicaid (post-expansion), are oftentimes ineligible for subsidies in the health insurance exchange, and usually have no viable income with which to purchase insurance on the health insurance exchange. In reality, Medicaid expansion is the only viable option to have homeless persons receive health insurance coverage (National Health Care for the Homeless Council, 2014). Yet, there are still flaws in the ability of the homeless to obtain Medicaid such as a distrust in the

system, barriers to process enrollment such as language barriers and low literacy, lack of transportation, and the lack of required documentation. It will be beneficial to HCH organizations to help circumvent barriers by encouraging and assisting individuals to enroll in Medicaid. The increase in the number of patients enrolled in Medicaid seen at the HCH organization will result in untapped patient revenue. But to that effect, organizations will need to support administration and staff in regards to handling the increase in billing and other administrative costs (Kaiser Commission on Medicaid and the Uninsured, 2012).

A question that maybe raised is if HCH organizations will become obsolete as individuals enroll in Medicaid and choose to access their health care in a non-HCH organization. Even with the expansion of Medicaid it does not guarantee patients will be eligible, or if eligible patients will enroll, or if patients can overcome common access and financial problems of Medicaid enrollees. A study using the 2012 National Health Interview Survey, found that individuals on Medicaid had problems accessing any type of health provider (14%); was told the clinic would not accept Medicaid (6.8%); and had unmet medical needs due to finances (11%) (Kenney, Saloner, Anderson, Polsky, & Rhodes, 2014). On the other hand, a study using the Medical Expenditure Panel Survey (MEPS), found that 5.8% of providers practicing in community health centers (CHC) were not accepting Medicaid patients while 30.9% providers practicing outside CHCs were not accepting Medicaid patients. Unfortunately, 37% of those patients surveyed indicated an inability to access specialty services (Mortensen, 2014). These two studies provide information regarding the challenges that homeless individuals that enroll in

Medicaid may face. What is absent is the knowledge of how these issues may be exponential when faced with the complex challenges of homelessness.

In summary, the expansion of Medicaid may provide opportunities and challenges for organizations. The biggest opportunity is the ability to access patient revenue previously unavailable. In addition, providers of homeless individuals may be more successful in getting patients to receive sub-specialty services, albeit with access challenges patients already face. Last, patients may be unable to receive health care outside of their organization and continue to receive their services at the HCH organization ensuring patient revenue. The biggest challenge is the new, and or higher, administrative costs associated with processing Medicaid claims, patients still unable to receive sub-specialty care, and patients still burdened with the financial costs associated with health care.

Therefore, the PC-HOAT will still remain relevant post-Medicaid expansion as enrollment in Medicaid does not overcome all the existing barriers faced by homeless persons. In fact, the PC-HOAT may become more relevant as HCH may try to compete for patients, especially Medicaid patients, and therefore, primary care services should be designed to not only provide quality care but also to provide care that is focused on addressing the contextual issues of homelessness. The two organizations that are at the forefront in providing health care to homeless persons, the VA and HRSA, will be most interested in the findings from the study. These services are publicly-funded and have a social responsible to use those funds wisely. Last, changes in organizations, post PPACA implementation and Medicaid expansion, may require new items previously overlooked

that may need to be added such as patient revenue management, marketing, atmospherics, and a heavier focus on patient satisfaction and patient-centered care.

Missed Opportunities in Development of the PC-HOAT

This section discusses opportunities that were missed during the development of the PC-HOAT. In particular, the section discusses what items are missing from the tool that could have been beneficial to the understanding of primary care services for homeless persons. Although the items found in the final PC-HOAT capture a wide range of processes and structures, there is always the possibility of missing relevant items.

The overall purpose of the study was to identify organizational processes and structures that were either present or absent in the organization and thus questions were designed to avoid the participant interjecting their personal opinion; yet, it would have been favorable to gain personal opinions about an organization. It would be interesting to know if the respondent felt the organization provides quality care to homeless persons. This information could have been linked with the results of the survey to understand if their opinions fit within the results. Individuals that think their organizations are not doing well may be surprised to find that they are in fact providing quality health care. Other individuals that indicate their organization are doing well, may also be surprised to find that their organization were not providing quality health care.

The last question that could have garnered interesting information is the notion of whether or not the respondent person would be comfortable receiving care at the facility they provided the answers to the survey from. Of course, individuals probably do not

want their co-workers to know about their personal health information, and that requires the question to be written as such. The question would need to get at whether or not the person felt that they would get the best care available if they received care at their organization. If responses stated false, this could raise red flags that if a person would not receive their own personal health care at the organization, why would a patient receive their health care from that same organization?

Limitations of the Study

One limitations of this study concerns the nature of the individuals who completed the survey in the second phase. The researcher relied on the grantee to forward the information regarding the survey to the appropriate contact and had no direct contact with the individual assigned to answer the survey. In addition, the recipients were only a small sampling of HRSA-funded organizations, as described in chapter 3. To compensate for these potential limitations, subsequent research should involve distributing the instrument to a larger number of organizations and should include an effort to determine who would be the most appropriate individual at each organization to complete the survey. Because this study included linkages with previously obtained UDS data, it was necessarily limited to organizations where it was possible to match the grantee with the UDS data.

Another important limitation of the study, which proved to be very problematic during data analysis, was the small sample size. The response rate was not unreasonable, but the original sample population was small, affecting the ability to provide adequate

power for statistical analysis. Therefore, further study should be conducted with additional organizations that provide health care for the homeless, including the Veterans Administration and other not-for-profit organizations that do not receive HRSA funding that focus on delivering health care to the homeless. This step could also make the PC-HOAT more broadly generalizable across multiple types of organizations, or at least for all organizations concerned with health care for the homeless.

The possibility of international analysis should also be evaluated. Homelessness exists virtually everywhere, in the context of various health care delivery models and insurance markets. The tool could be adjusted to fit a particular market while retaining fidelity to the definitions established in the model. Such studies would further enrich understanding of the phenomenon of health care for the homeless and could improve patient services. In addition, the systemic approach used here to develop an assessment tool is applicable to other areas of concern to the homeless, such as dental care, mental health, and housing assistance.

Another limitation in the study resulted from the characteristics of most participating organizations, which usually have multiple revenue streams and do not serve only the homeless. This study had no way to separate outcomes data on the homeless from data for other patients. Ideally, further research should use data on the homeless patient population only. In addition, other relevant variables may not be included or controlled for in the study design, and this omission could influence the results. The variables selected (i.e., data on diabetes and hypertension) were used because diabetes and hypertension are common illnesses found in the homeless

population and were easiest to obtain, but they may not correctly reflect the constructs or reflect the most representative areas of quality assessment.

Causal relationships cannot be determined due to the fact that the study is cross-sectional, with UDS data collected during fiscal year 2010 and survey data collected in 2012. Funding changes and other public policy issues, most notably the implementation of the PPACA, could have had influence on the operations and outcomes of participating organizations between 2010 and 2012.

Combining primary and secondary data also presents unique problems. The accuracy and reliability of the secondary data cannot be confirmed; in addition, the researcher had to combine three different data sets, and human error could have resulted in the wrong data being merged. Another limitation is the reliance on self-reporting, although this approach is widely used to evaluate a large number of organizations, across a wide geographic region, within a small period of time (Bodur & Filiz, 2010).

Future Research

The present study makes a significant contribution to existing literature, but further research is needed to better understand optimal service delivery models of health care services for the homeless. Future research should be completed to determine if more statistically significant results can be obtained from a more robust study. The non-significant results in this study can be mostly attributed to a small sample size. Sample size has a particularly significant effect on appropriate factor analysis (Preacher & MacCallum, 2002).

To further test the validity and reliability of the instrument and to attempt to demonstrate its broader applicability, additional studies with new samples should be conducted (Zimet, Powell, Farley, Werkman, & Berkoff, 1990) and items that did not support the underlying theory should be considered for removal from the instrument (Zimet et al., 1988). The most valuable future research following this study would involve obtaining a full model that has good fit indices when using confirmatory factor analysis. Again, the small sample size influenced the outcome of the present study and thus the interpretation of the fit indices. Often, violations relevant to sample size, multivariate normality, and missing data will result in a non-fitting model (Suhr, 2006; Van Prooijen & Van Der Kloot, 2001) all of which occurred in the present study. A model that is considered a poor fit with a small sample size can often be proved to be a good fit with a larger sample size (Marsh & Balla, 1994).

An evaluation of seven studies with sample sizes ranging from 25 to 1,600 found that multiple fit indices are substantially influenced by sample size, including the Bentler-Bonnet Index (BBI), GFI, and adjusted goodness-of-fit index AGFI, whereas TLI was not affected by a small sample size (Marsh & Balla, 1994). There appears to be no clear-cut solution with regard to fit indices and sample size, although, of course, a larger sample size is optimal. Model misspecification must also be looked for when evaluating model fit (Hu & Bentler, 1998) but this solution does not discriminate between good-fitting and bad-fitting models (Maiti & Mukherjee, 1991). Additional reasons can explain why the CFA does not provide an appropriate fit, including inappropriate determination of the number of factors to retain, rotation, and factor procedure (exploratory versus principal component) (Van Prooijen & Van Der Kloot, 2001). In addition, PCA analysis is looser

and allows researchers more freedom to explore the model, whereas in CFA the factors and items have to be defined in advance (Van Prooijen & Van Der Kloot, 2001). It has been suggested that CFA should be carried out on a new data set collected independently from the original study (Van Prooijen & Van Der Kloot, 2001). One caveat is that, in some cases a factor structure obtained through an exploratory method was not confirmed in a subsequent study using CFA (Borkenau & Ostendorf, 1990; Church & Burke, 1994; Hartman et al., 1999; Lonigan, Hooe, David, & Kistner, 1999; McCrae, Zonderman, Costa Jr, Bond, & Paunonen, 1996; Parker, Bagby, & Summerfeldt, 1993; Rao & Sachs, 1999; A. J. Reynolds & Lee, 1991; Vassend & Skrondal, 1997). In conclusion, the CFA did produce a workable model that is certainly superior to having no model at all, but the result is not fully satisfactory in terms of the attempt to reject the hypothesis of no correlation between the items. The most probable cause of this result is an insufficient sample size relative to the high number of parameters within the model. Therefore, additional data should be collected to more fully evaluate the validity of the PC-HOAT.

Further research could also include obtaining patients' perspective to strengthen understanding of and to design services that best meet patient needs. Using quality-of-care surveys specific to the homeless population could be beneficial. Additional measures that describe the population and service context could be more evaluated, such as characteristics of the patients, managers, and staff. This will continue to advance the knowledge of specific structure and process variables that promote improvement in quality of care.

It would be useful to compare organizations with varying levels of financial resources to determine if resources are being used effectively or if they could be used in a

different manner. Other areas of interest not included in this study are organizational culture, mission and vision, and board composition and characteristics. Future studies that look at the external environmental context could provide further insight into the role of competition, laws, and other factors, helping organizations to identify how resources can be manipulated in areas where change is possible and how to work around those items over which they have little influence.

Other questions regarding the PC-HOAT could be more fully examined, such as how well the framework represents the profiles of the highest-quality organizations; what characteristics best define high performance; and how to identify items that differentiate high-performing from low-performing organizations. The final modified instrument should be reanalyzed as new data are collected and further forms of analysis should be performed to understanding the relationship among factors and determining whether the items contained in the factor are relevant if the scale does not perform as expected (Roth, Wiebe, Fillingim, & Shay, 1989). In addition, I could have used an inductive approach to developing the PC-HOAT (Thomas, 2006) by conducting the interviews first and allowing items to use in the PC-HOAT emerge from the interviews (Steinhauser et al., 2000).

Conclusion

This chapter has presented policy, managerial, and research implications, limitations, and recommendations for future research. For the PC-HOAT to achieve its intended purpose, good planning and implementation will be needed. Institutions must

be prepared to undertake organizational changes that may need to occur in order to improve health outcomes. Further testing is needed to provide more useful information and better determination of the tool's reliability and validity.

Overall, the study provides both practical and theoretical contributions to the field of organizational research, with specific relevance to health care organizations serving the homeless by developing and evaluating a framework pertinent to these organizations. It applies existing scholarship to determine the best way to systematically evaluate relevant organizational processes and structures. Such rigorous evaluations of health care entities provide information relevant to stakeholders. The main contribution of this study is to develop and evaluate empirically a measurement tool specific to a particular subpopulation. This research has built on management research, theory, and ideologies and can provide insight to practitioners, managers, theorists, and policymakers.

LIST OF REFERENCES

Abdi, Hervé, & Williams, Lynne J. (2010). Principal component analysis. *Wiley Interdisciplinary Reviews: Computational Statistics, 2*(4), 433-459.

Aidala, Angela A, Lee, Gunjeong, Abramson, David M, Messeri, Peter, & Siegler, Anne. (2007). Housing need, housing assistance, and connection to HIV medical care. *AIDS and Behavior, 11*(2), 101-115.

Alvesson, M. (2003). Beyond neopositivists, romantics, and localists: A reflexive approach to interviews in organizational research. *The Academy of Management Review, 28*(1), 13-33.

Alwin, Duane F, & Krosnick, Jon A. (1985). The measurement of values in surveys: A comparison of ratings and rankings. *Public Opinion Quarterly, 49*(4), 535-552.

Anastasi, A., & Urbina, S. (1997). *Psychological Testing* (7th ed.). Upper Saddle River, New Jersey: Prentice-Hall.

Angrosino, Michael V. (2006). *Doing cultural anthropology: Projects for ethnographic data collection*. Long Grove, IL: Waveland Press.

Argeriou, M., McCarty, D., & Mulvey, K. (1995). Dimensions of homelessness. *Public Health Rep, 110*(6), 734-741.

Argyris, C. (1979). Using qualitative data to test theories. *Administrative Science Quarterly, 24*(4), 672-679.

Armstrong, B., Levesque, O., Perlin, J. B., Rick, C., & Schectman, G. (2005). Reinventing Veterans Health Administration: focus on primary care. *Journal of Healthcare Management 50*(6), 399-408; discussion 409.

Ash, Joan S, & Bates, David W. (2005). Factors and forces affecting EHR system adoption: report of a 2004 ACMI discussion. *Journal of the American Medical Informatics Association, 12*(1), 8-12.

Bagalman, Erin. (2014). The Number of Veterans That Use VA Health Care Services: A Fact Sheet (pp. 1-3): Congressional Research Service.

Baker, D.W., Stevens, C.D., & Brook, R.H. (1994). Regular source of ambulatory care and medical care utilization by patients presenting to a public hospital emergency department. *JAMA, 271*(24), 1909.

Baker, D.W., Stevens, C.D., & Brook, R.H. (1996). Determinants of emergency department use: are race and ethnicity important? *Annals of Emergency Medicine, 28*(6), 677-682.

Bamberger, Josh. (2014). VA's HPACT Program Collaborates to Meet Healthcare, Housing Needs. Retrieved July 5, 2014, from http://usich.gov/population/veterans/veterans_homelessness_in_focus/hpact

Barr, M. (2006). The Advanced Medical Home: A Patient-centered, Physician-guided Model of Health Care; a Policy Monograph of the American College of Physicians. Philadelphia, PA: American College of Physicians.

Barrow, S.M., Herman, D.B., Cordova, P., & Struening, E.L. (1999). Mortality among homeless shelter residents in New York City. *American Journal of Public Health, 89*(4), 529.

Bartlett, Claude J, Heermann, Emil, & Rettig, Salomon. (1960). A comparison of six different scaling techniques. *The Journal of Social Psychology, 51*(2), 343-348.

Baskerville, NB, Hogg, W, & Lemelin, J. (2001). Process evaluation of a tailored multifaceted approach to changing family physician practice patterns improving preventive care. *The Journal of family practice, 50*(3), W242-249.

Basu, A., Kee, R., Buchanan, D., & Sadowski, L. S. (2012). Comparative cost analysis of housing and case management program for chronically ill homeless adults compared to usual care. *Health Serv Res, 47*(1 Pt 2), 523-543.

Baxter, Raymond J, & Mechanic, Robert E. (1997). The status of local health care safety nets. *Health Affairs, 16*(4), 7-23.

Bean-Mayberry, B.A., Yano, E.M., Caffrey, C.D., Altman, L., & Washington, D.L. (2007). Organizational Characteristics Associated with the Availability of Womens Health Clinics for Primary Care in the Veterans Health Administration. *Military medicine, 172*(8), 824-828.

Beijer, Ulla, Wolf, Achim, & Fazel, Seena. (2012). Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: a systematic review and meta-analysis. *The Lancet infectious diseases, 12*(11), 859-870.

Bensing, J. (2000). Bridging the gap: The separate worlds of evidence-based medicine and patient-centered medicine. *Patient Education and Counseling, 39*(1), 17-25.

Bentler, Peter M, & Bonett, Douglas G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological bulletin, 88*(3), 588.

Berenson, Robert A, Hammons, Terry, Gans, David N, Zuckerman, Stephen, Merrell, Katie, Underwood, William S, & Williams, Aimee F. (2008). A house is not a home: keeping patients at the center of practice redesign. *Health Affairs, 27*(5), 1219-1230.

Berwick, D. M. (2002). A user's manual for the IOM's 'Quality Chasm' report. *Health Affairs, 21*, 80-90.

Bettis, R.A. (1991). Strategic management and the straightjacket: An editorial essay. *Organization Science, 2*(3), 315-319.

Blewett, DR, Barnett, GO, & Chueh, HC. (1999). *Experience with an electronic health record for a homeless population.* Paper presented at the Proceedings of the AMIA Symposium.

Blount, Alexander. (2003). Integrated Primary Care: Organizing the Evidence. *Families, Systems, & Health, 21*(2), 121.

Blue-Howells, J., McGuire, J., & Nakashima, J. (2008). Co-location of health care services for homeless veterans: A case study of innovation in program implementation. *Social Work in Health Care*.

Bodenheimer, T., Wagner, E.H., & Grumbach, K. (2002). Improving primary care for patients with chronic illness. *JAMA, 288*(15), 1909-1914.

Bodenheimer, Thomas, Lorig, Kate, Holman, Halsted, & Grumbach, Kevin. (2002). Patient self-management of chronic disease in primary care. *JAMA, 288*(19), 2469-2475.

Bodur, Said, & Filiz, Emel. (2010). Validity and reliability of Turkish version of of "Hospital Survey on Patient Safety Culture" and perception of patient safety in public hospitals in Turkey. *BMC Health Services Research, 10*(1), 28.

Bollen, Kenneth A. (1986). Sample size and Bentler and Bonett's nonnormed fit index. *Psychometrika, 51*(3), 375-377.

Bonevski, Billie, Baker, Amanda, Twyman, Laura, Paul, Christine, & Bryant, Jamie. (2012). Addressing smoking and other health risk behaviours using a novel telephone-delivered intervention for homeless people: A proof-of-concept study. *Drug and alcohol review, 31*(5), 709-713.

Boonstra, Albert, & Broekhuis, Manda. (2010). Barriers to the acceptance of electronic medical records by physicians from systematic review to taxonomy and interventions. *BMC health services research, 10*(1), 231.

Borkenau, Peter, & Ostendorf, Fritz. (1990). Comparing exploratory and confirmatory factor analysis: A study on the 5-factor model of personality. *Personality and Individual Differences, 11*(5), 515-524.

Bornstedt, G.W. . (1977). Reliability and Validity in Attitude Measurement. In G.F. Summers (Ed.), *Attitude Measurement* (pp. 80-99). Chicago, IL: Rand-McNally.

Bower, P., Campbell, S., Bojke, C., & Sibbald, B. (2003). Team structure, team climate and the quality of care in primary care: an observational study. *Quality and Safety in Health Care, 12*(4), 273.

Brickner, Philip W., Scanlan, Brian C., Conanan, Barbara, Elvy, Alexander, McAdam, John, Scharer, Linda Keen, & Vicic, William J. (1986). Homeless Persons and Health Care. *Annals of Internal Medicine, 104*(3), 405-409.

Brown, J. (2009). Choosing the Right Number of Components or Factors in PCA and EFA. *JALT Testing & Evaluation SIG Newsletter, 13*(2), 19-23.

Buchanan, D., Doblin, B., Sai, T., & Garcia, P. (2006). The effects of respite care for homeless patients: a cohort study. *American journal of public health, 96*(7), 1278.

Buck, Carol J. (2011). *Step-by-Step Medical Coding 2011 Edition*. St. Louis, Missouri: Elvsevier Saunders.

Buck, D.S., Rochon, D., Davidson, H., & McCurdy, S. (2004). Involving homeless persons in the leadership of a health care organization. *Qualitative Health Research, 14*(4), 513-525.

Bureau of Primary Health Care. (2014). Section 330 of the Public Health Service Act (42 USCS § 254b) Authorizing Legislation of the Health Center Program. Retrieved 2014, July 1 from http://bphc.hrsa.gov/policiesregulations/legislation/index.html

Burns, Karen EA, Duffett, Mark, Kho, Michelle E, Meade, Maureen O, Adhikari, Neill KJ, Sinuff, Tasnim, & Cook, Deborah J. (2008). A guide for the design and conduct of self-administered surveys of clinicians. *Canadian Medical Association Journal, 179*(3), 245-252.

Burt, Martha R. , Aron, Laudan Y., Douglas, T., Valente, J., Lee, E. , & Iwen, B. (1999). *Homelessness: Programs and the People They Serve: Findings of the National Survey of Homeless Assistance Providers and Clients*. United States Interagency Council on Homelessness. Washington, DC.

Campbell, Donald T, & Fiske, Donald W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological bulletin, 56*(2), 81.

Casalino, L., Gillies, R.R., Shortell, S.M., Schmittdiel, J.A., Bodenheimer, T., Robinson, J.C., . . . Wang, M.C. (2003). External incentives, information technology, and organized processes to improve health care quality for patients with chronic diseases. *JAMA, 289*(4), 434.

Cattell, Raymond B. (1966). The scree test for the number of factors. *Multivariate behavioral research, 1*(2), 245-276.

Cavacuiti, C., & Svoboda, T. (2008). The use of electronic medical records for homeless outreach. *J Health Care Poor Underserved, 19*(4), 1270-1281.

Centers for Medicare and Medicaid Services. (2011). Medicare program; Medicare Shared Savings Program: Accountable Care Organizations. Final rule. *Federal Register, 76*(212), 67802.

Chaudhry, B., Wang, J., Wu, S., Maglione, M., Mojica, W., Roth, E., . . . Shekelle, P.G. (2006). Systematic review: impact of health information technology on quality, efficiency, and costs of medical care. *Annals of internal medicine, 144*(10), 742.

Chen, Alice Hm, Kushel, Margot B, Grumbach, Kevin, & Yee, Hal F. (2010). A safety-net system gains efficiencies through 'eReferrals' to specialists. *Health Affairs, 29*(5), 969-971.

Chen, Fang Fang. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling, 14*(3), 464-504.

Cherpitel, C.J. (1999). Emergency room and primary care services utilization and associated alcohol and drug use in the United States general population. *Alcohol and Alcoholism, 34*(4), 581.

Cheung, A.M., & Hwang, S.W. (2004). Risk of death among homeless women: a cohort study and review of the literature. *Canadian Medical Association Journal, 170*(8), 1243.

Child, Dennis. (1990). *The essentials of factor analysis* (2nd ed.). London: Cassell Educational.

Chin, Wynne W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research, 295*(2), 295-336.

Chinman, M. J., Rosenheck, R., & Lam, J. A. (2000). The case management relationship and outcomes of homeless persons with serious mental illness. *Psychiatric Services, 51*(9), 1142-1147.

Chueh, H.C., & Barnett, G. (1994). Client-server, distributed database strategies in a health-care record system for a homeless population. *Journal of the American Medical Informatics Association, 1*(2), 186.

Church, A Timothy, & Burke, Peter J. (1994). Exploratory and confirmatory tests of the big five and Tellegen's three-and four-dimensional models. *Journal of personality and social psychology, 66*(1), 93.

Clark, Lee Anna, & Watson, David. (1995). Constructing validity: Basic issues in objective scale development. *Psychological assessment, 7*(3), 309.

Cochrane, Lorna J, Olson, Curtis A, Murray, Suzanne, Dupuis, Martin, Tooman, Tricia, & Hayes, Sean. (2007). Gaps between knowing and doing: understanding and assessing the barriers to optimal health care. *Journal of Continuing Education in the Health Professions, 27*(2), 94-102.

Cohen, Deborah, McDaniel Jr, Reuben R, Crabtree, Benjamin F, Ruhe, Mary C, Weyer, Sharon M, Tallia, A.F., . . . Solberg, Leif I. (2003). A practice change model for quality improvement in primary care practice. *Journal of Healthcare Management, 49*(3), 155-168; discussion 169-170.

Comrey, AL , & Lee, H.B. (1992). *A First Course in Factor Analysis* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Conover, CJ, & Whetten-Goldstein, K. (2002). The impact of ancillary services on primary care use and outcomes for HIV/AIDS patients with public insurance coverage. *AIDS care, 14*(S1), 59-71.

Conviser, R, & Pounds, MB. (2002). The role of ancillary services in client-centred systems of care. *AIDS care, 14*(S1), 119-131.

Copeland, H Liesel, & Hewson, Mariana G. (2000). Developing and testing an instrument to measure the effectiveness of clinical teaching in an academic medical center. *Academic Medicine, 75*(2), 161-166.

Corrigan, JM, Donaldson, MS, Kohn, LT, Maguire, SK, & Pike, KC. (2001). Crossing the Quality Chasm. A New Health System for the 21st Century. Washington, DC: Institute of Medicine: National Academy of Sciences, National Academy Press.

Costello, AB, & Osborne, JW. (2005). Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Pract Assess Res Eval 10*, 7.

Courtney, Katherine Ortega, Joe, George W, Rowan-Szal, Grace A, & Simpson, D Dwayne. (2007). Using organizational assessment as a tool for program change. *Journal of Substance Abuse Treatment, 33*(2), 131-137.

Cousineau, M.R. (2010). Health status of and access to health services by residents of urban encampments in Los Angeles. *Journal of Health Care for the Poor and Underserved, 8*(1), 70-82.

Crampton, P., Perera, R., Crengle, S., Dowell, A., Howden-Chapman, P., Kearns, R., . . . Southwick, M. (2004). What makes a good performance indicator? Devising primary care performance indicators for New Zealand. *Journal of the New Zealand Medical Association, 117*, 1191.

Creswell, J.W., & Clark, V.L.P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications, Inc.

Creswell, John W, Fetters, Michael D, & Ivankova, Nataliya V. (2004). Designing a mixed methods study in primary care. *The Annals of Family Medicine, 2*(1), 7-12.

Cronbach, Lee J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334.

Cronbach, Lee J, & Meehl, Paul E. (1955). Construct validity in psychological tests. *Psychological bulletin, 52*(4), 281.

Culhane, Dennis P, Metraux, Stephen, & Hadley, Trevor. (2002). Public service reductions associated with placement of homeless persons with severe mental illness in supportive housing. *Housing policy debate, 13*(1), 107-163.

Curran, Geoffrey M, Mukherjee, Snigda, Allee, Elise, & Owen, Richard R. (2008). A process for developing an implementation intervention: QUERI Series. *Implementation Science, 3*(1), 17.

D'Aunno, T., & Vaughn, T.E. (1995). An organizational analysis of service patterns in outpatient drug abuse treatment units. *Journal of Substance Abuse, 7*(1), 27-42.

Dahlem, Nancy W, Zimet, Gregory D, & Walker, Robin R. (1991). The multidimensional scale of perceived social support: A confirmation study. *Journal of clinical psychology, 47*(6), 756-761.

de Winter, JCF, Dodou, D, & Wieringa, PA. (2009). Exploratory factor analysis with small sample sizes. *Multivariate Behavioral Research, 44*(2), 147-181.

Denomme, Louisa Bestard, Terry, Amanda L, Brown, Judith Belle, Thind, Amardeep, & Stewart, Moira. (2011). Primary health care teams' experience of electronic medical record use after adoption. *Family medicine, 43*(9), 638-642.

Desai, M.M., Rosenheck, Robert A., & Kasprow, W.J. (2003). Determinants of receipt of ambulatory medical care in a national sample of mentally ill homeless veterans. *Medical care, 41*(2), 275-287.

Diamant, Allison L, Hays, Ron D, Morales, Leo S, Ford, Wesley, Calmes, Daphne, Asch, Steven, . . . Fielding, Jonathan. (2004). Delays and unmet need for health care among adult primary care patients in a restructured urban public health system. *American Journal of Public Health, 94*(5).

Dillman, D.A. (1978). *Mail and telephone surveys*. Chichester, United Kingdom: Wiley.

Dillman, D.A. (2007). *Mail and internet surveys: The tailored design method*. New York: John Wiley & Sons Inc.

Donabedian, A. (1966). Evaluating the quality of medical care. *The Milbank Memorial Fund Quarterly*, 166-206.

Donabedian, A. (1988). The quality of care: How can it be assessed? *Jama*, *260*(12), 1743-1748.

Donaldson, MS, Yordy, KD, Lohr, KN, & Vanselow, NA. (1996). *Primary care: America's health in a new era*. Washington, D.C.: National Academies Press.

Dudley, R.A., Landon, B.E., Rubin, H.R., Keating, N.L., Medlin, C.A., & Luft, H.S. (2000). Assessing the relationship between quality of care and the characteristics of health care organizations. *Medical care research and Review, 57*(3 suppl), 116.

Dwyer III, Samuel J, Weaver, Alfred C, & Hughes, Kristen Knight. (2004). Health Insurance Portability and Accountability Act. *Security Issues in the Digital Medical Enterprise, 72*(2), 9-18.

Elvy, A. (1985). Chapter 16: Access to Care. In P.W. Brickner, L. Scharer, B. Conanan, A. Elvy & M. Savarese (Eds.), *Health care of homeless people*. New York: Springer Pub. Co.

Engström, S., Foldevi, M., & Borgquist, L. (2001). Is general practice effective? A systematic literature review. *Scandinavian journal of primary health care, 19*(2), 131-144.

Ensign, J. (2004). Quality of health care: The views of homeless youth. *Health Services Research, 39*(4 Pt 1), 695.

Fahey, Tom, Schroeder, Knut, & Ebrahim, Shah. (2005). Educational and organisational interventions used to improve the management of hypertension in primary care: a systematic review. *British Journal of General Practice, 55*(520), 875-882.

Farrell, Andrew M. (2010). Insufficient discriminant validity: A comment on Bove, Pervan, Beatty, and Shiu (2009). *Journal of Business Research, 63*(3), 324-327.

Fazel, Seena, Khosla, Vivek, Doll, Helen, & Geddes, John. (2008). The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. *PLoS medicine*, *5*(12), e225.

Felker, B.L., Barnes, R.F., Greenberg, D.M., Chaney, E.F., Shores, M.M., Gillespie-Gateley, L., . . . Morton, C.E. (2004). Preliminary outcomes from an integrated mental health primary care team. *Psychiatric Services, 55*(4), 442.

Fennell, M.L., & Flood, A.B. (1998). Key challenges in studying organizational issues in the delivery of healthcare to older Americans. *Health Services Research, 33*(2 Pt 2), 424.

Ferlie, E.B., & Shortell, S.M. (2001). Improving the quality of health care in the United Kingdom and the United States: a framework for change. *Milbank Quarterly, 79*(2), 281-315.

Fick, Donna M, Cooper, James W, Wade, William E, Waller, Jennifer L, Maclean, J Ross, & Beers, Mark H. (2003). Updating the Beers criteria for potentially inappropriate medication use in older adults: results of a US consensus panel of experts. *Archives of internal medicine, 163*(22), 2716-2724.

Field, Andy. (2009). *Discovering statistics using SPSS*. London: Sage publications.

Fiscella, K., & Geiger, H.J. (2006). Health information technology and quality improvement for community health centers. *Health Affairs, 25*(2), 405.

Fischer, P.J., & Breakey, W.R. (1991). The epidemiology of alcohol, drug, and mental disorders among homeless persons. *American Psychologist, 46*(11), 1115.

Fleming, B., Silver, A., Ocepek-Welikson, K., & Keller, D. (2004). The relationship between organizational systems and clinical quality in diabetes care. *Am J Manag Care, 10*(12), 934-944.

Flood, A.B. (1994). The impact of organizational and managerial factors on the quality of care in health care organizations. *Medical Care Research and Review, 51*(4), 381.

Floyd, Frank J, & Widaman, Keith F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological assessment, 7*(3), 286.

Foreman, Spencer. (1994). Social responsibility and the academic medical center: building community-based systems for the nation's health. *Academic Medicine, 69*(2), 97-102.

Foscarinis, M. (1996). The federal response: The Stewart B. McKinney homeless assistance act. *Homelessness in America*, 160–171.

Foster, RS. (2010). *Estimated financial effects of the "Patient Protection and Affordable Care Act," as amended* Washington, DC.: Centers for Medicare and Medicaid Services.

Fowler, Floyd J. (2014). *Survey research methods* (5th ed.). Thousand Oaks, CA: Sage.

Fox, Richard J. (2010). Confirmatory factor analysis *Wiley International Encyclopedia of Marketing*: John Wiley & Sons, Ltd.

Freedman, M.J., Lester, K.M., McNamara, C., Milby, J.B., & Schumacher, J.E. (2006). Cell phones for ecological momentary assessment with cocaine-addicted homeless patients in treatment. *Journal of substance abuse treatment, 30*(2), 105-111.

Friedberg, M.W., Coltin, K.L., Safran, D.G., Dresser, M., Zaslavsky, A.M., & Schneider, E.C. (2009). Associations between structural capabilities of primary care practices and performance on selected quality measures. *Annals of internal medicine, 151*(7), 456.

Friedmann, P.D., Alexander, J.A., & D'Aunno, T.A. (1999). Organizational correlates of access to primary care and mental health services in drug abuse treatment units. *Journal of Substance Abuse Treatment, 16*(1), 71-80.

Friedmann, P.D., D'Aunno, T.A., Jin, L., & Alexander, J.A. (2000). Medical and psychosocial services in drug abuse treatment: do stronger linkages promote client utilization? *Health Services Research, 35*(2), 443.

Gabrielian, Sonya, Yuan, Anita H, Andersen, Ronald M, Rubenstein, Lisa 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. *Medical care, 52*(5), 454-461.

Gelberg, L., Gallagher, T.C., Andersen, R.M., & Koegel, P. (1997). Competing priorities as a barrier to medical care among homeless adults in Los Angeles. *American Journal of Public Health, 87*(2), 217-220.

Gelberg, L., & Linn, L. S. (1988). Social and physical health of homeless adults previously treated for mental health problems. *Hosp Community Psychiatry, 39*(5), 510-516.

Gelberg, L., & Linn, L. S. (1989). Assessing the physical health of homeless adults. *JAMA, 262*(14), 1973-1979.

Gelberg, L., & Siecke, N. (1997). Accuracy of homeless adults' self-reports. *Medical Care, 35*(3), 387.

Gerteis, M., Edgeman-Levitan, S. , Daley, J. , & Delbanco, T. . (1993). *Through the patient's eyes: Understanding and promoting patient-centered care*. San Francisco, CA: Jossey-Bass.

Gill, J.M., Mainous III, A.G., & Nsereko, M. (2000). The effect of continuity of care on emergency department use. *Archives of family medicine, 9*(4), 333.

Gillum, L.A., & Johnston, S.C. (2001). Characteristics of academic medical centers and ischemic stroke outcomes. *Stroke, 32*(9), 2137.

Glickman, S.W., Baggett, K.A., Krubert, C.G., Peterson, E.D., & Schulman, K.A. (2007). Promoting quality: the health-care organization from a management perspective. *International Journal for Quality in Health Care, 19*(6), 341.

Goldstein, Marc S, Elliott, Steven D, & Guccione, Andrew A. (2000). The development of an instrument to measure satisfaction with physical therapy. *Physical Therapy, 80*(9), 853-863.

Goldwater, Jason C, Kwon, Nancy J, Nathanson, Ashley, Muckle, Alison E, Brown, Alexa, & Cornejo, Kerri. (2014). The use of open source electronic health records within the federal safety net. *Journal of the American Medical Informatics Association, 21*(2), 280-284.

Goldzweig, C.L., Parkerton, P.H., Washington, D.L., Lanto, A.B., & Yano, E.M. (2004). Primary care practice and facility quality orientation: influence on breast and cervical cancer screening rates. *Am J Manag Care, 10*(4), 265-272.

Gray, Jeremy. (2010). Homelessness rising in Alabama, Birmingham metro area. Retrieved October 15, , from http://blog.al.com/spotnews/2010/06/homelessness_rising_in_alabama.html

Gronvall, J. A. (1987). Medical care of low-income veterans in the VA health care system. *Health Affairs, 6*(1), 167-175.

Groves, R.M., Fowler, F.J., Couper, M.P., Lepkowski, J.M., & Singer, E. (2009). *Survey methodology* (2nd ed.). Hoboken, NJ: John Wiley & Sons Inc.

Grumbach, K., Keane, D., & Bindman, A. (1993). Primary care and public emergency department overcrowding. *American Journal of Public Health, 83*(3), 372.

Guadagnoli, Edward, & Velicer, Wayne F. (1988). Relation to sample size to the stability of component patterns. *Psychological bulletin, 103*(2), 265.

Guidry, JJ, Aday, LA, Zhang, D., & Winn, RJ. (1997). Transportation as a barrier to cancer treatment. *Cancer practice, 5*(6), 361.

Gupta, Diwakar, & Denton, Brian. (2008). Appointment scheduling in health care: Challenges and opportunities. *IIE transactions, 40*(9), 800-819.

Guyatt, GH, Bombardier, C, & Tugwell, PX. (1986). Measuring disease-specific quality of life in clinical trials. *CMAJ: Canadian Medical Association Journal, 134*(8), 889.

Hammermeister, K.E., Shroyer, A.L., Sethi, G.K., & Grover, F.L. (1995). Why it is important to demonstrate linkages between outcomes of care and processes and structures of care. *Medical Care, 33*(10), OS5-OS16.

Han, B., Wells, B.L., & Taylor, A.M. (2003). Use of the Health Care for the Homeless Program services and other health care services by homeless adults. *Journal of Health Care for the Poor and Underserved, 14*(1), 87.

Harrington, Donna. (2008). *Confirmatory factor analysis*. Oxford: Oxford University Press.

Hartman, Catharina A, Hox, Joop, Auerbach, Judith, Erol, Nese, Fonseca, Antonio C, Mellenbergh, Gideon J, . . . Shalev, Ruth S. (1999). Syndrome dimensions of the Child Behavior Checklist and the Teacher Report Form: A critical empirical evaluation. *Journal of Child Psychology and Psychiatry, 40*(7), 1095-1116.

Hasenfeld, Y. (1992). The Nature of Human Service Organizations. In Y. Hasenfeld (Ed.), *Human services as complex organizations*. New Park: Sage.

Hasenfeld, Y., & Richard, A. (1974). *Human service organizations: A book of readings*. Ann Arbor: The University of Michigan Press.

Health Care for the Homeless Clinicians' Network. (2002). Electronic Information Systems In Homeless Health Care. *Healing Hands, 6*, 1-6.

Health Resources and Services Administration. (2012). List of Grantees National Summary for 2008 Healthcare for the Homeless. Retrieved June 1, 2012, from http://bphc.hrsa.gov/healthcenterdatastatistics/nationaldata/2008/SpecialPopulations/Homeless/2008_homeless_grantees.html

Heinzl, Armin, Buxmann, Peter, Wendt, Oliver, & Weitzel, Tim. (2011). *Theory-guided Modeling and Empiricism in Information Systems Research*. London: Springer.

Henderson, B.D. (1989). The origin of strategy. *Harvard business review, 67*(6), 139-143.

Henry, Meghan, Cortes, A, & Morris, S. (2013). The 2013 Annual Homeless Assessment Report (AHAR) to Congress. *Washington: The US Department of Housing and Urban Development*.

Hibbs, J.R., Benner, L., Klugman, L., Spencer, R., Macchia, I., Mellinger, A.K., & Fife, D. (1994). Mortality in a cohort of homeless adults in Philadelphia. *New England Journal of Medicine, 331*(5), 304-309.

Hillestad, Richard, Bigelow, James, Bower, Anthony, Girosi, Federico, Meili, Robin, Scoville, Richard, & Taylor, Roger. (2005). Can electronic medical record systems transform health care? Potential health benefits, savings, and costs. *Health Affairs, 24*(5), 1103-1117.

Hillson, S.D., Katz, M., & Dowd, B. (1994). Effects of a transportation program for Medicaid patients. *Clinical Research, 42*, 417.

Himmelstein, David U, & Woolhandler, Steffie. (1995). Care denied: US residents who are unable to obtain needed medical services. *American Journal of Public Health, 85*(3), 341-344.

Hinkin, Timothy R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational research methods, 1*(1), 104-121.

Hinman, Alan R, Orenstein, Walter A, & Rodewald, Lance. (2004). Financing immunizations in the United States. *Clinical infectious diseases, 38*(10), 1440-1446.

Hitt, M.A., Gimeno, J., & Hoskisson, R.E. (1998). Current and future research methods in strategic management. *Organizational Research Methods, 1*(1), 6.

Horrocks, Sue, Anderson, Elizabeth, & Salisbury, Chris. (2002). Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. *Bmj, 324*(7341), 819-823.

Howard, Richard D. (2007). *Using Mixed Methods in Institutional Research*. Tallahassee,, FL: Association for Institutional Research.

Howe, E.C. (2009). *Health Care Utilization by the Homeless Services Population.* Case Western Reserve University. Retrieved from https://etd.ohiolink.edu/

Hoyle, Rick H. (2000). Confirmatory factor analysis. In Howard Tinsley & Steven Brown (Eds.), *Handbook of applied multivariate statistics and mathematical modeling* (pp. 465-497). San Diego, CA: Academic Press.

HRSA. (2011). What is a health Center? Retrieved November 21, from http://www.bphc.hrsa.gov/about/index.html

Hsu, Meng-Hsiang, & Chiu, Chao-Min. (2004). Internet self-efficacy and electronic service acceptance. *Decision support systems, 38*(3), 369-381.

Hu, Li-tze, & Bentler, Peter M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological methods, 3*(4), 424.

Hulka, B. S., & Cassel, J. C. (1973). The AAFP-UNC study of the organization, utilization, and assessment of primary medical care. *American journal of public health, 63*(6), 494.

Hung, D.Y., Rundall, T.G., Crabtree, B.F., Tallia, A.F., Cohen, D.J., & Halpin, H.A. (2006). Influence of primary care practice and provider attributes on preventive service delivery. *American journal of preventive medicine, 30*(5), 413-422.

Hunter, JK, Ventura, MR, & Kearns, PA. (1998). Cost analysis of a nursing center for the homeless. *Nursing economic$, 17*(1), 20-28.

Hutcheson, G. D. . (2011). Ordinary Least-Squares Regression. In L. Moutinho & G. D. Hutcheson (Eds.), *The SAGE Dictionary of Quantitative Management Research* (pp. 224-228). Thousand Oaks, CA Sage.

Hwang, S.W. (2000). Mortality among men using homeless shelters in Toronto, Ontario. *JAMA, 283*(16), 2152.

Hwang, S.W., & Bugeja, A.L. (2000). Barriers to appropriate diabetes management among homeless people in Toronto. *Canadian Medical Association Journal, 163*(2), 161.

Hwang, S.W., O'Connell, J.J., Lebow, J.M., Bierer, M.F., Orav, E.J., & Brennan, T.A. (2010). Health care utilization among homeless adults prior to death. *Journal of Health Care for the Poor and Underserved, 12*(1), 50-58.

Hwang, S.W., Orav, E.J., O'Connell, J.J., Lebow, J.M., & Brennan, T.A. (1997). Causes of death in homeless adults in Boston. *Annals of Internal Medicine, 126*(8), 625.

Institute of Medicine. (1988). *Homelessness, health, and human needs*. Washington D.C.: National Academies.

Jackson, G.L., Yano, E.M., Edelman, D., Krein, S.L., Ibrahim, M.A., Carey, T.S., . . . Weinberger, M. (2005). Veterans Affairs primary care organizational characteristics associated with better diabetes control. *Am J Manag Care, 11*(4), 225-237.

Jacobson, P.D., & Neumann, P.J. (2009). A framework to measure the value of public health services.

Jaeger, Richard M. (1990). *Statistics: A spectator sport*. Thousand Oaks, CA: Sage.

John, Oliver P, & Benet-Martinez, Victoria. (2000). Measurement: Reliability, construct validation, and scale construction. In Harry T. Reis & Charles M. Judd (Eds.), *Handbook of Research Methods in Social and Personality Psychology*. Cambridge, UK: Cambridge University Press.

Johnson, R.B., & Onwuegbuzie, A.J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher, 33*(7), 14.

Jones, Kohar, Blinkhorn, Laura M, Schumann, Sarah-Anne, & Reddy, Shalini T. (2014). Promoting Sustainable Community Service in the 4th Year of Medical School: A Longitudinal Service-Learning Elective. *Teaching and learning in medicine, 26*(3), 296-303.

Kaiser Commission on Medicaid and the Uninsured. (2012). Medicaid Coverage and Care for the Homeless Population: Key Lessons to Consider for the 2014 Medicaid Expansion Retrieved July 11, 2014 from http://kaiserfamilyfoundation.files.wordpress.com/2013/01/8355.pdf

Kaluzny, A. D., Zuckerman, H. S., & Rabiner, D. J. (1998). Interorganizational factors affecting the delivery of primary care to older Americans. *Health Serv Res, 33*(2 Pt Ii), 381-401.

Kasprow, Wesley J., Rosenheck, Robert A., DiLella, Diane, Cavallero, Leslie A., & Harelik, Nicole. (2009). Health Care for Homeless Veterans Programs: Twenty-Second Annual Report. West Haven, CT: Department of Veterans Affairs Northeast Program Evaluation Center.

Keating, N.L., Landrum, M.B., Landon, B.E., Ayanian, J.Z., Borbas, C., Wolf, R., & Guadagnoli, E. (2004). The influence of physicians' practice management strategies and financial arrangements on quality of care among patients with diabetes. *Medical Care, 42*(9), 829-839.

Keats, Barbara, & O'Neill, Hugh M. (2005). Organizational structure: Looking through a strategy lens. In Michael A. Hitt, R. Edward Freeman & Jeffrey S. Harrison (Eds.), *The Blackwell Handbook of Strategic Management* (pp. 537). Malden, MA: Wiley-Blackwell.

Kenney, Genevieve M, Saloner, Brendan, Anderson, Nathaniel, Polsky, Daniel, & Rhodes, Karin. (2014). Access to Care for Low-Income Medicaid and Privately Insured Adults in 2012 in the National Health Interview Survey: A Context for Findings from a New Audit Study. *Washington, DC: The Urban Institute*.

Kertesz, S. G. (2008). Relationship between primary care organizational characteristics and degree of homeless customization. In Kertesz-PCCustomization.Model (Ed.).

Kertesz, S. G., Holt, Cheryl L., Steward, Jocelyn L., Jones, Richard N., Roth, David L., Stringfellow, Erin, . . . Pollio, David E. (2013). Comparing Homeless Persons' Care Experiences in Tailored Versus Nontailored Primary Care Programs. *American Journal of Public Health, 103*(S2), S331-S339. doi: 10.2105/AJPH.2013.301481

Kertesz, S. G., Hwang, S.W., Irwin, J., Ritchey, F. J., & Lagory, M. E. (2009). Rising inability to obtain needed health care among homeless persons in Birmingham, Alabama (1995-2005). *J Gen Intern Med, 24*(7), 841-847. doi: 10.1007/s11606-009-0990-0

Kertesz, S. G., McNeil, Whitney, Cash, Julie J, Desmond, Renee, McGwin Jr, Gerald, Kelly, Jason, & Baggett, Travis P. (2014). Unmet need for medical care and safety net accessibility among Birmingham's homeless. *Journal of Urban Health, 91*(1), 33-45.

Kertesz, S., Pollio, David E., Jones, Richard N, Steward, Jocelyn L, Stringfellow, Erin, Gordon, Adam J, . . . Holt, Cheryl L. (in press). 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.

Kim, M. M., Swanson, J. W., Swartz, M. S., Bradford, D. W., Mustillo, S. A., & Elbogen, E. B. (2007). Healthcare barriers among severely mentally ill homeless adults: evidence from the five-site health and risk study. *Adm Policy Ment Health, 34*(4), 363-375.

Kim, T. W., Kertesz, S. G., Horton, N. J., Tibbetts, N., & Samet, J. H. (2006). Episodic homelessness and health care utilization in a prospective cohort of HIV-infected persons with alcohol problems. *BMC Health Serv Res, 6*, 19.

Kinchen, K., & Wright, J.D. (1991). Hypertension management in health care for the homeless clinics: results from a survey. *American Journal of Public Health, 81*(9), 1163.

King, T.B., & Gibson, G. (2003). Oral health needs and access to dental care of homeless adults in the United States: a review. *Special Care in Dentistry, 23*(4), 143-147.

Kizer, K.W., & Dudley, R.A. (2009). Extreme makeover: transformation of the veterans health care system. *Annual review of public health, 30*, 313-339.

Kizer, K.W., Fonseca, M. L., & Long, L. M. (1997). The veterans healthcare system: preparing for the twenty-first century. *Hosp Health Serv Adm, 42*(3), 283-298.

Kizer, K.W., & Pane, G. A. (1997). The "new VA": delivering health care value through integrated service networks. *Ann Emerg Med, 30*(6), 804-807. doi: S0196-0644(97)70053-2 [pii]

Kleinman, L.C., Freeman, H., Perlman, J., & Gelberg, L. (1996). Homing in on the homeless: assessing the physical health of homeless adults in Los Angeles County using an original method to obtain physical examination data in a survey. *Health services research, 31*(5), 533.

Krebsbach, Craig Michael. (2014). *Bootstrapping with small samples in structural equation modeling: Goodness of fit and confidence intervals.* University of Rhode Island.

Krist, Alex H, Beasley, John W, Crosson, Jesse C, Kibbe, David C, Klinkman, Michael S, Lehmann, Christoph U, . . . Pace, Wilson D. (2014). Electronic health record functionality needed to better support primary care. *Journal of the American Medical Informatics Association*, 1-8.

Krumholz, H.M., Currie, P.M., Riegel, B., Phillips, C.O., Peterson, E.D., Smith, R., . . . Faxon, D.P. (2006). A taxonomy for disease management. *Circulation, 114*(13), 1432-1445.

Ku, Bon S, Scott, Kevin C, Kertesz, S. G., & Pitts, Stephen R. (2010). Factors associated with use of urban emergency departments by the US homeless population. *Public Health Reports, 125*(3), 398.

Kushel, Margot B, Vittinghoff, Eric, & Haas, Jennifer S. (2001). Factors associated with the health care utilization of homeless persons. *JAMA, 285*(2), 200-206.

Kutner, Jean S, Steiner, John F, Corbett, Kitty K, Jahnigen, Dennis W, & Barton, Phoebe L. (1999). Information needs in terminal illness. *Social science & medicine, 48*(10), 1341-1352.

Laine, C., Lin, Y. T., Hauck, W. W., & Turner, B. J. (2005). Availability of medical care services in drug treatment clinics associated with lower repeated emergency department use. *Med Care, 43*(10), 985-995.

Lang, T., Davido, A., Diakité, B., Agay, E., Viel, J.F., & Flicoteaux, B. (1997). Using the hospital emergency department as a regular source of care. *European journal of epidemiology, 13*(2), 223-228.

LaPelle, Nancy R, Luckmann, Roger, Simpson, E Hatheway, & Martin, Elaine R. (2006). Identifying strategies to improve access to credible and relevant information for public health professionals: a qualitative study. *BMC public health, 6*(1), 89.

Larimer, Mary E, Malone, Daniel K, Garner, Michelle D, Atkins, David C, Burlingham, Bonnie, Lonczak, Heather S, . . . Hobson, William G. (2009). Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. *JAMA, 301*(13), 1349-1357.

Leatt, Peggy, Shortell, S.M., & Kimberly, John R. . (1997). Organization Design. In Stephen Michael Shortell & Arnold D. Kaluzny (Eds.), *Essentials of Health Care Management* (pp. 274-306). Albany: Delmar.

Lee, T.C., Hanlon, J.G., Ben-David, J., Booth, G.L., Cantor, W.J., Connelly, P.W., & Hwang, S.W. (2005). Risk factors for cardiovascular disease in homeless adults. *Circulation, 111*(20), 2629.

Leginski, W. (2007). *Historical and Contextual Influences on the US Response to Contemporary Homelessness.* Paper presented at the The 2007 National Symposium on Homelessness Research.

Levine, David M, Becker, Diane M, Bone, Lee R, Hill, Martha N, Tuggle, Melvin B, & Zeger, Scott L. (1994). Community-academic health center partnerships for underserved minority populations: one solution to a national crisis. *JAMA, 272*(4), 309-311.

Levy, B.D., & O'Connell, J.J. (2004). Health care for homeless persons. *New England Journal of Medicine, 350*(23), 2329-2332.

Lonigan, Christopher J, Hooe, Eric S, David, Corinne F, & Kistner, Janet A. (1999). Positive and negative affectivity in children: Confirmatory factor analysis of a two-factor model and its relation to symptoms of anxiety and depression. *Journal of Consulting and Clinical Psychology, 67*(3), 374.

Lowe, Robert A, Localio, A Russell, Schwarz, Donald F, Williams, Sankey, Tuton, Lucy Wolf, Maroney, Staci, . . . Feldman, Harold I. (2005). Association between primary care practice characteristics and emergency department use in a Medicaid managed care organization. *Medical care*, *43*(8), 792-800.

Lukas, Carol VanDeusen, Holmes, Sally K, Cohen, Alan B, Restuccia, Joseph, Cramer, Irene E, Shwartz, Michael, & Charns, Martin P. (2007). Transformational change in health care systems: an organizational model. *Health care management review*, *32*(4), 309-320.

Macario, Alex, Weinger, Matthew, Carney, Stacie, & Kim, Ann. (1999). Which clinical anesthesia outcomes are important to avoid? The perspective of patients. *Anesthesia & Analgesia, 89*(3), 652.

Macnee, C.L., & McCabe, S. (2004). Satisfaction with care among homeless patients: Development and testing of a measure. *Journal of community health nursing*, *21*(3), 167-178.

Maiti, Sadhan Samar, & Mukherjee, Bishwa Nath. (1991). Two new goodness-of-fit indices for covariance matrices with linear structures. *British Journal of Mathematical and Statistical Psychology*, *44*(1), 153-180.

Mandelberg, J.H., Kuhn, R.E., & Kohn, M.A. (2000). Epidemiologic analysis of an urban, public emergency department's frequent users. *Academic Emergency Medicine*, *7*(6), 637-646.

Manser, T. (2009). Teamwork and patient safety in dynamic domains of healthcare: a review of the literature. *Acta Anaesthesiologica Scandinavica*, *53*(2), 143-151.

Mares, A.S., Greenberg, G.A., & Rosenheck, Robert A. (2008). Client-level measures of services integration among chronically homeless adults. *Community mental health journal*, *44*(5), 367-376.

Mares, A.S., & Rosenheck, Robert A. (2011). A comparison of treatment outcomes among chronically homelessness adults receiving comprehensive housing and health care services versus usual local care. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(6), 459-475.

Marsh, Herbert W, & Balla, John. (1994). Goodness of fit in confirmatory factor analysis: The effects of sample size and model parsimony. *Quality and Quantity, 28*(2), 185-217.

Martell, J.V., Seitz, R.S., Harada, J.K., Kobayashi, J., Sasaki, V.K., & Wong, C. (1992). Hospitalization in an urban homeless population: the Honolulu Urban Homeless Project. *Annals of internal medicine, 116*(4), 299.

Masaoka, J., & Allison, M. (1995). Why Boards Don't Govern *Taking Trusteeship Seriously*. Indianapolis:: Indiana University Center on Philanthropy.

McAlearney, J.S. (2002). The financial performance of community health centers, 1996–1999. *Health Affairs, 21*(2), 219.

McCrae, Robert R, Zonderman, Alan B, Costa Jr, Paul T, Bond, Michael H, & Paunonen, Sampo V. (1996). Evaluating replicability of factors in the Revised NEO Personality Inventory: Confirmatory factor analysis versus Procrustes rotation. *Journal of Personality and Social Psychology, 70*(3), 552.

McDaniel, Reuben R, & Driebe, Dean J. (2001). Complexity science and health care management. *Advances in health care management, 2*, 11-36.

McDaniel, Susan H, Grus, Catherine L, Cubic, Barbara A, Hunter, Christopher L, Kearney, Lisa K, Schuman, Catherine C, . . . McCutcheon, Stephen. (2014). Competencies for psychology practice in primary care. *American Psychologist, 69*(4), 409.

McGeary, K.A., & French, M.T. (2000). Illicit drug use and emergency room utilization. *Health Services Research, 35*(1 Pt 1), 153.

McGuire, J., Gelberg, L., Blue-Howells, J., & Rosenheck, Robert A. (2009). Access to primary care for homeless veterans with serious mental illness or substance abuse: a follow-up evaluation of co-located primary care and homeless social services. *Administration and Policy in Mental Health and Mental Health Services Research, 36*(4), 255-264.

McGuire, J., Rosenheck, Robert A., & Kasprow, W. J. (2003). Health status, service use, and costs among veterans receiving outreach services in jail or community settings. *Psychiatr Serv, 54*(2), 201-207.

McIlvain, Helen E, Backer, Elisabeth L, Crabtree, Benjamin F, & Lacy, Naomi. (2002). Physician attitudes and the use of office-based activities for tobacco control. *Family medicine, 34*(2), 114-119.

McMurray-Avila, M. (2001). Organizing health services for homeless people: A practical guide. Nashville, TN: National Health Care for the Homeless Council.

McMurray-Avila, M., Gelberg, L., & Breakey, W.R. (1999). *Balancing Act, Clinical Practices That Respond to the Needs of Homeless People*. 1998 National Symposium on Homelessness Research Washington D.C.

McVea, Kristine, Crabtree, Benjamin F, Medder, Jim D, Susman, Jeffrey L, Lukas, Lou, McIlvain, Helen E, . . . Hawver, Marlene. (1996). An ounce of prevention? Evaluation of the'Put Prevention into Practice'program. *The Journal of family practice, 43*(4), 361-369.

Mead, N., & Bower, P. (2000). Patient-centredness: a conceptual framework and review of the empirical literature. *Social Science and Medicine, 51*(7), 1087-1110.

Mechanic, D. (1997). Approaches for coordinating primary and specialty care for persons with mental illness. *General hospital psychiatry, 19*(6), 395-402.

Meigs, James B, Cagliero, Enrico, Dubey, Anil, Murphy-Sheehy, Patricia, Gildesgame, Catharyn, Chueh, Henry, . . . Nathan, David M. (2003). A Controlled Trial of Web-Based Diabetes Disease Management The MGH Diabetes Primary Care Improvement Project. *Diabetes Care, 26*(3), 750-757.

Menear, Matthew, Duhoux, Arnaud, Roberge, Pasquale, & Fournier, Louise. (2014). Primary care practice characteristics associated with the quality of care received by patients with depression and comorbid chronic conditions. *General hospital psychiatry, 36*(3), 302-309.

Merrill, J., Keeling, J., & Gebbie, K. (2009). Toward standardized, comparable public health systems data: A taxonomic description of essential public health work. *Health Serv Res, 44*(5 Pt 2), 1818-1841.

Messick, Samuel. (1990). Validity of test interpretation and use. Princeton, NJ: Educational Testing Center

Miller, William L, Crabtree, Benjamin F, McDaniel, Reuben, & Stange, Kurt C. (1998). Understanding change in primary care practice using complexity theory. *The Journal of family practice, 46*(5), 369-376.

Miranda, J., Azocar, F., Komaromy, M., & Golding, J.M. (1998). Unmet mental health needs of women in public-sector gynecologic clinics. *American Journal of Obstetrics and Gynecology, 178*(2), 212-217.

Moore, Carlton, Wisnivesky, Juan, Williams, Stephen, & McGinn, Thomas. (2003). Medical errors related to discontinuity of care from an inpatient to an outpatient setting. *Journal of General Internal Medicine, 18*(8), 646-651.

Mortensen, Karoline. (2014). Access to Primary and Specialty Care and Emergency Department Utilization of Medicaid Enrollees Needing Specialty Care. *Journal of health care for the poor and underserved, 25*(2), 801-813.

Mueser, Kim T, Bond, Gary R, Drake, Robert E, & Resnick, Sandra G. (1998). Models of community care for severe mental illness. *Schizophrenia bulletin, 24*(1), 37-74.

Munson, J Michael, & McIntyre, Shelby H. (1979). Developing practical procedures for the measurement of personal values in cross-cultural marketing. *Journal of Marketing Research*, 48-52.

National Association of Free & Charitable Clinics. (2014). About Us. Retrieved July 1, 2014, from http://nafcclinics.org/about-us

National Health Care for the Homeless Council. (2014). Medicaid expansion improving health & stability, reducing costs & homelessness. Retrieved July 10, 2014, from http://www.nhchc.org/wp-content/uploads/2013/02/NHCHC-Medicaid-Expansion-Position-Paper.pdf

Needleman, Jack, Buerhaus, Peter, Mattke, Soeren, Stewart, Maureen, & Zelevinsky, Katya. (2002). Nurse-staffing levels and the quality of care in hospitals. *New England Journal of Medicine, 346*(22), 1715-1722.

Nelson, E.C., Batalden, P.B., Huber, T., Mohr, J.J., Godfrey, M.M., Headrick, L.A., & Wasson, J.H. (2002). Microsystems in health care: Part 1. Learning from highperforming front-line clinical units. *Joint Commission Journal on Quality and Patient Safety, 28*(9), 472-493.

Nevo, Baruch. (1985). Face validity revisited. *Journal of Educational Measurement, 22*(4), 287-293.

Nickasch, Bonnie, & Marnocha, Suzanne K. (2009). Healthcare experiences of the homeless. *Journal of the American Academy of Nurse Practitioners, 21*(1), 39-46.

Nordentoft, M., & Wandall-Holm, N. (2003). 10 year follow up study of mortality among users of hostels for homeless people in Copenhagen. *BMJ, 327*(7406), 81.

Nutting, Paul A, Rost, Kathryn, Dickinson, Miriam, Werner, James J, Dickinson, Perry, Smith, Jeffrey L, & Gallovic, Beth. (2002). Barriers to initiating depression treatment in primary care practice. *Journal of General Internal Medicine, 17*(2), 103-111.

O'Connell, J.J. (2004). Dying in the shadows: the challenge of providing health care for homeless people. *CMAJ, 170*(8), 1251-1252.

O'Connell, J.J. (2005). Premature mortality in homeless populations: a review of the literature. Nashville, TN: Nashville: National Health Care for the Homeless Council.

O'Toole, T.P., Buckel, L., Bourgault, C., Blumen, J., Redihan, S.G., Jiang, L. , & Friedmann, P.D. (2010). Applying the chronic care model to homeless veterans: effect of a population approach to primary care on utilization and clinical outcomes. *American Journal of Public Health, 100*(12), 2493-2499.

O'Toole, Thomas P, Bourgault, Claire, Johnson, Erin E, Redihan, Stephen G, Borgia, Matthew, Aiello, Riccardo, & Kane, Vincent. (2013). New to Care: Demands on a Health System When Homeless Veterans Are Enrolled in a Medical Home Model. *American journal of public health, 103*(S2), S374-S379.

Okin, R.L., Boccellari, A., Azocar, F., Shumway, M., O'Brien, K., Gelb, A., . . . Wachsmuth, C. (2000). The effects of clinical case management on hospital service use among ED frequent users 1. *The American journal of emergency medicine, 18*(5), 603-608.

Olfson, Mark, Kroenke, Kurt, Wang, Shuai, & Blanco, Carlos. (2014). Trends in office-based mental health care provided by psychiatrists and primary care physicians. *The Journal of clinical psychiatry, 75*(3), 247-253.

Onwuegbuzie, Anthony J, & Johnson, R Burke. (2006). The validity issue in mixed research. *Research in the Schools, 13*(1), 48-63.

Orzano, A.J., Tallia, A.F., Nutting, P.A., Scott-Cawiezell, J., & Crabtree, B.F. (2006). Are Attributes of Organizational Performance in Large Health Care Organizations Relevant in Primary Care Practices? *Health Care Management Review, 31*(1), 2.

Padgett, D. (2008). *Qualitative methods in social work research* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Padgett, D., Struening, E.L., Andrews, H., & Pittman, J. (1995). Predictors of emergency room use by homeless adults in New York City: the influence of predisposing, enabling and need factors. *Social Science & Medicine, 41*(4), 547-556.

Padgett, D., & Struening, EL. (1992). Victimization and traumatic injuries among the homeless: associations with alcohol, drug, and mental problems. *American Journal of Orthopsychiatry, 62*(4), 525-534.

Parker, James DA, Bagby, R Michael, & Summerfeldt, Laura J. (1993). Confirmatory factor analysis of the Revised NEO Personality Inventory. *Personality and Individual Differences, 15*(4), 463-466.

Patient Protection and Affordable Care Act. (2010). 42 U.S.C § 18001.

Patrick, K., Griswold, W.G., Raab, F., & Intille, S.S. (2008). Health and the mobile phone. *American journal of preventive medicine, 35*(2), 177.

Perl, Libby. (2013). Veterans and homelessness (pp. 1-42). Washington, DC: Congressional Research Service.

Post, P.A. (2001). Casualties of Complexity: Why Eligible Homeless People Are Not Enrolled in Medicaid. Nashville, TN: National Health Care for the Homeless Council.

Preacher, Kristopher J, & MacCallum, Robert C. (2002). Exploratory factor analysis in behavior genetics research: Factor recovery with small sample sizes. *Behavior genetics, 32*(2), 153-161.

Pronovost, P.J., Jenckes, M.W., Dorman, T., Garrett, E., Breslow, M.J., Rosenfeld, B.A., . . . Bass, E. (1999). Organizational characteristics of intensive care units related to outcomes of abdominal aortic surgery. *JAMA: the journal of the American Medical Association, 281*(14), 1310.

Provan, K.G., Sebastian, J.G., & Milward, H.B. (1996). Interorganizational cooperation in community mental health: A resource-based explanation of referrals and case coordination. *Medical Care Research and Review, 53*(1), 94.

Pulliam, Lucille. (1991). Client satisfaction with a nurse-managed clinic. *Journal of Community Health Nursing, 8*(2), 97-112.

Quinn, J. (1992). The intelligent enterprise: A new paradigm. *Academy of Management Executive, 6*(4), 48-63.

Ramsay, Jean, Campbell, John L, Schroter, Sara, Green, Judith, & Roland, Martin. (2000). The General Practice Assessment Survey (GPAS): tests of data quality and measurement properties. *Family Practice, 17*(5), 372-379.

Rao, Nirmala, & Sachs, John. (1999). Confirmatory factor analysis of the Chinese version of the Motivated Strategies for Learning Questionnaire. *Educational and Psychological Measurement, 59*(6), 1016-1029.

Rask, K.J., Williams, M.V., Parker, R.M., & McNagny, S.E. (1994). Obstacles predicting lack of a regular provider and delays in seeking care for patients at an urban public hospital. *JAMA, 271*(24), 1931.

Rattray, Janice, & Jones, Martyn C. (2007). Essential elements of questionnaire design and development. *Journal of clinical nursing, 16*(2), 234-243.

Reynolds, Arthur J, & Lee, Jason S. (1991). Factor analyses of measures of home environment. *Educational and psychological measurement, 51*(1), 181-192.

Reynolds, Jared, Zeng, Zhen, Li, Jingshan, & Chiang, Shu-Yin. (2010). Design and analysis of a health care clinic for homeless people using simulations. *International journal of health care quality assurance, 23*(6), 607-620.

Rittenhouse, D.R., Casalino, L.P., Gillies, R.R., Shortell, S.M., & Lau, B. (2008). Measuring the medical home infrastructure in large medical groups. *Health Affairs, 27*(5), 1246.

Roberts, KT, Robinson, KM, Stewart, C., & Smith, F. (2009). An integrated mental health clinical rotation. *The Journal of nursing education, 48*(8), 454.

Rosenheck, Robert A., Kasprow, W., Frisman, L., & Liu-Mares, W. (2003). Cost-effectiveness of supported housing for homeless persons with mental illness. *Archives of General Psychiatry, 60*(9), 940-951.

Rosenheck, Robert A., & Seibyl, C.L. (1998). Homelessness: health service use and related costs. *Medical care, 36*(8), 1256.

Rosenthal, T.C. (2008). The medical home: growing evidence to support a new approach to primary care. *The Journal of the American Board of Family Medicine, 21*(5), 427.

Ross, Stephen E, & Lin, Chen-Tan. (2003). The effects of promoting patient access to medical records: a review. *Journal of the American Medical Informatics Association, 10*(2), 129-138.

Roth, David L, Wiebe, Deborah J, Fillingim, Roger B, & Shay, Kathleen A. (1989). Life events, fitness, hardiness, and health: a simultaneous analysis of proposed stress-resistance effects. *Journal of Personality and Social Psychology, 57*(1), 136.

Rothgeb, Jennifer, Willis, Gordon, & Forsyth, Barbara. (2001). *Questionnaire pretesting methods: Do different techniques and different organizations produce similar results.* Paper presented at the Proceedings of the Annual Meeting of the American Statistical Association.

Russell, Grant M, Dahrouge, Simone, Hogg, William, Geneau, Robert, Muldoon, Laura, & Tuna, Meltem. (2009). Managing chronic disease in Ontario primary care: the impact of organizational factors. *The Annals of Family Medicine, 7*(4), 309-318.

Rust, George, Daniels, Elvan, Satcher, David, Bacon, Janice, Strothers, Harry, & Bornemann, Thomas. (2005). Ability of community health centers to obtain mental health services for uninsured patients. *JAMA, 293*(5), 550-556.

Sadowski, Laura S, Kee, Romina A, VanderWeele, Tyler J, & Buchanan, David. (2009). Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: a randomized trial. *JAMA, 301*(17), 1771-1778.

Safran, Dana Gelb, Kosinski, Mark, Tarlov, Alvin R, Rogers, William H, Taira, Deborah A, Lieberman, Naomi, & Ware, John E. (1998). The Primary Care Assessment Survey: tests of data quality and measurement performance. *Medical care, 36*(5), 728-739.

Safran, Dana Gelb, Rogers, William H, Tarlov, Alvin R, Inui, Thomas, Taira, Deborah A, Montgomery, Jana E, . . . Slavin, Charles P. (2000). Organizational and financial characteristics of health plans: are they related to primary care performance? *Archives of Internal Medicine, 160*(1), 69-76.

Saitz, R., Larson, M.J., Horton, N.J., Winter, M., & Samet, J.H. (2004). Linkage with primary medical care in a prospective cohort of adults with addictions in inpatient detoxification: Room for improvement. *Health services research, 39*(3), 587-606.

Samet, J.H., Friedmann, P.D., & Saitz, R. (2001). Benefits of linking primary medical care and substance abuse services: patient, provider, and societal perspectives. *Archives of Internal Medicine, 161*(1), 85.

Sashkin, M. (1989). Visionary leadership: A perspective from education. *Contemporary issues in leadership. Bolder: Westview*.

Savage, Christine L, Lindsell, Christopher J, Gillespie, Gordon L, Dempsey, Anita, Lee, Roberta J, & Corbin, Adele. (2006). Health care needs of homeless adults at a nurse-managed clinic. *Journal of community health nursing, 23*(4), 225-234.

Schroeder, Knut, Fahey, Tom, & Ebrahim, Shah. (2004). How Can We Improve Adherence to Blood Pressure–Lowering Medication in Ambulatory Care?: Systematic Review of Randomized Controlled Trials. *Archives of internal medicine, 164*(7), 722-732.

Schumacher, J.E., Milby, J.B., Wallace, D., Meehan, D.C., Kertesz, S. G., Vuchinich, R., . . . Usdan, S. (2007). Meta-analysis of day treatment and contingency-management dismantling research: Birmingham Homeless Cocaine Studies (1990-2006). *Journal of consulting and clinical psychology*, *75*(5), 823.

Scott, J Tim, Rundall, Thomas G, Vogt, Thomas M, & Hsu, John. (2005). Kaiser Permanente's experience of implementing an electronic medical record: a qualitative study. *Bmj, 331*(7528), 1313-1316.

Shortell, S. M., Schmittdiel, J., Wang, M. C., Li, R., Gillies, R. R., Casalino, L. P., . . . Rundall, T. G. (2005). An empirical assessment of high-performing medical groups: results from a national study. *Medical care research and Review*, *62*(4), 407.

Shortell, S.M. (1999). The emergence of qualitative methods in health services research. *Health Services Research, 34*(5 Pt 2), 1083.

Shortell, S.M., Bennett, Charles L, & Byck, Gayle R. (1998). Assessing the impact of continuous quality improvement on clinical practice: what it will take to accelerate progress. *Milbank quarterly*, *76*(4), 593-624.

Shortell, S.M., & LoGerfo, J.P. (1981). Hospital medical staff organization and quality of care: results for myocardial infarction and appendectomy. *Medical Care*, 1041-1055.

Shortell, S.M., Richardson, W.C., LoGerfo, J.P., Diehr, P., & Weaver, B. (1977). The relationships among dimensions of health services in two provider systems: a causal model approach. *Journal of health and Social Behavior*, 139-159.

Shortell, S.M., Rousseau, D.M., Gillies, R.R., Devers, K.J., & Simons, T.L. (1991). Organizational assessment in intensive care units (ICUs): construct development, reliability, and validity of the ICU nurse-physician questionnaire. *Medical Care*, 709-726.

Shortell, S.M., Zazzali, James L, Burns, Lawton R, Alexander, Jeffery A, Gillies, Robin R, Budetti, Peter P, . . . Zuckerman, Howard S. (2001). Implementing evidence-based medicine: the role of market pressures, compensation incentives, and culture in physician organizations. *Medical care*, I62-I78.

Shortell, S.M., Zimmerman, J.E., Rousseau, D.M., Gillies, R.R., Wagner, D.P., Draper, E.A., . . . Duffy, J. (1994). The performance of intensive care units: does good management make a difference? *Medical Care, 32*(5), 508-525.

Shortt, SED, Hwang, S.W., Stuart, H., Bedore, M., Zurba, M., & Darling, M. (2008). Delivering primary care to homeless persons: a policy analysis approach to evaluating the options. *Healthc Policy, 4*(1), 108-122.

Silber, Jeffrey H, Rosenbaum, Paul R, Schwartz, J Sanford, Ross, Richard N, & Williams, Sankey V. (1995). Evaluation of the complication rate as a measure of quality of care in coronary artery bypass graft surgery. *JAMA, 274*(4), 317-323.

Singer, Eleanor. (2006). Introduction Nonresponse Bias in Household Surveys. *Public Opinion Quarterly, 70*(5), 637-645.

Solberg, L.I., Asche, S.E., Pawlson, L.G., Scholle, S.H., & Shih, S.C. (2008). Practice systems are associated with high-quality care for diabetes. *The American journal of managed care, 14*(2), 85.

Stafford, Randall S, Saglam, Demet, Causino, Nancyanne, Starfield, Barbara, Culpepper, Larry, Marder, William D, & Blumenthal, David. (1999). Trends in adult visits to primary care physicians in the United States. *Archives of family medicine, 8*(1), 26.

Stapleton, Connie D. (1997). Basic Concepts in Exploratory Factor Analysis (EFA) as a Tool To Evaluate Score Validity: A Right-Brained Approach.

Starfield, B. (1986). Primary care in the United States. *Int J Health Serv, 16*(2), 179-198.

Starfield, B. (1998). *Primary care: balancing health needs, services, and technology*: Oxford University Press, USA.

Starfield, B., Simborg, D., Johns, C., & Horn, S. (1977). Coordination of care and its relationship to continuity and medical records. *Medical Care*, 929-938.

Steinhauser, Karen E, Christakis, Nicholas A, Clipp, Elizabeth C, McNeilly, Maya, McIntyre, Lauren, & Tulsky, James A. (2000). Factors considered important at the end of life by patients, family, physicians, and other care providers. *Jama, 284*(19), 2476-2482.

Stewart, A.L., Hays, R.D., & Ware Jr, J.E. (1988). The MOS short-form general health survey. Reliability and validity in a patient population. *Medical Care, 26*(7), 724.

Streiner, David L. (1994). Figuring Out Factors: The Use and Misuse of Factor Analysis. *Can. J. Psychiatry, 39*, 6.

Streiner, David L, & Norman, Geoffrey R. (2008). *Health measurement scales: a practical guide to their development and use*. Oxford: Oxford university press.

Sue, S. (1977). Community mental health services to minority groups: Some optimism, some pessimism. *American Psychologist; American Psychologist, 32*(8), 616.

Sue, S., Fujino, D.C., Hu, L., Takeuchi, D.T., & Zane, N.W.S. (1991). Community mental health services for ethnic minority groups: A test of the cultural responsiveness hypothesis. *Journal of Consulting and Clinical Psychology; Journal of Consulting and Clinical Psychology, 59*(4), 533.

Suhr, Diana D. (2005). *Principal component analysis vs. exploratory factor analysis.* Paper presented at the Thirtieth Annual SAS User Group International Conference, Philadelphia, PA.

Suhr, Diana D. (2006). *Exploratory or confirmatory factor analysis?* Paper presented at the Thirty-first Annual SAS Users Group International Conference, Cary, NC.

Szilagyi, Peter G, Roghmann, Klaus J, Campbell, James R, Humiston, Sharon G, Winter, Nancy L, Raubertas, Richard F, & Rodewald, Lance E. (1994). Immunization practices of primary care practitioners and their relation to immunization levels. *Archives of pediatrics & adolescent medicine, 148*(2), 158-166.

Tallia, A.F., Stange, K.C., McDaniel Jr, R.R., Aita, V.A., Miller, W.L., & Crabtree, B.F. (2003). Understanding organizational designs of primary care practices. *Journal of healthcare management, 48*(1), 45.

Tarczy-Hornoch, P, Kwan-Gett, TS, Fouche, L, Hoath, J, Fuller, S, Ibrahim, KN, . . . Goldberg, HI. (1997). *Meeting clinician information needs by integrating access to the medical record and knowledge resources via the Web.* Paper presented at the AMIA Annual Fall Symposium, Nashville TN.

Taylor, J., Blue, I., & Misan, G. (2001). Approach to sustainable primary health care service delivery for rural and remote South Australia. *Australian Journal of Rural Health, 9*(6), 304-310.

Teddlie, Charles, & Tashakkori, Abbas. (2003). Major issues and controveries inthe use of mixed methods in the social and behvioral sciences. In Abbas Tashakkori & Deborah A Taira (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 3-50). Thousand Oaks, CA: Sage Publications, Inc. .

Thomas, David R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation, 27*(2), 237-246.

Tommasello, A. C., Gillis, L. M., Lawler, J. T., & Bujak, G. J. (2006). Characteristics of homeless HIV-positive outreach responders in urban US and their success in primary care treatment. *AIDS Care, 18*(8), 911-917.

Torrey, E.F. (1991). Who goes homeless? *National Review, 43*(15), 34-36.

Toutkoushian, R. (2005). Regression analysis for institutional research. In Mary Ann Coughlin (Ed.), *Applications of intermediate/advanced statistics in institutional research* (pp. 89–109). Tallahassee, FL: Association of Institutional Research.

Tremblay, Marc-Adelard. (1957). The key informant technique: A nonethnographic application. *American Anthropologist, 59*(4), 688-701.

Tsai, M., Gee, L., Weintraub, R., & Kushel, M. (2005). Identifying homelessness at an urban public hospital: a moving target? *Journal of health care for the poor and underserved, 16*(2), 297-307.

Tsemberis, Sam, Gulcur, Leyla, & Nakae, Maria. (2004). Housing first, consumer choice, and harm reduction for homeless individuals with a dual diagnosis. *Journal Information, 94*(4).

Tyrance Jr, PH, Himmelstein, D.U., & Woolhandler, S. (1996). US emergency department costs: no emergency. *American journal of public health, 86*(11), 1527.

Vacek, P.M., Ashikaga, T., Mabry, J.H., & Brown, J.P. (1978). A Model for Health Care Delivery: With an Illustration of Its Application. *Medical Care, 16*(7), 547-559.

Van den Hombergh, P., Grol, R., Van Den Hoogen, HJ, & Van Den Bosch, WJ. (1998). Assessment of management in general practice: validation of a practice visit method. *The British Journal of General Practice, 48*(436), 1743.

Van Maanen, J. (1979). Reclaiming qualitative methods for organizational research: A preface. *Administrative Science Quarterly, 24*(4), 520-526.

Van Prooijen, Jan-Willem, & Van Der Kloot, Willem A. (2001). Confirmatory analysis of exploratively obtained factor structures. *Educational and Psychological Measurement, 61*(5), 777-792.

van Wijk, C.M.T., Van Vliet, K.P., & Kolk, A.M. (1996). Gender perspectives and quality of care: towards appropriate and adequate health care for women. *Social Science & Medicine, 43*(5), 707-720.

Vance, C., & Larson, E. (2002). Leadership research in business and health care. *Journal of Nursing Scholarship, 34*(2), 165-171.

Vassend, Olav, & Skrondal, Anders. (1997). Validation of the NEO Personality Inventory and the five-factor model. Can findings from exploratory and confirmatory factor analysis be reconciled? *European Journal of Personality, 11*(2), 147-166.

Vestal, K.W., Fralicx, R.D., & Spreier, S.W. (1997). Organizational culture: the critical link between strategy and results. *Hospital & health services administration, 42*(3), 339.

Veterans Affairs, Department of. (2009). Secretary Shinseki Details Plans to End Homelessness for Veterans. Retrieved June 15, 2011, from http://www.va.gov/opa/pressrel/pressrelease.cfm?id=1807

Veterans Affairs, Department of. (2011). About VHA. Retrieved November 1, 2011, from http://www.va.gov/health/aboutVHA.asp

Veterans Affairs, Department of (2009). VA Benefits in Brief. Retrieved November 1, 2911, from http://www.vba.va.gov/pubs/forms/vba-21-0760-are.pdf

VHA Media Management. (2014). About VHA - Veterans Health Administration Retrieved July 5, 2014, from http://www.va.gov/health/aboutVHA.asp

Wagner, Edward H, Grothaus, Louis C, Sandhu, Nirmala, Galvin, Mary Sue, McGregor, Mary, Artz, Karen, & Coleman, Eric A. (2001). Chronic Care Clinics for Diabetes in Primary Care A system-wide randomized trial. *Diabetes care, 24*(4), 695-700.

Waldman, J.D., Kelly, F., Aurora, S., & Smith, H.L. (2004). The shocking cost of turnover in health care. *Health Care Management Review, 29*(1), 2.

Walker, G. (1997). Common Statistical Methods for Clinical Research With SAS Examples. Cary, NC: SAS Institute: Inc.

Walker, H., Symon, G. , & Davies, B. . (1996). Assessing Organizational Culture: A Comparison of Methods. *International Journal of Selection and Assessment 4*(7), 96-105.

Walls, C.A., Rhodes, K.V., & Kennedy, J.J. (2002). The emergency department as usual source of medical care: estimates from the 1998 National Health Interview Survey. *Academic Emergency Medicine, 9*(11), 1140-1145.

Washington, Donna L, Bean-Mayberry, Bevanne, Riopelle, Deborah, & Yano, E.M. (2011). Access to care for women veterans: delayed healthcare and unmet need. *Journal of general internal medicine, 26*(2), 655-661.

Weingarten, Scott R, Henning, James M, Badamgarav, Enkhe, Knight, Kevin, Hasselblad, Vic, & Ofman, Joshua J. (2002). Interventions used in disease management programmes for patients with chronic illnesswhich ones work? Meta-analysis of published reports. *Bmj, 325*(7370), 925.

Weiss, E, Haslanger, K, & Cantor, JC. (2001). Accessibility of primary care services in safety net clinics in New York City. *American Journal of Public Health, 91*(8), 1240.

Wenzel, S.L., Gelberg, L., Bakhtiar, L., & Caskey, N. (1993). Indicators of chronic homelessness among veterans. *Hospital & community psychiatry, 44*(12).

Wilk, T., Mora, P.F., Chaney, S., & Shaw, K. (2002). Use of an insulin pen by homeless patients with diabetes mellitus. *Journal of the American Academy of Nurse Practitioners, 14*(8), 372-380.

Wilson, Meg. (2005). Health-promoting behaviors of sheltered homeless women. *Family & community health, 28*(1), 51-63.

Wold, Svante, Esbensen, Kim, & Geladi, Paul. (1987). Principal component analysis. *Chemometrics and intelligent laboratory systems, 2*(1), 37-52.

Wong, C.A., & Cummings, G.G. (2007). The relationship between nursing leadership and patient outcomes: a systematic review. *Journal of Nursing Management, 15*(5), 508-521.

Wood, Susan, Beeson, Tishra, Bruen, Brian, Goldberg, Debora Goetz, Mead, Holly, Shin, Peter, & Rosenbaum, Sara. (2014). Scope of family planning services available in Federally Qualified Health Centers. *Contraception, 89*(2), 85-90.

Wooldridge, J.M. (2009). *Introductory econometrics: A modern approach* (4th ed.). Mason, OH: South-Western Cengage Learning.

Worthington, Roger L, & Whittaker, Tiffany A. (2006). Scale development research a content analysis and recommendations for best practices. *The Counseling Psychologist, 34*(6), 806-838.

Wright, N.M.J., & Tompkins, C.N.E. (2006). How can health services effectively meet the health needs of homeless people? *The British Journal of General Practice, 56*(525), 286.

Wright, N.M.J., Tompkins, C.N.E., Oldham, N.S., & Kay, D.J. (2004). Homelessness and health: what can be done in general practice? *Journal of the Royal Society of Medicine, 97*(4), 170.

Yano, E.M. (2008). The role of organizational research in implementing evidence-based practice: QUERI Series. *Implementation Science, 3*(1), 29.

Yano, E.M., Simon, B. F., Lanto, A. B., & Rubenstein, L. V. (2007). The evolution of changes in primary care delivery underlying the Veterans Health Administration's quality transformation. *Am J Public Health, 97*(12), 2151-2159.

Yin, Robert K. (2006). Mixed methods research: Are the methods genuinely integrated or merely parallel. *Research in the Schools, 13*(1), 41-47.

Zimet, Gregory D, Dahlem, Nancy W, Zimet, Sara G, & Farley, Gordon K. (1988). The multidimensional scale of perceived social support. *Journal of personality assessment, 52*(1), 30-41.

Zimet, Gregory D, Powell, Suzanne S, Farley, Gordon K, Werkman, Sidney, & Berkoff, Karen A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of personality assessment, 55*(3-4), 610-617.

Zinn, J.S., & Mor, V. (1998). Organizational structure and the delivery of primary care to older Americans. *Health Services Research, 33*(2 Pt 2), 354.

Zlotnick, C., & Zerger, S. (2009). Survey findings on characteristics and health status of clients treated by the federally funded (US) Health Care for the Homeless Programs. *Health & Social Care in the Community, 17*(1), 18-26.

Zwick, William R, & Velicer, Wayne F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological bulletin, 99*(3), 432.

APPENDIX A

KEY INFORMANT RECRUITMENT LETTER

I am writing in regards to a University of Alabama at Birmingham dissertation titled Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless. I am interested in identifying best practices to organize primary care services for the homeless.

This dissertation will investigate, design, and test an organizational assessment tool for primary care services for the homeless called Primary care homeless organizational assessment tool (PC-HOAT). This tool will provide leaders and stakeholders a snapshot of the structures and processes associated with greater quality of primary care for the homeless. The tool will provide greater understanding of organization's strengths and weaknesses; guide discussions regarding operations; and provide information to inform future strategies.

This phase of the dissertation asks experts to examine the existing PC-HOAT and provide feedback regarding the importance and feasibility of the structures and processes in the existing tool in regards to best practices of primary care services for the homeless.

You have been identified as an expert in the area of health care services for the homeless, and I would appreciate your participation in the pilot testing of the PC-HOAT. Your insights and knowledge in this area will be critical in improving the survey instrument. More specifically, I will need your assistance in evaluating the existing tool in regards to its strengths and weaknesses.

I look very much forward to talking to you. If you are willing to participate, please respond via e-mail so I can set up a time for us to speak, or you can call me at 706-394-0284. I will then set up a time to interview you at your convenience. Prior to the interview, I will need you to complete an on-line survey that should take about 20 minutes of your time to complete. After you complete the survey, your answers will be analyzed and a subsequent interview will be conducted to discuss the results of the survey and to ask for your opinion regarding the survey. The interview should take approximately 60 minutes of your time and will be conducted over the telephone. There is minimal risk to you when you participate and all responses will be kept confidential.

In particular, if you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board of Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at 205-934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00

am – 5:00 pm CST, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Thank you in advance for your consideration,

Jocelyn L. Steward, MSM
Principal Investigator
University of Alabama at Birmingham

Robert Weech-Maldonado, PhD
Dissertation chair/Faculty advisor
University of Alabama at Birmingham

APPENDIX B

LETTER TO KEY INFORMANTS WHO AGREED TO PARTICIPATE IN STUDY

Thank you again for agreeing to participate in the interview in regards to a University of Alabama at Birmingham dissertation, Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless. In particular, I would like to receive your input about the survey that has been developed for the dissertation. This survey will be distributed to individuals who work at HRSA's Health Care for the Homeless Program, particularly those in management positions. The survey will be web-based and used with standardized data to determine the reliability and validity of the PC-HOAT.

Before this survey is fielded, I would like to gather feedback on the instrument from experts like you. I have attached a copy of the tool for us to discuss during the interview, please have the attachment available for discussion during the interview.

Before the interview, you will need to complete and on-line survey. The survey should take approximately 20 minutes of your time. I will be sending you a separate e-mail with the link to the survey.

During the interview, which should last approximately 60 minutes, along with other questions, I will ask for your general impressions about the PC-HOAT, and whether there are any missing components that you think are important to include in the survey. I will also discuss with you your responses to particular survey items to identify areas where the survey can be improved. Please respond to the e-mail with dates and time you are available to be interviewed.

In particular, if you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board of Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at 205-934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 am – 5:00 pm CST, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Jocelyn L. Steward, MSM
Principal Investigator
University of Alabama at Birmingham

Robert Weech-Maldonado, PhD
Dissertation chair/Faculty advisor
University of Alabama at Birmingham

APPENDIX C

TELEPHONE CONSENT TO PARTICIPATE IN INTERVIEW

Study Title: Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless

Principle Investigator: Jocelyn L. Steward

Hello, my name is Jocelyn L. Steward from the University of Alabama at Birmingham. We are asking you to volunteer to take part in a phone interview as part of a research study and information used will only be used for research purposes. The study will investigate, design, and test an organizational assessment tool for primary care services for the homeless called *Primary care homeless organizational assessment tool (PC-HOAT)*. This tool will provide leaders and stakeholders a snapshot of the structures and processes associated with greater quality of primary care for the homeless. The tool will provide greater understanding of organization's strengths and weaknesses; guide discussions regarding operations; and provide information to inform future strategies.

This phone interview is being conducted to receive your input about the survey that has been developed. I am interested in learning more about the best ways to organize primary health care services for the homeless.

Previously to the interview, you took an on-line survey and the results were analyzed and are going to be discussed during the interview.

This phone interview will NOT be recorded. The phone interview will consists of questions pertaining to the survey in particular, I am interested in your opinions regarding the survey including strengths and weaknesses; unclear statements; and opinions regarding your responses to the survey. Questions will include insight into organizational items you think should have been included, ambiguous questions and follow-up questions regarding the survey you took prior to interview including questions in regards to what a particular question meant and the reason you gave a particular question a specific score.

The interview will take approximately 60 minutes of your time.

Your participation in this survey is completely voluntary. This means you do not have to participate if you don't want to. If you agree to participate, you have the right to only answer the questions you choose to answer. The potential risks of this research are minimal and confidentiality of any information that you share with us will be maintained to the highest level. You have the right to stop participation at any point during the interview if you so choose. All responses will be kept confidential.

In particular, if you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board of Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at 205-934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 am – 5:00 pm CST, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

"Do you have any questions?"

"Do you agree to voluntarily participate in this survey process?"

[ ] Yes If Yes..... Continue

[ ] No If No... Good-bye

APPENDIX D

INTERVIEW GUIDE FOR KEY INFORMANT INTERVIEWS

Interviewer: Thank you again for agreeing to participate in the interview in regards to a University of Alabama at Birmingham dissertation, Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless. In particular, I would like to receive your input about the survey that has been developed for the dissertation. I am interested in learning more about the best ways to organize primary health care services for the homeless.

I sent you an email that had an attachment with a tool, the primary care homeless organizational assessment tool (PC-HOAT). Can you please either have that attachment open or a copy available for discussion during this interview?

This survey will be distributed to individuals who work at HRSA's Health Care for the Homeless Program, particularly those in management positions. The survey will be web-based and used with standardized data to determine the reliability and validity of the PC-HOAT.

At the conclusion of these interviews, I will re-evaluate the tool and make necessary changes. Just to remind you, the information will only be used for the purpose of this study.

1. Can you please tell me about your role in the delivery of health (primary) care services for the homeless?

In the next section, I'm going to refer to the organizational assessment tool (PC-HOAT) that I emailed you. I really would like your honest opinions concerning the tool. I analyzed the responses to your survey and would like to discuss certain aspects of the tool.
Looking at domain…. [INFORMATION SYSTEMS, ACCESSIBILITY, ETC.]

1. Was there anything that was missed that you think is important?
2. Was there anything that you think should be changed?
3. Were there any service/capabilities important to the delivery of primary care for the homeless missing from the survey?
4. Was the order of the questions appropriate? Or would you suggest a different order?
5. Were there any items that were worded awkwardly or had ambiguous language?
6. Were there items that were difficult to respond?
    a. Why do you think they were difficult?

In the next section, I'm going to ask you some specific questions regarding some of the answer you provided during the survey.

1. Can you tell me what you think QUESTION __ meant?

2. Can you explain why you indicated N/A for QUESTION……?
3. Can you explain why you gave QUESTION___ a feasibility score of ____?

Do you have any additional questions or comments?

APPENDIX E

PRE-RECRUITMENT LETTER SENT TO DIRECTORS OF HRSA HEALTH CARE FOR THE HOMELESS GRANTEES

I am writing in regards to a University of Alabama at Birmingham dissertation titled *Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless.* I am interested in identifying best practices to organize primary care services for the homeless.

This dissertation will investigate, design, and test an organizational assessment tool for primary care services for the homeless called ***Primary care homeless organizational assessment tool (PC-HOAT).*** This tool will provide leaders and stakeholders a snapshot of the structures and processes associated with greater quality of primary care for the homeless. The tool will provide greater understanding of an organization's strengths and weaknesses; guide discussions regarding operations; and provide information to inform future strategies.

This phase of the dissertation asks individuals who are executive directors and/or medical directors of health care for the homeless programs regarding the existence of the specific structures and process that are considered best practices of primary care services for the homeless. Specifically, I am looking to find information regarding your largest health care for the homeless program within your organization. Some of the questions I will need you to answer will pertain to existing information systems, human resources, and medical services that the organization provides. For example,

At my clinic, patients can access primary care services offsite

At my clinic, the governing board of the organization is active in the organization (e.g., volunteering and fund-raising)

At my clinic, dental and health providers are located within the primary care clinic

My clinic offers care in a facility that is physically comfortable for the patients

My clinic has guidelines for operations based on modified clinical guidelines that are homeless-specific (i.e., taking into account the unique challenges presented by homelessness that may limit the ability of patients to adhere to a plan of care).

At my clinic, providers are assessed for competency specific to their scope of practice (e.g., standardized patients, peer assessment, and audits of medical records)

If you feel there is another individual more capable of answering the above questions, you may forward this information and the link to that person. Please only submit one survey per organization.

I look forward to having you participate in the study. Tomorrow, you will receive an e-mail link to the survey. If you are willing to participate, please follow the link and complete the on-line survey. The survey should take approximately 20 minutes of your time to complete.

For your participation, I am raffling four $50 Visa gift cards. The probability of winning the raffle is 1 in 208.

There is minimal risk to you when you participate and all responses will be kept confidential.

If you have concerns or questions, you may contact the PI, Jocelyn L. Steward, at 706-394-0284 or via e-mail at jsteward@uab.edu. In particular, if you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board of Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at 205-934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 am – 5:00 pm CST, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Thank you in advance for your consideration,

Jocelyn L. Steward, MSM
jsteward@uab.edu
706-394-0284
Principal Investigator
University of Alabama at Birmingham

Robert Weech-Maldonado, PhD
rweech@uab.edu
Dissertation chair/Faculty advisor
University of Alabama at Birmingham

APPENDIX F

RECRUITMENT LETTER SENT TO DIRECTORS OF HRSA HEALTH CARE FOR THE HOMELESS GRANTEES WITH SURVEY LINK

This e-mail is a follow-up to the e-mail you received yesterday regarding the University of Alabama @ Birmingham dissertation "***Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless."***

Just a reminder, this survey should be completed by the individual with the knowledge concerning the organizational structure and process to your largest health care for the homeless organization. Please only submit one survey per organization. If you have more than one organization, please choose the one that has the highest percentage of homeless patients.

If you feel that you are unable to answer the survey, I ask that you forward this e-mail to the individual you feel would be able to complete the survey.

For your participation, at the end of the survey you will have the opportunity to submit your e-mail address to be entered into a drawing to win one of four $50 Visa Gift Cards. The odds of winning are 1 in 208.

Here is a link to the survey:

https://www.surveymonkey.com/XXXXX

Thank you in advance for your consideration in participating in my research.

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.

https://www.surveymonkey.com/XXXXX

There is minimal risk to you when you participate and all responses will be kept confidential.

If you have concerns or questions, you may contact the PI, Jocelyn L. Steward, at 706-394-0284 or via e-mail at jsteward@uab.edu. In particular, if you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board of Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at 205-934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 am – 5:00 pm CST, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Thank you in advance for your consideration,

Jocelyn L. Steward, MSM
jsteward@uab.edu
706-394-0284
Principal Investigator
University of Alabama at Birmingham

Robert Weech-Maldonado, PhD
rweech@uab.edu
Dissertation chair/Faculty advisor
University of Alabama at Birmingham

APPENDIX G

FOLLOW-UP CONTACT LETTER

Dear Sir/Madam

Recently, I sent you an email requesting your participation in a University of Alabama at Birmingham dissertation titled ***Development and testing of the primary care homeless organizational assessment tool (PC-HOAT) to evaluate primary care services for the homeless.*** I am requesting your participation in a web-based survey that will last approximately 20 minutes.

I look forward to having you participate in the study. If you are willing to participate, please follow the link and complete the web-based survey. The survey should take about 20 minutes of your time to complete.

Link to survey: XXXX

For your participation, you have the opportunity to win one of four $50 Visa gift cards.

If you have concerns or questions, you may contact the PI, Jocelyn L. Steward, at 706-394-0284 or via e-mail at jsteward@uab.edu. In particular, if you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the Institutional Review Board of Human Use (OIRB) at the University of Alabama at Birmingham (UAB) at 205-934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the Office of the IRB are 8:00 am – 5:00 pm CST, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Thank you in advance for your consideration,

Jocelyn L. Steward, MSM
jsteward@uab.edu
706-394-0284
Principal Investigator
University of Alabama at Birmingham

Robert Weech-Maldonado, PhD
rweech@uab.edu
Dissertation chair/Faculty advisor
University of Alabama at Birmingham

APPENDIX H

ITEM MODIFICATION FROM ORIGINAL TO FINAL PC-HOAT

	ORIGINAL QUESTION	MODIFICATION	FINAL VERSION
INFORMATION SYSTEMS	N/A	NEW QUESTION	At my clinic, we use electronic medical records? (i.e., a computerized medical record created in an organization that delivers care that allows storage, retriveal and modification of records).
	N/A	NEW QUESTION	How long has your organization been using electronic medical records?
	At my clinic, health information systems (i.e. medical records and mobile devices) facilitate coordination of care between providers.	YES	At my clinic, medical records facilitate coordination of care between providers
	At my clinic, medical records allow providers to access information needed to evaluate the care provided.	NO	At my clinic, medical records allow providers to access information needed to evaluate the care provided.
	At my clinic, providers inside the organization share medical records.	NO	At my clinic, providers inside the organization share medical records.
	At my clinic, providers outside of the organization can access our medical records when needed.	DELETED	N/A
	At my clinic, patients have access to their personal medical records.	DELETED	N/A
	At my clinic, providers have access to all their patients' medical records.	YES	At my clinic, providers can access their patients' behavioral and medical records
	At my clinic, medical records indicate homeless status.	NO	At my clinic, medical records indicate homeless status.
ACCESSIBILITY	At my clinic, primary care services are located in accessible areas to the homeless.	NO	At my clinic, primary care services are located in accessible areas to the homeless.
	At my clinic, patients can access primary care services onsite (i.e., stand-alone clinic and hospital-based clinics)	NO	At my clinic, patients can access primary care services onsite (i.e., stand-alone clinic and hospital-based clinics)
	At my clinic, patients can access primary care services offsite (i.e., mobile vans, streets, and shelters).	NO	At my clinic, patients can access primary care services offsite (i.e., mobile vans, streets, and shelters).

PERFORMANCE AND QUALITY IMPROVEMENT	At my clinic, organizational performance is measured in terms of accessibility to care (i.e., wait times for appointment, access to specialists, and insurance).	DELETED	N/A
	At my clinic, organizational performance is measured in terms of patient costs.	DELETED	N/A
	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes and safety).	YES	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes, mortality rates, and readmission rates).
	N/A	NEW QUESTION	At my clinic, we collect patient satisfaction surveys.
	At my clinic, organizational performance is measured in terms of patient satisfaction.	YES	At my clinic, patient satisfaction is used to assess organizational performance (e.g., condition of facility and accessibilty of services).
	At my clinic, patient satisfaction is used to assess staff performance.	YES	At my clinic, patient satisfaction is used to assess staff performance (e.g., courtesy and respect).
	At my clinic, patient satisfaction is used to assess provider's performance.	YES	At my clinic, patient satisfaction is used to assess provider performance (e.g., communication, respect, and spending adequate time with the patient).
	At my clinic, providers are evaluated on the effectiveness of providing care to the homeless. (i.e, patient interviews, surveys, and evaluations).	NO	At my clinic, providers are evaluated on the effectiveness of providing care to the homeless. (i.e, patient interviews, surveys, and evaluations).
	At my clinic, providers' performance is evaluated on their patients' adherence to standard practice guidelines for self management of illness.	NO	At my clinic, providers' performance is evaluated on their patients' adherence to standard practice guidelines for self-management of illness.

PERFORMANCE AND QUALITY IMPROVEMENT	At my clinic, providers are checked for competency through the use of test, exercises, and competency guidelines specific to the job description.	YES	At my clinic, providers are checked for competency specific to their scope of practice (e.g., standardized patients, peer assessment, and audits of medical records).
	At my clinic, staff is checked for competency through the use of test, exercises, and competency guidelines specific to the job description.	DELETED	N/A
	At my clinic, organizational performance data is used to make changes in the organization's operations.	NO	At my clinic, organizational performance data is used to make changes in the organization's operations.
	At my clinic, organizational performance data are available to individuals within the organization (i.e., patients, providers, and staff).	NO	At my clinic, organizational performance data are available to individuals within the organization (i.e., patients, providers, and staff).
	At my clinic, organizational performance data are available to entities outside the organization (i.e., other provider organization and the public).	NO	At my clinic, organizational performance data are available to entities outside the organization (i.e., other provider organization and the public).
	At my clinic, we use uniform standards to deliver care based on evidence-based practices (i.e., avoiding injury or error and providing effective and efficient care).	NO	At my clinic, we use uniform standards to deliver care based on evidence-based practices (i.e., avoiding injury or error and providing effective and efficient care).
	At my clinic, meetings are conducted monthly to review patient cases.	YES	My clinic conducts meetings to review patient cases.
	N/A	NEW QUESTION	How often are meetings held?
	N/A	NEW QUESTION	Do the meetings ever include interdisciplinary team members? (e.g., social, medical, and behavioral)
PRIMARY CARE SERVICES	My clinic provides primary care services (i.e., physical medical exams and routine check-ups).	NO	My clinic provides primary care services (i.e., physical medical exams and routine check-ups).
	My clinic provides preventative services (i.e. screening and immunizations).	YES	My clinic provides preventative services (e.g., cancer screening, pelvic examinations, diabetes and hypertension screening).

PRIMARY CARE SERVICES	My clinic provides treatment for acute medical illnesses (i.e. burns, cuts, and fractures).	YES	My clinic provides treatment for acute medical illnesses (e.g., colds, the flu, headaches, and fevers).
	My clinic provides treatment for chronic medical illnesses (i.e. asthma, diabetes, and hypertension).	NO	My clinic provides treatment for chronic medical illnesses (i.e. asthma, diabetes, and hypertension).
	My clinic provides laboratory services.	NO	My clinic provides laboratory services.
	My clinic provides radiological services.	NO	My clinic provides radiological services.
	My clinic provides pharmaceutical services.	NO	My clinic provides pharmaceutical services.
	My clinic provides health education and health promotion services.	NO	My clinic provides health education and health promotion services.
	My clinic provides well-child services.	DELETED	NO
	My clinic provides perinatal services.	DELETED	NO
	My clinic provides family planning services.	NO	My clinic provides family planning services.
	My clinic provides medical respite care.	DELETED	N/A
	At my clinic, dental and oral health providers are co-located in the primary care clinic.	NO	At my clinic, dental and oral health providers are co-located in the primary care clinic.
	At my clinic, there are established linkages with other agencies in the community to provide services patients need (i.e., specialists, substance abuse, dental, and social services) that are not provided at the organization.	NO	At my clinic, there are established linkages with other agencies in the community to provide services patients need (i.e., specialists, substance abuse, dental, and social services) that are not provided at the organization.
	At my clinic, case managers are available to link patients with community resources.	NO	At my clinic, case managers are available to link patients with community resources.
	At my clinic, providers are available as homeless health care consultants to other health organizations (i.e., hospitals and other health care clinics) in the community.	NO	At my clinic, providers are available as homeless health care consultants to other health organizations (i.e., hospitals and other health care clinics) in the community.
	At my clinic, providers are called upon to help in the community to provide care for the homeless.	NO	At my clinic, providers are called upon to help in the community to provide care for the homeless.

PATIENT-CENTERED CARE	At my clinic, providers discuss with patients their values and preferences.	NO	At my clinic, providers discuss with patients their values and preferences.
	My clinic allows patients to involve their family and friends in their health care.	NO	My clinic allows patients to involve their family and friends in their health care.
	At my clinic, patients receive care that is respectful to the culture of the homeless.	NO	At my clinic, patients receive care that is respectful to the culture of the homeless.
	My clinic offers care in a facility that is physically comfortable for the patients.	NO	My clinic offers care in a facility that is physically comfortable for the patients.
	My clinic ensures patients have an ongoing relationship with the same provider.	NO	My clinic ensures patients have an ongoing relationship with the same provider.
	My clinic allows patients to see a provider of their choosing.	NO	My clinic allows patients to see a provider of their choosing.
	My clinic has guidelines for operations based on modified clinical guidelines that are homeless-specific.	NO	My clinic has guidelines for operations based on modified clinical guidelines that are homeless-specific.
	My clinic provides providers with a variety of pictures, drawings, and models to explain health information.	DELETED	N/A
	My clinic reviews written health information to determine it meets the literacy level of the population.	NO	My clinic reviews written health information to determine it meets the literacy level of the population.
	At my clinic, patient satisfaction with the organization is measured.	MOVED	Moved to performance and quality improvement
	At my clinic, patient satisfaction with the staff is measured.	MOVED	Moved to performance and quality improvement
	At my clinic, patient satisfaction with their provider is measured.	MOVED	Moved to performance and quality improvement

APPENDIX I

NAMES AND DESCRIPTIONS OF THE ITEMS IN THE PC-HOAT

INFORMATION SYSTEMS	
Item	Description
IS_1	At my clinic, we use electronic medical records? (i.e., a computerized medical record created in an organization that delivers care that allows storage, retrieval and modification of records).
IS_2	How long has your organization been using electronic medical records?
IS_3	At my clinic, medical records facilitate coordination of care between providers.
IS_4	At my clinic, medical records allow providers to access information needed to evaluate the care provided.
IS_5	At my clinic, providers inside the organization share medical records.
IS_6	At my clinic, providers can access their patients' behavioral and medical records.
IS_7	At my clinic, medical records indicate homeless status.

ACCESSIBILITY	
Item	Description
AS_1	At my clinic, primary care services are located in accessible areas to the homeless.
AS_2	At my clinic, patients can access primary care services onsite (e.g., standalone clinic and hospital-based clinics)
AS_3	At my clinic, patients can access primary care services offsite (e.g., mobile vans, streets, and shelters).
AS_4	At my clinic, schedules are flexible so patients can receive health care without interfering with obtaining other needed services (e.g., shelter, meals, and employment).
AS_5	At my clinic, patients are able to obtain walk-in appointments.
AS_6	At my clinic, transportation assistance is available to patients.
AS_7	At my clinic, if a patient needs a referral to another provider (e.g., cardiology, neurology, and urology) we arrange an appointment immediately.
AS_8	At my clinic, when a patient needs a referral to another provider (e.g., cardiology, neurology, and urology), they are able to see a provider within 30 days.

AS_9	At my clinic, patients can access multiple providers/services in one visit (e.g., mental health, social services, and primary care services).
AS_10	At my clinic, providers work in multidisciplinary teams to provide care to a single patient.

PERFORMANCE AND QUALITY IMPROVEMENT	
Item	Description
PF_1	At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes, mortality rates, readmission rates).
PF_2	At my clinic, we collect patient satisfaction surveys.
PF_3	At my clinic, patient satisfaction is used to assess organizational performance (e.g., condition of facility and accessibility of services).
PF_4	At my clinic, patient satisfaction is used to assess staff performance (e.g., courtesy and respect).
PF_5	At my clinic, patient satisfaction is used to assess provider performance (e.g., communication, respect, and spending adequate time with the patient).
PF_6	At my clinic, providers are evaluated on the effectiveness of providing care to the homeless (e.g., patient interviews, surveys, and evaluations).
PF_7	At my clinic, providers are evaluated on their patients' adherence to standard practice guidelines for self-management of illness.
PF_8	At my clinic, providers are checked for competency specific to their scope of practice (e.g., standardized patients, peer assessment, and audits of medical records).
PF_9	At my clinic, organizational performance data is used to make changes in the organization's operations.
PF_10	At my clinic, organizational performance data are available to individuals within the organization (i.e., patients, providers, and staff).
PF_11	At my clinic, organizational performance data are available to entities outside the organization (i.e., other provider organization and the public).
PF_12	At my clinic, we use uniform standards to deliver care based on evidence-based practices (i.e., avoiding injury or error and providing effective and efficient care).
PF_13	My clinic conducts meetings to review patient cases.
PF_14	How often are meetings held?
PF_15	Do the meetings ever include interdisciplinary members? (e.g., social, medical, and behavioral)

PRIMARY CARE SERVICES DELIVERY	
Item	Description
PC_1	My clinic provides primary care services (e.g., physical medical exams and routine check-ups).
PC_2	My clinic provides preventative services (e.g., cancer screening, pelvic examinations, diabetes and hypertension screening).
PC_3	My clinic provides treatment for acute medical illnesses (e.g., colds, the flu, headaches, and fevers).
PC_4	My clinic provides treatment for chronic medical illnesses (e.g., asthma, diabetes, and hypertension).
PC_5	My clinic provides laboratory services.
PC_6	My clinic provides radiological services.
PC_7	My clinic provides pharmaceutical services.
PC_8	My clinic provides health education and health promotion services.
PC_9	My clinic provides family planning services.
PC_10	At my clinic, dental and oral health providers are located within the primary care clinic.
PC_11	At my clinic, there are established linkages with other agencies in the community to provide services patients need (e.g., specialists, substance abuse, dental, and social services) that are not provided at the organization.
PC_12	At my clinic, case managers are available to link patients with community resources.
PC_13	At my clinic, providers are available as homeless health care consultants to other health organizations (e.g., hospitals and other health care clinics) in the community.
PC_14	At my clinic, providers are called upon to help in the community to provide care for the homeless.

INTEGRATION OF MEDICAL, SOCIAL AND BEHAVIORAL SERVICES	
Item	Description
INT_1	At my clinic, mental health providers are located within the primary care clinic.
INT_2	At my clinic, patients can be referred to in-patient substance abuse treatment programs.
INT_3	At my clinic, patients can be referred to out-patient substance abuse treatment programs.
INT_4	At my clinic, there is a designated person to assist with housing issues.
INT_5	At my clinic, MD and non-MD primary care providers work together to see patients.
INT_6	At my clinic, there is a designated person who focuses on homeless health care issues.
INT_7	Does this person have a management role?
INT_8	At my clinic, providers from multiple disciplines report to a homeless health care department chair/director.

HUMAN RESOURCES	
Item	Description
HR_1	My clinic hires providers that have experience/expertise with the homeless.
HR_2	My clinic uses relevant non-financial incentives (e.g., flexible work schedules, awards, and formal recognitions) to retain homeless health care providers.

LEADERSHIP AND GOVERNANCE	
Item	Description
LEAD_1	At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate with their employees the organization's performance evaluations.
LEAD_2	At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate to their employees the organization's goals and expectations.
LEAD_3	At my clinic, the governing board of the organization is active in the organization (e.g., volunteering and fund-raising).
LEAD_4	At my clinic, the governing board of the organization has a sitting homeless or formerly homeless patient.

PATIENT-CENTERED CARE	
Item	Description
PCC_1	At my clinic, providers discuss with patients their values and preferences.
PCC_2	My clinic encourages patients to involve their family and friends in their health care.
PCC_3	At my clinic, patients receive care that is respectful to the culture of the homeless.
PCC_4	My clinic offers care in a facility that is physically comfortable for the patients.
PCC_5	My clinic ensures patients have an ongoing relationship with the same provider.
PCC_6	My clinic encourages patients to see a provider of their choosing.
PCC_7	My clinic has guidelines for operations based on modified clinical guidelines that are homeless-specific.
PCC_8	My clinic reviews written health information to determine it meets the literacy level of the population.

APPENDIX J

SELECTED DESCRIPTIVE STATISTICS DESCRIBING THE ORGANIZATIONS THAT THE RESPONDENTS REPRESENTED

Item	n = 68	Percent
Geographic Distribution**		
Northeast	18	26%
Midwest	15	22%
South	11	16%
West	24	35

**Note: Regions as defined by the US Census Bureau

Item	Percent Affirmed
How many hours a week does your clinic offer primary care services?	
0	1.52%
1-8	1.52%
9-20	4.55%
21-40	34.85
41+	57.58%
What percentage of your patients are homeless?	
1-25%	41.53%
26-50%	9.23%
51-75%	7.7%
76-100%	41.54%
Item	**Percent Affirmed**

Where does your organization provide services?	
Free standing	84%
Shelter	66%
Mobile sites	40%
Within another site	35%
School	18%
Outreach	56%
Hospital	6%
Correctional facility	12%
Respite	13%
Nursing Home/Long term care	3%
Does your organization cater to any of the following sub-populations?	
HIV/AIDS	58%
Migrant farm workers	18%
Hispanic/Latino	64%
Women	80%
Men	70%
LGTB	46%
Children	42%
Teens	56%
Elderly	47%
Behavioral disorders	60%
Native American	26%
Non-English speaking	61%
Addiction/Substance abuse	64%
Recent immigrants	44%
Political asylum	15%

Item	Percent affirmed
What other types of services, besides primary care, can patients receive at your organization?	
Pharmaceutical	78%
Public health	38%
Shelter/Temporary Housing	15%
Laboratory	83%
Mental health	90%
Substance abuse	61%
Dental	78%
Respite	21%
Social services (i.e., case management, food assistance, government program assistance, housing assistance)	90%
Domestic violence	15%
Sub-specialty medical care (i.e., surgery, rheumatology, endocrinology, podiatry, optometry)	50%
Wellness	64%
Geriatric services	24%
Spiritual	0%

APPENDIX K

SELECTED DEMOGRAPHICS OF THE RESPONDENTS TO THE SURVEY

Item	Percent affirmed
How long have you been employed at this organization?	
6 MONTHS – 1 YEAR	1.56%
1-3 YEARS	12%
4-7 YEARS	31%
8-10 YEARS	14%
11+ YEARS	40%
Have you ever in your life experienced homelessness?	
Yes	9.38%
Gender	
Female	60%
Male	40%
How long have you been involved in homeless health care?	
1-2 YEARS	4%
3-4 YEARS	18%
5-10 YEARS	32%
11+ YEARS	43%

Item	Percent affirmed
Indicate your primary job description.	
CEO	1.56%
Chief medical officer	4.68%
Executive Management	62%
Community Outreach	1.56%
MD-Provider	10.94%
Non-executive management	15%
Non-MD Provider	3.13%
Nurse	9.37%
Social Worker	6.25%
Policy/Advocacy	1.56%
Program Coordinator	1.56%
How much influence do you have over your organization's operations?	
None	3.13%
A little	3.13%
Some	15.63%
A lot	67%
All	10%
To which racial or ethnic group(s) do you most identify	
Asian-Pacific Islander	4.68%
African-American	12%
Indian	1.56%
Latino	9.4%
Mixed	1.56%
White	71%

APPENDIX L

PERCENTAGE OF RESPONDENTS WHO RESPONDED "TRUE" TO THE ITEMS IN THE PC-HOAT

ITEM	PERCENT THAT RESPONDED TRUE
IS_1	90%
IS_3	98%
IS_4	100%
IS_5	98%
IS_6	83%
IS_7	93%

ITEM	PERCENT THAT RESPONDED TRUE
IS_2	
N/A	9%
< 1 YEAR	13%
1-2 YEARS	23%
3-4 YEARS	23%
5+ YEARS	30%

ITEM	PERCENT THAT RESPONDED TRUE
AS_1	100%
AS_2	98%
AS_3	76%
AS_4	90%
AS_5	92%
AS_6	92%
AS_7	78%
AS_8	58%
AS_9	89%
AS_10	87%

ITEM	PERCENT THAT RESPONDED TRUE
PF_1	92%
PF_2	95%
PF_3	87%
PF_4	87%
PF_5	84%
PF_6	64%
PF_7	46%
PF_8	90%
PF_9	96%
PF_10	89%
PF_11	65%
PF_12	92%
PF_13	82%
PF_15	73%

ITEM	PERCENT THAT RESPONDED TRUE
PF_14	
N/A	16%
DAILY	4%
WEEKLY	23%
BIMONTHLY	14%
MONTHLY	35%
AS NEEDED	4%

ITEM	PERCENT THAT RESPONDED TRUE
PC_1	98%
PC_2	98%
PC_3	98%
PC_4	98%
PC_5	90%
PC_6	29%
PC_7	81%
PC_8	98%
PC_9	90%
PC_10	59%
PC_11	98%
PC_12	92%
PC_13	54%
PC_14	73%

ITEM	PERCENT THAT RESPONDED TRUE
INT_1	82%
INT_2	76%
INT_3	100%
INT_4	54%
INT_5	95%
INT_6	76%
INT_7	57%
INT_8	30%

ITEM	PERCENT THAT RESPONDED TRUE
HR_1	71%
HR_2	56%

ITEM	PERCENT THAT RESPONDED TRUE
LEAD_1	90%
LEAD_2	90%
LEAD_3	68%
LEAD_4	82%

ITEM	PERCENT THAT RESPONDED TRUE
PCC_1	87%
PCC_2	90%
PCC_3	100%
PCC_4	95%
PCC_5	93%
PCC_6	79%
PCC_7	65%
PCC_8	84%

APPENDIX M

FACTOR LOADINGS FROM THE FINAL ROTATED FACTOR MATRIX FOR THE PC-HOAT: WITH PROMAX ROTATION

ITEM	**FACTOR**							
	1	2	3	4	5	6	7	8
AS_2	**0.88663**	-0.19106	0.09301	0.11060	0.04636	-0.05222	-0.05315	-0.08656
PC_2	**0.88663**	-0.19106	0.09301	0.11060	0.04636	-0.05222	-0.05315	-0.08656
PF_10	**0.86760**	-0.05189	-0.00268	-0.00447	0.02232	-0.01046	-0.11194	-0.01206
INT_1	**0.75803**	0.02770	-0.14830	-0.06984	0.35044	-0.02768	-0.05489	0.04373
AS_4	**0.74474**	0.34589	-0.04459	-0.02050	-0.16989	-0.07153	0.03858	0.23160
INT_2	**0.71317**	0.32479	-0.07519	-0.06416	-0.12886	-0.18693	-0.23343	-0.04315
PF_11	**0.64028**	0.34972	-0.04812	0.00324	-0.21017	0.31064	0.05009	0.16623
PF_15	**0.62719**	0.17383	0.01216	-0.06429	0.06419	-0.23846	0.38736	-0.21850
PC_7	0.36443	-0.29484	0.28280	-0.06036	-0.15663	-0.08658	0.13509	0.07402
HR_1	0.17716	**0.79448**	-0.00490	-0.04450	0.00919	0.22817	0.01298	0.15507
AS_3	-0.06431	**0.75836**	-0.06214	-0.06274	-0.04702	-0.27221	-0.03676	0.10939
PC_14	0.06806	**0.65418**	-0.00991	**0.45274**	0.10694	-0.20364	-0.00063	0.16733

IS_6	0.04262	**0.59186**	0.04972	-0.06515	0.30311	0.19027	0.35941	-0.20968
HR_2	-0.01620	**0.59102**	-0.16086	-0.14787	0.16516	0.32265	0.26414	-0.04364
PC_13	-0.03176	**0.56089**	0.15491	-0.02532	0.25314	-0.04855	-0.18064	-0.15010
INT_4	-0.08674	**0.51783**	-0.13926	-0.02335	-0.05417	-0.12125	**-0.44491**	-0.18976
PCC_5	-0.03702	-0.07747	**0.94113**	-0.08308	-0.14893	-0.04390	0.02150	-0.03141
PCC_6	-0.03068	0.27557	**0.89162**	-0.03969	0.25176	-0.08065	-0.01255	-0.04106
INT_6	0.03308	-0.21083	**0.72873**	-0.14792	0.01853	0.10147	0.00742	0.10024
IS_1	0.34943	-0.13240	**0.67997**	0.06279	-0.17102	0.31618	0.00028	-0.19469
PF_6	-0.06311	0.23250	**0.63299**	0.36913	0.22657	-0.17463	-0.15566	0.29816
PCC_4	-0.08452	0.10318	**0.57909**	0.03247	-0.22548	-0.16247	0.02246	-0.14389
PC_5	0.07555	-0.31171	**0.51205**	-0.14537	0.20682	0.01842	0.12205	0.05199
PF_5	0.03095	-0.05494	-0.04935	**0.94710**	0.09026	-0.07934	-0.04348	-0.04514
PF_4	0.03095	-0.05494	-0.04935	**0.94710**	0.09026	-0.07934	-0.04348	-0.04514
PF_3	-0.03385	-0.01167	-0.14510	**0.74734**	0.20519	0.28774	-0.26052	-0.10482
PCC_2	-0.02039	0.09572	-0.03179	**0.73397**	-0.15453	-0.02057	0.25154	0.24065
LEAD_4	**0.41757**	-0.14449	-0.00560	**0.58559**	-0.08869	0.26547	-0.07709	-0.23754
LEAD_3	-0.15138	0.42852	0.30078	**0.43829**	-0.00927	0.08739	**0.45974**	-0.21271
AS_8	-0.18990	-0.02218	0.05548	**0.42056**	-0.10664	0.25233	-0.00194	0.39575
AS_10	0.06242	0.09492	-0.02152	0.00944	**0.82094**	0.03289	0.09283	0.00405

PCC_8	-0.02727	0.25112	-0.10236	0.09650	**0.77666**	0.36501	-0.19481	-0.03934
PCC_7	-0.06521	-0.04995	-0.07106	0.35272	**0.67086**	-0.15212	0.34257	0.07994
PC_12	0.00017	**0.56820**	0.18231	0.04911	**0.62771**	-0.07378	-0.05086	-0.02497
PF_7	0.26271	-0.08075	0.11714	-0.14265	**0.50312**	0.24612	0.22878	0.36930
LEAD_1	-0.11443	0.07899	-0.12071	0.09856	0.05775	**0.90642**	-0.20697	-0.13961
LEAD_2	-0.07536	-0.06047	0.33566	-0.00655	0.05911	**0.81438**	-0.16765	-0.05611
PF_8	-0.08535	-0.14168	-0.17787	-0.03331	0.25249	**0.68406**	0.01846	0.02643
INT_5	-0.10098	0.18638	-0.00740	0.08520	-0.30196	**0.59811**	0.30510	0.20586
PC_9	-0.11638	0.09381	0.01322	-0.02861	-0.14129	-0.08913	**0.90527**	0.01808
IS_3	-0.10244	-0.05759	0.01320	-0.11260	0.10867	-0.17461	**0.86495**	-0.35441
PC_10	0.19173	-0.36696	-0.22482	0.26599	0.22841	-0.19104	**0.47300**	0.17621
INT_8	0.02742	**0.40189**	-0.19417	-0.21371	0.33706	0.10273	**0.47012**	-0.02544
PCC_1	-0.09464	0.01109	-0.01781	0.04247	-0.13428	-0.00671	0.13529	**0.87712**
PF_1	-0.07223	-0.17255	-0.02993	-0.01382	0.11840	-0.06008	-0.20503	**0.83932**
AS_9	0.13800	0.26383	-0.08334	-0.08582	0.05084	-0.16679	-0.26586	**0.65854**
AS_7	-0.10102	-0.01700	0.36616	-0.17246	0.41091	0.06088	-0.14529	**0.50905**

Note: Factor loadings greater than 0.40 are in boldface

APPENDIX N

OPERATIONS MANUAL FOR THE USE OF THE PRIMARY CARE HOMELESS ORGANIZATIONAL ASSESSMENT TOOL (PC-HOAT)

Introduction

The primary care homeless organizational assessment tool (PC-HOAT) was designed to determine the most feasible, relevant, and statistically significant organizational processes and structures needed to service homeless patients in a primary care setting. The following manual provides a checklist of structures and processes an organization should maintain to deliver primary care services for the homeless. The PC-HOAT is a 50-item checklist assessing the following areas: core organizational services, evaluation and delivery of primary care services, provider and organizational flexibility in providing health care to the population, organizational structures relevant to effective delivery of care, patient and family centeredness, leadership transparency, care coordination, and access and quality of care.

To use the PC-HOAT, an individual who is most intimate with the workings of the organization, should evaluate if the organization has in possession those organizational processes and structures that are found in the check-list. The PC-HOAT should be used to foster discussions with the staff and patients of the organizations. Organizations should strive to include as many processes and structures that are found in the PC-HOAT. Organizations should also use the tool to re-evaluate if structures and processes found in the facility, but not in the PC-HOAT should be reallocated.

Directions: Items that are found in the organization should be checked "YES" and if they are not found in the organization should be checked "NO"

CORE ORGANIZATIONAL SERVICES

	YES	NO
At my clinic, medical records allow providers to access information needed to evaluate the care provided.		
At my clinic, providers inside the organization share medical records.		
At my clinic, providers inside the organization share medical records.		
At my clinic, primary care services are located in accessible areas to the homeless.		
At my clinic, patients are able to obtain walk-in appointments.		
At my clinic, we collect patient satisfaction surveys.		
At my clinic, organizational performance data is used to make changes in the organization's operations.		
At my clinic, we use uniform standards to deliver care based on evidence-based practices (i.e., avoiding injury or error and providing effective and efficient care).		
My clinic conducts meetings to review patient cases.		
My clinic provides primary care services (e.g., physical medical exams and routine check-ups).		
My clinic provides treatment for acute medical illnesses (e.g., colds, the flu, headaches, and fevers).		
My clinic provides treatment for chronic medical illnesses (e.g., asthma, diabetes, and hypertension).		
My clinic provides health education and health promotion services.		
At my clinic, there are established linkages with other agencies in the community to provide services patients need (e.g., specialists, substance abuse, dental, and social services) that are not provided at the organization.		
At my clinic, patients can be referred to out-patient substance abuse treatment programs.		
At my clinic, patients receive care that is respectful to the culture of the homeless.		

EVALUATION AND THE DELIVERY OF PRIMARY CARE SERVICES

	YES	NO
At my clinic, patients can access primary care services onsite (e.g., standalone clinic and hospital-based clinics)		
At my clinic, schedules are flexible so patients can receive health care without interfering with obtaining other needed services (e.g., shelter, meals, and employment).		
My clinic provides preventative services (e.g., cancer screening, pelvic examinations, diabetes and hypertension screening).		
At my clinic, mental health providers are located within the primary care clinic.		
At my clinic, patients can be referred to in-patient substance abuse treatment programs.		
Do the meetings ever include interdisciplinary members? (e.g., social, medical, and behavioral)		
At my clinic, organizational performance data are available to entities outside the organization (i.e., other provider organization and the public).		
At my clinic, organizational performance data are available to individuals within the organization (i.e., patients, providers, and staff).		

PROVIDER AND ORGANIZATIONAL FLEXIBILITY IN PROVIDING HEALTH CARE TO THE POPULATION

	YES	NO
At my clinic, patients can access primary care services offsite (e.g., mobile vans, streets, and shelters).		
My clinic hires providers that have experience/expertise with the homeless.		
My clinic uses relevant non-financial incentives (e.g., flexible work schedules, awards, and formal recognitions) to retain homeless health care providers.		
At my clinic, providers can access their patients' behavioral and medical records		
At my clinic, providers are called upon to help in the community to provide care for the homeless.		
At my clinic, providers are available as homeless health care consultants to other health organizations (e.g., hospitals and other health care clinics) in the community		
At my clinic, there is a designated person to assist with housing issues.		

ORGANIZATIONAL STRUCTURES RELEVANT TO EFFECTIVE DELIVERY OF CARE

	YES	NO
At my clinic, we use electronic medical records? (i.e., a computerized medical record created in an organization that delivers care that allows storage, retrieval and modification of records).		
At my clinic, providers are evaluated on the effectiveness of providing care to the homeless (e.g., patient interviews, surveys, and evaluations).		
At my clinic, there is a designated person who focuses on homeless health care issues.		
My clinic ensures patients have an ongoing relationship with the same provider.		
My clinic encourages patients to see a provider of their choosing.		
My clinic offers care in a facility that is physically comfortable for the patients.		

PATIENT AND FAMILY CENTEREDNESS

	YES	NO
At my clinic, patient satisfaction is used to assess provider performance (e.g., communication, respect, and spending adequate time with the patient).		
At my clinic, patient satisfaction is used to assess staff performance (e.g., courtesy and respect).		
At my clinic, patient satisfaction is used to assess organizational performance (e.g., condition of facility and accessibility of services).		
My clinic encourages patients to involve their family and friends in their health care.		
At my clinic, when a patient needs a referral to another provider (e.g., cardiology, neurology, and urology), they are able to see a provider within 30 days.		
At my clinic, the governing board of the organization is active in the organization (e.g., volunteering and fund-raising).		

LEADERSHIP TRANSPARENCY

	YES	NO
At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate with their employees the organization's performance evaluations.		
At my clinic, senior leaders (e.g., CEO, Medical Directors, and Senior Managers) openly communicate to their employees the organization's goals and expectations.		

CARE COORDINATION

	YES	NO
My clinic provides family planning services.		
At my clinic, medical records facilitate coordination of care between providers.		
At my clinic, providers from multiple disciplines report to a homeless health care department chair/director.		

ACCESS AND QUALITY OF CARE

	YES	NO
At my clinic, organizational performance is measured in terms of quality (i.e. clinical outcomes, mortality rates, readmission rates).		
At my clinic, patients can access multiple providers/services in one visit (e.g., mental health, social services, and primary care services).		

APPENDIX O

LETTER FROM DEPARTMENT OF HEALTH & HUMAN SERVICES PROVIDING ACCESS TO THE 2010 GRANTEE LEVEL UDS DATA

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Communications
Health Resources and
Services Administration
5600 Fishers Lane, Rm. 6C-18
Rockville MD 20857

November 2, 2011
November 23, 2011 **RESEND**

Ms. Jocelyn Steward
4218 Dunwoody Rd.
Martinez, GA 30907

RE: Freedom of Information Act Case Number HRSA 12-005

Dear Ms. Steward:

I am responding to your Freedom of Information Act request for all 2010 grantee level UDS tables.

As required by FOIA Regulation, 45 CFR, Section 5.65(d), this Office engaged in pre-disclosure notification (PDN) procedures with the grantees to determine the release of non-discloseable data contained in their UDS reports. Enclosed you will find a disc containing the non-proprietary data for all of the FQHC's as well as the proprietary data for those centers who consented to its release. The proprietary data consists of Table 5 (Staffing and Utilization), Table 8A (Financial Costs, Enabling Services), and Table 9D (Patient Related Revenue).

The Department of Health and Human Services' policy calls for the fullest responsible disclosure consistent with the requirements of administrative necessity and confidentiality which are recognized by the FOIA, 5 U.S.C. 552, and the Department's implementing Public Information Regulations, 45 CFR Part 5.

In accordance with the FOIA, Section 5.42(2), the Department of Health and Human Services has established a policy that FOIA fees of $25 or less will be waived. As a result, the fee associated with the FOIA response has been waived.

If I can be of further assistance, please contact me at (301) 443-2865. Also if you have any questions pertaining to the enclosed data, please don't hesitate to call Ms. Michelle Chung at (301) 594-0199.

Sincerely yours,

Kristy Muse
Freedom of Information Specialist

Enclosure

APPENDIX P

INSTITUTIONAL REVIEW BOARD APPROVAL DOCUMENTATION

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Institutional Review Board for Human Use

Form 4: IRB Approval Form
Identification and Certification of Research
Projects Involving Human Subjects

UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on September 29, 2013. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator:	STEWARD, JOCELYN L
Co-Investigator(s):	
Protocol Number:	**X110503002**
Protocol Title:	*Development and Testing of the Primary Care Homeless Organizational Assessment Tool (PC-HOAT) to Evaluate Primary Care Services for the Homeless*

The IRB reviewed and approved the above named project on 8-3-11. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

This project received EXPEDITED review.

IRB Approval Date: 8-3-11

Date IRB Approval Issued: 8-3-11

Marilyn Doss

Marilyn Doss, M.A.
Vice Chair of the Institutional Review Board for Human Use (IRB)

Investigators please note:

The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.

470 Administration Building
701 20th Street South
205.934.3789
Fax 205.934.1301
irb@uab.edu

The University of
Alabama at Birmingham
Mailing Address:
AB 470
1530 3RD AVE S