Title
Complex Care Management to Decrease Emergency Department Utilization: A Case Study of the Homeless Patient Aligned Care Team Demonstration Project at VA Greater Los Angeles Healthcare System

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Complex Care Management to Decrease Emergency Department Utilization:
A Case Study of the Homeless Patient Aligned Care Team Demonstration Project
at VA Greater Los Angeles Healthcare System

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Public Health

by

Beena Ishwar Patel

2013
ABSTRACT OF THE DISSERTATION

Complex Care Management to Decrease Emergency Department Utilization:

A Case Study of the Homeless Patient Aligned Care Team Demonstration Project

at VA Greater Los Angeles Healthcare System

By

Beena Patel

Doctor of Public Health

University of California, Los Angeles, 2013

Professor Ronald Andersen, Chair

This quality improvement (QI) dissertation is a case study of the homeless-oriented Patient Centered Medical Home demonstration program, referred to as the Homeless Patient Aligned Care Team (HPACT) at West Los Angeles VA Medical Center (WLA). The WLA HPACT program was implemented to address the complex needs of the homeless and at-risk for homelessness population using the Patient Centered Medical Home model (PCMH) – a multi-disciplinary, team-based approach to primary care. Unlike traditional PCMH models, the WLA HPACT demonstration program employed a series of complex care management interventions to tailor care for homeless
Veteran patients. The primary goal of the WLA HPACT demonstration program was to decrease the number of emergency department (ED) visits among patients assigned to the WLA HPACT team by identifying tools and processes to perform complex care management for the WLA HPACT panel of patients. This dissertation identifies barriers and best practices to address needs of WLA HPACT patients to support the demonstration program’s goal of decreasing their ED utilization.

This problem-solving QI dissertation was carried out in three phases – literature review, diagnosis, and implementation. In the first phase, we conducted a literature review of the factors contributing to homeless Veteran ED utilization patterns. In the diagnosis phase, we undertook a local needs assessment (conducted by informal stakeholder focus groups) to determine the organizational context for the WLA HPACT program and how to best evaluate HPACT’s objective to reduce ED utilization rates for HPACT patients. The implementation phase of this QI dissertation employed a mixed-method progress-focused formative evaluation to examine patient characteristics, intervention processes, ED utilization patterns, staff perceptions on perceived barriers and interventions to address gaps in care to decrease ED visits for current HPACT patients. The evaluation used qualitative key informant interviews and quantitative descriptive data analysis.

The findings of this early implementation QI project inform clinical and organization processes for the WLA HPACT demonstration program that should be considered for on-going implementation. Recommendations for future implementation include complex care management interventions for patients with pain needs, substance abuse conditions, as well as modifications to organizational features of the program such as hours of operations, and team composition.
The dissertation of Beena Ishwar Patel is approved.

Diana W. Hilberman

Stuart Schweitzer

Alexander Young

Ronald M. Andersen, Committee Chair

University of California, Los Angeles

2013
DEDICATION

This dissertation is dedicated to my loving parents, Ishwar and Sandhya, my brother and sister-in-law, Surag and Monique, for their undeniable love and support throughout my life. Without their strength, comfort, and blessings I would not be the person I am today.

I also dedicate this dissertation to the heroes of our nation who find themselves homeless. I hope that this is one of many scholarly works to shed light on their experience in an effort to give them a voice.

“We are like dwarfs sitting on the shoulders of giants. We see more, and things that are more distant, than they did, not because our sight is superior or because we are taller than they, but because they raise us up, and by their great stature add to ours.”

—John of Salisbury, 12th-century theologian
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Dr. Ronald Andersen, my Committee Chair, who always kept me motivated and focused to produce the best product possible, and who always went above and beyond the call of duty as a mentor and friend.

Dr. Diana Hilberman, Committee Member, for her guidance and mentorship throughout this program.

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Dr. Rishi Manchanda, Lead Physician, for being my work “big brother”, a mentor, and the best role model I could have hoped for, and for teaching me how to “kill them with kindness” – the most invaluable management skill I have learned yet.
My VA Greater Los Angeles co-workers and staff for sharing their knowledge, experience, and
passion to their work, and for the endless encouragement, enthusiasm, and support they gave me to
successfully complete this project.

I can confidently say that working on this project with all of you has meant more to me, and taught
me more than the last 15 years of my educational career. Unlike a lot of the projects I could have
worked on, I actually got to be part of the HPACT program from the time that it was just an idea
(and not a widely supported one because a lot of people didn’t see the need for it) to a claim to fame
– not just for GLA, but VA nationally. To say that I know the nitty gritty details of the program
down to every patient and every dollar spent is an understatement. For the first eight months of
clinic I spent my evenings with the patients playing the role of a part-time nurse, social worker, clerk,
clinic coordinator, patient advocate, or just being there to make sure things ran smoothly. These
patients have become more than just social security numbers to me and as I got to know them better
I’ve been able to embrace their needs and challenges and frustrations to the point that I would get
frustrated at all the hurdles that we had in front of us. Working to build a program that overcomes
these hurdles has been a challenge and an honor.

I can’t say that I’ve have single handedly ended Veteran homelessness or solved the problem of
inappropriate emergency department utilization and saved a ton of money. But I can say that we
won’t get to any of that without the amount of heart and sweat that this team has put in to this
program.

So I want to thank you all again for taking the time to guide me through these past few years and for
giving me a skill set that I know will make me successful in whatever I do.
VITA

Beena Ishwar Patel

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M.P.H Health Services Administration Emphasis, June 2008, University of California at Davis — School of Medicine

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OVERVIEW

The Problem

The Veterans Health Administration (VHA) spends three times as much providing healthcare to homeless Veterans as it does to non-homeless Veterans (Veterans Health Administration 2011). Homeless and at-risk for homelessness Veterans have special healthcare needs that are often inadequately addressed in traditional care models due to the complexity of these issues. Homelessness is often caused by an underlying illness (e.g. mental illness) that then both causes other illnesses (e.g. infectious diseases) and challenges disease management of others (e.g. chronic illnesses) (Institute of Medicine 1988; Buchholz, Malte et al. 2010). In addition to having more comorbid conditions, homeless Veterans face limited physician access due to transportation restrictions, fragmented care, and basic survival challenges that often preclude medical treatment (O'Toole, Conde-Martel et al. 2003). These well-documented factors contribute to high rates of emergency department use among homeless Veterans resulting in financial and efficiency strains on the health care system (Richards, Navarro et al. 2000). Primary care approaches seeking to address these issues can benefit from a deeper, contextual understanding the factors that contribute to emergency department use for homeless Veterans in order to tailor these care models to provide more efficient and less costly primary care delivery.

Proposed Solutions

Overcoming the barriers to care to improve health and housing outcomes, and address inappropriate health services utilization by the Veteran homeless population, requires implementation of comprehensive, coordinated, and accessible primary care treatment models (O'Toole, Buckel et al. 2010). Some integrated primary care-homeless services care models that are
tailored to the needs and specific challenges of homeless Veterans have decreased emergency
department use by up to 40%, reduced hospitalizations by 30-50%, improved chronic disease
management outcomes, and expedited housing placement and retention (Veterans Health
Administration 2011). Large-scale implementation of this type of coordinated care model requires a
systems redesign of the clinical processes and well-established care dynamics. This redesign is
suggested within the context of the Patient Centered Medical Home and Chronic Care Models. The
VA has restructured primary care around the Patient Centered Medical Home model (PCMH),
which is a team-based, multidisciplinary approach to primary care delivery and intends to reduce
physician burnout while improving outcomes for patients (Crabtree, Chase et al. 2011). The Chronic
Care Model (CCM), which informs interventions of the PCMH model, suggests domains for
interventions to improve the outcomes of chronic conditions. The CCM lends itself well to a quality
improvement (QI) orientation for homeless Veteran care (Wagner, Austin et al. 2001; Bodenheimer,
Wagner et al. 2002). The literature suggests that the care dynamics that need to be addressed to
better address the complex needs of homeless Veterans to address utilization include accessibility of
care, readiness to respond to a “treatable moment”, trust and relationship building, integrated
delivery models that address competing needs, and rapid engagement (i.e. Housing-First approach)
(O’Toole, Buckel et al. 2010).

Successful case studies outside and within the VA of sites incorporating care dynamics
necessary to appropriately care for homeless Veterans within primary care models suggested testing
the approach within the Veterans Health Administration (VHA). To this end, the National Center
on Homelessness Among Veterans established a two-year Homeless Patient Aligned Care Team
(HPACT) demonstration project as a leading initiative to engage homeless and at-risk for
homelessness Veterans in integrated primary-care homeless services care models. With financial
support from the VHA Office of Homeless Programs and Office of Primary Care, 32 sites were funded as HPACT demonstration sites (refer to APPENDIX A – HPACT Request For Proposal for Letter of Intent and supporting demonstration project selection documentation). The Veterans Affairs West Los Angeles Medical Center (WLA), part of the Greater Los Angeles Healthcare System (GLA) family, was selected as one of the demonstration sites and $606,252 was allocated to WLA for fiscal years 2012 and 2013 to support HPACT program implementation and staffing.

The WLA HPACT program aims to eliminate barriers to quality health care and improve health and housing outcomes for Veterans that are homeless or at imminent risk of homelessness by implementation of a coordinated homeless primary care patient centered medical home (referred to as patient aligned care team or PACT within the VA) that matches the WLA facility needs and capacity.

**Significance of the Project**

The purpose of this case study is to explore high cost emergency department utilization and best practices to decrease emergency department utilization among homeless and at-risk for homelessness Veterans in a PCMH at the Veterans Affairs Greater Los Angeles Healthcare System. More specifically, this quality improvement project seeks to evaluate the complex care management interventions employed by the West Los Angeles Homeless Patient Aligned Care Team (WLA HPACT) demonstration project using progress-focused formative evaluation methods. This type of formative evaluation is employed to monitor a program’s progress towards its goal. The evaluation was conducted to identify the progress the WLA HPACT demonstration program has made toward its goal of reducing emergency department utilization among homeless and at-risk for homelessness patients treated by the WLA HPACT. The findings from the evaluation provide baseline
measurements for key measures of interest, identify gaps in care, barriers to achieving goals, and inform the complex care management interventions to address and mitigate barriers. Lastly, this project provides recommendations that take into consideration the GLA organizational capacity and constraints to inform future quality improvement for the WLA HPACT demonstration program.

This quality improvement project has four primary aims:

1. To “diagnose” the identified problem, that is inappropriate emergency department utilization among homeless Veterans in a homeless-oriented PCMH
2. To identify barriers or gaps in care and explore acceptability of complex care management to decrease emergency department utilization among homeless Veterans in a homeless-oriented PCMH
3. To understand the role of the case management tracking tool to facilitate team-based complex care management of medical and social needs
4. To inform future quality improvement of homeless-oriented PCMH

Dissertation Objectives

The aims of this quality improvement project will be carried out by the following objectives:

Objective 1: Identify factors associated with emergency department use and barriers to care among homeless Veterans to be treated by WLA HPACT by conducting stakeholder focus groups and literature review.

Objective 2: Define metrics and available data sources to evaluate factors related to emergency department utilization among homeless Veterans treated by WLA HPACT.
Objective 3: Using a progress-focused formative evaluation, identify changes in and factors associated with emergency department utilization among homeless Veterans treated by WLA HPACT.

Objective 4: Make recommendations to inform interventions for complex care management that address key gaps identified in needs assessment and formative evaluation.
BACKGROUND

The Department of Veterans Affairs (VA) Greater Los Angeles Healthcare System (GLA) provides comprehensive ambulatory and tertiary care to Veterans throughout Kern, Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties. GLA is one of the largest integrated healthcare organizations in VHA with 945 operating and authorized beds, over 5,000 employees, and an annual operating budget of $807 million. The VA West Los Angeles Medical Center (WLA) campus is designated as a 1A VHA healthcare facility, a Patient-Centered Care (PCC), Center of Innovation, and a Level II Poly-trauma Network Site for Veterans Integrated Service Network (VISN) 22. GLA has several programs that provide services to homeless Veterans as well as a comprehensive homeless program to support the high number of homeless Veterans living in the GLA catchment area. The following section describes the history of Veteran homelessness, the homeless Veteran population served by GLA, and describes the mission, structure, and components of GLA’s comprehensive homeless program (also referred to as the Community Care service line). Lastly, this section provides background on the issue of emergency department use among homeless Veterans and strategies, including the Chronic Care Model (CCM) and Patient Centered Medical Home (PCMH), to address this issue.

History of Veteran homelessness

Homelessness has always existed in the United States, but only in recent decades has the issue become well known. In the 1970s and 1980s, the number of homeless individuals has increased, as did their visibility. Experts cite various causes for the increase in homelessness. These include the demolition of single room occupancy dwellings in so-called “skid rows” where transient single men lived, the decreased availability of affordable housing generally, the reduced need for seasonal unskilled labor, the reduced likelihood that relatives will accommodate homeless family
members, the decreased value of public benefits, and changes in the eligibility statuses at mental hospitals (National Coalition for the Homeless 2006). The increased visibility of homeless persons was due, in part, to the decriminalization of actions such as public drunkenness, loitering, and vagrancy (Kirklin 2012).

Homeless Veterans initially came to the attention of the public at the same time that homelessness generally was becoming more common. As homeless persons began to grow, it became apparent that homeless Veterans were overrepresented in the general U.S. homeless population. News accounts chronicled the plight of Veterans who had served their country but were living (and dying) on the street (Homelessness 2010). The commonly held notion that the military experience provides young people with job training, educational and other benefits, as well as the maturity needed for a productive life, conflicted with the presence of Veterans among the homeless population.

The wars in Iraq and Afghanistan have brought renewed attention to the needs of Veterans, including those of the homeless Veteran population. The 2011 point-in-time prevalence (determined by the number of homeless Veterans on any given day) identifies 67,495 homeless Veterans on a given night (Table 1). Homeless Veterans comprise approximately 14% of the homeless adult population. The annual prevalence (includes only include those persons who were residing in emergency shelters or transitional housing during the relevant time periods) identified 144,842 homeless Veterans in 2010. Although the burden of homelessness among Veterans is widespread, nearly half of all homeless Veterans are located in four states: 25 percent in California, 10 percent in Florida, eight percent New York, and seven percent Texas. Furthermore, nearly half (43%) of homeless Veterans are unsheltered (living on the street, in an abandoned building, or another place not meant for human habitation) (HUD and VHA 2011).


<table>
<thead>
<tr>
<th>Type of Estimate</th>
<th>Population Included in Estimate</th>
<th># of Homeless Veterans</th>
<th>% of Adult Homeless Population</th>
<th># of Homeless Veterans</th>
<th>% of Adult Homeless Population</th>
<th># of Homeless Veterans</th>
<th>% of Adult Homeless Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-in-time</td>
<td>Veterans living in shelter, on the street, or other places not meant for human habitation.</td>
<td>75,609</td>
<td>16%</td>
<td>76,329</td>
<td>16%</td>
<td>67,495</td>
<td>14%</td>
</tr>
<tr>
<td>Annual</td>
<td>Veterans living in shelter (long-term or emergency)</td>
<td>136,334</td>
<td>10%</td>
<td>144,842</td>
<td>13%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Greater Los Angeles Homeless Veterans and Services**

The homeless Veteran population in Los Angeles is markedly significant as compared to most other parts of the country. LA County has the largest number of homeless Veterans (6,371), accounting for 21% of the homeless Veterans in major cities and more than 10 percent of homeless Veterans in the US (GLA’s five county catchment area has 7,141 homeless Veterans). The need of this sizeable population has molded the homeless Veteran programs and services provided by GLA. Since FY 2006, GLA has provided care to over 34,000 homeless Veterans. On average, GLA sees over 4,000 new unique homeless Veterans each year. In FY 2012 alone, GLA served 11,046 homeless Veterans. In general, the number of homeless Veterans served by GLA has steadily increased over the past six years.
Though GLA’s homeless Veterans are predominantly middle-aged and male, its homeless program is seeing a large number of women, Operation Enduring Freedom (OEF)/Operation Iraqi Freedom (OIF)/Operation (OND), and Veterans with families. These homeless Veterans are resource intensive and in FY 2011 GLA homeless patients had a total of 42,578 encounters (with the projection expected to be higher for FY 2012). GLA’s homeless Veteran population has high rates of medical and mental health issues; and many are chronically homeless. The most common medical diagnoses homeless Veterans utilizing GLA services are substance use disorders, PTSD, bipolar, major depression, and poly trauma (Nakashima 2012).

Table 2 GLA Homeless Program Veterans Served in Total

<table>
<thead>
<tr>
<th></th>
<th>FY06</th>
<th>FY07</th>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique patients</td>
<td>7,213</td>
<td>8,573</td>
<td>9,311</td>
<td>9,411</td>
<td>10,094</td>
<td>9,428</td>
<td>11,046</td>
</tr>
</tbody>
</table>

Figure 1 Growth of Homeless Veterans Unique Patients by Fiscal Year*

* The drop in unique patients in FY11, compared to FY10, may be partially attributable to misinterpretation of appropriate stop code usage, resulting in undercounting of homeless patients. This was identified and corrected in that same fiscal year, but could not retroactively be corrected to reflect to true number of unique patients. We believe this resulted in an undercount in FY11.

GLA’s service area is 20,472 square miles and covers five counties (Los Angeles, Kern, Ventura, Santa Barbara, and San Luis Obispo). (Figure 2) Though most homeless Veterans (93%)
served by GLA live in Los Angeles County, there are significant populations of homeless Veterans served in outlying areas in the four other counties of GLA’s catchment area. This fact requires GLA’s homeless programming to be available across a large geographic area. In an effort to work with the Veterans in these more distant catchment areas GLA has assigned Community Care staff to cover the outlying areas. They currently commute between WLA campus and these sites as we work to build capacity and space for staff and local resources to work more closely with these Veterans and the community. Strategically if there were a Northern Community Based Outpatient Clinic (CBOC) hub for Homeless health care and HUD – VASH, the program could be more efficient and accessible.

Figure 2 FY 2012 Homeless Veterans served at outlying VA Community Based Outpatient Centers

<table>
<thead>
<tr>
<th>LA County</th>
<th>Ventura County</th>
<th>Santa Barbara County</th>
<th>San Luis Obispo County</th>
<th>Kern County</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,238</td>
<td>120</td>
<td>383</td>
<td>110</td>
<td>195</td>
</tr>
</tbody>
</table>

Demographics: Emergence of New Sub-Populations in need among homeless Veterans

Generally, the Veterans population served by GLA is predominantly male, middle aged, and ethnically diverse (Table 3).

Table 3 Homeless Veteran Demographic Characteristics

<table>
<thead>
<tr>
<th>Male</th>
<th>Average Age</th>
<th>Black</th>
<th>White</th>
<th>Hispanic</th>
<th>Other</th>
<th>After Vietnam Era</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.5%</td>
<td>51</td>
<td>52%</td>
<td>31%</td>
<td>13%</td>
<td>4%</td>
<td>68%</td>
</tr>
</tbody>
</table>

However, with the return of OIF/OEF, and OND Veterans, GLA is beginning to see an increase in the number of recently discharged younger Veterans and female Veterans. Of the 11,046, homeless Veterans served by GLA in FY 2012, 719 (6.5%) were women; 987 (8.9%) were
OEF/OIF/OND. The number of women and OEF/OIF/OND homeless Veterans served by GLA has been steadily increasing over the past few years. (Figures 3, 4) In addition, GLA is also serving more Veterans with families. In FY 2012, GLA served 362 Veterans with over 600 dependent children.

**Figure 3 Growth of Homeless Women Veterans served by GLA**

![Graph](image)

**Figure 4 Growth of Homeless OIF/OEF/OND Veterans served by GLA**

![Graph](image)
A Complex Population: High Rate of Medical and Mental Health Issues

Overall, there is high prevalence of serious medical and mental health conditions among the homeless Veterans served by GLA. As indicated below (Table 4), almost 70% of clients report a serious medical issue at intake: half indicate a psychiatric problem, and nearly half a substance abuse problem.

Table 4 FY 2012 Reported Health Issues for Homeless Veterans at Intake

<table>
<thead>
<tr>
<th>Serious medical problem</th>
<th>Substance Abuse Problem</th>
<th>Psychiatric Problem</th>
<th>Dual Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>69%</td>
<td>45%</td>
<td>50%</td>
<td>27%</td>
</tr>
</tbody>
</table>

The high rates of health issues identified likely contribute to a high rate of chronic homelessness in the GLA region. About 40-50% of the homeless Veterans served by GLA are “chronically homeless” (i.e., been homeless continuously for a year or more or had four episodes of homelessness in the past three years).

GLA Community Care Program Mission and Structure

The GLA programs that provide housing and clinical services to support this population are comprehensive, interdisciplinary, and collaborate across multiple service lines. GLA has developed a homeless program office, known as Community Care, which integrates the homeless care activities across the multiple service lines. Community Care, also referred to as the comprehensive homeless program, provides a continuum of care services for homeless Veterans including assessment, primary care, housing assistance, vocational rehabilitation, and access to VA medical and mental health inpatient and outpatient services. The mission of the Community Care service line is to end
homelessness for Veterans by assisting their return to society as independent, productive citizens.

GLA’s Community Care service line has the following objectives:

1. Establish a “no wrong door” approach in serving homeless and at-risk Veterans
2. Implement outreach initiatives targeting chronic homeless Veterans and special homeless Veterans population groups (OEF/OIF/OND; women Veterans; Veteran in the criminal justice system; Veterans with families; rural Veterans)
3. Establish 24/7 rapid re-housing and support services for homeless and at-risk Veterans
4. Right-size continuum of care to address the prevention, treatment, rehab and supportive housing needs of homeless and at-risk Veterans
5. Develop an active support network of community partnerships & collaborations
6. Integrate VBA and NCA services in support of ending homelessness among Veterans

The Community Care programs have grown to meet the demands of the GLA homeless Veteran patients. GLA’s Community Care service line is the largest in the nation and is nationally recognized for innovation and quality of care. Today, GLA provides 734 beds transitional and long-term for formerly homeless Veterans in several medical and mental health treatment programs on the WLA campus, plus 4,980 additional beds of transitional housing, permanent housing or treatment in the community. This represents GLA’s ability to house 5,714 formerly homeless Veterans at any given time – and a 60% increase in bed capacity from the approximately 3,579 beds available for homeless Veterans in 2009. GLA continues to successfully implement proven practices and develop new initiatives to support the goal of ending homelessness among Veterans.

As identified in the previous section, GLA is seeing new sub-groups of homeless Veterans. To better address the unique needs of these sub-groups, GLA is developing specialty programs
targeting women, older adults, recently incarcerated, OEF/OIF Veterans, individuals with dual diagnosis, Veterans with children, and Veterans with pets (considered by many to be an important emotional support system for many homeless individuals). Furthermore, in FY 2012 GLA has recently implemented a multi-disciplinary ACT (Assertive Community Treatment) team. This team provides “street medicine” and holistic care to chronically homeless Veterans in the field. The objective of the ACT team is to offer medical, mental health and other care to Veterans where they need it (often on the streets) as an ongoing effort to engage and attract individuals into VA homeless residential care and other appropriate services.

The primary components of the Community Care programs include: clinical services and programs, outreach efforts, employment support, Veterans Court, support services for Veteran families, and well as several demonstration projects aimed at addressing homelessness (Nakashima 2012; Nakashima 2012). Furthermore, Community Care oversees the VA and external partnership supported housing programs. The subsequent section outlines key features of the GLA comprehensive homeless program (Nakashima 2012).

**All day access to services:** GLA provides telephone access to a VA homeless social worker 24 hours a day and seven days a week. Starting in early FY 2012 an outreach worker has been available 24/7 to pick up homeless Veteran off the streets and transport them to a shelter or program.

**Outreach:** GLA outreaches to over 2,400 homeless Veterans annually at homeless congregating areas like Skid Row, rescue missions and shelters (including a cold weather shelter on the WLA VA campus during winter months). VA also helps sponsor and staff Stand Downs (health/service events for Veterans) at sites in Bakersfield, Lancaster, San Luis Obispo, Ventura and Compton. GLA has a women’s outreach team targeting female Veterans. It also has a jail outreach staff that
develops discharge plans for Los Angeles County inmates and helps Veterans receive VA care upon release.

**Homeless prevention outreach:** GLA is host to health events at local community colleges to enroll student Veterans into GLA as part of a homeless prevention effort (i.e., proactively offering mental health, medical, benefits, and employment services).

**Veterans Courts to divert Veterans from incarceration:** GLA works with three courts (Los Angeles, Ventura, and Santa Barbara) to divert Veterans into VA residential treatment programs.

**Screening clinic:** The Mental Health Outpatient Treatment Center provides weekday, daytime, same-day assessment and access to primary care, mental health care, substance use treatment, and housing services at one location.

**On-campus shelter beds:** There are 65 shelter/detoxifications beds on the West Los Angeles VA campus (Salvation Army HAVEN/Exodus Emergency) for homeless Veterans who need to stay overnight until they are thoroughly evaluated. These include eight recuperative care beds to help stabilize and transition medically compromised inpatients into a suitable residential program. Also, 20 additional beds are available during cold-weather months through a partnership with a local community program, Salvation Army Bell Shelter.

**VA Domiciliary:** An on-campus VA domiciliary with 296 beds provides residential care for Veterans with mental health and medical problems. Domiciliary stays usually are 90 days.

**VA Grant and Per Diem (GPD) transitional housing program:** Through partnerships with about 40 programs managed by 15 agencies, GLA has 1,259 community transitional housing beds for homeless Veterans. These partners include Volunteers of America, Salvation Army, United
States Veterans Initiative, and New Directions. Veterans in transitional housing programs stay for 3-18 months while receiving a range of medical, mental health and rehabilitative services. Many Veterans who complete their transitional housing program progress to independent housing. Specialty programs targeting women, older adults, recently incarcerated, OEF/OIF Veterans, individuals with dual diagnosis, Veterans with children, and Veterans with pets (an important emotional support for many homeless individuals) are available. Also, some VA Grant and Per Diem transitional housing programs now admit Veterans after hours and on weekends.

**Healthcare for Homeless Veterans (HCHV) beds:** Similar to the VA Grant and Per Diem program, the VA Healthcare for Homeless Veterans (HCHV) program provides specialized housing for homeless Veterans. Currently GLA has HCHV contracts with Tarzana Treatment Center to provide residential drug treatment, and Good Samaritan to provide detoxification beds.

**Supported Housing Program:** Westside Supported Housing program is operated by U.S. Vets and has 321 beds. This program emphasizes job readiness and maintenance of treatment gains of residents, including many graduates of the GPD and HCHV programs.

**Long-term care for homeless Veterans:** Through the Community Residential Care program, approximately 300 Veterans with medical and mental health issues are case managed in private residential care facilities.

**Vocational rehabilitation and job-finding services:** These are provided through Community Care’s Veteran Community Employment Development (VCED) Program and also private community partners. There are 15 HVSEP (Homeless Veteran Supported Employment) staff members embedded within GLA homeless programs. These trained specialists are formerly homeless Veteran providing assistance to their peers.
VA specialty medical and mental health care: This includes programs for Veterans with dual diagnosis or PTSD.

Homeless Veteran Dental Program: Non-emergent and restorative dental care by VA and contracted non-VA providers.

Demonstration projects: This includes the Assertive Community Treatment team that conducts outreach and provides medical services in the field for Project 60 Veterans, as well as the HPACT demonstration program described in this proposal.

Gaps from the Voice of the Veteran and the Staff that serve them

GLA seeks to address the needs of their homeless Veteran patients as they perceive them. Table 5 illustrates the top ten unmet needs for homeless Veterans, according to homeless Veterans, as well as the top ten unmet needs according to GLA Community Care staff. This data was gathered by paper-based surveys administered by community care administrative staff at one point in time. Interestingly, there is almost total overlap of “need” as defined by the Veterans and by the Staff. Many of the top priority needs are resources that the VA currently does not provide such as childcare and financial assistance for move in. These continue to be major obstacles to getting patients out of homelessness. Collaborations with the community partners are being considered as a potential strategic answer to these obstacles.
Table 5 Top Unmet Needs identified by GLA Homeless Veterans and GLA Homeless Staff

<table>
<thead>
<tr>
<th>Rank</th>
<th>According to GLA Homeless Veteran Patients</th>
<th>According to GLA Homeless Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Goods (furniture, housewares) for new apartment</td>
<td>Child care</td>
</tr>
<tr>
<td>2</td>
<td>Financial assistance to prevent eviction/foreclosure</td>
<td>Housing for registered sex offenders</td>
</tr>
<tr>
<td>3</td>
<td>Housing for registered sex offenders</td>
<td>Family reconciliation assistance</td>
</tr>
<tr>
<td>4</td>
<td>Child care</td>
<td>Legal assistance for child support issues</td>
</tr>
<tr>
<td>5</td>
<td>Move-in assistance (rent and utility security deposits)</td>
<td>Financial assistance to prevent eviction/foreclosure</td>
</tr>
<tr>
<td>6</td>
<td>Legal assistance to prevent eviction/foreclosure</td>
<td>Legal assistance to prevent eviction/foreclosure</td>
</tr>
<tr>
<td>7</td>
<td>Legal assistance for child support issues</td>
<td>Goods (furniture, housewares) for new apartment</td>
</tr>
<tr>
<td>8</td>
<td>Guardianship (financial)</td>
<td>Credit counseling</td>
</tr>
<tr>
<td>9</td>
<td>Women’s health care</td>
<td>Move-in assistance (rent and utility security deposits)</td>
</tr>
<tr>
<td>10</td>
<td>Assisted living for elderly</td>
<td>Family and marital counseling</td>
</tr>
</tbody>
</table>

Addressing homeless emergency department use

Despite GLA’s comprehensive homeless program and robust organizational structure, WLA continues to have a significant population of homeless Veterans using the ED for non-acute reasons, as well as high inpatient admission rates. This is in part due to the ability to connect and coordinate the multiple care and service needs for the WLA homeless population is challenged by a fragmented delivery system and lack of coordination of services. Furthermore, gaps in care, such as limited services during evening and weekends, or primary care that fails to address homeless-specific barriers, encourage inappropriate ED use and increases inpatient admission rates. Several models, including the Chronic Care Model (CCM) and Patient Centered Medical Home (PCMH), have been proposed to address these challenges and promote seamless care, which in turn can positively influence homeless utilization patterns. The idea of complex care management, which informed the
WLA HPACT interventions, is based on these models of care. The chronic care model and PCMH model are described in the next section.

**Chronic Care Model**

The Chronic Care Model is a quality improvement conceptual model to help guide clinical quality improvement initiatives. The model was originally identified as a framework to guide quality improvement initiatives for patients with chronic illnesses. The model is a multi-dimensional solution to a complex problem and can be applied to various contexts. The way the model is used is similar to an evidence-base guideline as it serves as a synthesis of system changes to guide quality improvement. Furthermore, the model is intended to be flexible and subject to change as new evidence becomes available.

The CCM has six core components: organization of health care, health system delivery, decision support, clinical information systems, community resources, and promoting self-care. Together these components are designed to promote productive interactions between an informed, activated patient and his or her prepared, proactive provider in the context of a practice or team. Historically healthcare organizations have used CCM-anchored QI approaches to collaborate on making rapid system changes. Evidence suggests that organizations making changes in more CCM elements are likely to have a greater benefit (Soban and Yano 2005). Thousands of QI studies have applied parts of this model to inform QI efforts; however, few take into consideration all or most of the components of the model (Bodenheimer, Wagner et al. 2002; O'Toole, Buckel et al. 2010).

The CCM has been proposed as a tool to address the issue of inappropriate ED utilization because of the multifaceted approach required to address the complex needs for the homeless Veteran population. The CCM, as it applies to this QI project to decrease ED utilization of patients
in HPACT, is discussed below in the Theoretical Approach section. The next section describes PCMH as it applies to the VA, discusses homeless care within the PACT model, and monitoring performance of these models.

**Patient Centered Medical Home**

The Patient Centered Medical Home (PCMH) model is a health care delivery model that aims to address the issues around inappropriate utilization of health care services, as well as improve quality and outcomes for patients within a primary care setting. The primary care crisis in the United States, described by the lack of primary care resources to treat the United States population, has called for innovation and transformation in the health care delivery system. The Patient Centered Medical Home is a patient-driven, team-based approach that delivers efficient, comprehensive and continuous care through active communication and coordination of healthcare services (Veterans Health Administration 2010; PCPCC 2012). It seeks to identify and remove barriers to high-quality care thus improving patient and staff experiences, outcomes, safety, and system efficiency (AHRQ 2012). Implementation of medical homes to address high emergency department (ED) and hospitalization rates characteristic of the Veteran population is a promising approach (Hoff, Weller et al. 2012). Although the manner by which this is accomplished is multifold and heavily debated, the fundamental concept is as follows: ED and inpatient hospitalization rates are targeted through focused and defined approaches to achieve primary care comprehensiveness, accessibility, continuity, and coordination (Grumbach and Bodenheimer 2002). Individuals assigned to a medical home are provided with preventative and other routine care services to treat problems before they become acute, thus reducing their need to seek emergency services.
What the PCMH model has the potential to do is best exemplified by the way it can treat patients with complex health care needs. This population comprises the 10% who incur 70% of health care costs in the United States (Bodenheimer and Berry-Millett 2009). In a PCMH, a multidisciplinary team generally consisting of a physician and non-physician members including a RN case manager, LVN, and clerk. These individuals work together to provide a panel of patients with preventative and primary care services. The non-physician team plays an integral role in the case management for this high-risk population and provides the services that physicians often do not have the time for (Ghorob and Bodenheimer 2012). Examples include active recruitment for preventative care, chronic care tasks (such as following up on lab results), and non-physician team members have been useful as health coaches and care navigators (Ngo, Hammer et al. 2010; Ghorob, Vivas et al. 2011; Lasser, Murillo et al. 2011; Ghorob, Thom et al. 2012). Treating complex patients, such as Veterans, in a medical home as described above has shown significant improvement in patient outcomes and efficiency of care (Chen, Thom et al. 2010; Clarke 2010; DiGioia, Lorenz et al. 2010; Fields, Leshen et al. 2010; Ghorob, Vivas et al. 2011; Hoff, Weller et al. 2012).

**Veteran Health Administration Patient Aligned Care Teams (PACT)**

The Office of Patient Care Services and Primary Care Program Office are undertaking a new initiative to implement a patient-centered medical home model at all VHA primary care sites. The medical home model is referred to as Patient Aligned Care Teams (PACT) within VHA. The VA’s approach to the medical home is modeled on those developed in other integrated health care delivery systems, including Kaiser Permanente, Geisinger Health System, and Duke University Medical Center (Klein 2011). This initiative supports VHA’s Universal Health Care Services Plan to redesign VHA healthcare delivery through increasing access, coordination, communication, and
continuity of care. PACT provides accessible, coordinated, comprehensive, patient-centered care, and is managed by primary care providers with the active involvement of other clinical and non-clinical staff. PACT allows patients to have a more active role in their health care and is associated with increased quality improvement, patient satisfaction, and a decrease in hospital costs due to fewer hospital visits and readmissions. The Primary Care Program Office has developed a variety of tools to assist Primary Care staff with the transformation process towards becoming patient-centered medical homes (O'Toole, Conde-Martel et al. 2003). In addition to improving chronic disease management, the VA’s patient aligned care team model seeks to increase access to care, intensify preventive health services, and improve coordination of care as patients move from primary care to specialty care providers (Group 2011). Creating capacity to strengthen services and bridge gaps in care has required the VA to extensively redesign care delivery to become less traditional face-to-face visits and more focused on convenient forms of communication (Department of Veterans Affairs 2010). Roll out of virtual health modalities such as telephone visits, secure messaging, video tele-health, and others have supported PACT goals. The PACT model is one operational application of the CCM because PCMH components, such as panel management, and team-based care, are in line with the intervention domains identified in the CCM. The next section describes ways to monitor PACT performance. However, the measures described can also be used to monitor CCM-informed interventions.

**Monitoring PACT Performance**

The metrics used to monitor performance and organization of the PACT model are based on the processes by which program aims are achieved and resulting outcomes (see Table 6 PACT Performance Metrics). Metrics were identified primarily for impact analyses and program evaluation by VHA program offices (namely the Office of Primary Care) and are used at the national, facility,
and individual team levels to provide feedback on performance as well as to identify areas requiring intervention (Klein 2011). Table 6 PACT Performance Metrics describes the PACT performance metrics commonly used in the areas of continuity of care, access, coordination of care, panel management, clinical improvement, and patient engagement and satisfaction. Definitions of these measures can be found in APPENDIX F – VHA Database Descriptions and Measure Definitions. As discussed previously, the PACT model aims to increase continuity of care, access, coordination of care, and utilize panel management techniques to improve clinical outcomes as well as satisfaction and engagement for patients. The following metrics were considered in order to measure impact, as well as monitor progress and success.
Table 6 PACT Performance Metrics

<table>
<thead>
<tr>
<th>Continuity of care</th>
<th>Access</th>
<th>Coordination of care</th>
<th>Panel management</th>
<th>Clinical improvement</th>
<th>Patient engagement and satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provider: % visits with assigned PCP</td>
<td>• Desired-date appointments</td>
<td>• Admission rate</td>
<td>• Panel size</td>
<td>• Admission rates</td>
<td>• All-employee survey PC satisfaction scores</td>
</tr>
<tr>
<td>• Emergency department visit rate</td>
<td>• Same-day appointments</td>
<td>• Patient contacted within 2 days of discharge</td>
<td>• Panel capacity</td>
<td>• Emergency department visit rates</td>
<td>• Patient satisfaction survey results</td>
</tr>
<tr>
<td>• Team: % visits with team</td>
<td>• Appointments within 7 days</td>
<td>• Patient contacted within 7 days of discharge</td>
<td>• DCG, a measure of patient complexity</td>
<td>• Panel case mix</td>
<td>• Patient complaints</td>
</tr>
<tr>
<td></td>
<td>• Appointments within 14 days</td>
<td>• 3rd next available appointment</td>
<td>• Teamlet staff FTE</td>
<td>• Readmission rates</td>
<td>• My HealtheVe t enrollment</td>
</tr>
<tr>
<td></td>
<td>• 3rd next available appointment</td>
<td>• Group clinic encounters</td>
<td>• Staffing ratio</td>
<td>• Ambulatory care-sensitive admissions</td>
<td>• Percentage of patients with in-person authentication, a requirement for secure messaging</td>
</tr>
<tr>
<td></td>
<td>• Telephone clinic encounters</td>
<td>• Telephone access data</td>
<td>• Revisit rate</td>
<td>• Mortality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No-show rate</td>
<td>• Secure messaging Data</td>
<td>• Number of new patients</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: PCP = primary care physician; PC = primary care; DCG = diagnostic code group; CCHT = care coordination/home tele-health services.

The time to the third next available appointment is a standard measure of access to medical care. It is considered more a reliable indicator of how long a patient might wait than the time to the next available appointment, which may be affected by last-minute cancellations and other chance occurrences.

**PACT Team Structure**

PACTs are most often comprised of a primary care provider (a physician, nurse practitioner, or physician’s assistant), a registered nurse (RN), and licensed vocational nurse (LVN) or equivalent,
and a medical clerk. This interdisciplinary team is supported by pharmacists, social workers, nutritionists, psychologists, and health coaches (Group 2011). The RN typically takes on the role of the care manager (also referred to as a case manager) whose responsibilities includes coordination of care and panel management. Refer to Table 7 for staffing ratios for the PACT model (Klein 2011). PACT staffing structure was identified by the VHA Primary Care program office and staffing requirements are consistent across general PACT teams in VHA.

Table 7 PACT Staffing Requirements

<table>
<thead>
<tr>
<th>Care team assigned to 1 panel of ± 1,200 patients</th>
<th>Additional team members at each primary care facility</th>
<th>Additional team members assigned to multiple panels of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider: 1 FTE</td>
<td>Health promotion/disease prevention manager: 1 FTE</td>
<td>Clinical pharmacy specialist: ± 3 panels</td>
</tr>
<tr>
<td>RN care manager: 1 FTE</td>
<td>Health behavior coordinator: 1 FTE</td>
<td>Clinical pharmacy anticoagulation: ± 5 panels</td>
</tr>
<tr>
<td>Clinical associate (LPN, MA, or health tech): 1 FTE</td>
<td>My Health eVet coordinator: 1 FTE</td>
<td>Social work: ± 2 panels</td>
</tr>
<tr>
<td>Clerk: 1 FTE</td>
<td></td>
<td>Integrated behavioral health:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychologist (± 3 panels)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social worker (± 5 panels)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Care manager (± 5 panels)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Psychiatrist (± 10 panels)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Case managers Trainees</td>
</tr>
</tbody>
</table>

Note: FTE = full-time equivalent.

PACT Early Implementation Results

The three-year implementation of PACT across the VA’s 900 primary care clinics began in 2010. By 2011 there were 23 PACT demonstration projects. Early implementation results from several sites indicate that the program has decreased ED visits, hospitalizations and inpatient visits, and appointment wait times, while improving patient and staff satisfaction and health outcomes (Reid, Coleman et al. 2010; Klein 2011; Kuehn 2012). Furthermore, demonstration sites have yielded
lessons based on early implementation work and provide insight on future efforts. A detailed analysis on the early implementation efforts for PACTs in Memphis and Lincoln have identified the following lessons (Klein 2011):

- The need for effective monitoring of quality and efficiency to ensure staff competence
- The importance of collaboration at all levels of the organization
- The importance of involving key stakeholders early
- The importance of bridging gaps between providers and health care institutions
- The importance of aligning program goals with performance incentives
- Ensuring stability
- Using partnerships to overcome workforce shortages and other challenges

These lessons have been useful for national dissemination of PACT throughout the VA and also provide guidance for specialized PACT models.

**Special Population PACTs**

The PACT model acts to improve the quality of care for the general Veteran population. However, several studies indicate the need for tailored PACT models to address the unique needs of special populations such as women, geriatric patients, severely mentally ill patients. This is also true for the homeless Veteran population. Consideration of the following key features have been identified for special population PACTs (Veterans Health Administration 2011):

- Access - Accommodates barriers, challenges to routine care
- Care tailored to specific needs of a population
- Readiness to respond to “treatable moments”
- Case management/Care coordination
- Expanded team members/communities
- Capacity to address competing needs
- Care team equipped with specialized knowledge and skills

Currently, VA special population PACTs exists for women, and a severely mentally ill demonstration project is planned. The HPACT demonstration project was developed based on findings from the literature indicating that homeless and at-risk for homelessness Veterans can also benefit from a tailored model because most have multiple deferred care needs complicated by their living arrangements and other barriers. Furthermore, this population has higher rates of ED and inpatient utilization than the general Veteran population which makes them very costly to treat. Several hypotheses point to better engagement in primary care as an approach to control utilization patterns and cost expenditure. The next section describes the complexity of homeless patients, the unique barriers they face, and why the CCM and PACT models of care have increased potential to engage them in primary care and affect ED utilization patterns.

**Homelessness and PACT**

Homeless people are three to six times more likely to become ill than housed people (National Health Care for the Homeless Council 2008). This is in part due to significant unmet health and housing needs (Baggett, O'Connell et al. 2010), as well as barriers which limit access to care (O'Toole, Gibbon et al. 1999; McGuire, Gelberg et al. 2009). Of the many barriers faced by this population, poor health is most closely related with homelessness (National Coalition for the Homeless 2006). Nearly 25% of homeless individuals nationally suffer from severe mental illness (SMI), over 50% have substance abuse disorders, and several homeless individuals have co-
occurring conditions of mental illness and substance use. These conditions have increased their need for chronic medical, mental health, and substance abuse treatments. These conditions are more difficult to treat in primary care (Padgett and Struening 1991; Padgett, Stanhope et al. 2011). The complexity of needs for this population makes them hard-to-reach and difficult to engage in traditional health care settings. Furthermore, homeless individuals have non-medical barriers that limit their access to care. Homeless individuals with competing sustenance needs (food, shelter, work) have been associated with not having a regular source of care (Gallagher, Andersen et al. 1997) and suggests that all but the most pressing health care needs are ignored (Gelberg, Gallagher et al. 1997). In addition, barriers such as transportation (Kim, Swanson et al. 2007), social isolation (Kirklin 2012), lack of communications means (Kushel, Vittinghoff et al. 2001), and scheduling that doesn’t accommodate bus schedules, walking, or weather-related delays (North, Pollio et al. 1998; Kushel, Vittinghoff et al. 2001), all provide additional barriers to accessing care. The literature also notes that some homeless individuals not perceive a need for health care (O’Toole, Conde-Martel et al. 2003), or have barriers to care related to their concerns about costs of health care, clinical uncertainty, and how they will be treated (O’Toole, Gibbon et al. 1999).

These barriers lead to poor health outcomes (Institute of Medicine 1988; Veterans Health Administration 2011; Rabiner and Weiner 2012), inappropriate utilization of health services (primarily ED and inpatient), and increased costs (Salit, Kuhn et al. 1998; O’Toole, Conde-Martel et al. 2003). ED utilization by homeless individuals is often inappropriate and higher than ED utilization rates by non-homeless counterparts (Kushel, Vittinghoff et al. 2001; Brown, Goodacre et al. 2010; Hastings, Smith et al. 2011). One study has found 40% of homeless adults went to an emergency department in the previous year and 7.9% accounted for 54.5% of all visits (Kushel, Perry et al. 2002). Homeless persons in more unstable shelter (emergency shelters, unsheltered) were
more likely to go the ED than those homeless persons in more stable shelter (e.g. permanent supported housing). The top five reasons for ED use are substance abuse, trauma, mental illness, chronic disease exacerbations (O'Toole, Conde-Martel et al. 2007). Moreover, homeless Veterans were 1.7 times more likely to have repeat ED visits within 30 days (Hastings, Smith et al. 2011).

Achieving the outcomes identified for PACT is difficult to achieve for the homeless Veteran population because of these limitations and increased inappropriate utilization patterns. However, the literature suggests addressing the unique challenges inherent to this population is necessary and can improve health outcomes, patient satisfaction, and lower cost to treat this population (Padgett, Struening et al. 1990).

In addition to the CCM and PACT model, several additional models for primary care delivery have been identified to better tailor primary care to the homeless population. These include the Ambulatory ICU (aICU) model (Milstein 2009; Milstein and Gilbertson 2009), as well as the Mental Health-Primary Care Integration (MHPC) approach (Post and Van Stone 2008; Zeiss and Karlin 2008). The aICU model operates using a team-based approach to deliver urgent care type treatment for primary care (Lewis, Hoyt et al. 2011). The MCPC models are also a team-based approach; however, the emphasis of this model is the integration of mental health services in to the primary care setting by expanding the team composition to include mental health providers. Examples of these models exist within the Greater Los Angeles Health System (Blue-Howells, McGuire et al. 2008; McGuire, Gelberg et al. 2009). The common thread among these models is that they all seek to enhance access by building care models around the patient and are tailored to overcome barriers to care, thus affecting ED utilization patterns.
Project Rationale – Bridging gaps and overcoming barriers with best practices for homeless care coordination

The lessons learned by these approaches indicate the need to redesign clinical processes to support well-established homeless care dynamics. These include expanded accessibility to services and resources, capacity to provide care when and where it is needed, building trust and relationships with patients, ability to address competing needs through integrative system, and finally an infrastructure to allow for a housing-first model (O'Toole, Conde-Martel et al. 2003; O'Toole, Pollini et al. 2008; Veterans Health Administration 2011). These findings provide a strong infrastructure when developing homeless-oriented primary care models, however further direction is needed on how to appropriately tailor care given organizational context and conduct quality improvement to achieve program aims and objectives.

In the project’s preliminary planning phase (the project phase), the WLA HPACT strategy was identified for the program that was informed by these well-established models of care. This strategy, simply stated, was to develop the WLA HPACT program as primarily a complex care management intervention. This strategy was agreed upon by key WLA HPACT stakeholders after better understanding the needs of the target population and ways to provide the intensive primary care services required to decrease ED utilization. The local needs assessment that was conducted in the diagnostic phase of this dissertation discusses the strategy of complex care management that guides the operational efforts of the WLA HPACT team.

This quality improvement dissertation contributes to the field of quality improvement by providing a case study of the progress-focused formative evaluation conducted for the WLA HPACT demonstration project in order to understand the factors associated with ED visits, the barriers to reducing ED visits for this population, and identifying recommendations to inform the
complex care management strategies employed by the team. Specifically, the barriers and recommendations identified inform how to improve complex care coordination within the HPACT model using the WLA HPACT Case Management Tracking Tool. This tool was developed during the preliminary implementation phase of the WLA HPACT project in order to address the need to manage the care planning and coordination processes for the WLA HPACT patients. Care coordination is “the deliberate organization of patient care activities between two or more participants involved in a patient’s care to facilitate the appropriate delivery of health care services” (Bodenheimer, Wagner et al. 2002). The concept of care coordination, also referred to commonly as case management, has been found to be a central and vital component of all the models aimed at providing primary care delivery for homeless Veterans. This concept is particularly relevant to the program aim and objectives to decrease ED utilization for WLA HPACT patients because of its ability to bridge care between services, resources, and overcome organizational barriers. The next section provides the organization context and need for this QI project, and describes the WLA HPACT demonstration to date. The complex care coordination processes and tools employed by the WLA HPACT team are described in detail in the following section.
ORGANIZATIONAL CONTEXT AND NEED STATEMENT

VA National Priorities to End Veteran Homelessness and Redesign Primary Care

“We will provide new help for homeless Veterans because those heroes have a home – it’s the country they served, the United States of America. And until we reach a day when not a single Veteran sleeps on the street our business is unfinished.”

- President Barack Obama, November 3rd, 2009 at the National Summit on Homeless Veterans

The Homeless Patient Aligned Care Team demonstration project was created in light of pressing efforts by the Department of Veterans Affairs to align strategic planning goals with President Obama and the United States Interagency Council on Homelessness’ (USICH) Opening Doors: Preventing and Ending Homelessness in the United States initiative and federal strategic plan. The Opening Doors initiative seeks to end chronic homelessness, prevent, and end homelessness among Veterans in five years. Moreover, it aims to prevent and end homelessness for families and youth in 10 years. The intent of the Opening Doors initiative is to establish pathways to ending all types of homelessness (Homelessness 2010).

Secretary General Shinseki’s Department of Veterans Affairs Strategic Plan 2010-2014 identifies eliminating Veteran homelessness as one of its high-impact priorities (Department of Veterans Affairs 2010). The Five-Year Plan to End Homelessness among Veterans aims to achieve this through systematic efforts, new approaches to Veteran services, and robust management systems. This plan is supported by six equally important strategic pillars including Outreach/Education, Prevention, Treatment, Housing/Supportive Services, Income/Employment/Benefits, and Community Partnerships (Veterans Health Administration 2011). Several homeless service initiatives have been expanded and developed throughout the VA to operationalize this effort. For the Veterans Health Administration, these efforts focus on improving
Another VA high-impact priority is to redesign the primary care infrastructure of VHA to reduce the cost, and improve quality, and viability of primary care through a Veteran patient-centric health care model as well as infrastructure to help Veterans navigate the health care delivery system and receive coordinated care. In April 2010, the VA began a system-wide transformation of more than 850 primary care clinics in to the Patient-Centered Medical Home (PCMH) model. This model of care is referred to as Patient Aligned Care Teams or PACT within the VA (True, Butler et al. 2013). This quality improvement initiative is intended to provide patient-centered care that is team-based, comprehensive, and with enhanced access and improved coordination. PACT encourages patients to have a more active role in their health care. Early findings show some improvements in quality, patient satisfaction, and a decrease in costs due to fewer hospital visits and readmissions (Veterans Health Administration 2011).

However, the current iteration of the PACT model may be insufficient to systematically provide quality care to homeless or at-risk for homelessness Veterans due to barriers existing for this population that are not typically addressed in traditional primary care settings. Some early findings from the literature point to this as a key contributor to the high emergency department (ED) and inpatient utilization rates seen among homeless patients. Building an effective care model for this special population requires specific capacities that go beyond the PACT model and address population-specific needs such as those for social issues, mental illness and substance abuse, as well as competing needs (Veterans Health Administration 2011). Outside the VA, several efforts to tailor the medical home for homeless populations exist including the well-established Health Care for the Homeless program (further described in the FINDINGS: Literature Review section). Within VHA,
attempts to engage homeless Veterans into primary care settings can be seen at Providence VAMC, San Francisco VA Downtown CBOC, and the Greater Los Angeles Healthcare System (O'Toole T 2011). These sites have been able to demonstrate that co-location, and integration of services has shown some improved health and housing outcomes for homeless Veterans receiving care in a primary care setting (Blue-Howells, McGuire et al. 2008).

**Homeless Patient Aligned Care Team Demonstration Project**

The HPACT demonstration project was created in light of the findings that tailored primary-care delivery may improve health and housing outcomes for homeless Veterans. The HPACT demonstration project aims to eliminate the barriers to quality health care and to improve health and housing outcomes of homeless and at imminent risk (or individuals at risk of becoming) homeless Veterans through large scale implementation of coordinated homeless primary care models that are matched to facility needs and capacity within high-volume/high-need VA stations. Three care models were proposed and supported by this initiative. These include:

1. **Homeless PACT model co-located and integrated with VA Homeless Programs**

   This model best describes the approach at Greater LA (Screening clinic in Building 206, free-standing clinic model on hospital campus), the Providence VA (based at the medical center within primary care) and San Francisco (urban CBOC model). The key features of this model are: (a) the “one-stop shopping capacity” where a homeless Veteran can have multiple needs addressed in one setting and at one time. Co-location with the VA outreach and housing coordinators, HUD-VASH case managers, Veterans Resource Center, Veterans Benefits Administration case workers facilitates this function; (b) resources in-place to address competing needs such as transportation assistance, meals, a clothes and hygiene pantry, laundry facilities, etc.; and (c) primary care organized to
incorporate a housing-security agenda that addresses first-stop/point-of contact care needs, treatment engagement/behavior change and housing placement-stabilization treatment goals, all in addition to a traditional chronic and acute disease management. Staffing is pro-rated based on clinic volume with significant efficiencies achieved by co-located already existing staff and programs. The targeted homeless population for this model is expected to be best matched with multi-morbid homeless Veterans who would benefit most from a care management model and early engagement in homeless programming with a goal of housing placement and stabilization. This is also a population where care offsets from reduced emergency department and inpatient care would be most likely realized. The targeted care setting for this model is most appropriate in high-volume, urban medical centers and community based outpatient clinics where it is logistically easier to co-locate and integrate service teams (homeless programming, primary care PACT and mental health) and to cohort homeless veterans into this care model (O'Toole, Buckel et al. 2010).

2. PACT team model with homeless case management support

The primary care PACT team (PCP, RN, health tech, clerk) that is expanded to include a homeless case manager/care navigator whose primary responsibility is to assist homeless Veterans navigate care, facilitate access and follow-up to the PACT team and ensure homeless-sensitive care is being provided. This dedicated case management member also serves as the liaison with community agencies and providers, including grant-per-diem sites and HUD-VASH case managers. The targeted homeless population for this model is best suited to those homeless Veterans who are more “treatment engaged” where the primary focus is on keeping them engaged in care and placed in housing, including newly housed Veterans (in grant-per-diem or HUD-VASH housing) who may have multiple deferred care needs to be addressed. The targeted care setting for this model is best matched to either low-volume/low resource homeless Veteran settings where it is not practical to
co-locate services or to settings where there is a large grant-per-diem or HUD-VASH population where a case management/care navigator role is most needed (O'Toole T 2011).

3. Community Resource and Referral Centers (CCRC)-based Homeless PACT

This model builds on the growing capacity for community outreach supported by the development of CRRCs and previous research demonstrating the benefits of community outreach for disengaged and mentally ill homeless Veterans (25,26). The key features to this model are that (a) the care is provided in a nontraditional setting likely to attract homeless Veterans not otherwise in receipt of VA care; and (b) the care available in these settings is more limited because of location and lack of infrastructure. Primary care services in this model would be more focused on treatment engagement and episodic care that might include physical examination screening, laboratory testing/screening, medication management, prevention services (i.e. immunizations), psychiatric screening, and assistance in care referrals. The model would have a targeted primary care outreach component attached to the HCHV outreach activities to further enhance engagement. It is expected that this type of clinic model would serve as “feeder” to either a Homeless-Oriented PACT or PACT with a homeless case manager clinic as once treatment engagement goals are realized. The targeted homeless population for this model is the chronically homeless; treatment and service disengaged or treatment resistant homeless Veterans. The targeted care settings include CRRCs, and possibly mobile outreach units (O'Toole, Buckel et al. 2010; O'Toole T 2011).

These three homeless-oriented primary care models are reflective of optimal approaches taking into consideration characteristics of the location such as urban vs. rural communities, and community-based vs. health center-based vs. program-based sites. All models, regardless of location
and model type, were expected to be able to address the goals of the national HPACT demonstration project (goals to be described in subsequent section).

Financial support for this demonstration project was provided through the VHA Office of Homeless Programs and Office of Primary Care. A total of 32 sites at VA facilities across the United States were funded as HPACT demonstration sites for 18 months (refer to APPENDIX A – HPACT Request For Proposal). General guidelines were given to structure the HPACTs at these demonstration sites; however no explicit clinic organization was outlined in order to allow sites to match their HPACTs to facility needs and capacity.

Clinical Objectives

The demonstration project identifies the following five clinical objectives, which are made possible by the modified primary care clinic design. These objectives were identified because they have been demonstrated in piloted projects and models outside the VHA (T, Kane et al. 2011).

I. Rapid access: The sooner a homeless Veteran is identified and connected to services the more likely it is that they can be engaged in services necessary to exit homelessness, have underlying conditions treated and avoid the complications of long term homelessness. The models are intended to expedite the process of getting homeless veterans into the system and getting them the care they need.

II. Sustaining engagement: Continuity of care is critical to the process of treatment engagement and maintaining that engagement through critical times and events. This dynamic is essential in chronic disease management, reducing acuity and the severity of episodic needs and re-orienting individuals
to care models that do not rely on emergency departments and inpatient admissions for most of their care.

III. Quality of life: As demonstrated in earlier research, homeless-oriented primary care is associated with improvements in chronic disease management and enhanced treatment engagement in clinical services and supports needed to improve the Veteran’s quality of life. This will also likely impact care needs over the long term, including end-organ complications, need for institutionalization, etc.

IV. Care offsets: Several studies have shown that homeless-oriented primary care can result in decreased reliance on and use of emergency department and inpatient based care. This represents a potentially major cost and care offset for VA.

V. Housing placement/stabilization: Orienting the primary care model to a housing agenda recognizes the role of housing in determining both health needs and health outcomes. It is expected that this initiative will serve two important functions: (a) increase “housing readiness” among Veterans by facilitating treatment engagement in mental health care, substance abuse services, improving chronic disease and pain management and the receipt of social services; and (b) assist in housing retention by coordinating care with HUD/VASH case managers, grant-per-diem staff and being readily available to formerly homeless/recently housed Veterans pre-crisis to assist in care needs or interventions - before a deterioration in physical or mental health leads to an eviction.

**WLA Homeless Patient Aligned Care Team Demonstration Program**

The Veterans Affairs West Los Angeles Medical Center (WLA), part of the Greater Los Angeles Healthcare System (GLA) family, was selected as one of the 32 HPACT demonstration sites and $606,252 was allocated to WLA for 18 months during fiscal years 2012 and 2013 to support
HPACT program implementation and staffing. The primary aims for this program are consistent with those identified by the national initiative and strives to eliminate the barriers to quality health care and to improve health and housing outcomes of homeless and at imminent risk of homeless Veterans. However, the primary objective for the WLA HPACT during its implementation phase was to develop the HPACT program as an intervention to decrease emergency department utilization among homeless and at-risk for homeless Veterans.

**Implementation to date**

The GLA Office of Healthcare Transformation and Innovation lead the proposal to request funding to be a HPACT demonstration site with the process starting in September 2011. A Letter of Intent (LOI) was submitted during the initial program application phase and a budget was submitted in a later phase. A team consisting of Lisa Altman, MD, Lillian Gelberg, MD MSPH, and Beena Patel, MPH, was assembled to respond to the LOI. To respond to the LOI a preliminary needs assessment of homeless programs and primary care services at GLA was conducted through informal key-stakeholder interviews of homeless program administrative staff, as well as review of documentation from community care programs. This preliminary needs assessment informed the local HPACT goals and objectives, characteristics of the target populations, and proposed leadership teams included in the LOI. Furthermore, the preliminary needs assessment indicated the need for two HPACT demonstration sites within GLA. Thus, two separate LOIs were submitted on behalf of the West Los Angeles VA Medical Center and the Downtown Los Angeles Community Based Outpatient Clinic. Budgets were identified for the proposed HPACT teams at WLA and Downtown LA and submitted to the National HPACT Program Office along with letter of support from GLA medical director Donna Beiter.
GLA was notified of selection as a demonstration site on November 30, 2011. At this time a revised budget was created for the WLA site (the DTLA proposal was not approved). Funding for FY 2012 was received in December 2011 and funding began on January 1, 2012. The leadership team consisted of the following members: Lisa Altman, MD, ACOS of Healthcare Transformation and Innovation, Lillian Gelberg, MD MSPH, Homeless Research Physician Consultant, William Daniels, MSW, Chief of Mental Health, Michelle Wildy, MSW, Chief of Community Care, and Joan Brosnan, RN, PhD, Chief Ambulatory Care Nursing Services (refer to APPENDIX C – HPACT Organizational Charts).

Planning for this project began in January 2012 with the identification of members to be part of the implementation and operations team (refer to APPENDIX C – HPACT Organizational Charts). This team was carefully selected to be multidisciplinary, and comprehensive including the various service lines that address homeless health care and social services at GLA. Between January and April 2012, preliminary implementation began by identifying resources, staffing, and care processes for the demonstration program.

The WLA HPACT clinic began operation on Monday and Wednesday evenings on April 30, 2012. At WLA, a previously established “Homeless Screening Clinic” (a walk-in clinic – distinct from HPACT – that offers social and medical services for homeless Veterans) was already available during business hours on the north side of the GLA campus. This program is located within the site’s mental health program. However, as ED utilization for homeless Veterans peaked after-hours, the WLA HPACT was established within the physical structure of the WLA ED. During the program’s pilot phase, the clinic operated two evenings a week. Currently, the WLA HPACT clinical hours have expanded to three weekday evenings per week. During this time routine nursing triage occurs on all patients who present to the ED. However, distinct from other times of day, Veterans
who are triaged with low-acuity complaints that are appropriate for outpatient care (level 4 or 5 based on the Canadian Emergency Department Triage and Acuity scale) are given a self-administered, four-item questionnaire that identifies patients who are homeless or at risk for becoming homeless (refer to APPENDIX G – WLA HPACT Administrative and Clinical Processes for screening tool and flow diagram). This tool was identified in partnership with the National Center on Homelessness among Veterans and the VA Improvement Laboratory Homeless Research Workgroup at GLA (lead by Dr. Lillian Gelberg and Dr. Ronald Andersen). Using a patient-driven approach, Veterans who are identified with this screening tool are offered the choice of an ED or HPACT visit to address their reason for seeking care at the ED. Veterans who choose the latter are assigned to the queue for an HPACT primary care visit that evening and removed from the ED wait-list.

A physician who is double-boarded in internal medicine and pediatrics, and has an extensive background in medicine as it addresses the social determinants of care, led the clinical team. Additional services were provided from a mental health Clinical Nurse Specialist, as well as clerk, LVNs, and RNs who worked with homeless and/or mental health patients during business hours and provide part-time coverage in HPACT. Additional services are provided from ED nurses and social workers when necessary. Providers were chosen for their aptitude in culturally responsive communication with homeless individuals. As of March 2013, the WLA HPACT has been able to staff the team with additional primary care providers, and full-time HPACT RN case manager, HPACT social work case manager, and licensed vocational nurse. This increased capacity led to the identification of the second implementation phase for the project known has HPACT Plus (described further in the Local Needs Assessment).
Complex Care Coordination Processes and Tools

Patients who choose to be seen in WLA HPACT received a comprehensive primary care visit that also addresses the reason for ED presentation (if the patient came through the ED screening process). HPACT staff worked collaboratively, with interdisciplinary team “huddles” that preceded each clinic session and follow each patient visit. Referrals and social service needs were tracked and monitored by the PCP on an electronic spreadsheet that assists with care coordination and case management. This tool is referred to as the WLA HPACT Case Management Tracking Tool. It was developed based on the teams’ need to track and monitor the case management tasks that were identified for each patient. Specialty care referrals were tracked electronically and facilitated when possible with direct communication between HPACT providers and specialty services. After the index visit, patients were offered HPACT “enrollment” and follow-up care within this medical home. Biweekly meetings with daytime Homeless Screening Clinic and ED staff facilitate cross-departmental collaborations that help Veterans prepare for and retain housing. Other administrative and clinical processes identified by the WLA HPACT program can be found in the APPENDIX G – WLA HPACT Administrative and Clinical Processes section.

Problem to be Addressed & Relevance to Organization

As the WLA HPACT program continues to grow during its implementation and pilot phases, a progress-focused formative evaluation became increasingly necessary to determine where the program stands in its ability to achieve program aims and objectives. More specifically this led to the need for an evaluation on the progress HPACT has made to address ED rates for their patients and how to identify and bridge gaps in HPACT care that would lead to decreased ED utilization for HPACT patients.
The recommendations of this QI project build on how to evaluate and further improve the processes that are currently employed by the HPACT program, particularly the tools tailored for HPACT complex care coordination/case management. This dissertation addresses these needs using findings triangulated from a literature review, local needs assessment, and mixed method formative evaluation, and provides recommendations for HPACT care coordination improvement to that address the specific ED utilization patterns for HPACT patients.

The HPACT leadership, operations, clinical, and homeless research teams at GLA jointly identified the need for this QI project. The findings are relevant for several reasons. First, since HPACT is a two-year demonstration project, this QI project was conducted at a critical time so the findings and recommendations can inform the direction of the implementation efforts to improve the program's success in meeting its aims and objectives going forward. Secondly, the methods carried out to conduct this QI project can be used to inform a planned comprehensive evaluation of the HPACT program at WLA and nationally. Finally, the findings from this QI project will be used to inform the expansion of the WLA HPACT model that is planned at GLA later this fiscal year.
THEORETICAL APPROACH

Quality is never an accident. It begins with the intention to make a superior thing. It is always the result of intelligent action.

John Ruskin

This dissertation outlines a quality improvement (QI) project that aims to identify barriers and address gaps in care by “diagnosing” factors related to ED visits for patients assigned to the WLA HPACT team. There are several theories and frameworks that guide this QI project. The Clinical Practice Improvement (CPI) framework guides the phases of this QI project, while the Chronic Care Model and the Patient Centered Medical Home (discussed in the previous section) inform the HPACT intervention.

The Clinical Practice Improvement (CPI) framework, developed by the Clinical Excellence Commission of New South Wales, guides the operational steps for this QI project (NSW Health Department ; O'Connor, Ward et al. 2005; Fowler, Hardy et al. 2006). The framework builds off Nolan’s four-step Model for Improvement: 1) develop improvement aims; 2) identify strategies to measure improvement; 3) construct improvement efforts; and 4) launch Plan-Do-Study-Act (PDSA) cycles for iterative improvement. PDSAs work by hypothesis formation (Plan), protocol implementation/data collection (Do), data interpretation (Study), and protocol refinement (Act) (Berwick 1996; Speroff, James et al. 2004; NSW Health Department 2010). The CPI framework operationalizes the first three steps of Nolan’s model and is employed by this QI project as a well-defined framework to pilot test interventions. The first step of CPI, the Project Phase, includes problem identification, team building, and goal setting. The second step of CPI, the Diagnostic Phase, includes the data collection to “diagnose” the problem at hand. In the case of this QI project, the problem was identified as the need to reduce ED visits among patients assigned to the WLA
HPACT team. This was identified based on the direction provided by a directive from the National HPACT Program Office as well as the local needs assessment conducted at WLA (described further below). In the diagnostic phase, the literature review and local needs assessment were employed to identify the issue of ED use among homeless Veterans at WLA and what evaluation metrics and databases could be used to conduct formative evaluation of the WLA HPACT program. Together the project and diagnostic phases identified the aims, objectives, and evaluation metrics employed during phase three (intervention phase). The Intervention Phase focused on operationalizing the interventions informed by the literature review and local needs assessment (as mentioned above, these were conducted in the project and diagnostic phases). Interventions were implemented using a PDSA approach to measure on-going progress and impact of the outcome of interest (ED utilization), and to create the capacity for modifications and revisions in order to direct and sustain lasting improvement. The progress-focused formative evaluation was conducted during the implementation phase of this project (discussed further in the next sections).

Theoretical model of intervention: Chronic Care Model for Quality Improvement

WLA HPACT aim and objectives were defined in the project phase. Since this demonstration project is guided by National HPACT standards, required organizational structure of the program were defined for the demonstration program and informed by the Chronic Care Model (CCM). The model was developed more than a decade ago and has guided numerous clinical and systematic quality improvement projects aimed at improving ambulatory care. The CCM originally served as a guide to higher-quality chronic illness management within primary care; however adaptations of the model have been applied to various populations and health care settings nationally and around the world (Wagner, Austin et al. 2001).
The CCM aims to transform daily care for patients with chronic illnesses from acute and reactive to proactive, planned, and population-based (Wagner, Austin et al. 2001; Bodenheimer, Wagner et al. 2002). The model predicts that improvement in its six domains – self-management support, clinical information systems, delivery system redesign, decision support, health care organization, and community resources- can produce system reform in which “informed, activated patients interact with prepared, proactive practice teams” (Bodenheimer, Wagner et al. 2002; Bodenheimer, Wagner et al. 2002; O'Toole, Buckel et al. 2010). This model is an integral part of the current PCMH models as it takes the team-based approach to the next level by providing more structured and detailed insight on the care coordination (also referred to commonly as care management or case management) that is required to address the needs of patients with chronic illnesses within a team setting (Berenson, Hammons et al. 2008).

This model is particularly relevant to the HPACT model of care because the level of complexity of the patients that are being targeted and treated by the HPACT team can be thought of as comparable to the complexity of patients with chronic illnesses. The literature sites several examples of defining homelessness as not only a medical condition, but a chronic disease (O'Toole, Conde-Martel et al. 2003; O'Toole, Buckel et al. 2010). Furthermore, interventions to address the needs of homeless patients require interventions similar to those to treat patients with chronic illnesses (O'Toole, Buckel et al. 2010). Homeless patients have medical, social, and systematic needs that make routine care harder to deliver to them and less likely to allow them to engage in care. This level of complexity and need are similar to those of patients who have chronic illnesses and require extra effort to deliver care. In both of these patient populations the level of care coordination and management is increased and require processes to delivery intensive care coordination within primary care (O'Toole, Conde-Martel et al. 2003; O'Toole T 2011).
The CCM lends itself well to a quality improvement orientation because QI can focus on various elements of the CCM to identify reasons for and ways to intervene. The CCM has been used to inform QI approaches to make rapid systems changes and findings show that organizations that make changes in more CCM domains are more likely to benefit from those interventions (Yano, Goldzweig et al. 2006). The CCM model guides this QI project because the WLA HPACT program is a self-identified CCM-based intervention. WLA HPACT operates within an ambulatory care practice and seeks to change how daily care is delivered to homeless patients by clinical teams. Furthermore, WLA HPACT does not refer patients to external services that may be necessary to address patient needs but rather requires its clinical team to work differently from other general PACT teams to address these needs. Finally, WLA HPACT seeks to address most of the six CCM domains: health care organization, decision support, delivery system design, clinical information systems, and community resources. Table 8 Comparison of Clinical Design Models of the WLA HPACT and General PACT clinics: West Los Angeles Veterans Affairs Medical Center, Los Angeles, CA describes the components of CCM addressed by WLA HPACT and comparisons of the WLA HPACT model and the general PACT teams found at WLA. These interventions were identified for WLA HPACT in order to support its aim to create a clinic structure and identify care processes to address ED utilization for homeless patients in a medical home setting.
Table 8 Comparison of Clinical Design Models of the WLA HPACT and General PACT clinics: West Los Angeles Veterans Affairs Medical Center, Los, Angeles, CA

<table>
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<tr>
<th>Chronic Care Model Domain</th>
<th>WLA HPACT</th>
<th>General PACT</th>
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| Organization of health care | Open access. Fixed evening schedule 3 nights a week for drop-in care including both acute or episodic care as well as follow-up care.  
24/7 access to PCP or case manager via phone  
Co-location with ED to attract patients that could be deferred away from ED and seen in a more appropriate primary care setting for non-acute issues | Recall system, in which the patient is notified by mail that it is time to make an appointment and the patient then calls to schedule a time to be seen |
| Delivery system design     | Primary care provider (PCP) assigned and nurse/social worker case-managed: each patient is assigned a PCP, a RN case manager, and social work case manager who routinely track cases for clinical reminders and social issues and initiates PCP contact as needed  
On-site integration of homeless-specific services including housing, travel assistance, food, and other benefits assistance, job referral, and other services staff available through warm handoff to community care programs | Each patient is assigned a PCP; case management available for disease-specific care or social issues by referral to social worker  
Specialty or ancillary services available ad hoc and through formal consult process |
| Decision support           | Homeless-specific assessment at initial visit, updated at each visit       | Standard history and physical template                                      |
| Clinical information systems | VHA electronic medical record with built-in clinical reminders  
Homeless and at-risk for homeless screener administered | VHA electronic medical record with built-in clinical reminders              |
<table>
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<tr>
<th></th>
<th>in ED waiting area</th>
<th>ED utilization reports for WLA HPACT patients</th>
<th>WLA HPACT patient registry including health factors, utilization patterns, receipt of preventative services, and PACT performance measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community resources</td>
<td>Outreach and coordination of care with GLA community care programs, community shelters. This outreach and coordination includes frequent meetings, case conferencing with GLA providers as well as outreach to community partners.</td>
<td>Ad hoc outside of clinic team</td>
<td></td>
</tr>
<tr>
<td>Promoting self-care</td>
<td>Standard patient educational material and access to self-management classes</td>
<td>Standard patient educational material and access to self-management classes</td>
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**Quality Improvement Approach for Project**

As discussed in the previous section, this QI project was carried out in several phases. These phases are defined by the objectives of this dissertation.

Project Phase (objective 1): Identify factors associated with emergency department use and barriers to care among homeless Veterans to be treated by WLA HPACT by stakeholder focus groups and literature review.

Diagnostic Phase (objective 2): Define metrics and available data sources to evaluate factors related to emergency department utilization among homeless Veterans treated by WLA HPACT, based on needs assessment including stakeholder focus groups and literature review.
Intervention Phase (objective 3): Using a mixed method progress-focused formative evaluation, identify changes in and factors associated with emergency department utilization among homeless Veterans treated by WLA HPACT.

Intervention Phase (objective 4): Make recommendations to inform interventions for complex care management identified by the WLA HPACT team to address key gaps identified in needs assessment and formative evaluation.

The aims of the project and the first three objectives led to the four evaluation questions that are addressed in this dissertation. The primary methods of carrying out these objectives and addressing the evaluation questions were conducting a literature review, local needs assessment by stakeholder focus groups, and mixed method formative evaluation.

The literature review and local needs assessment were carried prior to the progress-focused formative evaluation and inform the design of the formative evaluation (methods to be described in the subsequent section). The formative evaluation used both qualitative and quantitative methods (further described in the Evaluation Approach section). The analytic questions for this QI evaluation, and respective methods to address them, are outline Table 9. The findings from the literature review, local needs assessment, and formative evaluation together suggested recommendations and areas for improvement for the WLA HPACT program, particularly around the care coordination and case management processes. These recommendations (Objective 4) are provided in the Recommendations section.
Table 9 Analytic Questions – WLA HPACT Program

<table>
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<th>Analytic Questions</th>
<th>Methods</th>
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| 1. What are the factors associated with emergency department use among homeless Veterans to be treated by WLA HPACT? | - Literature review  
- Local needs assessment by stakeholder focus groups |
| 2. What are the metrics and available data sources to best evaluate factors related to emergency department utilization among homeless Veterans treated by WLA HPACT? | - Literature review  
- Local needs assessment by stakeholder focus groups |
| 3. What are the barriers and gaps in care that contribute to emergency department use among homeless Veterans treated by WLA HPACT as perceived by WLA HPACT staff and other key informants? | - Key informant interviews (i.e. HPACT staff, operations and leadership team members) |
| 4. What is the baseline measurement of WLA HPACT patients (demographics, chronic disease management, mental health, substance abuse treatment, and housing engagement, and ED utilization) before enrolling in the program and 6 months after? Have there been changes in factors associated with ED utilization and ED utilization among homeless Veterans treated by WLA HPACT? | - Descriptive analysis of data (factors associated with ED utilization and ED utilization) of HPACT patients from chart reviews 6 months prior to HPACT enrollment and after being enrolled for 6 months |

Literature Review and Local Needs Assessment Methods

The first and second evaluation questions were addressed by conducting a literature review as well as findings from a local needs assessment (to be further discussed in the subsequent section). The literature review was organized around the Behavioral Model for Vulnerable Populations to identify factors commonly associated with ED use among homeless Veterans (Gelberg, Andersen et al. 2000). The findings of the literature review informed the need for and content of the local needs assessment. These findings are described in the Literature Review section of this dissertation.
A local needs assessment was conducted after the literature review to understand what key stakeholders at WLA believed to be barriers and gaps in care contributing to ED utilization of homeless Veteran patients at WLA, what role HPACT should play in addressing this issue, as well as local metrics and data sources that should be considered to evaluate factors behind ED utilization for WLA HPACT patients. The needs assessment was conducted through semi-structured, stakeholder focus groups with WLA administrators and individuals involved with caring for the WLA homeless Veteran patients. A total of 10 focus groups (1-2 hours in length) were conducted over a span of 3 months.

Focus groups were selected as the methodology of choice for this phase of the project because the ability of focus groups to engage a large number of people and speak to the interaction between members of the group (Gill, Stewart et al. 2008). This method has been useful for investigating complex behaviors, opinions and emotions, and for collecting a diversity of experiences. Since the focus groups conducted for this QI project required a large number of members, focus groups were also chosen to organize a great deal of information comparatively little time and expense. Furthermore, focus groups have often been used to orient researchers to a new field (Kitzinger 1995). Since the local needs assessment was conducted during the preliminary phase of this project, focus groups provided background useful to the implementation of the HPACT demonstration program at WLA.

Findings from these local needs assessment focus groups identified the proposed interventions for the WLA HPACT demonstration program and were documented and organized by common themes. These findings are described further in the Local Needs Assessment section. The literature review and local needs assessment findings informed the intervention of the progress-focused formative evaluation, and also identified the metrics and data sources that are used for the
The methods of the evaluation are further discussed in the Progress-Focused Evaluation Approach section of this dissertation.

**Progress-focused Formative Evaluation**

The third evaluation question, which informs the bulk of the recommendations for this dissertation, is based on well-established methods of program-based progress-focused formative evaluation (discussed in the PROGRESS-FOCUSED FORMATIVE EVALUATION APPROACH section). Rather than attempting to establish causal relationships between the intervention and the outcomes of interest, the results of the progress-focused formative evaluation are suggestive and used to understand how to improve WLA HPACT interventions for complex case management strategies in order to decrease the ED utilization for the WLA HPACT patient panel. The role of the progress-focused formative evaluation was to identify barriers, gaps in care, and areas for improvement of care coordination/case management practices implemented by the WLA HPACT team in order to decrease ED utilization for the HPACT patient panel. This was done through a mixed methods approach, using both qualitative and quantitative methods, in order to achieve a greater level of understanding than using one method for evaluation alone. Detailed evaluation methods are further described in the Evaluation Approach section.

The next section presents the findings from the literature review and local needs assessment. These findings are presented before the Evaluation Approach section because they informed the design of the intervention being evaluated.
FINDINGS: Literature Review

The literature review for this project addresses two important components of this quality improvement project. First, the literature review was conducted during the project phase to organize and better understand the factors associated with health services utilization among homeless Veterans, to inform clinical processes, organizational structure, and overall program strategy. Second, the literature review identifies measurements commonly used to evaluate factors related to emergency department utilization among homeless Veterans treated by WLA HPACT. These findings are supplemented with results from the Local Needs Assessment presented in the next section. Together these findings inform the progress-focused formative evaluation that was conducted during the implementation phase of this project.

This literature review is organized according to the domains identified in the Behavioral Model for Vulnerable Populations. This model is an adaptation from the Behavioral Model for Health Services Utilization identified by Dr. Ronald Andersen (Andersen 1995; Gelberg, Andersen et al. 2000). The domains are used to inform quality improvement interventions and strategies aimed at addressing or reducing utilization of health services (such as the emergency department for the homeless population). This literature review concludes with a summary of factors associated with ED use in the general population and the homeless population. The literature review also points out potential factors that may be characteristic of the GLA homeless population. These characteristics are explored further in the Local Needs Assessment.

*Understanding homeless emergency department use*

This literature organizes some of the key factors that have been found in the literature to contribute to the reasons why homeless populations utilize health services for the reasons they do,
and why the utilization patterns differ from general populations. These factors are identified and organized using the Behavior Model for Vulnerable Populations (adapted for the Behavioral Model) identified by Dr. Ronald Andersen and Dr. Lillian Gelberg. Although this literature review does not speak directly to how interventions can address these needs, it was done in order to compare the key reasons for ED use among the GLA homeless population.

**Predisposing**

Predisposing factors are those that are considered to make an individual more likely to have a particular health behavior over other individuals. These factors are commonly identified when trying to understand health services utilization behavior include demographic variables such as gender, age, race/ethnicity, and geographic area. Other predisposing measures include the health beliefs of an individual, social structure, and prevalence of mental illness, substance abuse, and other conditions. The predisposing factors that are important to consider for the homeless population are measures regarding housing status and criminal history. For the VA homeless population, another predisposing consideration may be whether or not the individual has VA benefits, and if so, to what extent.

**Enabling**

The enabling domain includes factors that are thought to make it possible for an individual to seek health services, or make it possible for an individual to have a particular health behavior. For example, the source of care (VA vs. non-VA) may be one interesting measure to consider when for homeless Veteran health behaviors. Also important to consider would be the income of a patient (or source of income), and insurance status. The enabling characteristics important to consider for the homeless population should also include the type of case management a homeless individual is
receiving. For example, within GLA, several homeless programs include case management support for homeless Veterans enrolled in their services. These case management programs may have an impact on the homeless Veteran’s health service utilization behavior. Finally, an enabling characteristic that is important to consider for the GLA homeless Veteran population is the type of clinic that the patient is receiving care. This is because not all clinics operate in the same way and considering unique components of these clinics could inform health behaviors. For example, some clinics have the capacity to address competing needs which is often characteristic of the homeless population whereas other clinics have limited capacity to do this.

Need and Health Behavior

The need domain was identified to capture the factors that influence a patient’s need for a particular health behavior, or service utilization. This need may be perceived by the individual seeking services, or be perceptions that are based on previous services or evaluation of their health. Furthermore, need factors can be based on previously services and can influence health behaviors, independent perceptions, or changes in the perceptions of the patient. For example, if I patient seeks services at the ED and is told that they have significant unaddressed conditions, this might inform the need the patient thinks he or she has to seek future services.

Health behaviors include personal health practices as well as the health service use for individuals. For the homeless population there are several health behaviors that have become characteristic of this population. For example, several studies identify homeless patients seeking care at emergency departments over traditional non-ED care settings due to patient preference or convenience. Also, recent literature speaks to homeless health practices as a result of the loneliness and social isolation issues that is common for this population. Considering the personal health
practices can support how to better understand and create interventions that address the reasons for some of these health practices and health service use.

**Outcomes**

The last domain characterized by the Behavioral Model for Vulnerable Populations is outcomes. This domain includes a patient’s health status, and satisfaction with care. An important outcome to consider for the homeless population is housing status. Several models have been identified that support the “housing-first” approach. In these models, housing is a key contributor to improving health outcomes for patients. The reason for this based on the commonly accepted idea that health care services and care coordination is more effective when a patient has a consistent and stable place to live. Furthermore, the ability to provide health care services and perform care management is compromised when patients lack stable housing.

Understanding the Behavioral Model for Vulnerable Populations is vital to identifying potential interventions for the homeless, and at-risk for homelessness populations because interventions can be tailored to address the factors represented by these domains. Several examples from the literature identify interventions that target multiple domains are more comprehensive interventions and more likely to be effective. This is likely the case for the homeless and at-risk for homelessness population. The local needs assessment takes the findings from this literature review to the next level by overlaying the organizational context of GLA to understand the health behaviors (particularly ED use) of the GLA homeless Veteran patient population that seeks services from GLA programs.
FINDINGS: Local Needs Assessment

The Local Needs Assessment was conducted during the project and diagnostics phases to identify barriers and gaps in care associated with ED use among homeless Veterans to be treated by WLA HPACT, as well as identify need for WLA HPACT interventions to address these proposed barriers and gaps. Since at the time the needs assessment was conducted, the over-arching goal to reduce ED visits for the homeless and at-risk for homelessness population had already been identified. The local needs assessment identified why it was important to GLA to address this issue as well as to suggest interventions and care processes, referred to as “best practices” because they both evidence-based and informed by the organizational context, to be implemented through the WLA HPACT program. This local needs assessment also assessed the feasibility of carrying out these interventions and identified necessary resources. This informal local needs assessment was carried out by semi-structured stakeholder focus groups. The findings were also supplemented by reviewing key program documentation that was identified as part of the stakeholder focus groups.

The primary aim of the focus groups was to work collaboratively with key stakeholders at WLA the need for the WLA HPACT demonstration project to decrease ED utilization rates among homeless Veterans, and identify best practices that are informed by WLA homeless patient needs. Stakeholders were identified from various GLA service lines that work with the homeless Veteran population at WLA. Recruitment of participants was based on a convenience sample of representatives available to meet during identified meetings, and interest in the WLA HPACT demonstration program. Stakeholders were identified from the following program offices: homeless program (Community Care), nursing, social work, mental health, primary care, emergency department, patient-centered care, finance, human resources, volunteer services, and knowledge management.
Focus groups were held for two hours weekly beginning in February 2012 until April 2012 (project and diagnostic phases). A total of ten focus groups were conducted. Although some focus group members attended all ten sessions, not all focus groups had the same members. The focus groups were moderated by staff from the Office of Healthcare Transformation and Innovation (office leading the demonstration project). Areas of discussion were identified based on the care process domains identified by the national HPACT team. These included: accessibility, readiness to respond to a “treatable moment”, trust/relationship building, integrated delivery model/addressing competing needs, and rapid engagement/Housing-First approach (T, Kane et al. 2011).

Collection methodology consisted primarily of notes and minutes taken during the focus groups, audio recordings, and supplemental program documentation and resource guides that were brought up during these focus groups. Notes and recordings were transcribed in to one document to identify key themes across focus groups and recommendations for each of the five domains that were discussed. Members of the focus groups were knowledgeable about WLA HPACT’s objective to address ED utilization among homeless Veterans at WLA, and also parameters of the demonstration program. Table 10 outlines the domains of patient needs, definition of domain (as perceived by the stakeholders in the focus groups), and proposed WLA HPACT interventions and care processes. The major findings of the semi-structured stakeholder focus groups were organized by the domains identified above.
Table 10 WLA HPACT Local Needs Assessment Domains, Identified Definitions, Needs to be addressed at GLA, and Proposed WLA HPACT “best practices”

<table>
<thead>
<tr>
<th>Domain (Needs)</th>
<th>Identified definition</th>
<th>Needs to be addressed at GLA</th>
<th>Proposed WLA HPACT “best practices”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Provide Accessible Just-in-Time and Continuity Care to homeless Veterans when and where they need it.</td>
<td>Homeless services offered primary during normal business hours (Monday through Friday from 8-5pm) and limited services apart from the emergency department are available to address the health care or social needs for homeless Veteran patients.</td>
<td>Evening clinic, co-located with ED</td>
</tr>
<tr>
<td>Readiness to respond to a “treatable moment”</td>
<td>Respond to the “treatable moment” with staff trained and prepared to engage patients in behavior change, and with resources in place to act on patient motivation.</td>
<td>General PACT structure has limited ability to provide homeless patients with mental health, substance abuse treatment, or housing and other social work services within the PACT team. Patients with these needs are required to be referred to the homeless programs. Often times patients fall through the gaps because of lack of coordination.</td>
<td>Ambulatory ICU model for care</td>
</tr>
<tr>
<td>Trust/relationship building</td>
<td>Create a care setting that promotes trust and relationship building necessary for longitudinal care.</td>
<td>Engagement of homeless patients with the general PACT teams is difficult due to capacity of PACT teams to provide comprehensive appointments that address all patient concerns. The reason for limited capacity is often due to the number of patients on a general PACT team panel (around 1,200 patients).</td>
<td>Staff to be trained in motivational interviewing</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Integrated delivery model/addressing competing needs</th>
<th>Provide integrated and coordinated on-site care that can address competing needs.</th>
<th>Competing needs are often not addressed in general PACT teams or Building 206 Screening Clinic because the lack of capacity to address competing needs and provide medical care. Furthermore, general PACT care management is not tailored to the needs of the homeless population such as difficulties in keeping appointments due to transportation, financial, or other barriers.</th>
<th>Provide homeless-tailored services including housing, food, benefits, and other social services to address competing needs. Complex care management processes including “warm hand-offs” to other services and working closely with patients to ensure they are receive the tailored care they need.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid engagement/Housing-First approach</td>
<td>Employ a Rapid Engagement/Housing-First approach</td>
<td>General PACT teams at GLA refer patients to community care programs for housing needs. However, Building 206 Screening Clinic is the gateway to housing services and is often not able to see patients when they seek services due to over-crowding and capacity issues. This issue is further exacerbated by limited housing options for homeless patients, as well as even fewer options for women, substance abusing, and sex offender Veterans.</td>
<td>Work with community care programs to bridge gaps in services by providing housing options through the WLA HPACT program.</td>
</tr>
</tbody>
</table>

**Findings: Target Areas and Gaps**

The needs that were identified for each of the local needs assessment domains were used to identify “best practices” for WLA PACT to employ in order to meet the program's goal of reducing ED visits for the homeless population at GLA. Not all best practices were implemented during the pilot implementation phase of the WLA HPACT program due to staffing and capacity issues. Since
this dissertation focuses on the best practices for care management, the identified interventions are broken out by when they were implemented during the implementation phase. The time from when the WLA HPACT clinic was first launched till February 2013 is referred to as the WLA HPACT Pilot Phase, and the time period following February 2013 is referred to as WLA HPACT Plus. The two phases are distinguished primarily by the increased capacity of the team to implement the proposed interventions. During the pilot phase, limited interventions were possible due to limited staffing. Below the best practices for care management by the WLA HPACT team is provided according to which phase they were first implemented.

Table 11 Care Management Interventions implemented by WLA HPACT implementation phase and responsible WLA HPACT team member

<table>
<thead>
<tr>
<th>WLA HPACT Pilot Phase</th>
<th>WLA HPACT Plus Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care Management Intervention</td>
<td>Responsible Team Member</td>
</tr>
<tr>
<td>Case management tracking tool</td>
<td>PCP, LVN, Clerk</td>
</tr>
<tr>
<td>PCP providing care management</td>
<td>PCP</td>
</tr>
<tr>
<td>Patient appointment reminder calls done couples times/week</td>
<td>Clerks</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
PROGRESS-FOCUSED FORMATIVE EVALUATION APPROACH

In January 2013 a formative evaluation was conducted within the diagnostic and early implementation phases of CPI, that are in line with the four aims of this QI project: (1) to “diagnose” the identified problem, that is inappropriate emergency department utilization among homeless Veterans in a homeless-oriented PCMH; (2) to identify barriers or gaps in care and explore acceptability of best practices to decrease emergency department utilization among homeless Veterans in a homeless-oriented PCMH; (3) to understand the role of complex care management (specifically a tool to facilitate team-based complex care management) of medical and social needs; and (4) to inform future quality improvement of homeless-oriented PCMH.

The methods described in this section are informed by the literature and local needs assessments carried out in earlier phases of this project. The literature review identified key findings from the literature that are thought to contribute to high rates of ED utilization by homeless and general populations. The local needs assessment identified what key stakeholders at WLA have used to assess ED utilization by the homeless population, and “best practices” for complex care management to be employed by the WLA HPACT program in order to decrease ED utilization rates for the homeless Veteran population. The following section describes the qualitative and quantitative methods used to carry out this formative evaluation. As described above, this formative evaluation is aimed at understanding the progress the WLA HPACT team has made towards its project aim of reducing ED visits among patients assigned to WLA HPACT, and inform future implementation of complex care management interventions to address this problem.

Data Collection and Measures

Data for this progress-focused formative evaluation were triangulated from (1) qualitative interviews, (2) medical records; and (3) VA information systems (performance and organizational
databases). The VAGLA Institutional Review Board administrator deemed this progress-focused formative evaluation a non-research VA operations activity and thus exempt from Institutional Review Board review.

**Qualitative Interviews**

The qualitative methods for this progress-focused formative evaluation included semi-structured key informant interviews with WLA HPACT team members, coordinators and administrators of WLA homeless programs and emergency department, and service lines including primary care, social work, nursing, and mental health. The purpose of these interviews was two-fold. First these interviews aimed to identify factors associated with the ED utilization rates for WLA HPACT patients, and second to identify gaps in care and areas for improvement for the WLA HPACT team in order to decrease ED utilization rates for these patients. This was carried out through qualitative key informant interviews in order to supplement and validate findings from the quantitative analysis and document staff and administrator perception surrounding these issues.

Fourteen key informants were asked to describe factors associated with increased ED utilization rates for homeless Veterans at WLA, as well as best practices to decrease ED utilization (generally and for HPACT). Initial questions were open-ended, though informants were subsequently prompted to provide anecdotes of experiences with homeless Veterans. Program analysts from the Office of Healthcare Transformation and Innovation served as interviewers and took detailed interview notes as well as recorded all interviews. Interviews were transcribes and notes were compared for consistency. Discrepancies were resolved in team discussions. Notes were compiled into a single file within one day of each interview. Interview questions were designed to cover the domains identified by the local needs assessment in regards to how they contribute to homeless emergency department use. These domains included: 1) Coordination across programs 2)
Organizational capacity 3) Gaps in care 4) Complexity of patients 5) Team structure 6) Care coordination and case management 6) Access to data. Interviews were transcribed and notes were compiled for coding. Two different people performed the coding and any discrepancies were discussed until resolved. Through a deductive coding process, key themes and recommendations were identified. Quotes were identified from transcripts of the interviews and are further discussed in the results of the progress-focused formative evaluation in the subsequent section. Results are presented in the subsequent Progress-Focused Formative Evaluation Findings section. Refer to APPENDIX E – Materials for Semi-structured Key informant Interviews for the interview protocol script, identified questions, interview notes, qualitative coding rubric, and table of results for these semi-structured key informant interviews.

Quantitative Analyses

The progress-focused formative evaluation was supplemented by a descriptive statistics on characteristics of the WLA HPACT panel (patients assigned to the WLA HPACT team), as well as a descriptive pre- and post-evaluation of patients assigned to the WLA HPACT team for at least six months. The pre-post evaluation considered analyses to determine where the WLA HPACT program stands in meeting its’ goal to reduce ED visits for the panel. The pre-post evaluations is organized in to the following types of analyses: chronic disease management, mental health, substance abuse treatment, and housing engagement, complexity of patients, primary care engagement, emergency department utilization, emergency department diagnoses, and emergency department utilization by weekday and time.

Data Sources

Several data sources were used to compile a complete WLA HPACT patient registry including the VA electronic medical records, VHA Support Service Center (VSSC) database, and
Emergency Department Information System (EDIS). These databases are accessible to VA employees and program managers in order to do performance reporting and patient management. The databases are further described in APPENDIX F – VHA Database Descriptions and Measure Definitions. This registry was used to organize the data utilized by this quality improvement progress-focused formative evaluation. The patient registry was created by entering data into Microsoft Excel, which was used to generate descriptive statistics (prevalence rates, means, standard deviations, and run Chi-square tests on pre-post evaluation analyses). The following section describes the data samples, collection methodology, and evaluation analysis type (cross sectional vs. pre-post evaluation).

Data Samples

The medical record and VA database review was compiled for the patients assigned to the WLA HPACT team as of April 15, 2013. This included 70 patients. A sub-sample pre-post evaluation analysis was conducted for patients from the cohort described above who have been assigned to the WLA HPACT team for at least six months as of April 15, 2013. This included a total of 47 patients.

Collection Methodology

The collection methodologies for all analyses are presented in Table 12 Progress-focused Formative Evaluation analyses measure definitions, collection methods, data type, sample size, and data source. Also presented is the corresponding table of the findings (as presented in the Findings section), data type (cross-sectional at one point in time or pre-post evaluation of six month period prior to assignment and six month period following WLA HPACT assignment, and data source.

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Table 12 Progress-focused Formative Evaluation analyses measure definitions, collection methods, data type, sample size, and data source

<table>
<thead>
<tr>
<th>Findings Table: Analysis</th>
<th>Collection Methods</th>
<th>Data Type</th>
<th>Sample (N)</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Demographics (age, gender, race/ethnicity)</td>
<td>VSSC primary care provider panel report was used to extract patient gender, and age and limited to those patients assigned as of 4/15/13. Patient chart reviews were done to collect race/ethnicity information for these patients.</td>
<td>Cross-sectional on 4/15/13</td>
<td>70</td>
<td>VSSC Chart reviews</td>
</tr>
<tr>
<td>Panel Characteristics (including provider assignment, last homeless service, and assignment length)</td>
<td>Panel characteristics were pulled from VSSV primary care provider panel report and limited to those patients assigned as of 4/15/13.</td>
<td>Cross-sectional on 4/15/13</td>
<td>70</td>
<td>VSSC</td>
</tr>
<tr>
<td>Housing Status at time of first WLA HPACT visit</td>
<td>Housing status at time of first WLA HPACT visit was determined by chart reviews using the WLA HPACT provider note.</td>
<td>Cross-sectional at date of 1st visit</td>
<td>70</td>
<td>Chart reviews</td>
</tr>
<tr>
<td>Prevalence of chronic medical, mental health, and substance abuse conditions</td>
<td>Notes from the first WLA HPACT visit were used to determine whether or not each diagnosis was specifically addressed in a patient’s first contact with WLA HPACT. Medical conditions were identified from a list of common outpatient diagnoses from the National Ambulatory Medical Care Survey (NAMCS) and supplemented by common conditions among homeless men.</td>
<td>Cross-sectional on 4/15/13</td>
<td>70</td>
<td>Chart reviews</td>
</tr>
<tr>
<td>Diagnosis Code Group (DCG) Average Score</td>
<td>The DCG average score was pulled for the cohort of patients assigned as of 4/15/13 from the VSSC primary care provider panel report. DCG average score measurement methodology is further detailed in the appendices.</td>
<td>Cross-sectional on 4/15/13</td>
<td>70</td>
<td>VSSC</td>
</tr>
<tr>
<td>Care Assessment Need (CAN) 90 day score and percentile</td>
<td>The CAN 90 day score and percentile were pulled for the cohort of patients assigned as of 4/15/13 from the VSSC primary care provider panel report. CAN score and percentile measurement</td>
<td>Cross-sectional on 4/15/13</td>
<td>70</td>
<td>VSSC</td>
</tr>
</tbody>
</table>
methodology is further detailed in the appendices.

| Chronic disease management measures (for hypertension, diabetes, and hyperlipidemia) | Key measures for hypertension, diabetes, and hyperlipidemia were identified based on measures for general PACT teams. For these measures chart reviews were conducted to extract results for patients during the six months prior to WLA HPACT assignment, and results after WLA HPACT assignment. This analysis is limited to patients assigned to WLA HPACT for at least six months as of 4/15/13. | Pre-post 6 months based on assignment date | Chart reviews |
| Substance abuse engagement | Substance abuse notes for treatment programs were pulled using the VSSC database. This analysis is limited to patients assigned to WLA HPACT for at least six months as of 4/15/13. | Pre-post 6 months based on assignment date | VSSC Chart reviews |
| Housing engagement | Mental health social work notes for homeless programs (as a proxy for housing services). Also, housing referral notes (referral to transitional housing) were pulled using the VSSC database. This analysis is limited to patients assigned to WLA HPACT for at least six months as of 4/15/13. | Pre-post 6 months based on assignment date | Chart reviews |
| Intensity of WLA HPACT services | This analysis used the number of diagnoses addressed by the WLA HPACT provider during the patient’s first visit to WLA HPACT. The number of diagnoses per patients was averaged across the cohort. This analysis is limited to patients assigned to WLA HPACT for at least six months as of 4/15/13. | Pre-post 6 months based on assignment date | Chart reviews |
| Primary care engagement | Primary care visits to primary care providers were calculated using the VSSC primary care reports. Primary care visits were further broken down in to a WLA HPACT primary care visits and other primary care | Pre-post 6 months based on assignment date | VSSC |
visits. This analysis is limited to patients assigned to WLA HPACT for at least six months as of 4/15/13.

| Emergency department utilization, primary diagnoses, and weekday/time of day analyses | ED visits were counted if they occurred during the study period and if there was a completed physician or nurse practitioner note. ED visits that did not have a completed physician or nurse practitioner note were not counted. For each ED visit, the EDIS database was used to identify the acuity level of the visit (based on the Canadian Triage and Acuity Scale), date and time of the ED visit, date and time of ED discharge, patient chief complaint, and primary diagnosis. The chief complaint and primary diagnosis were coded into major medical condition groupings. ED visits that took place outside of the WLA VA Medical Center were not captured in this analysis. These analyses are limited to patients assigned to WLA HPACT for at least six months as of 4/15/13. Only patients that had ED visits during the six months prior to assignment to HPACT, and/or after assignment to HPACT were considered in the ED utilization cohort. | Pre-post 6 months based on assignment date | 47 | EDIS |
**FINDINGS: Progress-focused Formative Evaluation**

*Part 1: Findings from Qualitative Interviews*

**Characteristics of Key Informants Surveyed**

Key informants were identified among administrative and clinical staff either working directly or indirectly with the WLA HPACT program. A convenience sample was used to identify the cohort of key informants based on willingness to be interviewed and availability. A total of 14 key informants were interviewed for these semi-structured key informant interviews. Of the 14 individuals, half identified themselves as being in administrative positions and half self-identified themselves as clinical staff members. All of these individuals identified working with homeless Veterans either directly or indirectly in their work at GLA (see Table 13 Semi-structure key informant interview respondent characteristics).
### Table 13 Semi-structure key informant interview respondent characteristics

<table>
<thead>
<tr>
<th>Code</th>
<th>Question</th>
<th>% of all respondents</th>
<th>% of admin respondents</th>
<th>% of clinical respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Total number of Key Informants</strong></td>
<td>14</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>none</td>
<td>Administrative</td>
<td>50.0%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>none</td>
<td>Clinical</td>
<td>50.0%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td><strong>Q0: Type of Key informants</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Indirect</td>
<td>42.9%</td>
<td>57.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>0</td>
<td>Direct</td>
<td>57.1%</td>
<td>42.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td><strong>Q 1: Would you your work entails direct or indirect contact with homeless Veterans at WLA VAMC?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Indirect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Q 2: How often do you work (either directly or indirectly) with homeless Veterans in your job?**

- **Q 3: Understanding reasons for ED use among homeless Veterans at GLA**

  In the third question of the key informant interviews, respondents were asked what they believed to be some of the contributing factors to ED use among homeless Veterans at GLA. The reasons for ED use were categorized by medical reasons, non-medical reasons, and organization-level reason (Table 14). Furthermore, responses were coded in to key domains that were identified deductively based on results from all key informant interviews. Key informants were not prompted to respond to these domains. Of these domains, Gaps in care (i.e. warm hand-offs to services) was identified by 92.9% of all respondents as a key organizational factor contributing to ED use. Other key organizational issues were patient preference of ED care over other traditional care (such as primary care), as well as overcrowding of other homeless clinics such as Building 206. Medical issues that were reported included 57.1% of all respondents stating mental health and/or substance abuse issues lead to ED use among homeless Veterans at GLA. Furthermore, a key social (or non-medical)
reason that was reported as a contributor to ED use included request for housing, or housing related issues (homelessness).

Table 14 Semi-structure key informant interview Question 3 findings

<table>
<thead>
<tr>
<th>Code</th>
<th>Question</th>
<th>% of all respondents</th>
<th>% of admin respondents</th>
<th>% of clinical respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 3 Domains: General Domains</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Coordination across programs</td>
<td>71.4%</td>
<td>71.4%</td>
<td>71.4%</td>
</tr>
<tr>
<td>2</td>
<td>Organizational capacity</td>
<td>42.9%</td>
<td>42.9%</td>
<td>42.9%</td>
</tr>
<tr>
<td>3</td>
<td>Gaps in care (warm handoffs)</td>
<td>92.9%</td>
<td>85.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>4</td>
<td>Complexity of patients</td>
<td>35.7%</td>
<td>42.9%</td>
<td>28.6%</td>
</tr>
<tr>
<td>5</td>
<td>Team structure</td>
<td>21.4%</td>
<td>14.3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>6</td>
<td>Care coordination and/or case management</td>
<td>42.9%</td>
<td>42.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>7</td>
<td>Data to support/make decisions</td>
<td>7.1%</td>
<td>14.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Q 3a: What are some of the medical reasons that homeless patients at WLA VAMC use the ED?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Mental health and/or substance abuse issues</td>
<td>57.1%</td>
<td>42.9%</td>
<td>71.4%</td>
</tr>
<tr>
<td>13</td>
<td>Pain treatment or medication</td>
<td>35.7%</td>
<td>42.9%</td>
<td>28.6%</td>
</tr>
<tr>
<td>14</td>
<td>Medication refill</td>
<td>35.7%</td>
<td>14.3%</td>
<td>57.1%</td>
</tr>
<tr>
<td>15</td>
<td>Other medical care</td>
<td>21.4%</td>
<td>14.3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>Q 3b: What are some of the non-medical or social reasons that homeless patients at WLA VAMC use the ED?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Housing (immediate or long term)</td>
<td>85.7%</td>
<td>71.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>9</td>
<td>Food</td>
<td>64.3%</td>
<td>57.1%</td>
<td>71.4%</td>
</tr>
<tr>
<td>10</td>
<td>Transportation</td>
<td>14.3%</td>
<td>14.3%</td>
<td>14.3%</td>
</tr>
<tr>
<td>11</td>
<td>Other social work services</td>
<td>14.3%</td>
<td>0.0%</td>
<td>28.6%</td>
</tr>
<tr>
<td>20</td>
<td>Socialize/loneliness</td>
<td>42.9%</td>
<td>42.9%</td>
<td>42.9%</td>
</tr>
<tr>
<td>22</td>
<td>Lack of education or knowledge of available resources</td>
<td>35.7%</td>
<td>28.6%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Q 3c: What are some of the aspects of how we deliver care at GLA that contributes to homeless patients at WLA VAMC using the ED?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Overcrowding/capacity of 206</td>
<td>50.0%</td>
<td>57.1%</td>
<td>42.9%</td>
</tr>
<tr>
<td>17</td>
<td>Overcrowding/capacity of PACT</td>
<td>28.6%</td>
<td>42.9%</td>
<td>14.3%</td>
</tr>
<tr>
<td>18</td>
<td>Availability of services at times that are convenient for patient</td>
<td>42.9%</td>
<td>100.0%</td>
<td>28.6%</td>
</tr>
<tr>
<td>19</td>
<td>Patient preference of ED care over other</td>
<td>57.1%</td>
<td>42.9%</td>
<td>71.4%</td>
</tr>
</tbody>
</table>
Question 4: Understanding need to address ED use among homeless Veterans at GLA

All respondents were asked whether they thought there is a need to address the issue of ED use among homeless Veterans at WLA VAMC. 100% of respondents, both administrative and clinical, responded that there was a need. When asked why they believed there is a need to address this issue, 71.4% of all respondents stated reasons related to costs, costs savings, and financial efficiency. Furthermore, 64.3% of all respondents also stated that the need to address this issue is due to the ED being an inappropriate care model for the needs and services homeless Veterans at WLA VAMC need (Table 15).

Table 15 Semi-structure key informant interview Question 4 findings

<table>
<thead>
<tr>
<th>Code</th>
<th>Question</th>
<th>% of all respondents</th>
<th>% of admin respondents</th>
<th>% of clinical respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Q 4: Do you think there is a need to address ED use among homeless Veterans at WLA VAMC?</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>1</td>
<td>Q 4a: Why do you think there is a need to address ED use among homeless Veterans at WLA VAMC?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>Inappropriate care model for needs/services</td>
<td>64.3%</td>
<td>57.1%</td>
<td>71.4%</td>
</tr>
<tr>
<td>1</td>
<td>Costs/control costs</td>
<td>71.4%</td>
<td>85.7%</td>
<td>57.1%</td>
</tr>
<tr>
<td>2</td>
<td>Improve quality of care</td>
<td>42.9%</td>
<td>57.1%</td>
<td>28.6%</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
<td>28.6%</td>
<td>14.3%</td>
<td>42.9%</td>
</tr>
</tbody>
</table>

Question 5 (a-c): Strategies and barriers to addressing ED use among homeless Veterans at GLA

Question 5 parts a through c (Table 16) focused on understanding what key informants believe to be working at WLA VAMC to address the issue of ED use among homeless Veterans, what is not working or is contributing to ED use, and what can be done (outside of the WLA HPACT program) to address this issue further. Responses were grouped in to key domains through a deductive process. 50% of all respondents stated that the coordination across various GLA
homeless programs has reduced the ED use among homeless Veterans at WLA VAMC and 50% also stated that the care coordination and/or case management of these patients through various clinical approaches has also reduced the ED use among homeless Veterans at WLA VAMC. However, when asked what they believe has contributed to ED use for this population, 57% of all respondents noted that the lack of care coordination and/or case management needed for this population has contributed to ED use. When asked what can be done (outside of the WLA HPACT program) to address ED use for this population 42.9% of respondents recommended better coordination across GLA homeless programs to maintain continuity and address gaps in care, and 42.9% also recommended the need for warm-hand offs in connecting patients with appropriate services.
Table 16 Semi-structure key informant interview Question 5 (a-c) findings

<table>
<thead>
<tr>
<th>Code</th>
<th>Question</th>
<th>% of all respondents</th>
<th>% of admin respondents</th>
<th>% of clinical respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Q 5a: How have the homeless programs reduced ED utilization among homeless Veterans at WLA VAMC?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Coordination across programs</td>
<td>50.0%</td>
<td>71.4%</td>
<td>28.6%</td>
</tr>
<tr>
<td>2</td>
<td>Organizational capacity</td>
<td>14.3%</td>
<td>14.3%</td>
<td>14.3%</td>
</tr>
<tr>
<td>3</td>
<td>Gaps in care (warm handoffs)</td>
<td>28.6%</td>
<td>28.6%</td>
<td>28.6%</td>
</tr>
<tr>
<td>4</td>
<td>Complexity of patients</td>
<td>21.4%</td>
<td>28.6%</td>
<td>14.3%</td>
</tr>
<tr>
<td>5</td>
<td>Team structure</td>
<td>21.4%</td>
<td>14.3%</td>
<td>28.6%</td>
</tr>
<tr>
<td>6</td>
<td>Care coordination and/or case management</td>
<td>50.0%</td>
<td>71.4%</td>
<td>28.6%</td>
</tr>
<tr>
<td>7</td>
<td>Data to support/make decisions</td>
<td>35.7%</td>
<td>28.6%</td>
<td>42.9%</td>
</tr>
<tr>
<td></td>
<td><strong>Q 5b: What are the factors of the homeless programs that have contributed to the rates of ED utilization among homeless Veterans at WLA VAMC?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Coordination across programs</td>
<td>50.0%</td>
<td>28.6%</td>
<td>71.4%</td>
</tr>
<tr>
<td>2</td>
<td>Organizational capacity</td>
<td>14.3%</td>
<td>14.3%</td>
<td>14.3%</td>
</tr>
<tr>
<td>3</td>
<td>Gaps in care (warm handoffs)</td>
<td>50.0%</td>
<td>42.9%</td>
<td>57.1%</td>
</tr>
<tr>
<td>6</td>
<td>Care coordination and/or case management</td>
<td>57.1%</td>
<td>42.9%</td>
<td>71.4%</td>
</tr>
<tr>
<td></td>
<td><strong>Q 5c: Apart from HPACT, what do you think can be done to reduce ED use among homeless Veterans at WLA VAMC?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Coordination across programs</td>
<td>42.9%</td>
<td>28.6%</td>
<td>42.9%</td>
</tr>
<tr>
<td>2</td>
<td>Organizational capacity</td>
<td>14.3%</td>
<td>28.6%</td>
<td>0.0%</td>
</tr>
<tr>
<td>3</td>
<td>Gaps in care (warm handoffs)</td>
<td>42.9%</td>
<td>42.9%</td>
<td>42.9%</td>
</tr>
<tr>
<td>4</td>
<td>Complexity of patients</td>
<td>7.1%</td>
<td>0.0%</td>
<td>14.3%</td>
</tr>
<tr>
<td>5</td>
<td>Team structure</td>
<td>7.1%</td>
<td>14.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>6</td>
<td>Care coordination and/or case management</td>
<td>35.7%</td>
<td>42.9%</td>
<td>28.6%</td>
</tr>
<tr>
<td>7</td>
<td>Data to support/make decisions</td>
<td>14.3%</td>
<td>14.3%</td>
<td>14.3%</td>
</tr>
</tbody>
</table>

Question 5 (d-f): Strategies and barriers for WLA HPACT to address ED use among homeless Veterans at GLA

Question 5 parts d through f spoke directly to the WLA HPACT program (Table 17). Key informants were asked what they believed the WLA HPACT program has done that has been helpful in reducing ED visits for the target population, what parts of the program may contribute to ED use among these patients, and what strategies should be employed by WLA HPACT to decrease ED visits for these patients. 71.4% of all respondents noted the WLA HPACT strategies for care
coordination and/or case management as a key factor in reducing ED use among this population. Superficially, key informants pointed out the WLA HPACT case management tracking tool that was developed to track patient care in WLA HPACT as a useful tool in performing the complex care coordination and case management required of this complex patient population. Only 7.1% of all respondents thought that using data (performance reports, encounter information, etc.) led to a decrease in the ED use for homeless Veterans. 57.1% of respondents believed that warm hand-offs, specifically in connecting homeless Veterans seen in WLA HPACT to the services they need has increased the ED use for this population. Several individuals noted the reason for this barrier was due to WLA HPACT staffing challenges and limited hours of operation during the daytime. Finally, the need for improvement in three key domains was identified for the WLA HPACT program to decrease ED use. This included the need for better coordination across the GLA homeless programs (ability to work with other programs to increase the resources and services available to WLA HPACT patients), the need for greater organization capacity in terms of staffing during the daytime and extended clinic hours.
Table 17 Semi-structure key informant interview Question 5 (d-f) findings

<table>
<thead>
<tr>
<th>Code</th>
<th>Question</th>
<th>% of all respondents</th>
<th>% of admin respondents</th>
<th>% of clinical respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coordination across programs</td>
<td>57.1%</td>
<td>14.3%</td>
<td>42.9%</td>
</tr>
<tr>
<td>2</td>
<td>Organizational capacity</td>
<td>57.1%</td>
<td>57.1%</td>
<td>57.1%</td>
</tr>
<tr>
<td>3</td>
<td>Gaps in care (warm handoffs)</td>
<td>57.1%</td>
<td>28.6%</td>
<td>85.7%</td>
</tr>
<tr>
<td>4</td>
<td>Complexity of patients</td>
<td>21.4%</td>
<td>28.6%</td>
<td>14.3%</td>
</tr>
<tr>
<td>5</td>
<td>Team structure</td>
<td>50.0%</td>
<td>14.3%</td>
<td>85.7%</td>
</tr>
<tr>
<td>6</td>
<td>Care coordination and/or case management</td>
<td>71.4%</td>
<td>42.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>7</td>
<td>Data to support/make decisions</td>
<td>7.1%</td>
<td>14.3%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Q5d: What has the HPACT program done that you think are helpful in reducing ED utilization among homeless Veterans at WLA VAMC?

Q5e: What aspects of the HPACT program do you think contribute to high ED use among homeless Veterans at WLA VAMC?

Q5f: What can the HPACT program do to decrease ED use among homeless Veterans at WLA VAMC?

Limitations

There are several limitations to the data collected through the qualitative semi-structured key informant interviews. Firstly, key informants were selected using convenience-sampling methods and this might cause a bias in terms of the types of key informants that were surveyed. Second,
responses were grouped in to general domains based on the types of responses given for each question. This could have led to over generalization. Finally, since these interviews were semi-structured and questions were clarified if the respondent requested, some key informants may have a better understanding of the question than other respondents and consequently answered questions under differing perceptions on what was being asked. Despite these limitations, two different coding analysts carefully analyzed data and discrepancies were addressed among the team.

These results comprise the qualitative results of the semi-structured key informant interviews that were conducted to identify barriers to reducing ED utilization among homeless Veterans at GLA as well as for patients assigned to the WLA HPACT team. Furthermore, the results point to several best practices that are currently being employed by the WLA HPACT program, and inform best practices for future WLA HPACT implementation plans. The next part of the formative evaluation findings details the results from the quantitative medical chart review and performance reports for patients assigned to the WLA HPACT team.

**Part 2: Findings from Quantitative Analyses**

The second part of this progress-focused formative evaluation was based on quantitative analyses using data from patient electronic medical records, VSSC performance reports, the EDIS database, as well as the DSS database (described in the PROGRESS FOCUSED FORMATIVE EVALUATION METHODS section). The analytic questions identified in the Theoretical Approach section guided the analyses done in this evaluation. These analytic questions include: 1) What are the barriers and gaps in care that contribute to emergency department use among homeless Veterans treated by WLA HPACT as perceived by WLA HPACT staff and other key informants? 2) What is the baseline measurement of WLA HPACT patients (demographics, chronic disease
management, mental health, substance abuse treatment, and housing engagement, and ED utilization) before enrolling in the program and 6 months after? and 4) Have there been changes in factors associated with ED utilization and ED utilization among homeless Veterans treated by WLA HPACT?

Question 1 was primarily addressed by the key informant interviews described in the previous section. However, the quantitative analyses supplement the findings by quantifying the barriers in terms of potential impact on the measures presented. In order to answer questions 2 and 3, several analyses were conducted in order to get a comprehensive understanding of where the WLA HPACT program stands in its efforts to address ED use for their patients. These analyses were broken out into the following sections: patient demographic and panel characteristics, patient complexity, and pre-post evaluation analyses including chronic disease management, substance abuse and housing engagement, primary care engagement, emergency department visits, emergency department diagnoses, and emergency department utilization by weekday and time.

As described in the previous section, patient demographic and panel characteristics, as well as patient complexity analyses were done using a cross-sectional design (data is representative of status at one point in time). All other analyses are based on data collected at two points in time – during the six months prior to WLA HPACT assignment, and during the six months after WLA HPACT assignment. These analyses comprise the pre-post evaluation that was done for this progress-focused formative evaluation. Changes (using deltas) and p-values presented for the evaluation time period before WLA HPACT assignment, and the time period after WLA HPACT assignment are primarily descriptive and only suggestive of causation.
Patient Demographic and Panel Characteristics

Table 18 presents demographic and panel characteristics of the patients assigned to the WLA HPACT program from April 30, 2012 until April 15, 2013 (end of data collection period). This included a total of 73 patients (three patients were excluded from most analyses due to incorrect assignment date). Table 19 shows the housing status of the 70 assigned WLA HPACT patients at the time of their first WLA HPACT visit.

The WLA HPACT panel is comprised of male Veterans (98.6%) with an average age of 53 years. 10% of the patient panel were Veterans from Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF). Majority of the patients were Black or African American (41.1%), followed closely by 37.0% identifying themselves as White (excluding Hispanic or Latino).

The VSSC reports provide panel characteristics for primary care patients assigned to a primary care team. These measures describe the type of patients that are enrolled to the primary care team in order to infer complexity of patients, as well as service utilization patterns. The majority of these patients (68.6%) have a single primary care provider (PCP). However, when compared to the National HPACT panel (all patients enrolled to HPACT teams across VHA), the WLA HPACT team has more than double the percentage of patients assigned to multiple primary care providers across VHA, as well as patients assigned to multiple primary care providers across the VISN. This difference may be explained by the complex nature of these patients’ needs (further described in the subsequent section.

The VA uses several methods to determine homelessness among their Veteran patients. One approach is to measure the last homeless service received. Table 18 includes the breakout of these services for the 70 WLA HPACT patients. 42.9% of WLA HPACT patients had a V60.0 homeless
diagnosis ICD.9 code as their last listed homeless service. This might be a reflection of provider
coding patterns across GLA.

The WLA HPACT panel of patients includes 47 patients who have been assigned to the
WLA HPACT team for at least six months as of the data collection end date (April 15, 2013). The
process of assigning a patient to the WLA HPACT team is identified in the APPENDIX G – WLA
HPACT Administrative and Clinical Processes section. These 47 patients are used as the cohort for
the pre-post evaluation of this progress-focused formative evaluation described in subsequent
sections.
Table 18 WLA HPACT Patient Demographics and Panel Characteristics as of 4/15/2013

<table>
<thead>
<tr>
<th></th>
<th>WLA HPACT</th>
<th>National HPACT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>% of all patients</td>
</tr>
<tr>
<td>Number of patients</td>
<td>70</td>
<td>100</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (mean)</td>
<td>70</td>
<td>53.8 (mean)</td>
</tr>
<tr>
<td>Male</td>
<td>69</td>
<td>98.6</td>
</tr>
<tr>
<td>Black</td>
<td>30</td>
<td>42.9</td>
</tr>
<tr>
<td>White</td>
<td>27</td>
<td>38.6</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>8</td>
<td>11.4</td>
</tr>
<tr>
<td><strong>Panel Enrollment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolled &gt; 180 days (6 months)</td>
<td>47</td>
<td>67.1</td>
</tr>
<tr>
<td>Enrolled &gt; 120 days (3 months)</td>
<td>60</td>
<td>85.7</td>
</tr>
<tr>
<td><strong>Type of PCP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple PCP across VHA</td>
<td>12</td>
<td>17.1</td>
</tr>
<tr>
<td>Multiple PCP in VISN</td>
<td>9</td>
<td>12.9</td>
</tr>
<tr>
<td><strong>Homeless Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DCHV-Homeless Domiciliary</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>GPD-Grant Per Diem</td>
<td>14</td>
<td>20.0</td>
</tr>
<tr>
<td>HCHV Outreach</td>
<td>14</td>
<td>20.0</td>
</tr>
<tr>
<td>HUD-VASH</td>
<td>6</td>
<td>8.6</td>
</tr>
<tr>
<td>V60.0 Code</td>
<td>30</td>
<td>42.9</td>
</tr>
<tr>
<td>VBA-Veteran Benefits Admin</td>
<td>2</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Of the 70 patients assigned to the WLA HPACT panel as of April 15, 2013, 34.3% were in transitional housing at the time of their first visit with the WLA HPACT team. Transitional housing includes VA-supported transitional or rehab programs (including Grant Per Diem and Domiciliary).
The second most notable housing category was patients who were residing with friends or family (18.6%). Approximately 20% of the patients assigned to the WLA HPACT panel were residing in a place not meant for human habitation (street, other outdoor public place, car, or other vehicle).

Table 19 WLA HPACT Patient Housing status at time of first WLA HPACT visit (data range 4/30/2012-4/15/2013)

<table>
<thead>
<tr>
<th>Housing</th>
<th>N</th>
<th>% of all patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street or other outdoor public place, abandoned building</td>
<td>19</td>
<td>27.1</td>
</tr>
<tr>
<td>VA-supported Transitional or Rehab Program, including GPD and domiciliary</td>
<td>18</td>
<td>25.7</td>
</tr>
<tr>
<td>Family/Friends</td>
<td>14</td>
<td>20.0</td>
</tr>
<tr>
<td>Own House or apartment (VASH here)</td>
<td>6</td>
<td>8.6</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>5</td>
<td>7.1</td>
</tr>
<tr>
<td>Car/Other vehicle</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Non-VA supported Transitional or Rehab Program</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Jail/Prison</td>
<td>2</td>
<td>2.9</td>
</tr>
<tr>
<td>Grand Total</td>
<td>70</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Patient Complexity

The WLA HPACT program was created with the intention of treating the most complex homeless at at-risk for homeless Veterans at GLA. The following analyses identify the prevalence of common chronic medical conditions, mental health conditions, and substance abuse disorders among the WLA HPACT panel (Table 20 presents the prevalence of chronic medical conditions, mental health conditions, and substance abuse disorders for patients assigned to the WLA HPACT team). Over half of all patients have hypertension (52.9%), alcohol substance abuse (57.1%), and mood disorders (54.3%), including bipolar and depression. These findings are consistent with those conditions that are found to be prevalent among homeless individuals as presented in the literature review findings.
Table 20 Chronic Medical Conditions, Mental Health Conditions, and Substance Abuse Disorders for Patients assigned to the WLA HPACT team as of 4/15/2013, n = 70 patients

<table>
<thead>
<tr>
<th>Chronic Medical Conditions</th>
<th>N</th>
<th>% (of all patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>37</td>
<td>52.9</td>
</tr>
<tr>
<td>Chronic Pain</td>
<td>22</td>
<td>31.4</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>20</td>
<td>28.6</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17</td>
<td>24.3</td>
</tr>
<tr>
<td>Hepatitis C</td>
<td>16</td>
<td>22.9</td>
</tr>
<tr>
<td>Respiratory</td>
<td>9</td>
<td>12.9</td>
</tr>
<tr>
<td>Coronary Artery Disease</td>
<td>6</td>
<td>8.6</td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
<td>6</td>
<td>8.6</td>
</tr>
<tr>
<td>DJD/Arthritis</td>
<td>4</td>
<td>5.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mental Health</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood Disorders</td>
<td>38</td>
<td>54.3</td>
</tr>
<tr>
<td>PTSD</td>
<td>20</td>
<td>28.6</td>
</tr>
<tr>
<td>Psychotic Disorders</td>
<td>15</td>
<td>21.4</td>
</tr>
<tr>
<td>Anxiety</td>
<td>12</td>
<td>17.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance Abuse</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>40</td>
<td>57.1</td>
</tr>
<tr>
<td>Tobacco</td>
<td>31</td>
<td>44.3</td>
</tr>
<tr>
<td>Cocaine</td>
<td>23</td>
<td>32.9</td>
</tr>
<tr>
<td>Marijuana</td>
<td>11</td>
<td>15.7</td>
</tr>
<tr>
<td>Opioid/Heroin</td>
<td>5</td>
<td>7.1</td>
</tr>
</tbody>
</table>

The complexity of these patients can be further described using the DCG (Diagnosis Code Group) and Care Assessment Need (CAN) scores. The DCG is presented as an average. A patient’s DCG score is based on his/her demographics (age, gender) and recorded diagnoses from VHA inpatient, outpatient and fee records over a 12-month period. These ICD.9 codes are then grouped into one of 184 condition categories (CCs.) Each CC is assigned a weight that was modeled through the Medicare FFS population. Finally, a standardized weight (i.e. the risk score) is computed and assigned to the patient. A high average DCG score indicates a panel of patients that are complex. For the WLA HPACT patients, the mean DCG score across 69 patients (1 missing value) was 1.51; the median score across the panel was 1.25 (Table 21). The DCG scores had a 1st quartile score of
0.87 and a 4th quartile score of 7.5. The WLA HPACT average DCG score is second highest among WLA primary care teams (second only to the geriatrics team).

Table 21 WLA Primary Care Teams DCG Average Scores as of 4/15/13

<table>
<thead>
<tr>
<th>GLA Primary Care Team</th>
<th>DCG Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA Geriatrics Team</td>
<td>1.560</td>
</tr>
<tr>
<td><strong>WLA HPACT</strong></td>
<td><strong>1.527</strong></td>
</tr>
<tr>
<td>WLA Women’s Health Teams</td>
<td>0.644</td>
</tr>
<tr>
<td>WLA Bronze Teams</td>
<td>0.699</td>
</tr>
<tr>
<td>WLA Gold Teams</td>
<td>0.718</td>
</tr>
<tr>
<td>WLA Mental Health-Primary Care PC Teams</td>
<td>0.733</td>
</tr>
<tr>
<td>WLA SILVER Teams</td>
<td>0.672</td>
</tr>
</tbody>
</table>

The CAN score is presented as either a percentile or score between 0 and 1.0. The CAN reflects the estimated probability of hospital admission or death within a specified time frame (90 days (or 1 year). The score is expressed as a percentile, ranging from 0 (lowest risk) to 99 (highest risk) and indicates how a given patient compares with other VA patients in terms of likelihood of hospitalization or death. Patients with a very high score (e.g., 99) have a risk of admission or death that approaches 72% at one year while for those with a low score (e.g., 5) that risk is only about 3%. The CAN score is generated using sophisticated statistical prediction models that utilize demographic data (e.g., age, gender) and clinical information (e.g., medical conditions, use of VA health care, vital signs, medications and laboratory tests) from VHA administrative data. In addition to the CAN score, the report displays the actual probability of an event associated with that CAN Score. The report also displays a count of the patient’s diagnoses, care management resources already in use, and utilization, including the date of the last primary care visit. It is critical to recognize that the CAN scores represent probabilities and although these scores are very accurate for large groups of patients, they may be inaccurate for an individual patient. In the highest risk
group, those with a CAN score of 99, more than a quarter of patients would not be expected to die or be hospitalized while even some of those in very low risk groups will experience one of these events. The goal is to identify groups of patients at high risk for whom care coordination may be valuable (Bodenheimer, 2012).

For the WLA HPACT patient panel, the CAN 90 Day score ranges from 0 to 0.45, the mean is 0.12, and the median score is 0.09. For the CAN 90 Day percentile, values ranged from 0 to 99, with an average of 80.1, and a median percentile of 90 (Table 22).

Table 22 CAN 90 day score and CAN 90 Day Percentile as of 4/15/13

<table>
<thead>
<tr>
<th>CAN Score (percentile)</th>
<th>As of 4/15/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>78.9</td>
</tr>
<tr>
<td>Median</td>
<td>90.0</td>
</tr>
<tr>
<td>Mode</td>
<td>90.0</td>
</tr>
<tr>
<td>25th Percentile</td>
<td>72.5</td>
</tr>
<tr>
<td>75th Percentile</td>
<td>96.5</td>
</tr>
</tbody>
</table>

Pre-Post Evaluation of patients enrolled to WLA HPACT for at least 6 months

The next section presents the analyses that were conducted using a pre-post evaluation design. These analyses are based on data that was collected at two points in time – during the six months prior to HPACT assignment, and during the six months after WLA HPACT assignment. These analyses are limited to the 47 patients who have been enrolled to the WLA HPACT team for at least six months as of April 15, 2013.
**Chronic Disease Management Measures**

Common chronic disease management measures related to hypertension, diabetes, and hyperlipidemia were considered for the pre-post evaluation patients. These measures were chosen because they are commonly considered for chronic disease management within primary care. The hypertension related measures considered patients with blood pressure (BP) results within the following categories: BP measured $<120$ and $<80$ (indicating normal BP), BP measured 120-139 or 80-89 indicating prehypertension, BP measured 140-159 or 90-99 indicating stage 1 hypertension, and BP measured $>160$ or $>100$ indicating stage 2 hypertension. The diabetes measures include HBA1c scores greater than nine. Finally, the hyperlipidemia focused measure identified patients who had a LDL-C score of less than 100mg/dl. Patients with missing results were also recorded for given evaluation time periods. Table 23 presents results of the measures for the patients who have been enrolled to the WLA HPACT team for at least six months as of April 15, 2013. Although there seems to be improvement in HBA1c as well as LCL-C scores, the change presented was not significant at $p < 0.05$. 

---

97
Table 23 Change in Chronic Disease Management Measures 6 months before and after WLA HPACT assignment from 4/30/2012-4/15/2013

<table>
<thead>
<tr>
<th>Blood Pressure (as defined below)</th>
<th>Last measurement before assignment</th>
<th>Last measurement after assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured &lt;120 and &lt;80 (Normal BP) (%)</td>
<td>N = 47 (patients assigned at least 6 months)</td>
<td>N = 47 (patients assigned at least 6 months)</td>
<td>1.00</td>
</tr>
<tr>
<td>Measured 120-139 or 80-89 (Prehypertension) (%)</td>
<td>29.8</td>
<td>29.8</td>
<td>1.00</td>
</tr>
<tr>
<td>Measured 140-159 or 90-99 (Stage 1 hypertension) (%)</td>
<td>44.7</td>
<td>48.9</td>
<td>0.696</td>
</tr>
<tr>
<td>Measured &gt;160 or &gt;100 (Stage 2 hypertension) (%)</td>
<td>10.6</td>
<td>12.7</td>
<td>0.66</td>
</tr>
<tr>
<td>HBA1C&gt;9</td>
<td>N = 17 (with diabetes)</td>
<td>N = 17 (with diabetes)</td>
<td>0.07</td>
</tr>
<tr>
<td>Uncontrolled diabetes (%)</td>
<td>11.8</td>
<td>5.9</td>
<td>0.16</td>
</tr>
<tr>
<td>LDL-C&lt;100 mg/dl</td>
<td>N = 20 (with hyperlipidemia)</td>
<td>N = 20 (with hyperlipidemia)</td>
<td>0.07</td>
</tr>
<tr>
<td>Controlled hyperlipidemia (&lt;100) (%)</td>
<td>10.2</td>
<td>20.0</td>
<td>0.07</td>
</tr>
</tbody>
</table>

**Housing and Substance Abuse Engagement**

For the pre-post evaluation cohort, we determined the number of housing and substance abuse encounters during the six months prior to WLA HPACT assignment and the number of encounters for the six months following assignment. Table 24 presents the number of housing social work encounters before and after WLA HPACT assignment. The number of unique patients with mental health social work encounters was 27 during the six-month time period before WLA HPACT assignment and 36 patients for the six months after WLA HPACT assignment. The 27 unique patients before had a total of 149 encounters whereas the 36 patients after had a total of 371 encounters. The increase in the number of encounters during the two evaluation periods was statistically significantly different at alpha = 0.05.
Table 24 Community Care Housing Social Work and Substance Abuse encounters for the 47 patients assigned to WLA HPACT for at least six months as of April 15, 2013

<table>
<thead>
<tr>
<th></th>
<th>Before &amp; after assignment</th>
<th>Before assignment</th>
<th>After assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique patients with Housing Social Work (SW) Encounters (N)</td>
<td>63</td>
<td>27</td>
<td>36</td>
<td>0.26</td>
</tr>
<tr>
<td>Housing SW Encounters (N)</td>
<td>520</td>
<td>149</td>
<td>371</td>
<td>0.00*</td>
</tr>
<tr>
<td>Unique patients with SA encounters (N)</td>
<td>16</td>
<td>6</td>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>SA encounters (N)</td>
<td>154</td>
<td>66</td>
<td>88</td>
<td>-</td>
</tr>
</tbody>
</table>

*Significant at alpha = 0.05

Housing Referrals

Housing referrals based on transitional housing referral notes from WLA HPACT team members was also used as a proxy for housing engagement. For the pre-post evaluation cohort, we determined the average number of housing referrals per month during the six months prior to WLA HPACT assignment and six months following assignment. Table 25 reflects the number of housing referrals to transitional housing program. This data was collected by identifying the number of “transitional housing program referral note” for these patients using the CPRS medical record system. One reason for the small numbers presented below is that homeless program staff commonly uses other note titles when a referral to a transitional housing program is made.
Table 25 Average Housing Referrals by month for the 47 patients assigned to WLA HPACT for at least six months as of April 15, 2013

<table>
<thead>
<tr>
<th></th>
<th>Before &amp; after assignment</th>
<th>Before assignment</th>
<th>After assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique patients with housing referrals (N)</td>
<td>25</td>
<td>7</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Average housing referrals per month (mean)</td>
<td>1.6</td>
<td>1.0</td>
<td>2.2</td>
<td>-</td>
</tr>
</tbody>
</table>

**Complexity of WLA HPACT Panel**

For the pre-post evaluation cohort, we determined the total number of visits across the 70 patients assigned to WLA HPACT as of April 15, 2013, the average number of diagnoses addressed by a WLA HPACT PCP during the patient’s first visit to the team, as well as the median number of diagnoses addressed. Table 26 presents the average number of diagnoses addressed for the 70 patients assigned to WLA HPACT as of April 15, 2013. The average number of diagnosis for these 70 patients was 7.1 diagnoses addressed per visit. When compared to the number of diagnoses addressed by general PACT providers, this average is much higher (Bodenheimer, 2012) and reflects the intensity of services required for WLA HPACT patients.

Table 26 Descriptive statistics of diagnoses addressed per patient for patients assigned to WLA HPACT as of April 15, 2013

<table>
<thead>
<tr>
<th>Total Patients (N)</th>
<th>Visits while assigned to WLA HPACT (N)</th>
<th>Mean number diagnoses addressed at first visit</th>
<th>Median number of diagnoses addressed at first visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>236</td>
<td>7.1</td>
<td>7.0</td>
</tr>
</tbody>
</table>

**Primary Care Engagement**

For the pre-post evaluation cohort, we determined the total number of visits across the 70 patients assigned to WLA HPACT as of April 15, 2013, the average number of diagnoses addressed
by a WLA HPACT PCP during the patient’s first visit to the team, as well as the median number of diagnoses addressed. Table 27 Primary Care Engagement by number of primary care for the 47 patients assigned to WLA HPACT for at least six months as of April 15, 2013 shows that for the 47 patients assigned for at least six months, there was a statistically significant increase in the number of primary care visits before assignment to after assignment.

Table 27 Primary Care Engagement by number of primary care for the 47 patients assigned to WLA HPACT for at least six months as of April 15, 2013

<table>
<thead>
<tr>
<th></th>
<th>Before &amp; after assignment</th>
<th>Before assignment</th>
<th>After assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique patients with PC visits (N)</td>
<td>47</td>
<td>47</td>
<td>47</td>
<td>1.00</td>
</tr>
<tr>
<td>Number of HPACT PC visits (N)</td>
<td>205</td>
<td>20</td>
<td>185</td>
<td>0.00*</td>
</tr>
<tr>
<td>Number of OTHER PC visits (N)</td>
<td>69</td>
<td>32</td>
<td>37</td>
<td>0.55</td>
</tr>
</tbody>
</table>

*Significant at alpha = 0.05

**Emergency Department Utilization**

The total number of visits across the 47 patients that had been assigned to the WLA HPACT team for at least six months as of April 15, 2013 was 362 visits during the six months before and six months after assignment (Table 28). The average acuity level across these visits was 3.63 and the average amount of time spent in the ED (from time of check in to time of discharge) was approximately five hours. During the six-month period before patients were assigned to WLA HPACT, the total number of visits was 168 ED visits, with an average acuity level of 3.57 across these visits, and average of approximately six hours per visit. For the six-month period following assignment, the total number of ED visits increased slightly (but not significantly) to 194 visits, an average acuity level of 3.71 across these visits, and approximately 5.5 hours on average spent in the ED per visit. Although the number of ED visits increased slightly from the six months before
assignment to the six months after assignment there was not a statistically significant change in the number of visits, acuity level, or time spent in the ED at alpha = 0.05.

The ED visits for WLA HPACT patients were further analyzed according to the primary diagnoses given by the ED provider. These primary diagnoses were written in a free text field and then coded into major medical domains. Across all 362 visits, there were a total of 437 primary diagnoses (up to two possible primary diagnoses possible per visit). The most significant primary diagnosis was pain related with 22.8% of all ED visits having a pain-related diagnosis. The second most noticeable primary diagnosis given for these patients was EtOH intoxication (16.6%). The 99 pain-related diagnoses were further analyzed by the type of pain presented because it comprised the largest number of primary diagnoses across all ED visits before and after assignment. Most notable across the 99 pain-related ED visits, was back or low back pain (18.2%), and foot, leg, or knee related pain (14.1%). During the six months prior to assignment and six months after assignment, pain and EtOH diagnoses were consistently the top primary diagnoses given across those ED visits.

Table 28 ED Utilization Characteristics for the 47 patients assigned to WLA HPACT for at least six months as of April 15, 2013

<table>
<thead>
<tr>
<th></th>
<th>Before &amp; after assignment</th>
<th>Before assignment</th>
<th>After assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unique patients with ED visits (N)</strong></td>
<td>38</td>
<td>34</td>
<td>30</td>
<td>0.62</td>
</tr>
<tr>
<td><strong>Number of ED visits (N)</strong></td>
<td>362</td>
<td>168</td>
<td>194</td>
<td>0.17</td>
</tr>
<tr>
<td><strong>Acuity across (1-5)( ED visits (mean)</strong></td>
<td>3.63</td>
<td>3.57</td>
<td>3.71</td>
<td>0.96</td>
</tr>
<tr>
<td><strong>Time spend in ED (hours:minutes) (mean)</strong></td>
<td>5.01</td>
<td>5:59</td>
<td>5:21</td>
<td>0.13</td>
</tr>
<tr>
<td><strong>Change between mean # ED visits/week before assignment to mean # ED visits/week after assignment (mean)</strong></td>
<td>-0.03</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 29 Primary Diagnoses for ED visits by WLA HPACT patients enrolled for at least six months as of April 15, 2013

<table>
<thead>
<tr>
<th>Primary Diagnosis (up to 2 possible per visit)</th>
<th>Before &amp; after assignment (N = 437)</th>
<th>Before assignment (N = 207)</th>
<th>After assignment (N = 227)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Pain-related</td>
<td>99</td>
<td>22.8%</td>
<td>44</td>
<td>21.3%</td>
</tr>
<tr>
<td>EtOH</td>
<td>72</td>
<td>16.6%</td>
<td>35</td>
<td>16.9%</td>
</tr>
<tr>
<td>Housing/Homeless</td>
<td>22</td>
<td>5.1%</td>
<td>14</td>
<td>6.8%</td>
</tr>
<tr>
<td>Medical Clearance</td>
<td>20</td>
<td>4.6%</td>
<td>10</td>
<td>4.8%</td>
</tr>
<tr>
<td>Medication (request/refill)</td>
<td>36</td>
<td>8.3%</td>
<td>17</td>
<td>8.2%</td>
</tr>
<tr>
<td>Mental Health (depression, anxiety, mood disorder, psychotic disorder, other mental health)</td>
<td>36</td>
<td>8.3%</td>
<td>18</td>
<td>8.7%</td>
</tr>
<tr>
<td>Homicidal/Suicidal</td>
<td>12</td>
<td>2.8%</td>
<td>6</td>
<td>2.9%</td>
</tr>
<tr>
<td>Non-EtOH Substance Abuse</td>
<td>22</td>
<td>5.1%</td>
<td>14</td>
<td>6.8%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>7</td>
<td>1.6%</td>
<td>4</td>
<td>1.9%</td>
</tr>
<tr>
<td>GI</td>
<td>15</td>
<td>3.5%</td>
<td>3</td>
<td>1.4%</td>
</tr>
<tr>
<td>Non-pain foot/leg/knee</td>
<td>13</td>
<td>3.0%</td>
<td>7</td>
<td>3.4%</td>
</tr>
<tr>
<td>Respiratory</td>
<td>11</td>
<td>2.5%</td>
<td>6</td>
<td>2.9%</td>
</tr>
<tr>
<td>Skin</td>
<td>32</td>
<td>7.4%</td>
<td>16</td>
<td>7.7%</td>
</tr>
<tr>
<td>Urinary</td>
<td>11</td>
<td>2.5%</td>
<td>3</td>
<td>1.4%</td>
</tr>
<tr>
<td>Other</td>
<td>26</td>
<td>6.0%</td>
<td>10</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

Table 30 Pain-related Primary Diagnoses for ED visits by WLA HPACT patients enrolled for at least six months as of April 15, 2013

<table>
<thead>
<tr>
<th>Pain-related diagnoses</th>
<th>Before &amp; after assignment (N = 437)</th>
<th>Before assignment (N = 207)</th>
<th>After assignment (N = 227)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>100.0%</td>
<td>44</td>
<td>100.0%</td>
</tr>
<tr>
<td>Back/Low Back</td>
<td>18</td>
<td>18.2%</td>
<td>5</td>
<td>11.4%</td>
</tr>
<tr>
<td>Foot/Leg/Knee</td>
<td>14</td>
<td>14.1%</td>
<td>8</td>
<td>18.2%</td>
</tr>
<tr>
<td>Head/Neck</td>
<td>12</td>
<td>12.1%</td>
<td>3</td>
<td>6.8%</td>
</tr>
<tr>
<td>Hand/Arm/Elbow</td>
<td>18</td>
<td>18.2%</td>
<td>8</td>
<td>18.2%</td>
</tr>
<tr>
<td>Chest</td>
<td>7</td>
<td>7.1%</td>
<td>4</td>
<td>9.1%</td>
</tr>
<tr>
<td>Chronic</td>
<td>12</td>
<td>12.1%</td>
<td>7</td>
<td>15.9%</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>5.1%</td>
<td>2</td>
<td>4.5%</td>
</tr>
<tr>
<td>Generalized</td>
<td>9</td>
<td>9.1%</td>
<td>6</td>
<td>13.6%</td>
</tr>
<tr>
<td>Abdominal</td>
<td>4</td>
<td>4.0%</td>
<td>1</td>
<td>2.3%</td>
</tr>
</tbody>
</table>
ED Utilization by Day of Week and Time of Day

The ED visits for WLA HPACT patients prior to and after assigned to the team was also analyzed by day of week and time of day of the visits. This analysis was done to inform when patients were utilizing ED services and cross-referenced with the times the WLA HPACT clinic was operational. Table 31 ED visits for patients enrolled to WLA HPACT for at least six months as of April 15, 2013 by Day of Week shows the time of day for these ED visits for each identified ED utilization time period. There was not a significant change between utilization of ED visits for the evaluation periods. Similarly, visits were analyzed by the time of day of the ED visit (early morning, late morning, afternoon, and evening) (Table 32). No significant change was noted by time of day of ED visits as well.

Table 31 ED visits for patients enrolled to WLA HPACT for at least six months as of April 15, 2013 by Day of Week

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Before &amp; after assignment</th>
<th>Before assignment</th>
<th>After assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Monday</td>
<td>49</td>
<td>13.5%</td>
<td>24</td>
<td>14.3%</td>
</tr>
<tr>
<td>Tuesday</td>
<td>50</td>
<td>13.8%</td>
<td>22</td>
<td>13.1%</td>
</tr>
<tr>
<td>Wednesday</td>
<td>49</td>
<td>13.5%</td>
<td>25</td>
<td>14.9%</td>
</tr>
<tr>
<td>Thursday</td>
<td>53</td>
<td>14.6%</td>
<td>24</td>
<td>14.3%</td>
</tr>
<tr>
<td>Friday</td>
<td>61</td>
<td>16.9%</td>
<td>23</td>
<td>13.7%</td>
</tr>
<tr>
<td>Saturday</td>
<td>46</td>
<td>12.7%</td>
<td>22</td>
<td>13.1%</td>
</tr>
<tr>
<td>Sunday</td>
<td>54</td>
<td>14.9%</td>
<td>28</td>
<td>16.7%</td>
</tr>
</tbody>
</table>
Table 32 ED visits for patients enrolled to WLA HPACT for at least six months as of April 15, 2013 by Time of Day

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Before &amp; after assignment</th>
<th>Before assignment</th>
<th>After assignment</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early morning (12:00-5:59am)</td>
<td>N  64  17.7%</td>
<td>N  33  19.6%</td>
<td>N  31  16.0%</td>
<td>0.95</td>
</tr>
<tr>
<td>Late Morning (6:00-1159am)</td>
<td>N  85  23.5%</td>
<td>N  42  25.0%</td>
<td>N  43  22.2%</td>
<td>0.97</td>
</tr>
<tr>
<td>Afternoon (12:00-5:59pm)</td>
<td>N  114  31.5%</td>
<td>N  51  30.4%</td>
<td>N  63  32.5%</td>
<td>0.98</td>
</tr>
<tr>
<td>Evening (6:00-11:59pm)</td>
<td>N  99  27.3%</td>
<td>N  42  25.0%</td>
<td>N  57  29.4%</td>
<td>0.95</td>
</tr>
</tbody>
</table>

These results are further discussed in the next section (RECOMMENDATIONS AND CONCLUSION) as they inform the recommendations of this progress-focused formative evaluation as well as the recommendations for future WLA HPACT implementation and quality improvement.

Limitations

The quantitative results from the progress-focused formative evaluation have several limitations. First, the data used for all components of the quantitative analysis are based on encounter data, or individual chart extraction and thus may have some errors due to data validation issues as well as human error. Furthermore, the data presented in this section is suggestive of progress towards goals and outcomes but since the data is primarily descriptive, changes do not imply causation. The subsequent section takes into consideration the descriptive nature of this data and uses it to inform the complex care management interventions employed by the WLA HPACT team, however do not to validate or prove the efficacy of the interventions. Finally, the evaluation design used to conduct this analysis is considered to be non-experimental because it does not use a control group to evaluate the change, and observations were done at two time points. Several other factors, besides the HPACT intervention, could have been exposed to the patients included in this
analysis. However, taking into consideration the quality improvement nature of this project and feasibility of using this available data for these quality improvement purposes, this design was considered to be the most appropriate. Furthermore, this evaluation can be used as a template to inform a more comprehensive evaluation for the WLA HPACT program.
RECOMMENDATIONS AND CONCLUSION

This section focuses on how the findings from the progress-focused formative evaluation can be used to inform the complex care management processes identified by the WLA HPACT program to reduce ED visits for the patients it aims to target. Recommendations are based on the qualitative key informant interviews and quantitative analyses using VA administrative databases. Recommendations are also provided to inform next steps for the demonstration project, how the findings from this case study can be applied to other contexts within and outside of the VA, and potential barriers that might be faced in implementing the recommendations from this evaluation. The extent to which the dissertation aims and objectives were met is also considered. Finally, this section concludes with a discussion of how this case study supplements the existing quality improvement literature and considerations for future quality improvement or research studies.

Interpretation of findings

The key informant interviews revealed several important findings from the viewpoint of GLA homeless administrative and clinical staff working the homeless Veteran patients that can be used to inform how to address the problem of emergency department use among patients assigned to WLA HPACT. One key finding was that although the WLA HPACT program aims to bridge the gaps in care experienced by homeless Veterans seeking care at GLA, there is still much more effort needed to be able to provide the “warm hand-offs” that are needed to connect patients with the services they require. For example, several key informants spoke to the GLA organizational silos as being a major barrier to being able to provide “warm hand-offs” between homeless programs. During the project phase, the WLA HPACT program identified what the purpose of the program would be, and how it would be implemented taking in to consideration the local needs assessment that was done to identify existing gaps within the homeless care services at GLA. The WLA HPACT
The program sought to bridge these gaps rather than becoming an organizational silo itself. The findings from the key informant interviews suggest that although the program has addressed some of the barriers caused by organizational silos in connecting patients to services, the process could be further improved. For example, one clinical key informant stated “The HPACT team should be working more closely with Building 206 during the daytime”. Bridging the services between the Building 206 Screening Clinic and WLA HPACT could be addressed during the planning of the new Building 402 at GLA, which will house both the Building 206 Screening Clinic primary care teams and the WLA HPACT team.

The second common theme to come out of the key informant interviews was the organizational capacity of the homeless programs, including WLA HPACT to treat the homeless Veteran patients, and the result that the capacity has on the ED utilization behavior for this population. Several staff members stated that they believed if WLA HPACT was open during more daytime hours that they would be able to reduce the need for at least some of the ED visits. Other staff believed that it was the program’s capacity to do more case management, outside the clinical hours, that would make a dent in the ED utilization patterns. As the WLA HPACT programs progresses through its implementation, the staffing capacity was been increased. Between April 30, 2012 and February 2013, the WLA HPACT clinical team had limited staffing including a part-time primary care provider, social work support from the social workers in the ED, and LVNs and clerks that worked on an overtime basis but were not employed by the WLA HPACT program. The results from the progress-focused formative evaluation are limited to those patients who were enrolled to the WLA HPACT team for at least six months as of April 15, 2013. This patient cohort is more likely to have had the majority of their services performed by the limited WLA HPACT team. As of March 2013, the clinical team now includes a part-time primary care physician, two nurse
practitioners working with the program on an overtime basis, a social work case manager, registered nurse case manager, LVN, and two clerks working on an overtime basis. Expanding the staff to include full-time case managers (social work and RN) as well as a WLA HPACT LVN has increased the capacity of the team to perform case management both during WLA HPACT clinical times, but more importantly outside of clinic times. Much of the case management is now being performed during the daytime business hours and is more conducive to the staff’s ability to perform these care management tasks. The new iteration of the WLA HPACT program is known as HPACT Plus. In the HPACT Plus implementation phase, a new recruitment strategy was identified. Patients who are identified as homeless and had at least six or more visits to the ED in the past six months are put on a patient list, which is then used by the WLA HPACT case managers to reach out to those patients. This recruitment strategy also may lead to the decrease in ED visits as more patients with high ED utilization are assigned to the HPACT team.

The qualitative interviews also spoke to reasons why homeless patients visited the WLA ED. The majority of the key informants stated that much of the ED use by this population was related to mental health and substance abuse needs. This finding was supported by the quantitative data analyses. A high percentage of WLA HPACT patients are coming in to the ED and receiving a substance abuse diagnosis (including EtOH intoxication). This speaks to the need for substance abuse to be addressed within the HPACT model. Although this was discussed during the planning of the clinic, the program has lacked the capacity to identify substance abuse clinical processes. Given the high prevalence of these conditions potentially leading to ED visits for these patients, the WLA HPACT program should consider addressing this during the implementation phase in order to meet the program goals. One way to address the need for substance abuse treatment would be to identify an on call addiction medicine provider that can be a shared resource among the ED, WLA
HPACT team, as well as the other homeless programs. Currently the on-call mental health provider for the ED is a psychiatrist but is not trained in addiction medicine. Furthermore, substance abuse training within primary care teams should be considered. Several approaches to addressed substance abuse needs within primary care models have been proposed in the literature and may benefit a special population PACT team such as the WLA HPACT program.

The quantitative analyses show considerable progress made by the WLA HPACT team towards program goals in a relatively short amount of time. Furthermore, these results also point out reasonable next steps that should be considered for the program to move towards its goal of reducing ED visits. WLA HPACT is succeeding in its efforts to target the most complex patients in terms of medical and social complexity, and ability to engage these patients in primary care and housing. However, the program has yet to show whether or not these achievements will be able to decrease in the number of ED visits for this patient population. There are several reasons that could account for the reason ED visits have not decreased between the six months prior to and the six months following assignment to WLA HPACT. The first reason speaks again to the capacity of the team and program to deliver care given the limited staffing during the time these patients were evaluated. A second reason points to the physical location of the WLA HPACT clinic. Since this clinic is co-located with the ED, the program is seeing patients come back to the clinic during times when it is not open for clinical services and having to be seen by the ED instead. Moving the clinical services to another location might lead to a decrease in visits. Another solution would be to work closely with the ED triage providers to identify a process for the ED staff to contact the WLA HPACT team if a patient presents to the ED with a non-acute need. Currently the HPACT administrative staff is meeting with the leaders of the ED to define such a process. One suggestion to do this has been to create a electronic reminder for the medical record system that notifies the
ED staff that the patient is assigned to the WLA HPACT team. Finally, other program outcomes, such as housing, health outcomes, and other utilization offsets, need to be assessed in order to determine their relationship to ED use.

Another reason that could explain why the WLA HPACT team has not shown a significant decrease in the number of ED visits is the complex needs of these patients. As needs are addressed in HPACT visits, patients may become more engaged in health care services and seek care outside of WLA HPACT. This possibility should be evaluated further in order to identify appropriate interventions to address the problem. Another potential reason for these utilization patterns could be patient preference. Several key informants spoke to the preference of homeless Veterans to seek services at the ED over other clinics due to perceived wait times, provider engagement (or lack thereof), and interestingly, the ED waiting area as a place to meet and talk with others waiting to see ED providers. Several key informants mentioned the social isolation and loneliness issues of this population often drive their behaviors. This could be true for patients who prefer evening hours to daytime hours, or patients coming in to socialize with other Veterans in the ED waiting area.

**Interventions for Complex Care Management**

One of the main objectives for this dissertation was to use the results from the progress-focused formative evaluation to address the complex care management principles that were identified by the WLA HPACT program. The measures used for the evaluation were meant to be readily available to administrative and clinical staff to inform quality improvement of programs. Although there are limitations to the causality that can be determined using this data and study design, the findings can be used to inform directionality of interventions, support recommendations (as described above), and identify the need for more thorough or comprehensive evaluation. The
findings for this evaluation were used to identify how to improve the WLA HPACT Case Management Tracking Tool (describe in the organizational context section) to better address the problem of ED utilization for the patients being treated by the WLA HPACT team. The following specifications describe the changes to this tool for the next iteration of case management processes.

1. **Using real-time clinical and administrative data** – The WLA Case Management Tracking tool can be modified to integrate the process and outcome measurements that were presented in this formative evaluation at the patient level. Currently the tool is limited to information that is inserted by WLA HPACT staff members and is limited to the next steps that were identified by the team during a patient visit to the WLA HPACT clinic. The tool can be integrated with the primary care panel provider reports that include demographic, panel, and utilization information for each patient. For example, for each patient the tool would be able to show in real-time what care management tasks are completed, outstanding, as well as when the patient last visited the ED and the reason for visit. This can inform the case manager that they should follow up with the patient.

2. **Integration of Case Management Tracking Tool with Medical Record System** – currently the Case Management Tracking Tool is used as a checklist to manage the care management responsibilities that were identified for a patient. These tasks are recorded in the tool and then used by the case managers and other clinical staff to see whether or not a task has been completed, or what the status is for defined tasks. Currently, when tasks are completed they are removed from the active task list on the tool and moved to a completed task list (a separate sheet within the Excel workbook). Integration of these completed tasks in to the patient medical record (CPRS system) should be considered so that other GLA providers (who do not use the Case Management Tracking Tool) can be informed that these
tasks were done and completed. This should reduce the repetitive services that are often found for homeless patients. For example, if one of the identified case management tasks was to connect the patient with transitional housing services and the task was completed (the patient was screened for transitional housing), social work providers in the ED can refer back to when the screening was completed and connect with the transitional screening staff to check in on where the patient is in qualifying for housing. Integration of the tool and the CPRS system can be done either manually, or through an automated process.

3. **Case Management Tracking Tool Summary Documentation** – The tool might also be used for patient education and creating smart health goals and plans for the patients assigned to WLA HPACT. For example, during a patient’s visit to the WLA HPACT clinic, the provider identifies a health plan that is based on the goals that are important to the patient. For many of these patients the primary goals are related to housing while medically related goals are only secondary. The health plan directly informs the provider of what tasks need to be done in order to achieve these goals. These tasks are recorded with the tool. Currently the audience of this information is the WLA HPACT clinical team. However, the CCM, PCMH, and other team-based models of primary care include the patient as an integral part of the medical team. To support this role, a summary of the health plan, identified tasks, and short term and long term goals should be provided to the patient. This will increase patients’ knowledge of the health care services they require, and give them the ability to make more informed decisions about their health. This can affect the ED utilization patterns for these patients because often patients use the ED because they are unaware of other options or the next steps that were identified for them. This finding was presented through the key informant interviews as a potential reason for ED use.
The findings and recommendations that were described in this dissertation directly inform the implementation of the WLA HPACT program as it transitions to HPACT Plus, as well as long-term considerations for the program.

**Transformational Obstacles and Other Considerations**

There are significant barriers to achieving the recommendations in this section. Transformational obstacles are the factors related to the organization that make it difficult to overcome barriers to achieve quality improvement and transformation of care. Within GLA there are several transformational obstacles that need to be addressed to carry out the identified recommendations and to perform on-going quality improvement. One of these barriers is the lack of coordination across programs, service lines, and a shared vision. GLA is a large health care system with several program offices and services lines that are organized in a way that makes it difficult to deliver the team-based WLA HPACT care. For example, the multidisciplinary team structure of WLA HPACT includes a primary care provider (physician and nurse practitioners), nurse care manager, social work care manager, clerks, and administrative staff. All of these individuals are vital to the functioning of the program; however they are all supervised by different service lines. During the planning phase all service lines involved were brought together to discuss and identified a shared vision for the program. However, as implementation progresses, this shared vision has been followed less by some service lines than by others. The inconsistency leads to staffing problems, clinical and administrative processes, and in term negatively affects the care that the patients receive. This problem needs to be addressed through on-going meetings to support the shared vision and perhaps supplemented by a different organizational structure where all team members report to a common program or service line.
Another key barrier to making the recommendations described a reality is limited support for on-going quality improvement and research. Funding for evaluation such as the progress-focused formative evaluation discussed in this case study is not funded by medical center or VHA central office. Therefore, these types of quality improvement projects that aim to directly inform implementation and clinical processes are difficult to do. There needs to be more support for funding of projects that support quality improvement initiatives.

**Sustainability of program**

The sustainability of the WLA HPACT program can be described in regards to the immediate future and the long-term future. In the short term, the WLA HPACT program is funded through then end of FY 13 with plans to hire on additional staff. Furthermore, the new comprehensive homeless program clinic is going to be in Building 402. This building might house the WLA HPACT team as well as support the transition of the primary care teams operating in Building 206 Screening Clinic to operate like the WLA HPACT program. What this means operationally is that the team structure for these teams will include a primary care provider, RN case manager, social work case manager, as well as other homeless tailored services such as mental health providers and substance abuse providers. If this plan is set forth, it will inform the long-term sustainability of the program. Furthermore, financial support to support this demonstration program after its demonstration period needs to be secured. This can be approached several ways. For example, identifying increased reimbursement rates for patients assigned to the WLA HPACT team may point to one reason the program is needed and can be supported financially. Another approach is to secure general medical center funding in order to continue operation of this program.
In regards to the short-term and intermediate-term implications of the WLA HPACT program on ED utilization, the recommendations from this dissertation should be considered and applied using rapid cycle implementation and evaluation methods. The barriers to both the short-term and long-term sustainability of the program will depend on the funding that is received to continue the program, as well as capacity to do quality improvement and research.

Relevance of recommendations for other settings

This dissertation addresses development of one VA program for homeless Veterans and its progress towards changing ED utilization behavior in WLA. However, the recommendations that were identified can be applied to various settings both within VHA and outside. For example, the best practices and recommendations for complex care management can be applied to other HPACT teams nationally because the characteristics of the patient population are comparable in many ways. Also, the idea of complex care management and how it can be used to perform “predictive care modeling” for vulnerable populations is interesting to consider for non-homeless populations. Furthermore, how complex care management or “predictive care modeling” can be performed using the Case Management Tracking Tool can be tailored to address the care management needs for other vulnerable Veteran populations such as women, severely mentally ill, and geriatric patients. This tool was adapted from HIV case management best practices and can also be applied to HIV case management within the VHA infrastructure. The feasibility of applying these findings to other sites will rely on how programs are able to overcome transformational and organizational obstacles, and the infrastructure for quality improvement and research that is available to conduct and implement these best practices.
Revisiting dissertation aims and objectives

This dissertation was initially done to understand the issue of inappropriate emergency department utilization by the homeless and at-risk for homeless Veterans general and at GLA, to identify barriers and gaps in care that contribute to ED utilization, and understand how a progress-focused formative evaluation can inform how the WLA HPACT program does complex care management to reduce ED visits. These aims were all addressed by this dissertation. The literature review and local needs assessment were done in order to understand the issue of inappropriate ED utilization both generally for the homeless population, as well as for the GLA homeless and at-risk for homeless population. The qualitative key informant interviews were conducted in order to identify the perceived barriers to decreasing ED visits among this special population, and identify key gaps in care that the WLA HPACT program should consider in developing a strategy to decrease ED utilization. Finally, the progress-focused formative evaluation provided concrete, data-supported findings that determine where the program is in meeting its goal to reduce ED use among this population, and how the complex care management interventions that are used by the team can be modified and informed using these analyses.

Although the aims of this dissertation were addressed, the results from this dissertation point to several areas that should be explored further. For example, the findings presented from the progress-focused formative evaluation speak more directly to the short-term progress the program has made to meet its goals, and more importantly, how these preliminary results can be used to inform on-going implementation. This is due to the progress-focused formative nature of the evaluation. A comprehensive evaluation of the program and whether or not it achieved the overall program goals is also important to consider. This dissertation helps support a comprehensive
evaluation by providing the evaluation data infrastructure and metrics that could be used to conduct the comprehensive evaluation of the program.

**Conclusion**

This dissertation informs the quality improvement and research literature by describing a case study of the WLA HPACT program from the project phase through preliminary implementation phase, and provides the groundwork to inform on-going quality improvement and research. This dissertation is particularly relevant to GLA, the organizational setting in which it was conducted, and will be used as a consulting report to inform the next steps of the program. Furthermore, a key contribution of this dissertation is how an evidence-based problem solving approach was developed and carried out to address the ED utilization among homeless Veterans at GLA within the organization’s ability to perform quality improvement and research. This type of operational problem solving methodology is often required by VHA health care systems and other public and private sector organizations because the capacity for traditional research is often limited. This dissertation can be used to guide problem-solving work as the need for operational quality improvement grows.
APPENDIX A – HPACT Request For Proposal

1. WLA and Downtown LA LOIs

2. GLA Budget Letter

3. GLA HPACT Survey
1. WLA and Downtown LA LOIs

VA Greater Los Angeles Healthcare System

Proposal: Homeless Patient Aligned Care Teams (PACT) for West Los Angeles Veterans: A Co-Located, Integrated Homeless PACT

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1 Executive Summary

The VA Greater Los Angeles Healthcare System (GLA) is one of the largest, most complex healthcare system within the Department of Veterans Affairs. It is one component of the VA Desert Pacific Healthcare Network (VISN22) offering services to Veterans residing in Southern California and Southern Nevada. GLA consists of three ambulatory care centers, a tertiary care facility and 9 community based outpatient clinics. GLA serves Veterans residing throughout five counties: Los Angeles, Ventura, Kern, Santa Barbara, and San Luis Obispo. There are 1.4 million Veterans in the GLA service area. GLA is affiliated with both UCLA School of Medicine and USC School of Medicine, as well as more than 45 colleges, universities and vocational schools in 17 different medical, nursing, paramedical and administrative programs. Greater Los Angeles is a country and city where there are estimated to have over 120,000 homeless persons during the course of the past twelve months. At the West Los Angeles site alone we saw 9,580 unique homeless Veterans through one of our programs and took care of the health of 8,758.

In this LOI, we propose an enhancement of a Co-located, integrated Homeless PACT Model located at our West LA campus, the primary campus that serves the homeless Veterans of Los Angeles. We propose to expand our national model of a primary clinic for homeless Veterans with serious mental illness or substance from a co-located model to an integrated model based on PACT principles tailored to the unique needs of homeless Veterans. Development of homeless PACTs at GLA will be a collaborative effort through primary care, mental health/substance use, community care, social work, healthcare transformation office, and IT resources. We have an ideal group to lead the integration of our homeless programs and primary care with leaders that have shown lengthy years of experience and significant commitments to homelessness and to primary care integration. These leaders have pioneered the implementation and development of previous integration programs for many special populations.

Furthermore we agree to:

- Participate in cyber seminars on PACT model template
- Work with the Program Office to develop an implementation plan
- Participate in technical assistance, skill development workshops and data tracking/feedback metrics
- Identify local facility leadership responsible for program implementation and oversight (as described in Section 5)

Clinical Objectives are as follows:

Provide comprehensive and longitudinal care in collaboration with necessary disciplines (primary care, mental health, social work) to provide homeless Veterans with patient-centered care that
responds to their unique and changing complex, multi-morbid health and social problems and priorities.

Provide accessible and tailored healthcare resources to homeless Veterans to foster early access to care and avoid emergency room visits and hospitalizations for ambulatory care sensitive conditions.

Improve chronic disease outcomes by providing primary and secondary preventive care services, chronic disease management, and self-management tailored to homeless Veteran needs and locality.

Increase housing placement and retention by partnering with social work services, community agencies and organizations, and maintaining strong and close relationships with homeless Veterans during clinical care.

The goal of this LOI application is to lead West LA into well integrated homeless patient aligned care teams allowing for patient centered and comprehensive care that is seamless to our homeless and near homeless Veterans. Furthermore we strive to maintain care settings that promote trusting and long-term relationships for our homeless Veterans and provide them with the resources they require to motive and encourage them in behavior change.

GLA’s philosophy has always been “no one agency can do it alone.” GLA actively partners with many public and private organizations to provide care to homeless Veterans. GLA’s success in forging community collaborative to better serve Veterans has been recognized by the California Hospital Association (CHA); CHA honored the GLA Comprehensive Homeless Center with the Ritz E. Heerman innovator award for the improvement of patient care in California.

2 Need

Overview of homelessness in Los Angeles

In 2011 the Los Angeles Homeless Services Authority (LAHSA) estimated that 51,340 homeless individuals were living in Los Angeles county and 23,539 homeless individuals were living in the City of Los Angeles. The 2011 count identified that 18% of the homeless population of the Los Angeles Continuum of Care (CoC) are Veterans. This is a 3% increase from 2009 and comprises the largest homeless Veteran population of any city in the United States. Homeless Veterans in Los Angeles CoC were more likely to have experienced chronic homelessness than were other homeless persons; 31% of homeless Veterans are chronically homeless, up from 19% in 2009. In FY 2010, approximately 9,580 Veterans received a homeless Veteran service at GLA (VSSC Homeless Service Cube). At the West LA VA campus, we saw 8,758 unique Veterans last year.

To meet the special needs of the homeless Veterans we must consider their higher priority, more immediate unmet needs for food, clothing, shelter and bathroom facilities. As discussed by Gelberg
et al in the American Journal of Public Health (Feb 1997) “competing priorities” is a major barrier
to any healthcare and certainly to continuity and relational healthcare. Therefore for PACT to truly
be aligned with the needs of the homeless Veteran, it must embrace addressing these competing
needs as part of how we deliver care to them. Collaboration with our community partners to have
PACT providers embedded in the shelters and food lines must be a goal. Primary care will need to
join forces with social work and homeless outreach and address healthcare needs in the community.
The use of technology to enhance access to care, continuity of care, and self-management through
video and telephone (including cell phone technology for home telehealth to monitor serious
medical and mental health conditions) is an exciting possibility.

Our target populations are currently homeless Veterans, Veterans at-risk for homelessness, and
justice-involved Veterans who are at risk for homelessness.

Background and Rationale

Homeless people have high rates of medical and psychiatric morbidity and receive fragmented care
caracterized by overutilization of emergency and inpatient care (Arangua & Gelberg, 2007; Institute
of Medicine, 1988; Lim, Anderson, Leake, Cunningham, & Gelberg, 2002; McMurray- Avila,
Gelberg, & Breakey, 1999; Stein, Anderson, & Gelberg, 2007). VA studies confirm this is also true
for homeless Veterans and that homeless Veterans have poorer access to VA primary care services
than other Veterans, fewer visits and lower rates of preventive services (Desai, Rosenheck, &
Kasprw, 2003; McGuire & Rosenheck, 2005). GLA has years of experience meeting the needs of
the homeless population of the Los Angeles area. Since a homeless PACT would build on existing
efforts, the impact would be appreciated and spread more rapidly.

In June 2002, supported by funding from VA Central Office, VA Greater Los Angeles Healthcare
System established the Mental Health Primary Care Clinic for Homeless Veterans, a systems
innovation that co-located primary care, mental health, and homeless social services (Blue-Howells,
McGuire, & Nakashima, 2008). Research evaluating the impact of this innovation found that co-
location Clinic homeless Veterans, as compared with homeless Veterans using usual VA primary
care, had much quicker access to primary care, more primary care visits, higher rates of receipt of
prevention services and lower use of emergency services (McGuire, Gelberg, Blue-Howells, &
Rosenheck, 2009). This clinic has treated 9,000 homeless Veterans during the first years of
operation, has grown significantly since implementation, and has been presented in a number of
national VA and non-VA ambulatory care and mental health conferences over the past 8 years. The
health care needs of the homeless Veteran population are great, since nearly one-third have been
chronically homeless (up from 19% in 2009) (2011 Greater Los Angeles Homeless Count Report,
lahsa.org). The clinic at West LA currently has 3.5 NP teamlets and one half-time MD teamlet caring
for 2,422 homeless and chronically mentally ill Veterans.

Homeless returning Veterans are a growing population. In FY 2010, the GLA homeless program
took in 37 Operation Iraqi Freedom (OIF) Veterans and 93 Operation Enduring Freedom (OEF)
Veterans who served in Afghanistan.

Homeless Women Veterans (8% of the population nationally) have unique constellations of
precursors to homelessness which must be addressed in health care provided to them including
having experienced sexual assault during military service, and experiencing an anxiety disorder or post-traumatic stress disorder. In Los Angeles, female Veteran homelessness increased 51% to 909 in 2011, from 601 in 2009, with family issues including child care being among their top 10 needs. Male Veteran homelessness increased by 22% to 7,221 from 5,939 in 2009 (2009 Annual Homeless Assessment Report to Congress, Veteran Homelessness Supplement annual sheltered).

The growing numbers of homeless Veterans with families (an increase of 24%) have unique issues accessing care in the VA system, since most services are set up for the 96% of homeless persons who are individuals rather than the 4% who are homeless with their families (2009 Annual Homeless Assessment Report to Congress, Veteran Homelessness Supplement annual sheltered).

The homeless veteran population is aging, with their mean age older than other homeless persons in LA County. Most sheltered homeless Veterans (45%) are between 31 and 50 years of age. This age group is overrepresented in the homeless population when compared to the total Veteran population (23%) and all U.S. adults (37%). Veterans between 51 and 61 years of age are also overrepresented in the sheltered population compared to these other housed groups of veterans. Younger homeless Veterans, 18 to 30, were in approximate proportion to their share of the overall Veteran population. The 2011 LA homeless count found that 21% of homeless Veterans were greater than 62 years old (up 9.5% from 2009). This is a large increase in the proportion of older Veterans and requires consideration in planning care for homeless Veterans at GLA.

3 Capacity

In recent years the West LA VA has made a concerted effort to provide the homeless population of the greater Los Angeles area with comprehensive healthcare resources. Currently the homeless Veteran population in the Greater Los Angeles area is served by two main sites – the West Los Angeles Medical Center and the Downtown VA Ambulatory Care Center (VA LAACC). A homeless PACT program will help supplement existing homeless programs at the West Los Angeles medical center by enhancing and further tailoring healthcare services to this special population.

In the late 1980s, it had become clear that the growing number of homeless Veterans in GLA’s service area needed more specialized care to address their needs.

Like other Veterans, homeless patients received standard inpatient medical and psychiatric care at West LA. This “one size fits all” approach had limitations. First, homeless Veterans frequently used scarce inpatient beds for shelter, tying up valuable medical center resources. Second, homeless Veterans who really needed inpatient medical and/or psychiatric care had few housing options after medically-necessary stays were completed. This could promote extended stays in inpatient care as VA discharge planning staff scrambled for temporary housing arrangements. Worse, inpatient care sometimes leads to discharge back to homelessness (Nakashima et al. 2004).

Finally, many homeless Veterans had problems the VA had not historically addressed: temporary housing needs, unemployment, and lack of social ties/support. These social problems, especially when combined with chronic medical problems and mental illness, promoted a revolving door for
homeless Veterans between VA inpatient wards and the streets. Since the streets were no place to recover from acute illness, many Veterans were re-admitted to the hospital shortly after discharge.

To address these needs, the VA created partnerships in the early 1990s with private organizations whose mission was to help homeless Veterans with their housing, drug treatment, vocational rehabilitation, and other psycho-social needs. Thanks to funding mechanisms like the VA Grant and Per Diem program, GLA now has over 1,300 transitional housing beds for homeless Veterans at community programs.

**GLA’s Comprehensive Homeless Center**

GLA’s Comprehensive Homeless Center has access to over 4,000 beds targeting homeless Veterans, including over 700 located on its West Los Angeles VA Campus. GLA’s Comprehensive Homeless Center has many components:

- Active outreach to homeless Veterans at homeless congregating areas like Skid Row, rescue missions and shelters (including a cold weather shelter on the WLA VA campus during winter months). VA also helps sponsor and staff Stand Downs (health/service events for Veterans) at sites in Bakersfield and Ventura. GLA has a women’s outreach team targeting female Veterans. It also has a team which goes into Los Angeles County Jails. The jail outreach staff develops discharge plans for inmates and help the Veterans receive VA care upon release.

- A centralized screening clinic (Mental Health Outpatient Treatment Center Screening Clinic) on the West Los Angeles VA campus. This clinic provides same-day assessment and access to primary care, mental health care, and housing services. This clinic was named a VA Mental Health Best Practice Program in 2005 and 2006.

- A primary care clinic is embedded within 3.5 NP and a part-time MD caring for 2,422 empanelled Veterans within the Comprehensive Homeless Center.

- Over 50 shelter/detoxifications beds on the West Los Angeles VA campus (Salvation Army HAVEN/Exodus Emergency) for homeless Veterans who need to stay overnight to be more thoroughly evaluated or stabilized.

- Access to VA specialty medical and mental health care, including programs for Veterans with dual diagnosis or PTSD.

- Access to non-emergent dental care by VA and contracted non-VA providers.

- Access to vocational rehabilitation and job-finding programs through Community Care’s Veteran Community Employment Development (VCED) Program; and also private community partners.
For Veterans with severe mental health issues, access to therapeutic employment under the VA Transitional Work Experience (TWE) program, particularly its Supported Employment component that case-manages Veterans as they hold jobs in the community.

Transitional housing under the VA Grant and Per Diem program. VA has secured about 1,300 community transitional housing beds for homeless Veterans at GLA. These beds are provided by private community nonprofit partners such as Salvation Army, United States Veterans Initiative, and New Directions. Veterans in transitional housing programs stay for 3-18 months while receiving a range of medical, mental health and rehabilitative services. Many Veterans who complete their transitional housing program move on to independent housing.

Access to extended residential care for Veterans with serious mental health and medical problems through the VA GLA Domiciliary (296 beds).

Through the HUD-VA Supported Housing program, case management of over 1,500 Veterans with mental health issues living independently in the community.

Through the VA Community Residential Care program, case management of approximately 300 Veterans with a diagnosis of mental illness in board and care and assisted living facilities.

**Need for homeless PACT in West Los Angeles**

At GLA, we currently have our Mental Health Primary Care Clinic for Homeless Veterans that serves homeless Veterans with serious mental illness and substance use. The clinic is co-located in the same building as GLA’s mental health programs and homeless social service/outreach programs. However, utilizing the principles of the PACT program, we propose to expand this clinic to move along the continuum toward a homeless PACT model and fulfill the need for integration of services for homeless Veterans. In this GLA Homeless PACT team expansion, we hope to integrate all services needed for homeless Veterans with serious mental illness into one PACT team devoted to, and experienced in homeless health care – a one stop shopping approach. These services will all be under one roof and would use one common medical record so that if a Veteran comes in for any one of the services, they are integrated into a PACT team that can address their multi-morbid health and social problems including screening and outreach, primary care, mental health, substance use, PTSD, housing (HUD VASH and Grand per Diem), and VA justice programs. Warm hand-offs between service providers would be the standard of care.

**Table 1: West Los Angeles Homeless Shelters and Support Organizations**
4 Efficiency

For this homeless PACT initiative at W LA, we would be realigning providers with re-concentration of homeless patients. This proposal would expand the existing primary care clinic that is co-located with mental health and social work in community care into a real collaborative homeless PACT that is aligned with the needs of the homeless population including substance abuse, mental health/substance use issues, and food, shelter and community. This proposal would both realign existing staff and add in specialized homeless health care experts. This would include extended...
hours and reach into the homeless community and our partners caring for homeless in the community.

**Reduction in Emergency Room Visits**

The West LA Emergency Department (ED) physicians when informally polled had the following reports about the emergency room visits of homeless patients:

“I think they just want somewhere to sleep overnight that's more comfortable than being on the street, and they have all the time in the world to wait around, so they can come to the ER for non-emergent conditions.”

“The ones that come late at night...its mainly b/c they are lonely and need to be around people. The ones that come during the day either feel like an emergency department will treat their condition as emergent or they are intoxicated.”

“Many come to the ED mostly because they are looking for a place to sleep/get indoors, even if that is sitting in a chair. Also, the availability of food in the ED is a BIG DRAW (it is not uncommon for this to be one of the first things I am asked for). I think the lack of the PCP relationship is key. Many of the homeless patients have no idea who their PCP is - mostly because they are not using them -but using the ED instead. I think they see providers as interchangeable and one provider can do what another can do. So, some of this is "chicken and egg" - they keep using the ED because they have rarely used their PCP, they rarely use their PCP because they are always using the ED. Many people who are homeless are not deterred by a potentially long wait in the ED - actually this is good if they are looking for a place to sleep and/or looking for food (as above).”

Consistent with the responses above, the PACT for homeless would need to improve many dimensions of homeless patient centered access. This would include extended hours, community presence and resources for food, housing and jobs as well as seamless arms into substance abuse, chronic mental illness and issues of chronic homelessness and isolation.

With implementation of PACT homeless teams with connection/access and continuity we expect to see longer engagement in care, and fewer hospital and ED visits. These homeless aligned care teams will stop the revolving door between the ED, inpatient programs, substance abuse treatment programs, and even the jails and prisons. These health services utilization outcomes would be critical data for us to follow and focus upon with needs assessments, and PDSA (plan, do, study, act) cycles of quality improvement.

**Availability of Space**

We have expansion capacity for our homeless PACT team at the West Los Angeles campus with the lucky timing of a new modular mental health clinic opening in the next 12 months. This will be on the first floor of building 402 with over 10,000 feet dedicated to homeless screening intake and the PACT teamlets. There are 20 exam rooms for patients.
Staffing at the current West Los Angeles Mental Health Primary Care Clinic for Homeless Veterans has some additional capacity but with this grant we could add expanded staffing as well as expanded number of patients seen. Only about one quarter of the homeless patients we see are currently on a primary care panel. Working with our community, mental health, and social service providers, we will develop initiatives to link homeless persons, at key points of contact with them, to a PACT team and primary care provider.

5 Leadership

Program Development Expertise

A number of key experts are available both from within the VA as well as UCLA faculty who will provide the Leadership and expertise to guide the success of this program. These experts have a long history of collaborating to provide quality care to homeless Veterans and cover the spectrum of primary care, mental health, substance use, housing, social services, and community programs including Veterans justice programs.

Lisa Altman, MD – Dr. Altman is the Associate Chief of Staff for Healthcare Transformation and Innovation for the VA Greater Los Angeles Healthcare System (VA GLAHS). She has leadership responsibilities for Patient Centered Care and Patient Aligned Care ensuring that systems for patient care are accessible and effective. Dr. Altman has held several managerial roles including Clinical Director for Women’s Health, Lead Physician for Primary and Ambulatory Care for the West Los Angeles Healthcare Center, Assistant Director for Primary and Ambulatory Care for VA GLAHS, and Associate Chief of Staff, Ambulatory and Primary Care. With each new appointment, Dr. Altman has successfully led VA GLA into meeting its mission and goals. Dr. Altman received her MD in June 1984 from UCLA School of Medicine. She completed her residency in Internal Medicine (board certification in 1988) at the UCLA San Fernando Valley Program, as well as a fellowship in Hematology/Oncology (board certification in 1990). She has lead many successful funded implementation projects in women’s health, mental health integrated care, PACT evaluation and demonstration labs and SCAN (specialty access through tele-health case conferences).

Lillian Gelberg, MD, MSPH – Dr. Gelberg co-leads VISN22’s VA Assessment and Improvement Laboratory for Patient-Centered Care (VAIL-PCC) Homelessness Program, together with Dr. James McGuire and Ronald M. Andersen, whose focus is on the patient centered medical home for homeless Veterans. Initial and proposed projects of the VAIL Homelessness Laboratory include: Improving the coordination of care for homeless Veterans, by integrating into the HUD-VASH Program the services of Care Coordination Home Telehealth and peer support via the Vet-to-Vet program, and tailoring the PACT/PCMH for homeless Veterans. Dr. Gelberg was an integral part of the team that created and evaluated the GLAHS’s Mental Health Primary Care Clinic for Homeless Veterans. Dr. Gelberg is a family physician, professor, and health services researcher in the Department of Family and Community Medicine at the UCLA David Geffen School of Medicine (DGSOM) and in the Department of Health Services at the UCLA School of Public Health. She is an elected member of the Institute of Medicine of the National Academy of Sciences. She is associate director of the UCLA Primary Care Research Fellowship, and a member of the UCLA Johnson Comprehensive Cancer Center’s Division of Cancer Prevention and Control.
Research. She is a former Robert Wood Johnson VA Clinical Scholar. Among other accomplishments, she has published over 100 articles (in peer-reviewed journals) and book chapters. She received the Academy Health 1995 Young Investigator Award and 1997 Article of the Year Award, in 2001 was the first recipient of the Family Practice Excellence in Research Award from the California Academy of Family Physicians. She has conducted extensive community-based research on the health status, access to care, and quality of care for homeless and other vulnerable populations, including acute and chronic medical disease, mental health, brief substance use interventions for primary care, HIV, hepatitis B and C, tuberculosis, nutritional status, and dental health.

William L. Daniels, MSW – Mr. Daniels is the Chief of Mental Health for Greater LA VA, he previously served as Chief of Community Care and Director of the Homeless Program and had a major role in the planning and implementation of the GLA Outpatient Mental Health Primary Care Program. He has devoted many years to enhancing the care of the homeless Veteran.

Joan Brosnan RN, PhD – Dr. Brosnan is the Associate Chief Nurse/Community, Primary and Ambulatory Care at GLA VA. In this role she oversees the nursing care for one of the largest VA Ambulatory Care Programs as well as one of the largest Homeless programs in the VA system. Dr. Brosnan is an alumna of Hunter College CUNY (BSN), UCLA school of Nursing (MSN) and USC (PhD). She has worked in leadership roles at GLA for almost 30 years and has expertise in operational program management.

James McGuire, LCSW, PhD – Dr. McGuire is a Social Work Researcher and Program Administrator whose current position is National Director, VHA Veterans Justice Program, which includes VA Healthcare for Re-entery Veterans (HCRV) Program (prison outreach and reentry services) and VA Veterans Justice Outreach (law enforcement, jail, and court-based services for justice involved Veterans). Dr. McGuire led the efforts that created and evaluated the GLAHS’s Mental Health Primary Care Clinic for Homeless Veterans. Dr. McGuire’s research has included 1) longitudinal evaluations of a) VA-funded residential care outcomes for homeless Veterans and b) co-location of primary care and homeless services for homeless Veterans to improve access and health status; 2) outreach and treatment for incarcerated Veterans re-entering the community; 3) elderly homeless and incarcerated Veterans; and 4) VA-community agency partnerships. Dr. McGuire has also been PI or Co-PI at VA Greater Los Angeles Healthcare System on NEPEC studies of Supported Employment, Seeking Safety, Critical Time Intervention (CTI), and the VA-HUD Collaborative Initiative to Help End Chronic Homelessness (CICH).

Michelle Wildy – Community Care Line Chief, VA Greater Los Angeles Healthcare System. As Community Care Line Chief, Ms. Wildy oversees the largest VA homeless Veteran program in the nation with approximately 9% of all homeless Veterans receiving VHA care at GLA. Programs include homeless outreach, VA Grant and Per Diem Transitional housing programs (1,300 beds), and HUD-VA Supported Housing Program (over 2,200 HUD Section 8 vouchers to house formerly homeless Veterans in their own apartments).

Susan Rosenbluth, PhD – Associate Chief of Mental Health at VA Greater Los Angeles Healthcare System; GLA Outpatient Addiction. Dr. Rosenbluth is director of all outpatient substance abuse programs at VA Greater Los Angeles. She is an Assistant Health Sciences Clinical Professor of Psychiatry and Behavioral Sciences at the David Geffen School of Medicine, UCLA.
John Nakashima, PhD, MSW – Program Analyst, Community Care for Mental Health, VA GLAHS. Dr. Nakashima oversees evaluation and data collection for homeless Veteran programs at VA GLA. He is currently the research coordinator for Project CHALENG (Community Homelessness Assessment, Local Education and Networking Groups for Veterans): VHA’s largest annual needs assessment of homeless Veterans.

Ronald M. Andersen, PhD – Dr. Andersen is the Wasserman Professor Emeritus in the UCLA Departments of Health Services and Sociology and has studied health behavior and access to medical care for his entire professional career of almost 50 years. He developed the Behavioral Model of Health Services Use that has been used extensively nationally and internationally as a framework for utilization studies including special studies of minorities, low income, children, women, the elderly, oral health, Veterans, and the homeless. Of the 25 books and 260 articles he has authored, a large proportion deal with measuring and assessing the determinants of access to care.

Rachel Feldstein - Lead liaison to New Directions, Inc. New Directions runs many key programs co-located on the West L.A. VA campus with hundreds of Veterans that will receive care under PACT. These include an assessment center, drug treatment program, and dual diagnosis program (New Directions North). Rachel Feldstein has been the Associate Director of New Directions since 2004.

Janice Tsao - Lead liaison to the Salvation Army programs co-located on the West Los Angeles VA Campus. The Salvation Army runs many key programs with hundreds of Veterans that will receive care under PACT. These include a homeless shelter (Exodus/HAVEN transitional), drug treatment program (HAVEN 1), VA Grant and Per Diem transitional housing programs for women (Naomi House) and older adults (HAVEN Senior).

Advisory Board

Our homeless PACT at the WLA GLA will have an advisory board of consumers (homeless Veterans who do and do not use VA services), as well as WLA VAGLA and community services that provide primary care, mental health care, housing, or social services to homeless persons.

6 Engagement

The homeless Veteran population in Los Angeles is significant in size and has influenced the way we deliver care at the West LA VA for over 30 years. Patient centered and aligned care for the homeless patient is especially critical and requires a completely different approach for access and engagement in order to succeed. Although many of our patients have been cared for in special homeless primary care, substance abuse or mental health programs, we realize that continuity and coordination have room for improvement.

The GLA Homeless PACT leadership team agrees to share our experiences and lessons learned and work with the Program Office to develop an implementation plan. The Homeless PACT agrees to participate in technical assistance, skill development workshops and data tracking/feedback metrics looking for outcomes and decision points to understand our successes and failures. As well as to
actively participate in data collection and, feedback on our PDSA cycles to see where we are succeeding and where we need improvement.

Furthermore to engage all of our staff we will train staff interacting with homeless Veterans on important strategies in caring for the homeless, how to decrease the stigma, screen for near homeless, refer for housing, refer for employment and engage the homeless patient and get the homeless patient to return for ongoing care.

To further engage our Veterans who are homeless or at risk for becoming homeless, we will create primary care group visits for topics including unemployment stress, getting a job, hunger, shelters and alternative options, and emotional support. Social service and mental health program patient lists will be reviewed regularly as well as lists of veterans contacted in other areas and programs where screening for homelessness takes place, and homeless Veterans without a PCP or a PACT will be assigned to one.

As we embark on the transformation of the VA into the twenty first century, we embrace the mission to Eliminate Veteran Homelessness. This initiative recommends six strategies:

1. Outreach/Education
2. Treatment
3. Prevention
4. Housing/support services
5. Jobs/Employment
6. Community partnerships

These are the focus of our team and we will strategize to build our expanded comprehensive program by building and connecting these six pillars seamlessly and interweaving all of their "sharing of the care" goals.

7 Sustainability

Donna M. Beiter, RN, MSN, the Director of the GLAHS, is fully committed to the system changes required to create this Co-Located, Integrated Homeless PACT at our GLAHS West LA campus (see attached letter of support).

The draft changes for VERA FY12 have been issued. The reimbursement for homeless patients continues to be significantly higher than for non homeless and particularly for those patients with co-morbid mental illness or substance abuse issues. This enriched VERA funding is based on extensive outpatient care for these patients and requires them to be seen multiple times. Currently there are many homeless Veterans who come occasionally or once to the West LA Emergency
Department and they would not make the criteria. We have some evidence that the Mental Health Primary Care Clinic for Homeless Veterans in building 206 has engaged new Veterans in care and has fostered an ongoing relationship with their continuity primary care provider. If we could successfully expand PACT at GLA to engage more of our homeless and chronically mentally ill patients to engage and follow-through with patient-clinician collaborative plans for care, there would potentially be more than enough funding to sustain the PACT for homeless Veterans with VERA funding down the line with the new higher reimbursement for these patients in ongoing care. The FY12 guidelines specify that homeless Veterans with multiple medical issues are reimbursed at the VERA class 5 rate (roughly $10,000 or $13,000/pt, depending on pt class). The reimbursement for a homeless patient with chronic mental illness (41 or more visits) is roughly $30,000.

Partnering with our own ED would be critical to the success of a homeless PACT. If this program was able to decrease emergency room visits and decrease hospitalizations with expanded primary care hours, and increased continuity and coordinated care and patient-centered care, there could potentially be significant additional savings to our medical center. This would make the investment in the PACT homeless staff a great deal well worth sustaining.

8 References


VA Greater Los Angeles Healthcare System

Proposal: Homeless Patient Aligned Care Teams (PACT) for Downtown Los Angeles Veterans: A Co-Located, Integrated Homeless PACT

Contributors:

Lisa Altman, MD: Associate Chief of Staff for Healthcare Transformation & Innovation VA

Lillian Gelberg, MD, MSPH: Professor Family Medicine, Public Health, UCLA and VA GLA

Earl Tso, MD; Lead Physician Primary Care Downtown Clinic

Gary Wolfe MD: Chief Mental Health and Psychology, Downtown LAACC

Joetta Brown Higgins MSW: Chief Community Care Downtown LAACC

James McGuire, LCSW, PhD: National Coordinator, Veterans Justice Outreach Programs

Draft Prepared by: Beena Patel, MPH
1 Executive Summary

The VA Greater Los Angeles Healthcare System is one of the largest, most complex healthcare systems within the Department of Veterans Affairs. It is one component of the VA Desert Pacific Healthcare Network (VISN22) offering services to Veterans residing in Southern California and Southern Nevada. GLA consists of three ambulatory care centers, a tertiary care facility and nine community based outpatient clinics. GLA serves Veterans residing throughout five counties: Los Angeles, Ventura, Kern, Santa Barbara, and San Luis Obispo. There are 1.4 million Veterans in the GLA service area. GLA is affiliated with both UCLA School of Medicine and USC School of Medicine, as well as more than 45 colleges, universities and vocational schools in 17 different medical, nursing, paramedical and administrative programs.

Downtown Los Angeles Ambulatory Care Clinic (Downtown LAACC), is located a few blocks from Skid Row which for decades has been home to the largest concentration of homeless individuals in the County of Los Angeles. The clinic has been partnering with the community shelters for many years and built relationships that share the care of the homeless. The Downtown clinic has an academic affiliation with USC.

The goal of this LOI it do develop a homeless PACT at the Downtown Los Angeles Ambulatory Care Clinic (Downtown LAACC), a collaborative effort through primary care, mental health/substance use, community care, social work, healthcare transformation office, and IT resources. This fits most closely with model 1: A Co-Located, Integrated Homeless PACT.

Furthermore we agree to:

- Participate in cyber seminars on PACT model template
- Work with the Program Office to develop an implementation plan
- Participate in technical assistance, skill development workshops and data tracking/feedback metrics
- Identify local facility leadership responsible for program implementation and oversight (as described in Section 5)

Clinical Objectives are as follows:

- Provide comprehensive and longitudinal care in collaboration with necessary disciplines (primary care, mental health, social work) to provide homeless Veterans with patient-centered care that responds to their unique and changing complex, multi-morbid health and social problems and priorities.
• Provide accessible and tailored healthcare resources to homeless Veterans to foster early access to care and to avoid emergency room visits and hospitalizations for ambulatory care sensitive conditions.

• Improve chronic disease outcomes by providing primary and secondary preventive care services, chronic disease management, and self-management tailored to homeless Veteran needs and locality.

• Increase housing placement and retention by partnering with social work services, community agencies and organizations, and maintaining strong and close relationships with homeless Veterans during clinical care.

The goal of our program is to create well integrated homeless Veteran focused patient aligned care teams allowing for seamless patient centered and comprehensive care for our homeless and near homeless Veterans at the Downtown LAACC and into our downtown community.

GLA’s success in forging community collaboratives to better serve Veterans has been recognized by the California Hospital Association (CHA); CHA honored the GLA Comprehensive Homeless Center with the Ritz E. Herman innovator award for the improvement of patient care in California.

2 Need

Overview of homelessness in Los Angeles

In 2011 the Los Angeles Homeless Services Authority (LAHSA) estimated 51,340 homeless individuals were living in Los Angeles county and 23,539 homeless individuals were living in the City of Los Angeles. The 2011 count identified that 18% of the homeless population of the Los Angeles Continuum of Care (CoC) are Veterans. This is a 3% increase from 2009 and comprises the largest homeless Veteran population of any city in the United States. Homeless Veterans in Los Angeles CoC were more likely to have experienced chronic homelessness than were other homeless persons; 31% of homeless Veterans are chronically homeless, up from 19% in 2009 (“2011 Greater Los Angeles Homeless Count Report”. Los Angeles Homeless Services Authority).

To meet the special needs of the homeless Veterans we must consider the higher priority they place on seeking health care, for meeting their more immediate unmet needs for food, clothing, shelter and bathroom facilities. As discussed by Gelberg et al in the American Journal of Public Health (Feb 1997) “competing priorities” is a major barrier to any healthcare and certainly to continuity and relational healthcare. Therefore for PACT to truly be aligned with the needs of the homeless Veteran it must embrace addressing these competing needs as part of how we deliver care to them. Collaboration with our community partners to have PACT providers embedded in the shelters and food lines must be a goal. Primary care will need to join forces with social work and homeless outreach and address healthcare needs in the community. The use of technology to enhance access,
continuity of care, and self-management through video and telephone (including cell phone technology for home telehealth to monitor serious medical and mental health conditions) is an exciting possibility. GLA has years of experience meeting the needs of the homeless population of the Los Angeles area. Since a homeless PACT would build on existing efforts and many lessons learned, the impact would be gained more rapidly.

Homeless people have high rates of medical and psychiatric morbidity and receive fragmented care characterized by overutilization of emergency and inpatient care (Arangua & Gelberg, 2007; Institute of Medicine, 1988; Lim, Anderson, Leake, Cunningham, & Gelberg, 2002; McMurray-Avila, Gelberg, & Greakey, 1999; Stein, Anderson, & Gelberg, 2007). VA studies confirm this is also true for homeless Veterans and that homeless Veterans have poorer access to VA primary care services than other Veterans, fewer visits and lower rates of preventive services (Desai, Rosenheck, & Kasprow, 2003; McGuire & Rosenheck, 2005).

In June 2002, supported by funding from the VA Central Office, VA Greater Los Angeles Healthcare System established the Mental Health Primary Care Clinic for Homeless Veterans, a systems innovation that co-located primary care, mental health, and homeless social services (Blue-Howells, McGuire, & Nakashima, 2008). Research evaluating the impact of this innovation found that co-location Clinic homeless Veterans, as compared with homeless Veterans using usual VA primary care, had much quicker access to primary care, more primary care visits, higher rates of receipt of prevention services and lower use of emergency services (McGuire, Gelberg, Blue-Howells, & Rosenheck, 2009). This clinic has treated 9,000 homeless Veterans during the first years of operation, has grown significantly since implementation, and has been presented in a number of national VA and non-VA ambulatory care and mental health conferences over the past 8 years. However, this model W LA clinic is located a great distance (15 miles) from the homeless Veterans living in the Skid Row area of Los Angeles, reducing access to this clinic as well as to the full range of health and social services located at the large W LA campus.

The VA GLA’s Downtown Los Angeles Ambulatory Care Clinic (LAACC), provides first-contact health care for homeless Veterans living in that community. It is located less than a mile from the main shelters of Los Angeles’s Skid Row (the largest concentration of homeless Veterans in Los Angeles, including those living in emergency shelters as well as those living in the out-of-doors), and the LA County Twin Towers Jail from which many homeless veterans are directly released to Skid Row.

Homelessness in the Skid Row area has increased by 14% since 2009. In 2011, 17% of Los Angeles City’s homeless population were found in Skid Row (a 2% increase since 2009). The homeless population is growing and shifting to Skid Row. In the Downtown LAACC area, there are estimated to be 4,316 homeless persons in the Skid Row area with 18%, or 777, estimated to be homeless Veterans. More than 10 local homeless services providers are located less than a mile from the Downtown LAACC (see two attachments of the description and a map of some of these programs). The LAACC is readily accessible via walking or public transportation for the Veterans (see Table 1).

Currently, the Downtown LAACC has a small primary care staff made up of a single nurse practitioner dedicated to caring for homeless veterans with support from other part-time primary
care team members. With this LOI, we propose to expand the Downtown LAACC by creating Homeless PACT teams that will be designed to address the needs of both currently homeless and at-risk-for-homeless Veterans.

One at-risk population we are interested in including are the justice-involved individuals. This population includes justice-involved Veterans contacted in the jails, courts and prisons through VHA Veterans Justice Outreach (VJO) and Healthcare for Reentry Veterans (HCRV) Specialists. A large portion of these individuals were homeless before entering the system, or are released to “Skid Row” from jails or prisons without a place to live or means to support themselves. This is a special population targeted by the Secretary’s 5 Yr Plan to End Homelessness. These Veterans will be included in the downtown homeless PACT clinic by having the VJO Specialist for GLA on the homeless PACT advisory board to ensure that they are integrated into the homeless PACT clinical services and outreach, to train the homeless PACT clinicians and staff on the unique issues of caring for this population, and to assure effective access to primary care/PACT. VJO program staff work with Veterans pre-release to develop a release plan, and provide assistance with enrollment in VA health care and linkage to appropriate follow-up services. VJO program staff focus particular attention on Veterans with multiple needs, including assistance with housing, substance abuse treatment, mental health treatment, and medical services. In FY 2010, the Greater Los Angeles Healthcare System’s VJO program served 805 unduplicated Veterans; in Quarters 1-3 in FY 2011 the program has served 621 unduplicated Veterans.

3 Capacity

Homeless Veterans in the Greater Los Angeles area are served by two main sites – the West Los Angeles VA Medical Center (WLAVA) and the Downtown VA Ambulatory Care Center (VA LAACC). While the West Los Angeles VA provides inpatient, emergency room, urgent care, and primary care/specialty services for the homeless population, the Downtown clinic offers a host of innovative outpatient resources that outreach and provide care to this group.

Since the late 1980s, it has grown clear that services and care offered to the increasing numbers of homeless Veterans in GLA’s catchment area must respond to the specialized and diverse needs of this vulnerable population. At the West Los Angeles VA Medical Center, in the inpatient and emergency room/urgent care settings, homeless patients used to receive standard medical and psychiatric care that is offered to all Veterans. Unfortunately, this “one size fits all” approach had significant limitations. First, homeless Veterans frequently used scarce inpatient beds for shelter, tying up valuable medical center resources. Second, homeless Veterans who truly met criteria for inpatient medical and/or psychiatric treatment had few housing options after their medically-necessary stays were complete. Often, this resulted in extended hospitalizations as VA discharge planning staff scrambled to find temporary housing arrangements. Worse, inpatient care sometimes led to discharge back to homelessness (Nakashima et al. 2004). Last, many homeless Veterans had significant psychosocial needs that the VA did not historically address, including: temporary housing, competing needs, e.g., shelter, food, clothing, hygiene, employment, and social support. Since the streets were no place to recover from acute illness, many Veterans were re-admitted to the hospital shortly after discharge. When compounded by chronic medical and mental illnesses that are highly
prevalent in homeless Veterans, these social problems promoted a “revolving door” for homeless Veterans as they vacillated between VA inpatient wards, emergency room, and the streets.

In the early 1990s, to respond to these critical needs, the VA created partnerships with private organizations which had missions to help homeless Veterans with housing, substance abuse treatment, vocational rehabilitation, and other psychosocial needs. As a result, the GLA Comprehensive Homeless Center currently has access to over 4,000 beds for homeless Veterans, including over 700 beds which are physically located on the West Los Angeles VA campus. At LAACC, there are numerous relationships with local shelters where Veterans stay or receive social services (see Table 1 below and map with local shelters), including: the Single Room Occupancy Housing Corporation, Volunteers of America, the Weingart Center Association, LA Mission, Emmanuel Baptist Mission, New Image, Vernon House. People Helping People, Midnight Mission, Union Rescue Mission, Cardinal Manning, Downtown Women’s Shelter, and LAMP Community.

With key contributions of funding mechanisms like the VA Grant Per Diem program, GLA now has over 1,300 transitional housing beds for homeless Veterans at community-based programs. These beds are provided by private community non-profit partners, including the Salvation Army, United States Veterans Initiative, and New Directions. Veterans live in these transitional housing programs for 3-18 months, while receiving a range of medical, mental health, and substance abuse treatments, along with other rehabilitative services. For Veterans with serious mental illness who require additional support, the VA Community Residential Care offers case management for 300 Veterans, with the partnership of local board and care or other assisted living facilities. Others access extended residential care through the VA itself, at facilities like the VA GLA Domiciliary which has 296 beds for homeless Veterans with serious mental health, addiction, or medical problems.

These programs provide the foundation to meet short-term housing and other key psychosocial needs of homeless Veterans. With its network of VA-affiliated agencies, the VA can also provide active outreach to homeless Veterans at areas where homeless persons congregate in the Greater Los Angeles area, including Skid Row, rescue missions, and shelters. The West Los Angeles VA campus itself hosts a cold weather shelter on campus during the winter months, and the Veterans at this site receive specialized outreach services. Particularly vulnerable groups within the homeless population receive special attention, including female Veterans – who receive outreach by a women’s team, as well as incarcerated Veterans – who are targeted by a VA team that goes into Los Angeles County jails and works with staff to develop streamlined discharge plans for Veteran inmates to receive VA care upon release. In particular, in outreaching to homeless Veterans across a host of settings, access to VA specialty medical and mental health care is stressed, including access to non-emergent dental care by VA and contracted non-VA providers, as well as programs for Veterans with co-occurring mental health and substance use disorders, or persons with post-traumatic stress disorder (PTSD).

Beyond clinical and housing services, vocational rehabilitation is a critical need for homeless Veterans, particularly for those who have suffered incarceration or serious mental illness. Private community partners, along with the Veteran Community Employment Development (VCED) program offered through Community Care, offer vocational rehabilitation services and job-finding assistance for homeless Veterans. For Veterans who suffer from serious and persistent mental
illness, the VA Transitional Work Experience (TWE) program allows access to therapeutic employment, including a Supported Employment program that offers specialized case-management for mentally ill Veterans with jobs in the community.

Independent housing is the ultimate goal for homeless Veterans progressing through the continuum of housing care offered by the VA and its community partners. In particular, the Department of Housing and Urban Development and Veteran’s Administration Supported Housing Program (HUD-VASH) is a housing first model that offers community-based, independent housing for chronically homeless Veterans who meet income eligibility requirements and who are eligible for VA services. Initially developed in 1992, the HUD-VASH program is a joint effort of the Department of Veterans Affairs and the Department of Housing and Urban Development (HUD) that serves approximately 1800 Veterans in the Greater Los Angeles area by administering HUD-issued housing choice (Section 8) vouchers. In 2008, HUD-VASH was redefined as a comprehensive case management initiative for chronically homeless Veterans who are eligible for Section 8 housing, and became an identified priority program within the VA. At present, it is viewed as the most flexible and responsive housing initiative for homeless Veterans to gain independent housing.

Table 1: Downtown Los Angeles Homeless Shelters and Support Organizations

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<th>Name</th>
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<td>351 East Temple</td>
<td>90014</td>
<td>VA Campus</td>
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<td>Single Room Occupancy Housing Corporation</td>
<td>517 S. San Julian St.</td>
<td>90014</td>
<td>VA GPD Program</td>
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<td>90014</td>
<td>VA GPD Program</td>
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<tr>
<td>d</td>
<td>Weingart Center Association</td>
<td>566 S. San Pedro St.</td>
<td>90013</td>
<td>VA GPD Program</td>
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<td>530 E. 5th St.</td>
<td>90013</td>
<td>Shelter</td>
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<tr>
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To expand the Downtown LAACC, we would be realigning providers with reconcentration of homeless patients. This proposal would expand the existing primary care practice that is co-located with mental health and social work in community care into a real collaborative homeless PACT that is aligned with the needs of the homeless population including treatment providers that can address their substance abuse, mental health problems, food and shelter needs, and linkages with the local community services. This proposal would both realign existing staff, and add in specialized homeless care experts.

We anticipate that this expansion of the Downtown LAACC will reduce costs, especially by reducing emergency visits by providing tailored comprehensive, patient-centered care.
We informally polled the primary care group at Downtown LAACC and the Emergency Department (ED) at our West LA campus used by the downtown population and found the same themes. These patients want answers for their priority issues – food, shelter, and community, along with their healthcare needs. They want access to mental health, substance abuse, and social work, along with primary care so their multiple issues can be addressed at one time. This is what would be included in an expanded PACT for homeless and this would keep the veterans’ care coordinated and keep them engaged.

The PACT for homeless would need to have extended hours, community presence and resources for food, clothing, a shower, housing and jobs as well as seamless arms into treatment to address their substance abuse, chronic mental illness and issues of chronic homelessness and isolation. Clinicians trained in outreach/street medicine will be added to the team to engage disaffiliated homeless Veterans. Coordination of services/case management to and from community sites is essential.

With implementation of PACT homeless teams with connection/access and continuity we expect to see longer engagement, and less hospital and ED visits. These homeless aligned care teams will stop the revolving door between ED, inpatient, substance abuse treatment programs, jail, and Skid Row.

**Availability of Space**

We have capacity to provide care for additional homeless Veterans at the Downtown VA LAACC with additional capacity in existing primary care, and space available to expand and integrate an expanded team focused on PACT principles and one stop shopping for the homeless Veteran.

Furthermore, GLA has maintained strong partnerships with several homeless support organizations in the Los Angeles area. Volunteers of America, US VETS, New Directions, and Salvation Army receive Grant and Per Diem funding and are strong partners within the GLA homeless continuum. Two of these existing partnerships are located on the VA grounds. The Salvation Army runs a hospital funded shelter and New Directions has an assessment center. Both sites provide temporary shelter. Volunteers of America, LA, operates a homeless drop-in-center on Skid Row, which also has medical exam rooms that the PACT team could utilize. This site is approximately 1 mile from the Downtown LAACC that would serve as the medical support. US VETS—located in Inglewood would also provide a venue to provide primary care services to homeless Veterans. By collaborating with our community partners on the streets and in the shelters, we could create seamless access for our Veterans from these shelters, the streets, into our close by outpatient clinics. With comprehensive PACT for homelessness with mental health, substance abuse, and social work providers dedicated to the homeless we could improve their care and their experience. We currently have only 572 homeless that is on the panel of a single dedicated NP. Data reveals 1,753 homeless patients were seen at least once at our Downtown clinic. The data suggest about 40% of Los Angeles county Veterans are sleeping closest to this clinic setting. Expanding its homeless resources and hours would enhance important access for homeless Veterans.
5 Leadership

Program Development Expertise

A number of key experts are available both from within the VA as well as UCLA faculty who will provide the Leadership and expertise to guide the success of this program. Leadership comes not only from primary care, but also from mental health, substance use, housing, social services, and local homeless programs. The leadership is strongly committed to the homeless PACT at the Downtown LAACC and has worked together for many years to improve the health of our homeless Veterans. Building a homeless PACT is the essential next step to developing a patient aligned care team that is tailored to the unique, multi-morbid, and complex physical/mental/substance use and social health needs of homeless Veterans, with the goal of improving their health and healthcare, and reducing costly emergent care that could be avoided had they received quality outpatient care.

Lisa Altman, MD – Dr. Altman is the Director of Patient Centered Medical Home, Primary Care Services for the VA Greater Los Angeles Healthcare System (VA GLAHS). She has leadership responsibilities for Patient Centered Medical Home and Primary Care, ensuring that systems for patient care are accessible and effective. Dr. Altman has held several managerial roles including Clinical Director for Women’s Health, Lead Physician for Primary and Ambulatory Care for the West Los Angeles Healthcare Center, Assistant Director for Primary and Ambulatory Care for VA GLAHS, and Associate Chief of Staff, Ambulatory and Primary Care. With each new appointment, Dr. Altman has successfully led VA GLA into meeting its mission and goals. Dr. Altman received her MD in June 1984 from UCLA School of Medicine. She completed her residency in Internal Medicine (board certification in 1988) at the UCLA San Fernando Valley Program, as well as a fellowship in Hematology/Oncology (board certification in 1990). She has lead many successful funded implementation projects in women’s health, mental health integrated care, PACT evaluation and demonstration labs and SCAN specialty access through telehealth case conferences.

Lillian Gelberg, MD, MSPH – Dr. Gelberg co-leads VISN22’s VA Assessment and Improvement Laboratory for Patient-Centered Care (VAIL-PCC) Homelessness Program, together with Dr. James McGuire and Ronald M. Andersen, whose focus is on the patient centered medical home for homeless Veterans. Initial and proposed projects of the VAIL Homelessness Laboratory include: Improving the coordination of care for homeless Veterans, by integrating into the HUD-VASH Program the services of Care Coordination Home Telehealth and peer support via the Vet-to-Vet program, and tailoring the PACT/PCMH for homeless Veterans. Dr. Gelberg was an integral part of the team that created and evaluated the GLAHS’s Mental Health Primary Care Clinic for Homeless Veterans. Dr. Gelberg is a family physician, professor, and health services researcher in the Department of Family and Community Medicine at the UCLA David Geffen School of Medicine (DGSOM) and in the Department of Health Services at the UCLA School of Public Health. She is an elected member of the Institute of Medicine of the National Academy of Sciences. She is associate director of the UCLA Primary Care Research Fellowship, and a member of the UCLA Jonsson Comprehensive Cancer Center’s Division of Cancer Prevention and Control Research. She is a former Robert Wood Johnson VA Clinical Scholar. Among other
accomplishments, she has published over 100 articles (in peer-reviewed journals) and book chapters. She received the Academy Health 1995 Young Investigator Award and 1997 Article of the Year Award, in 2001 was the first recipient of the Family Practice Excellence in Research Award from the California Academy of Family Physicians. She has conducted extensive community-based research on the health status, access to care, and quality of care for homeless and other vulnerable populations, including acute and chronic medical disease, mental health, brief substance use interventions for primary care, HIV, hepatitis B and C, tuberculosis, nutritional status, and dental health.

Joan Brosnan RN, PhD – Dr. Joan Brosnan is the Associate Chief Nurse/ Community, Primary and Ambulatory Care at GLA VA. In this role she oversees the nursing care for one of the largest VA Ambulatory Care Programs as well as one of the largest Homeless programs in the VA system. Dr. Brosnan is an alumna of Hunter College CUNY (BSN), UCLA school of Nursing (MSN) and USC (PhD). She has worked in leadership roles at GLA for almost 30 years and has expertise in operational program management.

James McGuire, LCSW, PhD – Dr. McGuire is a Social Work Researcher and Program Administrator whose current position is National Director, VHA Veterans Justice Program, which includes VA Healthcare for Reentry Veterans (HCRV) Program (prison outreach and reentry services) and VA Veterans Justice Outreach (law enforcement, jail, and court-based services for justice involved Veterans). Dr. McGuire led the efforts that created and evaluated the GLAHS’s Mental Health Primary Care Clinic for Homeless Veterans. Dr. McGuire’s research has included 1) longitudinal evaluations of a) VA-funded residential care outcomes for homeless Veterans and b) co-location of primary care and homeless services for homeless Veterans to improve access and health status; 2) outreach and treatment for incarcerated Veterans re-entering the community; 3) elderly homeless and incarcerated Veterans; and 4) VA-community agency partnerships. Dr. McGuire has also been PI or Co-PI at VA Greater Los Angeles Healthcare System on NEPEC studies of Supported Employment, Seeking Safety, Critical Time Intervention (CTI), and the VA-HUD Collaborative Initiative to Help End Chronic Homelessness (CICH).

Earl Tso, MD – Lead Physician Downtown LAACC. Dr. Tso, is the Lead Physician at the VA Los Angeles Ambulatory Care Center and has worked with the homeless program at the VA over 10 years. He is Clinical Associate Professor of Medicine, Department of Internal Medicine, USC Keck School of Medicine in Los Angeles, California.

Gary Wolfe, PhD – Associate Chief of Mental Health, Department Chair, Psychology at VA Greater Los Angeles Healthcare System. Dr. Gary Wolfe was appointed to his present roles in the Greater Los Angeles Healthcare System beginning in November 1998. He is responsible for the coordinating various mental and behavioral health programs at the LAACC and also serves the Gardena and East Los Angeles Community Based Outpatient Clinics. In his role as the Department Chair, Dr. Wolfe also oversees the activities of psychologists throughout the GLA Healthcare System with regard to education, research and clinical privileges.

Ronald M. Andersen, PhD – Dr. Andersen is the Wasserman Professor Emeritus in the UCLA Departments of Health Services and Sociology and has studied health behavior and access to
medical care for his entire professional career of almost 50 years. He developed the Behavioral Model of Health Services Use that has been used extensively nationally and internationally as a framework for utilization studies including special studies of minorities, low income, children, women, the elderly, oral health, Veterans, and the homeless. Of the 25 books and 260 articles he has authored, a large proportion deal with measuring and assessing the determinants of access to care.

**JoEtta Brown Higgins, MSW** – JoEtta Brown-Higgins is the Social Work Supervisor/Site Manager for LAACC Social Work/Community Care Programs. She coordinates the LAACC downtown homeless Veteran programming which includes: a primary care screening clinic, jail outreach, and liaisons with VA Grant and Per Diem transitional housing partnership programs. She was also Co-Principal Investigator of the VA Homeless Women’s Research Program (2000-2006).

**Jim Howat** – Mr. Howat is CEO of Volunteers of America in Los Angeles. This organization operates a homeless drop in center on Skid Row. It also runs VA Grant and Per Diem transitional housing programs in the Skid Row area, including one targeting older adults.

**Stephen Peck, MSW** - Mr. Peck is president and CEO of U.S VETS located in Inglewood. His organization provides a venue to provide primary care services to homeless Veterans. Peck began his fulltime commitment to Veterans in 1991 when founded the nonprofit, Far From Home Foundation to advocate for homeless Veterans issues and raise funds for fledgling rehabilitation programs.

**Advisory Board**

Our homeless PACT at the Downtown LAACC will have an advisory board of consumers (homeless Veterans who do and do not use VA services), as well as local services and that provide primary care, mental health care, housing, or social services to homeless persons.

**6 Engagement**

The homeless Veteran population in Los Angeles is significant in size and has influenced the way we deliver care at our Downtown LA VAACC for over 30 years. Patient Centered and aligned Care for the homeless patient is especially critical and requires a completely different approach for access and engagement to succeed. Although many of our patients have been cared for in special Homeless primary care, substance abuse or mental health programs we realize that continuity and coordination have room for improvement.

The GLA Homeless PACT leadership team agrees to share our experiences and lessons learned and work with the Program Office to develop an implementation plan. The Homeless PACT agrees to participate in technical assistance, skill development workshops and data tracking/feedback metrics looking for outcomes and decision points to understand our successes and failures. As well as to actively participate in data collection and, feedback on our PDSA cycles to see where we are succeeding and where we need improvements.
Furthermore to engage all of our staff we will train staff interacting with homeless Veterans on important strategies for caring for homeless Veterans, how to decrease the stigma they might feel, screen for near homelessness, refer for housing, refer for employment, engage the homeless patient and assess their priorities for health and health care, and foster their returning for follow-up care as well as streamlining linkages, transportation, and communication between the Downtown LAACC and specialty services needed at WLA.

To further engage our patients who are homeless or at risk of becoming homeless, we will create primary care group visits for topics including unemployment stress, getting a job, hunger, shelters and alternative options, and emotional support.

We will identify patients who do not have a primary care provider (PCP). To do so, we will regularly review mental health patient lists as well as lists of Veterans screened by social services for current, or being at risk for, homelessness. Those who do not have a PCP or a PACT will be assigned to one.

As we embark on the transformation of VA into the twenty first century, we embrace the mission to Eliminate Veteran Homelessness. This initiative recommends six strategies:

1. Outreach/Education
2. Treatment
3. Prevention
4. Housing/support services
5. Jobs/Employment
6. Community partnerships

These are the focus of our team and we will strategize to build our expanded comprehensive program by building and connecting these six pillars seamlessly and interweaving all of their "sharing of the care" goals.

7 Sustainability

Donna M. Beiter, RN, MSN, the Director of the GLAHS, is fully committed to the system changes required to create this homeless PACT in the Downtown LAACC (see attached letter of support).

The draft changes for VERA FY12 have been issued. The reimbursement for homeless patients continues to be significantly higher than for non homeless patients, and the reimbursement rates are particularly high for those patients with co-morbid mental illness or substance abuse issues. This enriched VERA funding is based on extensive outpatient care for these patients and requires them to be seen multiple times. Currently there are many homeless Veterans who come occasionally or
once to the West LA Emergency Department and they would not make the criteria. We have some evidence that the Mental Health Primary Care Clinic for Homeless Veterans located in building 206 engaged new Veterans in care and created greater continuity of care and follow-up care with their primary care provider. If we could successfully expand this homeless PACT to engage more of our homeless and chronically mentally ill patients to follow-through with prescribed care, there would potentially be more than enough funding to sustain the PACT for homeless with VERA funding down the line with the new higher reimbursement for these patients in ongoing care. The FY12 guidelines specify that homeless Veterans with multiple medical issues are reimbursed at the VERA class 5 rate (roughly $10,000 or $13,000/pt, depending on patient class). The reimbursement for a homeless patient with chronic mental illness (41 or more visits) is roughly $30,000. The Downtown VA LAACC clinic is located a few blocks from Skid Row and walking distance from the Twin Towers Jail. These central focus spots for homeless make the Downtown clinic a critical access point to serve out homeless Veterans.

In addition, if this program with expanded primary care hours and increased continuity and coordinated care was able to decrease emergency room visits and decrease hospitalizations, potentially there could be significant additional savings to our medical center making the investment in the PACT homeless staff a great deal well worth sustaining.

8 References


VA Greater Los Angeles Healthcare System

Proposal: Homeless Patient Aligned Care Teams (HPACT) for West Los Angeles Veterans: A Co-Located, Integrated Homeless PACT

Budget Proposal Overview

Part 1: Summary of Agreement

As part of this application, we agree to:

- Participate in cyber seminars on PACT model template
- Work with the Program Office to develop an implementation plan
- Participate in technical assistance, skill development workshops and data tracking/feedback metrics
- Identify local facility leadership responsible for program implementation and oversight (as described in Section 5)

Specific areas we anticipate needing from the Community of Practice:

- Working with and learning with a community of people who are developing an testing out an implementation plan for a homeless PACT, who are experiencing and seeking solutions to the same challenges and participating in rapid sharing improvement cycles of successes and failures.
- Data support to determine use of services among Homeless Veterans; and cost efficacy using DSS or other means.
- Developing standardized outcomes metrics.
- Developing support and justification for modification of panel size for Homeless PACTs--they are high intensity.

Specific areas of support we can contribute to the Community of Practice:

- Lessons learned from a number of years of running a primary care clinic embedded in the Homeless program
- Lessons learned from extensive outreach programs to Homeless Veterans;
- Experience interfacing with jails and prisons--we have successfully brought into our medical system’s homeless programs more than 50% of incarcerated veterans who have been released into the community.
- Significant expertise in research (HSR&D) on needs assessment for homeless Veterans.

Part 2: Leveraging of Existing Resource
The proposal is designed to leverage, to every extent possible, existing resources from within Primary Care, Mental Health, and Community Care. Additional FTE will be hired only when existing resources cannot be re-aligned.

Existing staff are to be realigned include: Primary care provider 1 FTE, nurse practitioner 3.5 FTE, social worker 1 FTE, LVN 1 FTE, ambulatory care clerks 3 FTE, psychiatrist and psychologist (1 FTE each) with expertise in homelessness/mental health/substance use/PTSD and trauma related care, pharmacist 1 FTE with expertise in resourcefulness for homeless and other vulnerable populations, clinic coordinator 1 FTE, infectious disease support specialist 1 FTE (for HIV, hepatitis B and C, and tuberculosis treatment programs tailored to the needs of homeless persons and located in the HPACT team).

**Part 3: Proposal for Additional Resources:**

The annual request for HPACT at WLA in FY 2012 and FY2013 is $400,000 per Fiscal Year.

The PACT for homeless would need to improve many dimensions of homeless patient centered access. This would include extended hours, community presence and resources for food, housing and jobs as well as seamless arms into substance abuse, chronic mental illness and issues of chronic homelessness and isolation. Two key strategies will be employed: the introduction of the “Roving Team” and the re-organization of the existing Homeless Program into an integrated PACT team.

Resources will be used to develop a Roving Team that will consist of “Roving” or outreach peer coaches of formerly homeless/near homeless veterans 3 FTE, part time lead MD, nurse practitioner (existing), social worker (existing with housing coordination experience), a psychiatrist and psychologist with expertise in caring for the mental health and substance use problems of homeless persons 1 FTE each, and a master’s level health educator 1 FTE experienced in the unique issues faced by homeless persons in self-management.

The Roving Team will visit homeless persons in community sites including outdoor areas, shelters, drop in centers, VASH housing, Grant and Per Diem facilities to assist with linkages to PACT, to follow-up care, self-management, and medication management.

West LA’s existing co-located homeless clinic will be restructured and enhanced into an integrated PACT team and an integrated approach to care. Primary care, mental health, substance use, social service, pharmacy, health education, will be located on site in the same HPACT team. Team “huddles” will take place with medical and behavioral health providers and case managers who will meet at the start and end of each clinic sessions to develop joint plans for the homeless patient. The teams will deliver patient centered care that will start with where the patient is at and their priorities for care, use of harm reduction, motivational interviewing, and trauma informed care. The HPACT team will have extensive homeless healthcare expertise such as in substance use, mental health problems, multi-morbidities, cognitive impairment, trauma, managing medications, conducting outreach, engaging clients, following-up on agreed upon prescribed care and on patients lost to follow-up.
Using this new, integrated model, West LA Homeless PACT will achieve the following objectives:

**Enhancing Access and Continuity**
The HPACT roving coaches of formerly/nearly homeless veterans in teams with psychiatrists, psychologists, social workers, care coordinators, and nurse practitioners will make outreach visits to our community partner homeless organizations and outdoor congregating areas to help veterans link up to programs that can fulfill their basic needs for food, shelter, clothing, etc, and assist them with accessing benefits they are eligible for. These teams will go out into the communities during the hours when shelter facilities are most commonly open, that is during the late afternoon and evenings.

**Identifying and Managing Patient Populations**
For the homeless veterans they identified via outreach, the roving team will facilitate entry into the VA system by in-person and warm hand-offs to staff located in the WestLA HPACT program. The VA’s EMR will be utilized to enter new patients into the VA system, or to link up existing VA patients to the care they have already received at the VA.

The roving coaches, social workers and clinic coordinators will be trained to do the VA’s initial homeless intake assessment, and will facilitate receipt and connection to referrals for all social, physical health, and behavioral health needs. The intake will be broad, and will include screening for substance use, depression, PTSD and other traumas.

**Planning and Managing Care**
The HPACT Team will be experienced in homeless health care: primary care doctors and nurse practitioners, RNs, LVNs, medical assistants, peer specialists as “roving” coaches, practice manger and receptionists, data coordinator, infectious disease specialists, behavioral health providers including substance use treatment providers, case managers including VASH housing first case managers, care coordinators, pharmacists, health educators, patient advocates, and dentists.

They will have expertise and receive ongoing training in homeless health and healthcare and the unique issues of managing health problems common among homeless persons. Integrated care will be provided with communication and coordination will be enhanced among the team via the daily team huddles, the VA’s EMR, weekly team meetings twice a week to ensure team communication, monthly team meetings with partnering organizations. We will have one treatment plan, with one EMR, E-prescribing, and a lab interface built into the VA’s EMR to enhance continuity.

**Providing Self-Care and Community Support**
HPACT case managers and roving homeless coaches will help patients with their social service needs including providing assistance with applications for housing, respite care, employment and vocational rehabilitation programs.

The roving outreach teams will provide support and linkages to the HPACT teams for veterans who are in the hospital at West LA; detoxification/rehab programs; linkages with GLA’s VHA Veterans Justice Program, which includes VA Healthcare for Reentry Veterans (HCRV) Program (prison
outreach and reentry services) and VA Veterans Justice Outreach (law enforcement, jail, and court-based services for justice involved Veterans). Justice Program staff will be located at both HPACTs.

The team will ensure continuity of care as enter jail/prison, probation and parole departments, and when discharged from jails/prisons. The outreach teams will work closely with bi-directional linkage of veterans to PACT who are in housing programs including HUD-VASH, VA Domiciliary, and Grant and Per Diem programs. Housing case managers will be trained to link up veterans to PACT teams. PACT teams will know the homeless patients’ case manager and communicate when indicated to work together to support patient in obtaining and maintaining permanent housing. Linkage to specialty care will occur with specialty care services at West LA as well as locally in the PACT teamlets via telehealth programs and in their “homes” via cell phone/land line CCHT for monitoring unstable physical and mental health problems.
### VA Homeless PACT

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APPENDIX B – Funding Notifications

1. National Center on Homelessness Among Veterans and the National Homeless Veterans PACT Program Notification

2. VISN Office Notification
1. National Center on Homelessness Among Veterans and the National Homeless Veterans PACT Program Notification – Received Nov 29, 2011

Memorandum

DEPARTMENT OF VETERANS AFFAIRS

Date: NOV 29 2011

From: Deputy Under Secretary for Health for Operations and Management (10N)

Subj: Funding Notification – Homeless Patient Aligned Care Teams (PACT)

To: Network Directors (10N1-23)
Chief Medical Officers (10N1-23)

1. The Plan to Eliminate Homelessness Among Veterans remains a significant priority for the Department of Veterans Affairs (VA). Ending Veteran homelessness requires engagement throughout the entire organization to be successful. The Veterans Health Administration (VHA) Office of Homeless Programs and the Office of Primary Care Operations are very pleased to announce funding awards for 32 Homeless PACTs, which promote an integrated and coordinated health care response to eliminating Veteran homelessness. The response to the letter of intent and survey to implement Homeless PACTs was extremely impressive and highly competitive, with close to 70 medical centers responding. Equally impressive was the quality and thoughtfulness of the proposals, which uniformly demonstrated a strong commitment to our goal of ending Veteran homelessness.

2. Attached is a list of the VA medical centers selected for funding based on the quality of their application, readiness to implement, leadership commitment, and community-based need. Funding to implement Homeless PACTs for fiscal year (FY) 2012 (pro-rated based on proposed start date) and FY 2013 is denoted in the attachment. Please begin the hiring or contracting for any new positions and reassignment of existing positions as outlined in the attachment. It is the expectation that positions should be filled within 90 days of receipt of this memorandum.

3. Developing Homeless PACT models is expected to serve three functions: (1) provide a setting for first contact health care that engages homeless Veterans in care and receipt of homeless services while reducing emergency department and other acute care use; (2) provide a care setting that provides “one-stop shopping” with health services integrated with homeless program services in a way that promotes greater efficiencies and synergy across programs and initiatives, increases the likelihood for the full array of services being received, and accelerates exits from homelessness; and (3) provide the tailored services necessary to both assist Veterans in becoming more “housing ready” and, once the Veteran is housed, help reduce recidivism back to homelessness.
Subj: Funding Notification – Homeless Patient Aligned Care Teams (PACT)

4. The National Center on Homelessness Among Veterans and the National Homeless Veterans PACT Program will provide extensive technical assistance and staff support for developing these models, including: providing webinars, cyber seminars, fireside chats, and participation in virtual collaboratives to support ongoing implementation and skill development. Homeless PACT implementation will also include developing an integrated case identification (homeless and at-risk for becoming homeless), notification, and referral process at each facility. Technical assistance will begin no later than December 2011.

5. Any questions regarding this initiative may be directed to Vincent Kane, Director, National Center on Homelessness Among Veterans, at Vincent.Kane@va.gov; Dr. Thomas O’Toole, Director, National Homeless Veterans PACT Program, at Thomas.O’Toole@va.gov; or Riccardo Aiello, Project Coordinator, at Riccardo.Aiello@va.gov.

6. Thank you for your continued support of VHA Homeless Programs.

William Schoenhard, FACHE

Attachment
2. VISN Office Notification

Below are the stations within VISN 22 that will receive funding. Please begin the hiring or contracting for any new positions and reassignment of existing positions as outlined in the attachment. It is the expectation that positions should be filled within 90 days of receipt of this memorandum!

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The National Center on Homelessness Among Veterans and the National Homeless Veterans PACT Program will provide extensive technical assistance and staff support for developing these models, including: providing webinars, cyber seminars, fireside chats, and participation in virtual collaborative to support ongoing implementation and skill development. Homeless PACT implementation will also include developing an integrated case identification (Homeless and at-risk for becoming homeless), notification, and referral process at each facility. Technical assistance will begin no later than December 2011.
APPENDIX C – HPACT Organizational Charts

1. WLA HPACT Leadership Team
2. WLA HPACT Operations Team
3. WLA HPACT Clinical Team
1. HPACT Executive Leadership Team

National Leadership

National Center on Homelessness Among Veterans
Vincent Kane, Director
National HPACT Program Office
Tom O'Toole, Director

WLA Executive Leadership

Lisa Altman
Lillian Gelberg
(Principal Investigators)

William Daniels, Chief, Mental Health
Michelle Wildy, Chief, Community Care
Jean Brosnan, Chief, Ambulatory Care Nursing Services
2. HPACT Operations Team Members
3. WLA HPACT Clinical Team
APPENDIX D – WLA HPACT Flow Diagrams

1. Flow Map ED GLA – Updated March 2013

2. Emergency Department - Homeless PACT Patient Perspective Flow Map - Updated March 2013

3. Homeless PACT Team Flow Map - Updated March 2013
1. Flow Map ED GLA – Updated March 2013
3. HPACT Team Flow Map – Updated March 2013
APPENDIX E – Materials for Semi-structured Key informant Interviews

1. Interview Consent Form
2. Qualitative Interview Protocol
3. Qualitative Interview Coding Guide
1. Interview Consent Form

Administrative Consent Form

Audio Tape Release Form

I voluntarily agree to be audio taped during the interview being conducted by the Beena Patel, Health Systems Specialist at VA Greater Los Angeles Healthcare System. I understand that the tapes will be used to gather information about emergency department use by homeless Veteran patients, and such information will be used to generate a progress-focused formative evaluation of the Homeless Patient Aligned Care Team program. The tape will be kept for approximately six months and will be securely stored at VA Greater Los Angeles Healthcare System. After the data is collected and transcriptions are made, the tapes will be destroyed.

________________________________________________________________________
My Signature                                  Date

________________________________________________________________________
Signature of the Interviewer                  Date

Refusal to be Taped

I do not agree to be audio taped during the interview conducted by the Beena Patel, Health Systems Specialist at VA Greater Los Angeles Healthcare System. By refusing to be audio taped, I understand that I may not continue to participate in the quality improvement project.

________________________________________________________________________
My Signature                                  Date

________________________________________________________________________
Signature of the Investigator                  Date
2. Qualitative Interview Protocol

Introduction:

Thanks for taking the time to talk to me about your experience as a ____________ (HPACT team member, facility coordinator/administrator) working with homeless Veterans at West LA VAMC. As you may know, ending homelessness among Veterans is a top priority for VA both locally and nationally. What I am interested in talking to you about today are your thoughts on homeless Veteran emergency department use at West LA VAMC and what can be done to improve emergency department utilization patterns for this population. I appreciate your honest opinions – both good and bad – as we try to better understand and address this issue.

I will be asking you some questions about your experience with this population. It will take about 30 minutes. I want you to feel comfortable as we talk – if you don’t want to answer a question that I ask you, just let me know, and I can skip it and move on.

I will be asking you questions and __________ will be taking notes on what we talk about. Everything you tell us will be kept confidential among the quality improvement team. It’s also helpful for us to record the things that you tell us so that we can remind ourselves about what you tell us. Do you mind if I record this interview?

Do you have any questions before we get started?

Questions:

Type of experience with homeless Veterans at West LA VAMC

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<tr>
<th>Main questions:</th>
<th>Additional questions:</th>
<th>Clarifying/probing questions:</th>
</tr>
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<tbody>
<tr>
<td>Can you tell me what kind of experience you have working with homeless Veterans at West LA VAMC?</td>
<td>Would you say that you have direct experience working with this population?</td>
<td>Can you expand a little on this?</td>
</tr>
<tr>
<td>How often do you work with homeless Veterans in your job?</td>
<td>Could you tell me, in terms of percentage, how much of your work focuses on homeless Veterans?</td>
<td>Can you tell me anything else?</td>
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Can you give me some examples?
### Factors contributing to ED use among homeless Veterans at West LA VAMC

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<tr>
<th>Main questions:</th>
<th>Probing questions:</th>
<th>Clarifying questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can you tell me what you believe contributes to the reasons homeless Veterans at WLA VAMC use the emergency department?</td>
<td>Are there any patient-level factors that you think contribute to their use of the emergency department?</td>
<td>Can you expand a little on this?</td>
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<tr>
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<td>Are there any community-level factors that you think contribute to their use of the emergency department?</td>
<td>Can you tell me anything else?</td>
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<td>Are there any health systems or organizational-level factors that you think contribute to their use of the emergency department?</td>
<td>Can you give me some examples?</td>
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Improving emergency department use by homeless Veterans at West LA VAMC

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<tr>
<th>Main questions:</th>
<th>Probing questions:</th>
<th>Clarifying questions:</th>
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<tr>
<td>What are your thoughts on needing to address emergency department use among homeless Veterans at WLA VAMC?</td>
<td>(if there is a need) Why do you think this needs to be addressed?</td>
<td>Can you expand a little on this?</td>
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<td>(if no need) Why do you think this does not need to be addressed?</td>
<td>Can you tell me anything else?</td>
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<td>Tell me how the homeless-care programs at WLA VAMC have addressed the issue of emergency department use among homeless Veterans?</td>
<td>Can you tell me some good ways you think the homeless-care programs have addressed this?</td>
<td>Can you give me some examples?</td>
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<td>Can you tell me some problems the homeless-care programs have in addressing this?</td>
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<td>Tell me your thoughts on expanding these strategies to better address emergency department use by homeless Veterans at WLA VAMC.</td>
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<td>In your experience, do you think the WLA HPACT team does anything that influences the emergency department use for their patients?</td>
<td>(if yes) What do you think HPACT does that effects emergency department use for homeless Veterans?</td>
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<td></td>
<td>(if no and if yes) Tell me your thoughts on expanding the HPACT program to better address emergency department use by homeless Veterans at WLA VAMC.</td>
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Thank you so much for taking the time to talk to me today.
3. Qualitative Interview Coding Guide

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APPENDIX F – VHA Database Descriptions and Measure Definitions

1. VHA Support Service Center (VSSC) Primary Care Provider Panel Cube Measure Definitions

2. Decision Support System
1. VHA Support Service Center (VSSC) Primary Care Provider Panel Cube Measure

Definitions

PCP Panel Cube

Last Update: 05/08/2012

Purpose/Rationale: The PCP Panel cube and briefing book provides for in-depth analysis of VHA primary care workload. It provides for management of Primary Care panel’s (PCP) at the local division level as well as the ability to identity under-utilized primary care capacity. It provides, at the National, VISN, parent facility, division, primary care provider and associate provider levels, the ability to monitor, benchmark, identify opportunities, and manage primary care panels. It offers the ability to look at continuity, utilization patterns, capacity, and patient and provider demographics.

Most Recent Updates: Provide information on revisions & changes made to product

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<td>10/2/2008</td>
<td>Link to DCG Methodology 2008Oct01 added to this document</td>
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<tr>
<td>4/17/08</td>
<td>Updated measure definitions</td>
</tr>
<tr>
<td>11/04/09</td>
<td>Renamed Deceased dimension to “Potentially Deceased”</td>
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<td>11/10/09</td>
<td>Added MCG (Medical Ctr Groupings-also known as Facility Complexity Level) to the Provider Location Dimension</td>
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<tr>
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<td>Added Division Category (identifies division as VA Hospital, CBOC, Independent Outpatient Clinic, etc.) to the Provider Location Dimension</td>
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<td>Medical Home Builder Survey Results Added to Cube: A new dimension Medical Home Builder Assessment has been added, and a new measure, Response %, is added to reflect the number of positive (yes) responses to the survey questions.</td>
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<td>Link to methodology for determining Patient Intensity Average added to this document.</td>
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<td>Homeless History, Homeless History%, Home Telehealth Enrolled, Home Telehealth Enrolled%, Home Telehealth Enrolled &gt;= 1.5% of Teams, and Home Telehealth Enrolled &gt;= 1.5% of Teams% metrics data definitions added to this document</td>
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<tr>
<td>05/01/12</td>
<td>Added “PCP Continuity Evaluation by Division and Provider” Briefing Book Report view</td>
</tr>
<tr>
<td>05/08/12</td>
<td>Updated this document with additional Briefing Book Report views and Cube Measures with definition, and updated hyperlinks.</td>
</tr>
<tr>
<td>7/1/12</td>
<td>Added Homeless Metrics including Homeless History, Homeless History%, Homeless Service Last year, Homeless Service Last Year% to cube and to the patient Level Detail.</td>
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<tr>
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<td>Added Care Assessment Need 90 Day Potential Score, Percentile and Update Date to the Patient Level Detail</td>
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**Data Sources:**

The cube uses extracts from the Primary Care Management Module. The facility updates and entries in the PCMM package for active patients, providers, PCP capacity, FTE, etc. and this is transmitted to Austin Automation Center and extracted by the VSSC for utilization in the cube.

**Update Frequency:** Cube will be updated weekly

**Cube Location:** The PCP Panel cube is located under the PCMM database on server, vhaausbi5.vha.med.va.gov. The briefing book is located under the Clinical Care and Primary Care Domain and the Primary Care Management Module (PCMM) program area on the VSSC website.

**Security:** The PCP Panel cube contains Primary Care provider names and identification numbers and is considered Protected Health Information (PHI), therefore, the cube is restricted to users with PHI access.

**Dimensions:** Dimensions within a cube are qualitative or descriptive in nature and allow for both aggregation and breakdown of data into descriptive groups or categories. Each dimension may have one or more attributes or hierarchies. Below is the list of dimensions within the PCP Panel cube.

**Age:** Age of the patient in year groupings at the As of Date of the cube. If the patient is deceased, it is the age of the patient at death. Values are <25, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85-up, and Unknown.

**As of Date:** As of Date represents the last update of the raw PCMM data. In other words, the data contained within the PCP Panel cube is updated thru the As of Date.

**Assignment Length:** Length of time patient assigned to PC panel. 1. Assigned < 1yr (sublevels < 1mos, 1mos to 11mos); 2. Assigned >= 1 yr.

**Gender:** Gender indicates if a patient is male, female or unknown.

**Home County:** Home County is the county and state in which the patient resides.

**Means:** Means is the means rate/status or the assigned patient. Values are Cat A: Non-Service Connected; Cat A: Service Connected; CoPay Required Veterans; Non-Vet; Not Applicable; Not Done; and Unknown.

**Medical Home Builder Assessment:** Contains the Medical Home Builder Survey Questions. The levels of this dimension are Module, Module Subsection, Subsection Questions, and Question ID. Note that the survey was given at the Division level, so there is no survey response information at the PC Provider or Associate Provider level.

**Multiple PCPs Assigned:** Multiple PCPs Assigned indicates whether the patient is assigned to a single PCP or to multiple PCPs. It is allowable for a patient to be assigned to more than one PCP; for example, a patient that lives in the north in the summer and in the south in the winter (snowbird)
may need a PCP in each location. However, it’s important to review PCP assignments to remove not longer needed assignments. Values are: Assigned one PCP, Assigned Multiple PCPs across VHA and Multiple PCPs within a VISN.

**OEFOIF:** OEFOIF indicates whether a patient appears on the Operation Enduring Freedom/Operation Iraqi Freedom (OEFOIF) registry.

**Potentially Deceased:** Potentially Deceased indicates whether the patient is know to be potentially deceased or still living.

**Priority:** Priority is the Priority of the assigned patient as defined during the enrollment process. Values include Not Enrolled; Priority 1-6; Priority 7-8 and Unknown. Each priority group can be divided into the associated enrollment priority.

**Provider Location:** Provider Location identifies the location (Visn, Facility and Division) of the PCPs and associated APs. Because a PCP can work at multiple divisions and AP can work with multiple PCPs, this dimension is fairly complex and contains several hierarchies and attributes.

**Associate Provider (AP)**

**APPosition:** APPosition identifies the Category, Subcategory and Person Class of the AP. The AP Category values include MD, non-MD, Other, Resident, Unknown.

**APName:** APName is the name and providerid of the associated provider (AP).

**Primary Care Provider (PCP)**

**PCPPosition:** PCPPosition identifies the Category, Subcategory and Person Class of the PCP. The PCP Category values include MD, non-MD, Other, Resident, Unknown.

**PCP Modeled Capacity:** PCP Modeled Capacity indicates whether the PCP is included when calculating modeled capacity for the division.

**PCPName:** PCPName is the name and providerid of the primary care provider (PCP).

**PCP Resident:** Resident is based upon the PCP’s person class and indicates whether a PCP is a medical resident. A resident should not be a PCP but sometime the person class of a PCP is not changed when the provider becomes a full MD. Values are Resident or Not a Resident.

**Preceptor:** Preceptor indicates whether a PCP oversees APs when managing patients. Values are Not a Preceptor or Preceptor.

**Division Status:** Division Status indicates whether the division is current active or inactive.

**Division Type:** Division Type indicates the ownership of the division including leased, VA-owned and contract.
**Location:** Location identifies just the location: VISN, Facility and Division of the PCP.

**Provider:** Provider identifies the entire organizational hierarchy and includes VISN, Facility, Division, PCP (Primary Care Panel) and AP (associated provider(s)).

**Team:** Team is a care team that usually consists of primary care providers, nurses, technicians, nurse practitioners, physician assistants, and administrative clerks that support a group of patients assigned to the primary care providers within the team.

**Division:** Division is the Sta6a level, the actual medical center or CBOC location, of the PCP/AP.

**Division Category:** Based on VAST (Veterans Affairs Site Tracking System) data.

**MCG Name:** Medical Center Grouping (also known as Medical Center Complexity Grouping/Facility Complexity Levels) is the VHA's grouping of facilities according to relative complexity.

**Team Type:** Team Type/Team Purpose is derived from the Team Name. For example, *WH* - Women Health, *GER* - Geriatrics, *HBPC* - HBPC, *HOM* - Homeless, *SCI* - Spinal Cord Injury, *ID* - HIV Clinic, *PD* - Post Deployment, *REN* - Renal/Dialysis, All others – Primary Care

**TeamName:** TeamName is the team as recorded in PCMM with the division sta6a appended. For example, BLUE (358) or BLUE (460)

**VISN:** Veterans Integrated Service Network – The Veterans Health Administration of the Department of Veterans Affairs is divided into 21 different health system networks called Veterans Integrated Service Networks, or VISNs which are distributed in different regions of the country and are usually located in more than one state. They contain medical centers, vet centers and outpatient clinics offering primary and specialized care.

**Primary Health Care:** Primary Care is defined as appropriate health care services provided to qualified veterans. The care is delivered through Primary Care Clinic settings.

**SC Percent:** SC Percent indicates the service connected percent as defined by the enrollment process. Values included are Missing, 0%, 1-9%, 10-19%, 20-29%, 30-39%, 40-49%, 50-59%, 60-69%, 70-79%, 80-89%, 90-99% and 100%.

**Measures:** Measures within a cube are quantitative in nature and allow for the mathematical calculation of data including counting, summing, and averaging. Below is a list of measures in the PCP Panel cube. Measures are organized into Measure Folders.

**Associated Provider (AP) Measures:**

**AP:** AP is the number of Associate Providers providing primary care under the supervision of a PCP preceptor. Associated Providers can include Clinical Nurse Specialist, Nurse Practitioner,
Physician Assistant, Resident and other designated specialist. All residents are APs, while NPs and PAs may function either as APs or, if their scope of practice or locally established privileges encompasses the skills and responsibilities required to provide primary care for the patient, as PCPs. APs may have their own defined panel, with patients assigned specifically to them. Alternatively, a PCP and AP team may practice without assigning patients specifically to the AP, but rather assigning all patients directly to the PCP preceptor.

**AP Capacity**: AP Capacity is the maximum number of patients on the Associated Provider panel at a particular division.

**AP FTE**: AP FTE is the full time equivalent (0-1.0) that an Associate Provider works at a division in primary care.

**Panel Demographic Measures**:

**DCG Avg**: DCG Avg is the average Diagnostic Cost Group (DCG) score of patients. A patient’s DCG score is based on his/her demographics (age, gender) and recorded diagnoses from VHA inpatient, outpatient and fee records over a 12 month period. These 12 months’ ICD9 codes are then grouped into one of 184 condition categories (CCs). Each CC is assigned a weight that was modeled through the Medicare FFS population. Finally, a standardized weight (i.e. the risk score) is computed and assigned to the patient. A high average DCG score indicates a panel of patients that are complex. DCG Score Computation:

**DCG Severity%**: DCG Severity% is the percent difference between DCG avg and the VHA DCG Avg and will indicates if patients are less complex (negative percent) or more complex (positive percent) and by what percent than the VHA DCG Avg.

**Home Telehealth Enrolled**: Uniques enrolled in home telehealth anywhere. This is based upon the Office Of Telehealth Services Home Telehealth Vendor database.

**Home Telehealth Enrolled%**: Percent of panel unique enrolled in home telehealth anywhere.

**Home Telehealth Enrolled>=1.5% - Teams**: Number of teams with >=1.5% of panel enrolled home telehealth anywhere.

**Home Telehealth Enrolled>=1.5% - Team%**: Percent of teams >=1.5% of panel enrolled in home telehealth anywhere.

**Homeless History**: Uniques that have a history of homelessness (since FY06) and are in the Homeless Registry. These uniques may or may not be currently homeless.

**Homeless History%**: Percent of panel uniques that have a history of homelessness.

**Panel Age Avg**: Panel Age Avg is the average age of patients. A patient’s age is based on age in years at the As of Date of the cube or if the patient is deceased, the age at death and is averaged over all patients who age is known for the panel.
Panel Age>65%: Panel Age>65% provides the percent of Patients on PCP older than age 65.

Panel Age>75%: Panel Age>75% provides the percent of Patients on PCP older than age 75

Panel Assigned<=Year: Number of patients assigned to a PCP less than one year.

Panel Assigned<=Year%: Percent of patients assigned to a PCP less than one year.

Panel Assigned>Year: Number of patients assigned PCP for one year or longer.

Panel Female: Number of female patients assigned to a PCP.

Panel Female%: Percent of female patients of all patients assigned to a PCP.

Panel Multiple PCPs Across VHA%: Panel Multiple PCPs Across VHA% is the percent of panel that have more than one PCP assigned across VHA.

Panel Multiple PCPs Within VISN%: Panel Multiple PCPs Within VISN% is the percent of panel that have more than one PCP assigned within VISN.

Panel OIF/OEF: Number of OIF/OEF (Operation Enduring Freedom/ Operation Iraqi Freedom) patients assigned to a PCP.

Panel OIF/OEF%: Percent of OIF/OEF patients of all patients assigned to a PCP.

Patient Intensity Avg: Patient Intensity Avg estimates the total number of patient visits to primary care based upon patient complexity, distance from the VA and other relevant factors. The higher Patient Intensity Avg score, the more complex the care provided. Please note that patient intensity scores averaged at the individual provider level need to be interpreted with some caution, as they have not been validated at that level. Below is a link to a document that discusses the methodology for calculating Patient Intensity Average:

Panel Utilization Measures: (NOTE: Panel Size is the Denominator for the Panel Utilization Measures where an Average is calculated)

Admits to Facility: Admits to Facility is the total number of inpatient VHA admissions within the administrative parent facility umbrella of the PCP/AP assignment for the last 12 months.

Admits to Facility – Panel%: Admits to Facility – Panel% is the percent of unique patients that had an inpatient VHA admission within the administrative parent facility umbrella of the PCP/AP assignment in the last 12 months.

Admits to Facility Avg: Admits to Facility Avg is the number of inpatient VHA admissions within the administrative parent facility umbrella of the PCP/AP assignment for the last 12 months divided by the Panel Size.
**Admits to Facility While on Panel:** Admits to Facility While on Panel is the total number of VHA inpatient within the administrative parent facility umbrella of the PCP/AP assignment since the current PCP assignment date or last 12 months whichever is shorter.

**Admits to Facility While on Panel – Panel%:** Admits to Facility While on Panel – Panel% is the percent of unique patients who had an inpatient admission within the administrative parent facility umbrella of the PCP/AP assignment since the current PCP assignment date or within the last 12 months whichever is shorter.

**Admits to Facility While on Panel Avg:** Admits to Facility While on Panel Avg is the number of VHA inpatient within the administrative parent facility umbrella of the PCP/AP assignment since the current PCP/AP assignment date or last 12 months, whichever is shorter, divided by the Panel Size.

**Admits to Other VISN Facilities:** Admits to Other VISN Facilities is the total number of VHA inpatient admissions to the other facilities within the VISN (excluding the administrative parent facility umbrella of the PCP/AP assignment) for the last 12 months.

**Admits to Other VISN Facilities - Panel%:** Admits to Other Visn Facilities – Panel% is the percent of unique patients who had an inpatient admission to the other facilities within the VISN (excluding parent station of the patient assignment) within the last 12 months.

**Admits to Other VISN Facilities Avg:** Admits to Other Visn Facilities Avg is the number of VHA inpatient admissions to the other facilities within the VISN (excluding the administrative parent facility umbrella of the PCP/AP assignment) for the last 12 months, divided by the Panel Size.

**Continuity ER:** Continuity ER is the ratio between the number of encounters in the Emergency Room while on Panel to the summation of encounters in the Emergency Room while on Panel plus encounters while on panel in primary care with the patient’s primary care provider plus the encounters while on panel with a provider but not the patient’s pcp. This is a measure of where the patient receives his primary care and by whom. A low percentage is the better. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Continuity PCP:** Continuity PCP is the ratio between the number of encounters while on Panel in primary care with the patient’s primary care provider to the summation of encounters in the Emergency Room while on Panel plus encounters while on panel in primary care with the patient’s primary care provider plus the encounters while on panel with a provider but not the patient’s PCP/AP. This is a measure of where the patient receives his primary care and by whom. A high percentage is the better.

**Encounters in Audiology:** Encounters in Audiology is the number of encounters assigned patients had in Audiology (primary stops 203) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.
**Encounters in Audiology - Panel%:** Encounters in Audiology – Panel% is the percent of assigned patients that had at least one encounter in Audiology in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Cardiology:** Encounters in Cardiology is the number of encounters assigned patients had in Cardiology (primary stops 303) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Cardiology - Panel%:** Encounters in Cardiology – Panel% is the percent of assigned patients that had at least one encounter in Cardiology in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Dermatology:** Encounters in Dermatology is the number of encounters assigned patients had in Dermatology (primary stops 304) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Dermatology - Panel%:** Encounters in Dermatology – Panel% is the percent of assigned patients that had at least one encounter in Dermatology in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Endocrinology:** Encounters in Endocrinology is the number of encounters assigned patients had in Endocrinology (primary stops 305) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Endocrinology - Panel%:** Encounters in Endocrinology – Panel% is the percent of assigned patients that had at least one encounter in Endocrinology in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in ER:** Encounters in ER provides the number of encounters to the ER (primary or credit stop 130 or 131) in the prior 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in ER - Panel%:** Encounters in ER - Panel % is the percent of assigned patients who had at least one ER (primary or credit stop 130 or 131) encounter in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.
**Encounters in ER Avg**: Encounters in ER Avg is the number of ER (primary or credit stop 130 or 131) encounters assigned patients had within the last 12 months within administrative parent facility umbrella of their PCP/AP assignment, divided by the Panel Size. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Eye Clinics**: Encounters in Eye Clinics is the number of encounters assigned patients had in Eye Clinics (primary stops 407, 408) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Eye Clinics - Panel%**: Encounters in Eye Clinics – Panel% is the percent of assigned patients that had at least one encounter in Eye Clinics in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Gastroenterology**: Encounters in Gastroenterology is the number of encounters assigned patients had in Gastroenterology (primary stops 307) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Gastroenterology - Panel%**: Encounters in Gastroenterology – Panel% is the percent of assigned patients that had at least one encounter in Gastroenterology in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in General Surgery**: Encounters in General Surgery is the number of encounters assigned patients had in General Surgery (primary stops 401) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in General Surgery - Panel%**: Encounters in General Surgery – Panel% is the percent of assigned patients that had at least one encounter in General Surgery in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Mental Health**: Encounters in Mental Health is the number of encounters assigned patients had in Mental Health (500 primary stop series except 531) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Mental Health - Panel%**: Encounters in Mental Health – Panel% is the percent of assigned patients that had at least one encounter in Mental Health in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.
Encounters in Orthopedics: Encounters in Orthopedics is the number of encounters assigned patients had in Orthopedics (primary stops 409) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters in Orthopedics - Panel%: Encounters in Orthopedics – Panel% is the percent of assigned patients that had at least one encounter in Orthopedics in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters in PC with Any Staff: Encounters in PC is the number of encounters assigned patients had in primary care (primary or credit stops 322, 323, 350, 531, 348, or 704) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment regardless if the provider is the PCP or not. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters in PC with Any Staff - Panel%: Encounters in PC – Panel% is the percent of assigned patients that had at least one encounter in primary care (primary or credit stops 322, 323, 350, 531, 348, or 704) in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters in PC with Any Staff Avg: Encounters in PC Avg is the number of primary care (primary or credit stops 322, 323, 350, 531, 348, or 704) encounters assigned patients had in the last 12 months within administrative parent facility umbrella of their PCP/AP assignment, divided by the Panel Size. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters in PCMHl: Encounters in PCMHl is the number of encounters assigned patients had in Mental Health services with a primary or credit stop code of 534 or 539.

Encounters in PCMHl – Panel %: Encounters in PCMHl – Panel % is the percent of assigned patients that had at least one encounter in Mental Health services (primary or credit stop code of 534 or 539) in the past 12 months within administrative parent facility umbrella of their PCP/AP assignment.

Encounters in Podiatry: Encounters in Podiatry is the number of encounters assigned patients had in Podiatry (primary stops 411) in the last 12 months within the administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters in Podiatry - Panel%: Encounters in Podiatry – Panel% is the percent of assigned patients that had at least one encounter in Podiatry in the last 12 months within the administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.
**Encounters in Urology**: Encounters in Urology is the number of encounters assigned patients had in Urology (primary stops 414) in the last 12 months within the administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters in Urology - Panel%**: Encounters in Urology – Panel% is the percent of assigned patients that had at least one encounter in Urology in the last 12 months within the administrative parent facility umbrella of their PCP/AP assignment. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters While on Panel in ER**: Encounters While on Panel in ER is the number of patient encounters in the ER within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters While on Panel in ER%**: Encounters While on Panel in ER% is the percent of assigned patients who had an ER encounter within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters While on Panel in ER Avg**: Encounters While on Panel in ER Avg is the number of ER encounters within the administrative parent facility umbrella of their PCP/AP assignment while on panel, divided by the Panel Size. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters While on Panel in PC**: Encounters While on Panel in PC is the total number of primary care (primary or credit stops 322, 323, 350, 531, 348, or 704) encounters within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters While on Panel in PC - % with PC**: Encounters While on Panel in PC - % with PC is the percent of assigned patients who had a Primary Care (primary or credit stops 322, 323, 350, 531, 348, or 704) encounter within the administrative parent facility umbrella of their PCP/AP assignment while on panel with either their PCP or AP. While on Panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

**Encounters While on Panel in PC – Panel %**: Encounters While on Panel in PC – Panel % is the percent of assigned patients who had a Primary Care (primary or credit stops 322, 323, 350, 531, 348, or 704) encounter within the administrative parent facility umbrella of their PCP/AP assignment while on panel with either their PCP or AP. While on Panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

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Encounters While on Panel in PC Avg: Encounters While on Panel in PC Avg is the number of Primary Care encounters (primary or credit stops 322, 323, 350, 531, 348, or 704) within the administrative parent facility umbrella of their PCP/AP assignment while on panel, divided by the Panel Size. While on Panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with Non-Providers: Encounters While on Panel in PC with Non-Providers is the total number of encounters (primary or credit stops 322, 323, 350, 531, 348, or 704) with PC support staff (not MD, PA, or NP) within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with Non-Providers – Panel%: Encounters While on Panel in PC with Non-Providers – Panel% is the percent of assigned patients who had an encounter (primary or credit stops 322, 323, 350, 531, 348, or 704) with PC Support staff (not MD, PA, or NP) within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with Other PCP Providers: Encounters While on Panel in PC with Other PCP Providers is the total number of encounters (primary or credit stops 322, 323, 350, 531, 348, or 704) with another MD, PA, or NP (not the patient’s PCP or AP) within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with Other PCP Providers – Panel%: Encounters While on Panel in PC with Other PCP Providers – Panel% is the percent of assigned patients who had an encounter (primary or credit stops 322, 323, 350, 531, 348, or 704) with another MD, PA, or NP (not the patient’s PCP or AP) within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with Other PCP Providers Avg: Encounters While on Panel in PC with Other PCP Providers Avg is the number of encounters (primary or credit stops 322, 323, 350, 531, 348, or 704) with another MD, PA, or NP (not the patient’s PCP or AP) within the
administrative parent facility umbrella of their PCP/AP assignment while on panel, divided by Panel Size. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with PCP: Encounters While on Panel in PC with PCP is the total number of encounters (primary or credit stops 322, 323, 350, 531, 348, or 704) with their PCP or AP within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with PCP – Panel%: Encounters While on Panel in PC with PCP – Panel% is the percent of assigned patients who had an encounter (primary or credit stops 322, 323, 350, 531, 348, or 704) with their PCP or AP within the administrative parent facility umbrella of their PCP/AP assignment while on panel. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Encounters While on Panel in PC with PCP Avg: Encounters While on Panel in PC with PCP Avg is the number of encounters (primary or credit stops 322, 323, 350, 531, 348, or 704) with their PCP or AP within the administrative parent facility umbrella of their PCP/AP assignment while on panel, divided by Panel Size. While on panel means since their PCP/AP assignment but not greater than 12 months. Note: encounters with a credit stop of 107, 115, 152, 311, 333, 334, 999, 474, 103, 430, 328, 321, 329, or 435 are excluded.

Other Measures:

Care Assessment Need (CAN) Score and Percentile: The Care Assessment Need (CAN) score reflects the estimated probability of hospital admission or death within a specified time frame (90 days (or 1 year). The score is expressed as a percentile, ranging from 0 (lowest risk) to 99 (highest risk) and indicates how a given patient compares with other VA patients in terms of likelihood of hospitalization or death. Patients with a very high score (e.g., 99) are have a risk of admission or death that approaches 72% at one year while for those with a low score (e.g., 5) that risk is only about 3%. The CAN score is generated using sophisticated statistical prediction models that utilize demographic data (e.g., age, gender) and clinical information (e.g., medical conditions, use of VA health care, vital signs, medications and laboratory tests) from VHA administrative data. In addition to the CAN score, the report displays the actual probability of an event associated with that CAN Score. The report also displays a count of the patient’s diagnoses, care management resources already in use, and utilization, including the date of the last primary care visit. It is critical to recognize that the CAN scores represent probabilities and although these scores are very accurate for large groups of patients, they may be inaccurate for an individual patient. In the highest risk group, those with a CAN score of 99, more than a quarter of patients would NOT be expected to die or be hospitalized while even some of those in very low risk groups will experience one of these events. The goal is to identify groups of patients at high risk for whom care coordination may be valuable.
2. Decision Support System (DSS)

The Decision Support System (DSS) is an activity based cost allocation system that generates estimates of the cost of individual VA hospital stays and health care encounters. DSS data are available to VA investigators who obtain permission and follow Federal privacy regulations.

DSS consists of a set of programs that uses relational databases to provide cost and other information needed by managers and clinicians. DSS has been implemented throughout the U.S. Department of Veterans Affairs (VA) healthcare systems.

DSS extracts costs from the VA payroll and general ledger. These are assigned to departments based on activity reports from physicians and managers (at some sites, all staff provide activity reports). Six categories of expense are assigned in this step. Overhead (the cost of departments that do not produce patient care) is distributed to patient care departments using a step-down method.

Costs of intermediate products are then determined. Examples of intermediate products are: chest x-rays, units of blood, 15-minute clinic visits, or days of stay in the intensive care unit. They are called intermediate products to distinguish them from the final product--a patient encounter, which is a bundle of intermediate products. Relative Value Units (RVUs) are assigned to each product based on an estimate of the relative costs of the resources needed to produce it. Facilities are encouraged to modify RVUs to reflect local factors.

DSS relies on pre-existing VA databases for information on what care was provided and which patients utilized it. These data are combined with unit cost estimates to estimate the cost of hospital stays and outpatient visits.

VA researchers have two sources of data on the cost of VA hospital stays and outpatient visits back to 1999.

DSS national data extracts provide encounter level information, including the cost of stays, outpatient visits, outpatient pharmacy down to the level of individual prescription. There are also DSS tabulations of costs by department and by category of care at each facility. DSS estimates reflect the wage costs and efficiencies of each specific location where care was provided.

HERC has created cost estimates of individual stays and visits that are not facility-specific. The HERC inpatient file estimates the national average cost of a hospital stay given its Diagnosis Related Group, overall length of stay, and days in intensive care. The HERC outpatient file estimates the average cost given the Current Procedure and Terminology Codes assigned to the visit. The HERC inpatient estimates are based on the cost of Medicare hospitals. HERC outpatient estimates are
based on hypothetical Medicare reimbursement. Both estimates are adjusted so that the estimates tally to actual national VA expenditures.

VA also creates the Fee Basis File, which provides information on care provided under contract to VA.

In FY13, many datasets will be migrating to VA's Corporate Data Warehouse (CDW). Researchers will need access to the VA Informatics and Computing Infrastructure (VINCI) workspace to analyze these data. VA researchers may obtain more detailed information about these data sources from the HERC Intranet site.
APPENDIX G – WLA HPACT Administrative and Clinical Processes

1. WLA HPACT ED Screening Tool
2. WLA HPACT Assignment Process
3. WLA HPACT Case Management Tracking Tool Processes
1. WLA HPACT ED Screening Tool

Hello,

To better address the housing and health needs for our Veterans please help us by answering the following questions:

Are you currently receiving housing or other services from a VA Homeless Program?

   Yes     No

Do you have a home of your own that is safe and where you have lived for the past 90 days?

   Yes     No

Are you worried that you may not have a home of your own that is safe and where you can live for the next 90 days?

   Yes     No

Where did you sleep last night? Circle one:

   home / streets / vehicle / shelter / hospital /
   friends or family / jail / motel / New Directions /
   Haven (212) / Exodus (207) / Domiciliary / US Vets / Other__________________
2. WLA HPACT Assignment Process

**HPACT Patient Referral Process**

When a patient is referred to HPACT (by Andrea, the clerks, or others), he or she will need to get an approval from either Rishi Manchanda (lead HPACT physician) or Lisa Penny (HPACT Social Worker) before scheduling an HPACT appointment.

HPACT clerks will be responsible for making the appointment for the patient.

Once the initial visit is completed and the patient has expressed his or her desire to be in HPACT, the clerks will then assign the patient to HPACT.

A potential HPACT patient → Patient must be approved by HPACT PCP → Once approved, patient must make an → Patient sees HPACT PCP and expresses desire
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