Program Profile

Development and Implementation of a Homeless Mobile Medical/Mental Veteran Intervention

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A mobile clinic engages the most difficult-to-reach homeless veterans and provides needed health services in challenging environments.

Research has consistently identified remarkably high rates of addiction, mental illness, and health problems in the homeless population. Yet in spite of extensive service needs for these problems, abundant evidence exists of consistent underuse of health care services by homeless populations. Most of the homeless population reside in emergency shelters or in transitional or supportive housing, but many remain in places not meant for human habitation.

Homelessness is significantly overrepresented among military veterans. The January 2016 national point-in-time count identified 39,471 veterans experiencing homelessness. Iraq and Afghanistan veterans seem to have an especially high risk for homelessness. Disheartening statistics such as these prompted former VA Secretary Eric Shinseki to pledge to end veteran homelessness by December 2015. He argued in support of this mission that 85% of veteran homeless resources go to health care—implying that homelessness among veterans is primarily a health care issue, which is heavily burdened by substance abuse and other psychiatric and medical illnesses.

Health care service use has been associated with improved health, mental health, and outcomes among homeless populations. Unfortunately, access to these services is limited by barriers associated with homelessness, such as transportation or lack of proper identification. Veterans experiencing homelessness also face these common barriers to health care, and unsheltered veterans especially underutilize VA health care services.

Housing First—a successful model that places individuals into housing without prerequisites for sobriety, active participation in treatment, or other behavioral accomplishments, such as gainful employment—has not managed yet to place all the disengaged homeless veteran population into stable housing. However, the Housing First model, which is based on the individual’s priorities, is consistent with the approach of a new program at the VA North Texas Health Care System (VANTHCS).

The VHA, similar to other health care systems, is engaged in a cultural transformation to convert its health care approach from a traditional medical model to patient-centered care (PCC). In this priority area, a strategic objective is for the VHA to partner with each veteran to create a personalized, proactive strategy to optimize health and well-being and when needed provide state-of-the-art disease management. Patient-centered care is designed to address veterans’ specific needs in spiritual, environmental, physical, mental, and social domains and empower veterans to become active participants in their care. Patient-centered care differs from the traditional

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medical model in that patients are active participants in their treatment, partnering and collaborating with their providers on care that is quality-of-life centered instead of disease centered. This model is based on both respect for patients as unique individuals and on the obligation to care for them on their own terms, focused on their self-identified goals and aspirations.

At VANTHCS, the Homeless Mobile Medical/Mental Veteran (HMMM-V) pilot program was designed to deliver effective health care services to a homeless subpopulation of veterans who historically have been the most difficult to serve—those living in unsheltered environments, such as under bridges and in encampments. The purpose of the HMMM-V program was to contact and serve veterans not currently being reached by the VA system of care, using a PCC model.

This pilot program was initially funded in January 2013 by a 2-year grant from the Office of Patient Centered Care and Cultural Transformation to apply the PCC approach to engage veteran participation. For this project, the VA Personal Health Inventory tool—originally designed for use with the general veteran population—was adapted for use with the homeless veteran population. The grant funding period covered the design, development, and implementation of the HMMM-V program; thereafter, VANTHCS provided resources through its Comprehensive Homeless Center Programs to assure its sustainability and continued use of the clinical assessment tool created for this project.

This article describes the development and implementation of this novel program with sufficient detail to inform the development of similar programs in other sites. Descriptions of the program and staffing, creation of community partnerships, and modification of an assessment instrument are provided. It also illustrates the original implementation period of the HMMM-V program through presentation of self-reported data on the first homeless veterans it served.

**EQUIPMENT AND STAFFING**

A custom 28-foot mobile outreach vehicle was assembled according to specifications identified by the HMMM-V team as necessary to conduct the program’s interventions. The van became fully operational on April 8, 2015, after it underwent all the required reviews and inspections (eg, safety, infection control, etc) and was accredited in 2015 by the Commission on Accreditation of Rehabilitation Facilities.

The HMMM-V van has a driver compartment that is separate from its services rooms, which include a patient registration area, a fully equipped examination room, a laboratory area, and a bathroom. The vehicle is equipped with a wheelchair lift and an awning to shade outdoor areas where tables and chairs are set up for patient/staff waiting and rest areas. The vehicle is stocked with essential equipment and supplies needed to conduct work in off-street locations, vacant...
lots, under bridges, fields, unpaved paths, etc. It also is equipped with telemedicine capabilities to provide clinical supervision and access to attending physicians and specialists at VANTHCS. Personnel carry cell phones and laptop computers with secure Internet connections using a commercially available mobile wireless Wi-Fi hotspot to facilitate documentation of medical records and communication from the field.

This reliable type of equipment is routine for use in VA field operations; the only hurdle using these technologies for the program was acquiring funding and purchasing the equipment. The vehicle is further equipped with a refrigerator solely for secure storage of pharmaceutical supplies, a second refrigerator for specimens, and wall-mounted blood pressure and otoscope/ophthalmoscope units. The vehicle is supplied with thermometers, scales, phlebotomy supplies, and first-aid kits and is stocked with vaccines and medications, including antibiotic, hypertensive, diabetic, allergy, and over-the-counter pain medications. A more comprehensive list of supplies for the vehicle is available from the authors on request.

Medication provisions supplied to the HMMM-V mobile clinic conform to the Texas State Board of Pharmacy compliance regulations. Because the vehicle is designated as federal property and has U.S. government license plates, it is considered an extension of VANTHCS Pharmacy Service and falls under its pharmacy license. A medication formulation was created with input from HMMM-V prescribers and Dallas VAMC Pharmacy Service pharmacists. To safeguard the integrity of these pharmaceutical agents, the HMMM-V physician assistant picks up the medications before field deployment and returns the unused medications to the Dallas VAMC at the end of the day. The medications are transported in locked containers and placed either in a locked medication refrigerator or cabinet on the mobile unit.

For medication prescriptions that need laboratory testing before prescribing them, HMMM-V prescribers can check the VA electronic medical record from the field to determine whether these tests have been completed recently. If not, then HMMM-V team has an agreement with Dallas VA Pathology and Laboratory Medicine Service for testing samples obtained in the field.

The program was designed for staffing of the vehicle by 2 professional teams, each includes medical (physician's assistant or registered nurse), mental health (psychiatrist, residents), and social work providers (licensed social workers, clinical social workers); trainees of these disciplines; a peer support specialist; and an administrative clerk. The staffing varies daily, depending on available personnel. When personnel deploy to the field, they go in pairs or groups to address potential safety issues. Cell phones are available to summon police or ambulance services in an emergency. Systematic safety training was conducted with all field personnel before their first deployment to guard against vulnerability to danger in these settings.

Once in the field, personnel engage unsheltered homeless individuals to assess eligibility for VA services. Veterans found ineligible are assisted with application for military discharge upgrade, service-connected compensation, or appeal for health care coverage. Veterans eligible for VA care receive physical examinations, vital and glucose checks, influenza and pneumonia vaccinations, first-aid skin and wound care, medication management with limited medications provided at point of care, blood and urine testing, peer support services, suicide assessments, clinical mental health evaluations, and social work services through the HMMM-V program.

Social work assistance provided includes psychosocial assessment and care coordination for psychosocial needs such as mental health, substance abuse, vision, dental, housing, employment, legal aid, transportation, food, income, hygiene, and weather-appropriate provision needs.

COMMUNITY PARTNERSHIPS
The HMMM-V program benefitted from a number of partnerships with community agencies. During development of the program, HMMM-V personnel accompanied the Dallas Police Department’s Crisis Intervention Unit on typical homelessness crisis services deployments into the field to learn about the locations and nature of encampments and homeless per-ecriation patterns in the Dallas area.

To aid in the design and selection of features for the mobile outreach vehicle, team members toured Homeless Outreach Medical Service mobile clinics from 2 local county hospitals, Parkland Hospital and John Peter Smith Hospital. The staff for these mobile clinics were interviewed about their experience with various components of their programs and their recommendations for optimal design of the mobile medical clinic for service delivery.

Numerous agencies in the Dallas area that serve the homeless population assisted with locating and connecting homeless veterans to HMMM-V programs. These partnering agencies also serve homeless individuals who do not qualify for the HMMM-V program, such as veterans
with other-than-honorable military discharges.

The HMMM-V mobile outreach vehicle travels to partnering agencies and provides services on a recurring basis. These agencies are the Dallas International Street Church, a church and faith-based agency aiding the recovery of people with “broken lives”; Cornerstone Ministries, a church-based ministry serving people with adverse circumstances; and City Square’s Opportunity Center, human services and community development programs for low-income city residents. The mobile clinic also travels regularly to other areas to serve homeless veterans residing in unsheltered locations, such as homeless encampments and under bridges.

CLINICAL ASSESSMENT

The project used a modification of the VA Personalized Health Inventory (PHI) for general veteran populations, which assesses 8 areas of self-identified needs to address the specific concerns of homeless veterans served by a mobile clinic. Version 19 of the PHI (revised September 18, 2012), the version of the instrument available to the team at the inception of the project, was deployed with the HMMM-V personnel into the field. It imposed a heavy interview time burden (several hours), and its content areas did not seem appropriate to address the immediate concerns of homeless populations (eg, sections pertaining to personal development through hobbies, recreation, or volunteering; healthy living spaces with plenty of lighting and color; “eating healthy, balanced meals with plenty of fruits and vegetables each day”).

Based on HMMM-V personnel feedback, the team modified this tool and developed a patient-centered health inventory (P-CHI) for homeless veterans that was acceptable in length and applicable to the situational characteristics of homeless existence. The tool’s 10 “current and desired states” were revised to remove domains of exercise and flexibility, sleep and relaxation, and mind-body techniques. The intervention and prevention domains were combined. A material needs (clothing, furniture, transportation, financial benefits) domain was added, and a new domain on reducing alcohol/drug use was created by moving this material from the food and drink domain.

The remaining domains were modified to fit the homeless living situation (Food and Drink = Nutrition; Personal Development = Employment/Vocation; Family, Friends, and Co-Workers = Family/Social/Legal Support; Spirit and Soul = Personal/Spiritual Fulfillment; Surroundings = Housing). Current state ratings were revised to reflect level of satisfaction, and ratings of Desired State were replaced with level of importance.

The modifications resulted in 9 domains, which were assembled into a grid for efficient rating of both satisfaction and importance for each domain (rated 1 to 10, lowest to highest, respectively), followed by an instruction to mark an X in a...
designated space in all the domains with which the individual would like help (Table). The intent was to reduce the burden of the instrument by having the participant complete sections providing detailed information about only the domains selected by the participant.

The details of each domain in the original VA PHI tool were captured through open-ended questions in text responses provided by the veteran. Because open-ended text responses are not conducive for summarizing characteristics of the population served or for evaluating program activities, the detailed sections covering the domains were revised completely to capture data within categoric and numeric variables. Items from the validated Homeless Supplement Interview were added to collect information not provided in the Homeless Operations Management and Evaluation System interview that is routinely administered to all veterans accessing homeless VA services.26-28

The information collected in these domains cover duration of current homeless episode, lifetime number of homeless episodes, current living arrangements and dissatisfactions with these arrangements, frequency and source of meals, employment history and current work status, sources of income, special material needs, medical and dental problems and sources of care, current medications, mental health problems and sources of care, urgent mental health concerns, current amount and frequency of alcohol and drug use, substance abuse treatment history, relationships with family and intimate partners, legal assistance needs, and self-identified needs for spiritual and personal fulfillment. This instrument is available on request to the authors.

**VETERANS SERVED**

The project began with 1 team of professionals deploying with the HMMM-V vehicle while a second team was being assembled. Currently, the 2 HM MM-V teams deploy the mobile clinic 4 days per week. The mobile clinic visits agencies that serve the homeless, including emergency shelters and food ministries, as well as homeless encampments. To date, 195 homeless veterans have been served by the mobile clinic, 111 were currently enrolled with the VA, 8 were not enrolled but eligible for services, and 77 were not eligible for VA services. Of the unenrolled veterans, those eligible for services were offered VA enrollment assistance; those ineligible for VA services were offered a community referral.

For the veterans encountered in the field, the following interventions were provided: 49 housing placement referrals, 4 rental assistance referrals, 4 legal referrals, 27 medical care interventions, 13 dental referrals, 11 vision/hearing referrals, 12 mental health interventions, 9 substance abuse treatment referrals, 14 employment assistance referrals, 13 disability benefit applications, 18 transportation assists, 23 goods delivered, and 159 information assists. The HM MM-V mobile clinic also is deployed to participate in various educational and outreach events. At the time this article was written, the mobile clinic has reached nearly 2,000 veterans and community partners in at least 25 such events.

Of the veterans served to date, 73 completed the P-CHI. These veterans were predominantly male (77%), and the majority (60%) were black. The median age of the sample was 58 years, and typically they had a high school level of education (12.7; SD, 2.1 mean years of education). About half (49%) the sample were separated or divorced, and only a minority were currently married (8%). Half (50%) the sample served in the U.S. Army, with the post-Vietnam era being the era of service most represented (19%). Few (21%) veterans reported exposure to hostile or friendly fire during their service. More than three-fourths (80%) of the sample had experienced a homeless episode prior to their current one. On average, members of the sample had experienced a median of 3 lifetime homeless episodes. They had a mean 4.1 (SD, 5.8) lifetime number of years of homelessness, and 3.0 (SD, 5.2) years in their current homeless episode. Nearly one-third (31%) reported that they were currently staying in a homeless shelter, and nearly one-sixth (16%) were currently unsheltered in street settings, such as under bridges or in outdoor encampments at the time of the initial visit.

The mean number of minutes spent completing the P-CHI was 18.5 (SD, 9.4). The veterans indicated that they would like assistance with a mean 3.2 (SD, 2.2) number of domains. The domains with the highest average importance ratings were housing (mean, 9.4; SD, 1.7) and medical/dental care (mean, 8.9; SD, 2.2); the domains with the lowest average importance rating were reducing alcohol/drug use (mean, 6.4; SD, 4.1) and employment/vocation (mean, 6.3; SD, 4.2). The domains with the highest average satisfaction ratings were personal/spiritual fulfillment (mean, 7.3; SD, 2.9) and reducing substance use (mean, 5.9; SD, 4.0), and the domains with the lowest average satisfaction ratings were housing (mean, 2.9; SD, 2.9), material needs (mean, 4.2; SD, 3.3), and employment/vocation (mean, 4.2; SD, 3.2). The domain with the greatest indication of desire for help was housing, endorsed by more than four-fifths (84%) of the sample. This highly
endorsed housing domain also was one of the lowest in satisfaction. The domains with the least expressed interest in obtaining help were reducing substance use (18%) and personal/spiritual fulfillment (15%). Reducing substance abuse also was one of the lowest domains of importance and the least for dissatisfaction.

CHALLENGES AND BARRIERS
As anticipated from its inception, this project encountered many challenges and barriers. The first was with the design, construction, and delivery of the mobile clinic unit. The vehicle took more than 2 years to be delivered. There were delays in progress necessitated by required selection of an approved vendor to build the vehicle, extensive specification of details and features, and stocking it with equipment and supplies. The weight of the unit had to be < 26,000 pounds to avoid the requirement of a commercial driver’s license, which limited the size of the vehicle to 28 feet. Stocking the unit with equipment and supplies required attention to a myriad of specifications and decisions. For example, separate refrigerators were needed for specimens, medications, and food; pharmaceutical regulations governing medications in mobile clinics required strict adherence; and difficulties were encountered in attempting to establish adequate and secure connectivity for communications devices in the field.

Once the mobile unit was delivered and prepared for deployment, the next set of challenges pertained to learning all of the instructions required to operate and drive the vehicle and learning how to maneuver the vehicle in the field. Specific challenges for driving the vehicle encountered included unexpectedly low overpasses that prohibited passage, narrow spaces for passage, rough and uneven terrain in off-road settings, and lateral and vertical tilt of roads creating potential for sideswipes and undercarriage scrapes. Maintenance schedules needed to be developed and implemented for cleaning the unit, inspection compliance, repairs, refueling, and emptying waste materials.

Staffing the vehicle required the development of unique job specifications addressing special expertise in accessing VA databases for veteran verification and registration and for driving the mobile clinic vehicle. Schedules and deployment plans for 2 teams that shared the same vehicle had to be established and followed. Locating veterans in unsheltered settings, such as under bridges and in encampments, required community intelligence facilitated through partnerships with knowledgeable members of the Dallas police crisis unit and by gaining field experience to locate where the usual homeless gathering places are, especially those inhabited by veterans. Safety of team members and equipment/supplies in the field was paramount from the start, and additional steps beyond safety training required extra measures, such as special care in navigating known dangerous areas.

Provision of services necessitated completion of everything needed in a single visit due to the likelihood of loss to follow-up and acceptance of the limited types of service that could be provided in a mobile clinic. Special procedures were needed to provide referrals to sources of available care for non-VA-qualifying veterans.

DISCUSSION
The HMMM-V program for delivery of PCC to homeless veterans is an innovative pilot program designed to connect with difficult-to-reach homeless veterans and engage them in care. The deliverables provided by this project are (1) A mobile
outreach vehicle to deliver care to homeless veterans and outreach to other veterans and community agencies in North Texas; (2) The P-CHI assessment tool for homeless veterans modified and adapted for use with this special population; and (3) pilot data on its first cohort of homeless veterans served, describing their baseline characteristics and their stated satisfaction and preferences about their goals and aspirations for their physical, emotional, and mental health and well-being.

The HMMM-V program successfully identified homeless veterans in need of services, and more than one-third of these veterans were not previously engaged in VA services. Compared with the “typical” veterans served at VANTHCS homeless programs, veterans served by the HMMM-V comprised a greater proportion of minorities and a higher proportion who had been exposed to combat.29 Age and gender characteristics were similar.29 When compared with veterans who access care at VANTHCS and have not experienced homelessness, those served by the HMMM-V were younger and more likely to belong to a minority group; however, they were similar in combat exposure and gender.1 The veterans served by the HMMM-V program also were considerably older and had more homeless chronicity than did nonveteran homeless populations, consistent with other research.4,29,30

The veterans served by the HMMM-V program not surprisingly made housing their top priority in need of help, consistent with the Housing First model.22,31 They also indicated that employment/vocational and reducing substance use were of lower importance. Need for assistance with reducing substance use and social support were the domains least often identified as areas where help was needed, which seems inconsistent with the higher established rates of substance abuse problems among homeless veterans.1

With additional fieldwork, the HMMM-V program is expected to allow refinement of procedures for identifying and serving veterans from a patient-centered care perspective. The P-CHI will be further tested and developed, and the next step will be to create and pilot intervention templates for a Patient-Centered Health Improvement Plan, based on the P-CHI results. This process parallels the original development treatment plans for the VA’s Personalized Health Plan based on the PHI.23 Once the HMMM-V program is fully established in Dallas, the plans are for an expansion that will cover a broader geographic area in North Texas that includes rural areas.

The HMMM-V program was designed to address the barriers to health care that are encountered by homeless veterans. It is unique in homeless veteran care due to its patient-centered approach that partners with homeless veterans to prioritize their needs as determined by them rather than based solely on policies or provider conceptualizations of their needs. Access to services, engagement in care, and successful utilization of needed services may lead to measurable improvements in health care outcomes among homeless populations of veterans. Desired goals include remission of illness through appropriate medical intervention, preventing morbidity, achieving healthy lifestyles, recovery from addiction, stabilization of psychiatric illness, and attainment of stable housing.

The first hurdle for implementing this type of program in other settings is the identification of resources needed for these efforts. Need of additional staffing resources, however, may be circumvented by allowing employees working in other areas to rotate in community outreach shifts in the mobile unit. Another hurdle encountered in implementation of the HMMM-V initiative was the initial difficulty finding homeless veterans in community settings, especially those in unsheltered locations. The HMMM-V program addressed this issue by partnering with other agencies serving the homeless in the community. Therefore, a general recommendation for other entities seeking to implement this type of program is to reach out to these community partners from the outset.

CONCLUSION

The HMMM-V has the potential to engage the most difficult-to-reach homeless veterans in need of health services by delivering care and providing resources in challenging environments. Further work is needed to validate the P-CHI for use with this program and to conduct well-designed and implemented research to demonstrate effectiveness of this intervention on veteran outcomes, especially quality of life. Once this additional work is accomplished, this innovative program can potentially be implemented by VAMCs across the nation, and potentially in more general community care settings, to more effectively reach out and deliver services to homeless members of the community.

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REFERENCES