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Thomas Byrne  
Christopher B Roberts  
Dennis P Culhane  
Vincent Kane



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# RESEARCH BRIEF

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## Estimating Cost Savings Associated With HUD-VASH Placement

*Thomas Byrne, PhD; Christopher B. Roberts, MPH; Dennis P. Culhane, PhD; Vincent Kane, MSS*

### BACKGROUND

Existing research suggests that Veterans experiencing homelessness make disproportionate and costly use of acute health, mental health and substance abuse treatment services, but that placement in programs like the US Department of Housing and Urban Development-VA Supportive Housing Program (HUD-VASH) can result in substantial reductions in the utilization of these services and associated costs. Several studies have demonstrated that, for certain high need individuals and Veterans, cost savings resulting from the reduction in these acute care services subsequent to placement in permanent supportive housing (PSH) can substantially or completely offset the cost of providing PSH and may even result in net cost savings.

Building on this body of research, this brief summarizes the results of an evaluation that examined VA health, mental health and substance abuse services costs among HUD-VASH tenants who moved into HUD-VASH during Federal Fiscal Year (FY) 2010. We assessed these costs prior and subsequent to their entry into HUD-VASH housing and estimated potential cost savings associated with HUD-VASH placement.

Emerging evidence of a cohort effect in the single adult homeless population<sup>1</sup> suggests that the number of older (i.e., greater than 55) Veterans experiencing homelessness is likely to grow substantially in the coming 10 to 15 years; consequently, the number of older Veterans in HUD-VASH housing is likely to increase as well. Therefore, it is useful to evaluate the potential cost savings associated with HUD-VASH placement for older adults, and we report the results of separate sets of analyses that were conducted both for all HUD-VASH tenants and exclusively for those ages 55 and above.

### EVALUATION METHODS

We selected three groups of Veterans using data from the VA's Homeless Operations Management and Evaluation System (HOMES) and VA electronic medical records. The first group (the HUD-VASH group) consisted of Veterans who moved into a HUD-VASH placement at some point during FY 2010 and who remained stably housed for at least two years thereafter. The second group was comprised of Veterans who entered a VA residential homeless assistance program other than HUD-VASH (i.e., Grant and Per Diem, Healthcare for Homeless Veterans Emergency Shelter, Domiciliary Care for Homeless Veterans), during FY 2010. The third group (the Medicaid group) included

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<sup>1</sup> See Culhane, DP, Metraux, S, Byrne, T, Stino, M & Bainbridge, J. (2013). The age structure of contemporary homelessness. *Analyses of Social Issues and Public Policy*. Online version ahead of print publication.

Medicaid-eligible Veterans (i.e., those in priority group 5<sup>2</sup>) who did not have a record of HUD-VASH enrollment or other use of VA residential homeless assistance programs. Inclusion of the Medicaid group provided a means by which to compare HUD-VASH tenants to a low-income, but presumably consistently housed group.

We used a statistical technique known as propensity score matching to ensure that Veterans in these three groups were comparable in terms of age, race, gender and the presence of drug/alcohol abuse disorders and mental illness. By creating groups that were equivalent in terms of these characteristics, propensity score matching allowed for an “apples to apples” comparison in that it maximized the possibility that any differences in the cost of VA services among the three study groups was due to the type of housing assistance received, rather than to differences in their characteristics.

We used cost data from the VA Decision Support System (DSS) database to examine inpatient, outpatient and Emergency Department (ED) costs for each of the three groups. We then used an evaluation approach known as difference-in-difference analysis to estimate a series of statistical models that predicted the VA health costs for each of these groups both before and after Veterans moved into HUD-VASH housing.<sup>3</sup> These models allowed us to:

- Compare VA healthcare of HUD-VASH tenants with those of their homeless and low-income, but housed counterparts;
- Assess changes in VA health costs following HUD-VASH placement; and
- Estimate potential cost savings associated with HUD-VASH placement. As noted above, analyses were conducted separately for all HUD-VASH tenants and for HUD-VASH tenants ages 55 and above.

## DIFFERENCES IN VA HEALTHCARE COSTS AMONG HUD-VASH TENANTS, HOMELESS VETERANS AND HOUSED VETERANS

### All HUD-VASH Tenants

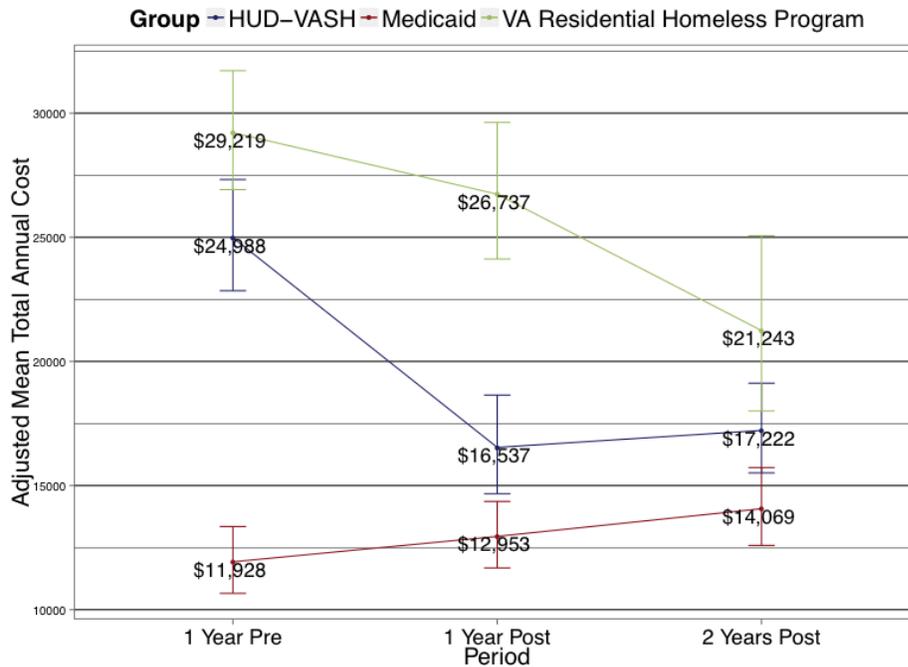
Figure 1 shows the estimated total cost of VA health services for each of the three groups in the periods before and after moving into HUD-VASH housing. Costs for HUD-VASH tenants during the year prior to move in (\$24,988) were not different, in statistical terms, from those of their characteristically similar counterparts who used other VA residential homeless programs, when both of these two groups were likely experiencing homelessness. HUD-VASH costs were significantly higher than those of their presumably housed, Medicaid-eligible, characteristically similar counterparts (\$11,928). However, costs decreased during the 1-year period following HUD-VASH move-in such that average costs for HUD-VASH tenants (\$16,537) were substantially lower than those who used other VA homeless programs (\$26,737) and were only marginally higher than their housed, Medicaid-eligible counterparts (\$12,953). Costs for HUD-VASH tenants remained almost level (\$17,222) in the second year following HUD-VASH placement.

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<sup>2</sup>Eligibility for VA Healthcare services is determined by tiered priority groups, with lower numbered groups having higher priority for enrollment. Veterans in Priority Group 5 include those Veterans who do not meet criteria for Priority Groups 1-4 and who 1) have a service-connected disability but have annual income and/or net worth below VA financial thresholds; or 2) are receiving VA pension benefits; or 3) are eligible for Medicaid.

<sup>3</sup> Only the HUD-VASH group had a HUD-VASH move in date. Therefore, for the group who used other VA homeless programs, we used their date of entry into that program as the pre-post index date, and median HUD-VASH move in date as the index date for the Medicaid eligible group.

**Figure 1. Mean Cost of VA Health Services Before and After Entry into HUD-VASH or Other VA Residential Homeless Program, All HUD-VASH Tenants**



### HUD-VASH Tenants Ages 55 and Older

A similar trend was observed when looking specifically at HUD-VASH tenants ages 55 and older. Figure 2 shows that there was not a statistically significant difference between the healthcare costs of older HUD-VASH tenants in the year prior to move-in (\$23,652) and those of characteristically similar Veterans who used other VA residential homeless programs; however, costs for HUD-VASH tenants were significantly higher than those of their housed, Medicaid-eligible counterparts (\$12,524). In the year after move-in, however, average healthcare costs for older HUD-VASH tenants (\$16,558) were substantially lower than those of their counterparts in other VA residential homeless programs (\$30,392), although not different in statistical terms from those of their housed, Medicaid-eligible counterparts (\$12,991). In the second year following HUD-VASH placement, costs for HUD-VASH tenants remained largely unchanged.

### CHANGES IN COSTS FOLLOWING HUD-VASH PLACEMENT AND ESTIMATED COST SAVINGS ASSOCIATED WITH HUD-VASH PLACEMENT

#### All HUD-VASH Tenants

Changes in VA health costs over time were calculated for each group based on the estimates shown in Figure 1. VA health costs for HUD-VASH tenants decreased by 34% or roughly \$8,451 from one year prior to HUD-VASH move-in to one year following HUD-VASH move-in, and the cost decrease held steady during the second year. This cost reduction was driven primarily by decreases in the utilization of inpatient services, the cost of which decreased by 66% from one year prior to one year post-move-in. To obtain a more

accurate estimate of net cost savings, we subtracted the change in VA healthcare costs for the comparison group of Veterans using other VA residential homeless programs before/after their program entry from the corresponding difference in cost for the HUD-VASH group. This estimate provides an approximation of the costs savings resulting from placement in HUD-VASH relative to entry into other VA homeless programs. Thus, the total net cost savings in the first year following HUD-VASH move-in was calculated as  $-\$8,451 + \$2,482$ , or  $-\$5,969$  (negative numbers indicate cost savings).

**Figure 2. Mean Cost of VA Health Services Before and After Entry into HUD-VASH or Other VA Homeless Residential Program, HUD-VASH Tenants Ages 55 and Above Only**

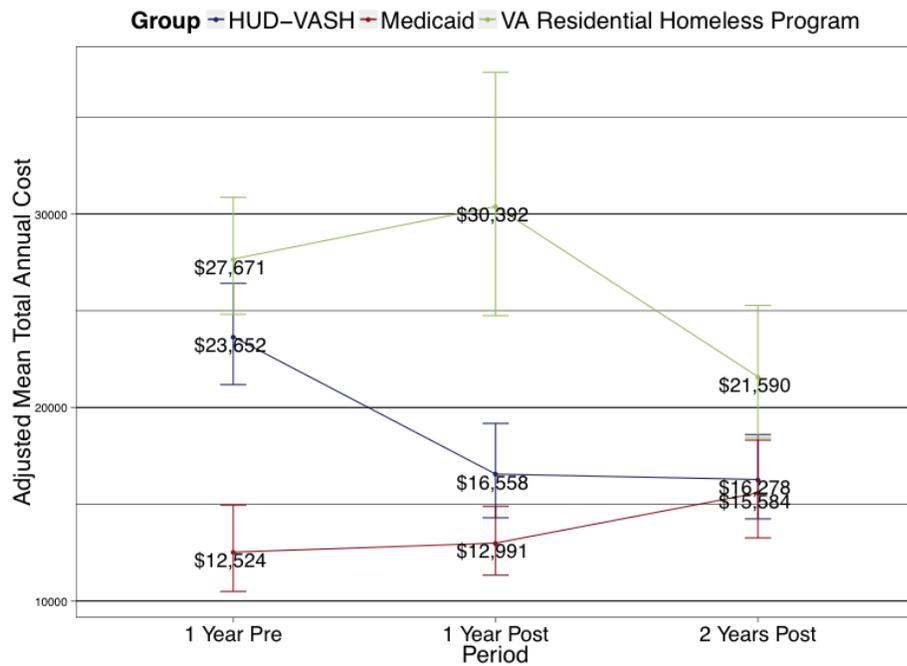


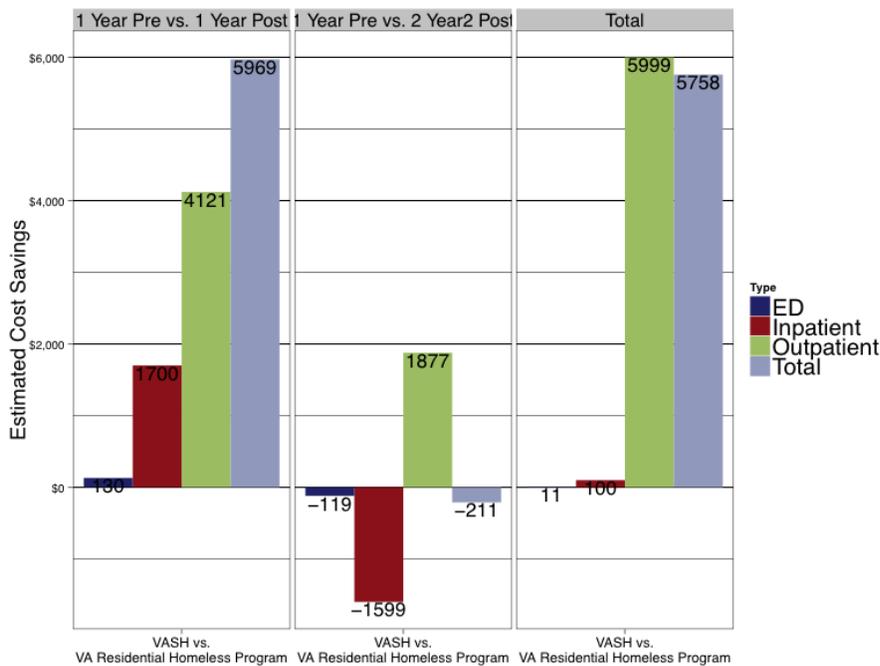
Figure 3 presents the total net cost savings estimates associated with HUD-VASH placement as well as estimates that were calculated separately for various types of VA health services for both one and two years following HUD-VASH move-in. (For ease of interpretation, the sign on these estimates is switched such that positive numbers indicate cost savings). The total net costs for this two-year period is also presented and was calculated by summing the net savings in each one-year period. Over the two-year period, HUD-VASH placement is estimated to save a net total of \$5,758, when compared to use of other VA homeless programs for similar Veteran populations.

### HUD-VASH Tenants Ages 55 and Older

We used the same methods to calculate changes in VA health costs over time and estimated cost savings for older HUD-VASH tenants. Among HUD-VASH tenants aged 55 years and older, VA health costs decreased by 37% or roughly \$9,960 from one year prior to HUD-VASH move-in to one year following HUD-VASH move-in. Once again, much of this decrease was due to a reduction in the use of inpatient treatment: inpatient costs dropped by 68% from one year prior to one year post HUD-VASH move-in. This decline in health costs was roughly the same in the second year following

move-in, relative to the year prior to move-in. Figure 4 shows the estimated net cost savings associated with HUD-VASH placement for both one and two years following HUD-VASH move-in. The total net cost savings in the first year following HUD-VASH for older HUD-VASH tenants, relative to those of Veterans with similar characteristics in other VA homeless residential programs, was estimated to be \$13,128. The total net costs for the two-year period post HUD-VASH move-in was estimated as \$15,125.

**Figure 3 . Estimated Cost Savings Associated with HUD-VASH Placement, All HUD-VASH Tenants**

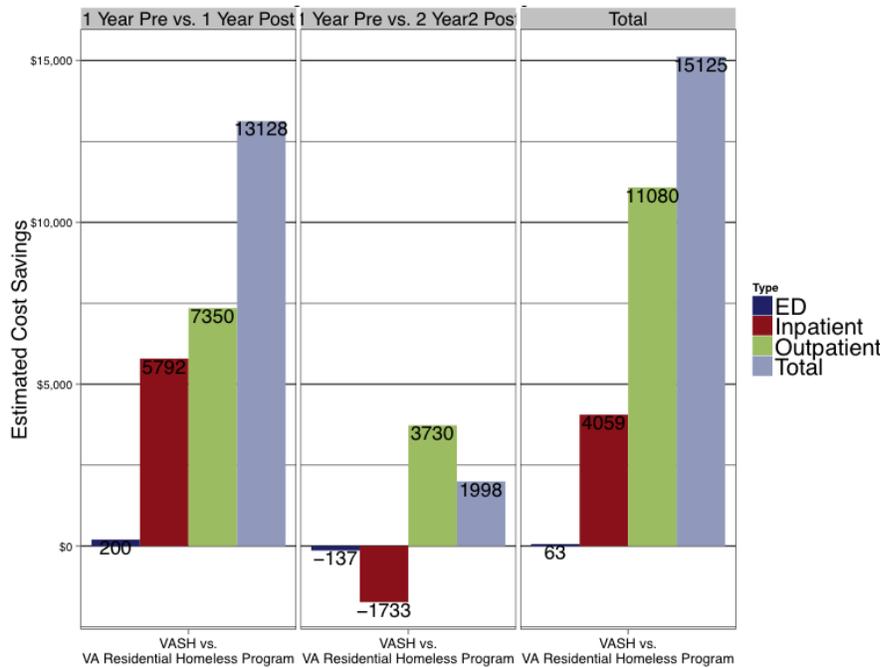


## DISCUSSION AND IMPLICATIONS

The results presented here indicate that Veterans experiencing homelessness substantially reduce their use of costly medical and behavioral health services following placement in HUD-VASH; decreases in inpatient treatment are especially steep. Findings show that, overall, costs of VA health services use decreased by more than one-third in the year after HUD-VASH move-in and suggest that once stably housed, healthcare costs for HUD-VASH tenants are effectively equivalent to their low-income, but housed counterparts. Additionally, when compared to Veterans with similar demographic characteristics and mental health/substance abuse diagnoses who used other VA residential homeless programs, cost savings for HUD-VASH tenants in the one-year period following HUD-VASH move-in amounted to roughly \$6,000 when considering all HUD-VASH tenants, and more than \$13,000 when looking specifically at HUD-VASH tenants older than 55 years. These savings attenuated in the second year following HUD-VASH move-in, although this was largely the result of a decrease in costs for the comparison groups of Veterans who did not receive a HUD-VASH placement.

On the whole, these findings suggest that, when comparing Veterans with similar characteristics and clinical diagnoses, HUD-VASH is more effective than other VA residential homeless programs in terms of reducing the use of health, mental health and substance abuse treatment services. This is

**Figure 4 . Estimated Cost Savings Associated with HUD-VASH Placement, HUD-VASH Tenants Ages 55 and Above Only**



consistent with prior research, which has shown that housing interventions like HUD-VASH that match permanent housing with supportive services can lead to substantial reductions in the use of costly healthcare services.

It is important to note a few limitations of the analyses presented here. First, the estimates of the net cost savings over the two-year period following move-in to HUD-VASH may be conservative as the net cost savings associated with HUD-VASH placement are substantially lower in the second year following VASH placement. This may be because many Veterans in the comparison group of users of other VA homeless programs may have regained stable housing in the second year and, therefore, may no longer represent an appropriate sample against which to compare the costs incurred by HUD-VASH. In addition, this analysis did not include other types of costs, particularly those stemming from involvement in the criminal justice system, which prior studies have shown to drop substantially following placement in PSH. Although these costs are not borne by the VA healthcare system, they are important for understanding the broader societal impact of HUD-VASH, and including them in the present analysis likely would have yielded larger cost savings.

Second, when estimating cost savings, the analysis presented here did not factor in the cost of the HUD-VASH housing subsidy and case management services nor the cost of other VA residential homeless programs. A more complete analysis would account for these program costs and assess whether HUD-VASH still yielded net cost savings relative to other VA residential homeless programs. Unfortunately, the available data did not allow for an adequately precise estimation of

such costs. However, future studies will develop and incorporate rigorous estimates of program costs to allow for much richer comparisons of the costs and benefits of HUD-VASH relative to other VA homeless programs.

Finally, the time period during which the analysis was conducted preceded the implementation of a Housing First approach in HUD-VASH sites throughout the country. The shift to a Housing First approach also coincided with an increasing emphasis on ensuring that Veterans experiencing chronic homelessness are the primary targets for placement in HUD-VASH. This programmatic shift has resulted in the HUD-VASH program serving a population with more complex needs who may be more intensive users of VA services than those included in the analysis reported here. As such, it is possible that examining a more recent group of HUD-VASH tenants would reveal even greater reductions in VA healthcare costs following move-in to the HUD-VASH program. The National Center on Homelessness Among Veterans is investigating this issue more closely, and findings from this work will be the subject of a future brief.

*Thomas Byrne is a Research Investigator at the VA National Center on Homelessness Among Veterans and Assistant Research Professor in the School of Social Policy and Practice at the University of Pennsylvania. Christopher Roberts is a Data Analyst at the Center. Dennis Culhane is Director of Research at the Center and holds the Dana and Andrew Stone Chair of Social Policy at the University of Pennsylvania. Vincent Kane is Director of the Center.*

Opinions expressed in this research brief represent only the position of the National Center on Homelessness Among Veterans and do not necessarily reflect the official policy of the U.S. Department of Veterans Affairs.