A Research Note: Long-Term Cost Effectiveness of Placing Homeless Seniors in Permanent Supportive Housing

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Abstract

A recently developed body of evidence shows that housing chronically homeless adults improves health outcomes and prevents unnecessary, high-cost, institutional-based medical care. In this study, we report changes in the healthcare costs of homeless seniors who were placed in housing from a skilled nursing facility (SNF) and the costs for those placed in housing from the general community. Cost and utilization data from 1 year before move-in were compared with data from the 7 years subsequent to moving into a new permanent, supportive housing facility. During the 7 years after placement, the total hospital-based costs for the 51 seniors who moved into the facility was $1.46 million less than the costs incurred in the year before moving in. Permanent supportive housing may be a cost-effective placement option for homeless seniors exiting SNFs, particularly as they approach the end of life.

Introduction

Past research has found that housing chronically homeless adults can not only reduce homelessness but also may improve health outcomes and reduce healthcare costs (Holtgrave et al., 2013; Larimer et al., 2009; Sadowski et al., 2009). The New York State Medicaid program has proposed

to budget more than $100 million in fiscal year 2014/2015 to pay for supportive housing that targets chronically homeless adults with the goal of reducing the overall state healthcare expenditures (Doran, Misa, and Shah, 2013).

Some past studies indicate that supportive housing may reduce costs for homeless adults who are frequent users of the healthcare system, but little attention has been given to how supportive housing might serve homeless adults as they approach the end of life. Gulcur et al. (2003) report that public health expenditures on homeless people before and after placement in permanent housing have fallen significantly (Gulcur et al., 2003). Few studies reported on the long-term effect on health and healthcare use following placement, however (Stefancic and Tsemberis, 2007). In addition, most studies assessed resource use after housing homeless people from the streets or shelters, whereas permanent supportive housing can also serve as a high-quality and cost-effective option for placing homeless people who have had extended stays in skilled nursing facilities (SNFs).

In 1999, the San Francisco Department of Public Health—through its Direct Access to Housing (DAH) program—began offering locally funded Housing First permanent supportive housing to homeless adults The Housing First strategy was adopted as an alternative to the Continuum of Care model that prevented people who continue to use illicit substances and/or alcohol or people with poorly controlled mental illness from qualifying for housing. A core belief underlying the Housing First strategy is that many people who live on the street, in shelters, or in institutions are unlikely to make progress in their substance abuse or mental health condition until they achieve stable housing. In May 2006, Mercy Housing opened Mission Creek Apartments a new affordable housing development. The residential component of the development provides housing and onsite services for 139 seniors (age 61 or older), with 51 units reserved to serve homeless seniors through the DAH program. The facility provides studio and one-bedroom apartments that overlook San Francisco Bay and are adjacent to the city's professional baseball stadium (AT&T Park). Preliminary reports indicate a significant reduction in healthcare use for the DAH tenants in the first year of placement at Mission Creek.

In this article, we present data on the healthcare use of these 51 seniors during the past 7 years since the building opened. In addition, we report on the housing outcomes and healthcare use and costs for the subset of seniors placed directly from the city-operated skilled nursing facility (SNF)—many of whom were approaching the end of life. We then compare these outcomes with those for homeless seniors placed in the facility from the general community. In this relatively small, initial study, we describe a new model of enriched supportive housing that not only improves the quality of life of seniors but also can provide a return on investment that reduces healthcare expenditures.

Program Description

As with other Housing First programs, tenants do not need to prove sobriety or compliance with treatment to qualify for access to permanent supportive housing. To be eligible for the DAH program, applicants must be homeless at the time of referral to the program or must have been homeless before entering an institution. A precondition to signing the lease includes that the tenant agree to pay rent through a third-party rent payee. The rent amount is fixed at $377 per

month. Tenants who have an income of less than $754 (double the rent) are ineligible for this facility (although they are eligible for other DAH buildings). The Supplemental Security Income, or SSI, benefit level for a single, disabled individual in California was $889.40 per month in 2015. Tenants are selected from a pool of referrals to the DAH Access and Referral Team; the referrals are designed to collect information to assess the clinical condition of each applicant and guide prioritization of clients who have the most severe medical, psychiatric, and substance use conditions, but who are able to safely live independently.

Two case managers work on site at the building, and most DAH tenants have outside case management from programs targeting seniors or frequent users of the healthcare system. Most tenants also have in-home support service providers to assist with housekeeping, food preparation, activities of daily living, and medication schedule reminders.

The Mission Creek Adult Day Health Center is colocated in the facility and offers functional activities, nursing services, food, physical therapy, occupational therapy, and socialization to qualifying tenants and community members. Entry to the day health program is based on a tenant's request to enroll; the tenant must meet medical eligibility for the program. The cost of the day health program is covered by Medi-Cal, California's Medicaid program. Attendance ranges from 2 to 5 days per week based on clinical assessment and tenant choice.

Tenants sign a lease directly with the owner of the facility and have all the rights and responsibilities of a leaseholder.

Methods

Medical records maintained by the San Francisco Department of Public Health (Lifetime Clinical Record) were used to determine utilization of inpatient and emergency department services at San Francisco General Hospital (SFGH)—the city's only public hospital—which is both the primary hospital for the city's uninsured and the major source of care for most homeless patients (San Francisco Planning and Urban Research Association, 2014). Records from the Mission Creek Adult Day Health program provided information on attendance in the day health program. Records of stay at Laguna Honda Hospital (LHH), San Francisco's public SNF, were used to calculate SNF days. In San Francisco, homeless adults with an acute hospitalization are placed at LHH if they need skilled nursing services after hospitalization. Community referrals came from agencies targeting chronically homeless adults on the streets, in shelters, or in residential substance use or mental health treatment programs. This cohort was identified as a comparison group to assess the cost savings associated with moving homeless seniors from SNFs to independent living and to compare this savings with that associated with housing those from the community. The DAH program database provided data on tenant demographics and dates of housing entrance and exit (as applicable). DAH residents sign a release of information at the time of referral and again at the time of housing application, which releases DAH to collect and review all information contained in the electronic medical record.

Estimation of medical care costs were based on 2012 median Medi-Cal reimbursement rates for SFGH: (1) $502 per emergency room encounter, (2) $1,440 per night spent in an inpatient hospital ward, and (3) $560 per night spent in an SNF (Valerie Inouye, SFGH Chief Financial Officer,

personal communication). The primary variables we assessed were public hospital use before and after placement, in addition to housing outcome and day health use after placement. Tenants exited housing because of death, placement in an SNF, voluntary exit, or eviction.

Results

In May 2006, 51 homeless seniors moved into Mission Creek Apartments. The average age of the tenants upon entry was 67 years; 67 percent were male, 47 percent were White, 29 percent were African-American, 12 percent were Latino, and 14 percent were Asian/Pacific Islander (exhibit 1). Of the 12 seniors (24 percent) referred from the SNF, all had an extensive history of homelessness before an extended stay in the SNF. For the 51 seniors who initially moved into Mission Creek, the estimated cost to the public healthcare system to provide hospital (medical and psychiatric inpatient or emergency department) and SNF care the year before moving into Mission Creek was an average of $33,537 per person for a total of $1,710,430 for the cohort (exhibit 2). In the 7 1/2 years between the opening date and January 1, 2014, the tenants residing in Mission Creek used a total of $249,460 in public hospital and SNF care costs.

Nearly one-half (47 percent) of all the tenants of Mission Creek enrolled in the onsite Mission Creek Adult Day Health program. A higher percentage of tenants referred from the general community (51 percent) attended day health compared with the tenants referred from the SNF (33 percent). Attendance at the day health program ranged from 2 days to 5 days per week, with an average of 4 days per week. Tenants referred from the SNF and tenants referred from the general community cost the public sector $409,396 and $1,636,918, respectively, for day health services during the study period during the time they resided at Mission Creek.

Exhibit 1

Tenant Demographics

	Tenants (Percent of Total)	Placement From SNF (Percent of Total)	Community Placement (Percent of Total)	*p* Value
Total	51	12 (24%)	39 (76%)	
Sex				
Male[a]	34 (67%)	8	26	Ref
Female	17 (33%)	4	13	0.773[b]
Average age (years)	67	67	68	0.890[c]
Race/ethnicity				
White[a]	24 (47%)	4	20	Ref
African-American	15 (29%)	5	10	0.2657
Latino	6 (12%)	1	5	1.000
Asian/Pacific Islander	7 (14%)	3	4	0.3023

SNF = skilled nursing facility.

[a] *Signifies referent category.*

[b] *Fisher's exact test, two tailed.*

[c] *Mann–Whitney U-test.*

Exhibit 2

Estimated Costs

	Total (N = 51)	Placement From SNF (N = 12)	Community Placement (N = 39)	*p* Value
Total hospital-based healthcare costs year before placement (average per tenant)	$1,717,430 ($33,537)	$1,617,430 ($134,202)	$100,000 ($2,564)	0.0001[b]
Inpatient days	152	63	89	
Emergency room episodes	5	2	3	
Skilled nursing days	2,852	2,852	0	
Total hospital-based healthcare cost while placed (average per tenant)	$249,460 ($4,891)	$4,400 ($367)	$245,060 ($6,284)	0.0019[b]
Inpatient days	181	4	177	
Emergency room episodes	37	0	37	
Skilled nursing days	37	0	57	
Number who participated in day health program (percent of total)	24 (47%)	4 (33%)	20 (51%)	0.0253[b]
Cost of day health while tenant resided in housing	$ 2,046,314	$ 409,396	$ 1,636,918	
Total housing costs while housed	$4,345,837	$683,511	$3,662,236	
Total hospital-based care plus housing after placement (annual average)	$6,641,611 ($1,186,002)	$1,097,307 ($296,569)	$5,554,304 ($908,902)	
Number exiting housing (percent of total)	27 (52%)	10 (83%)	17 (43%)	0.012[b]
Number exiting to SNF[a]	11 (22%)	5 (41%)	6 (15%)	
Deaths	11 (22%)	4 (33%)	7 (17%)	
Evictions	5 (10%)	1 (8%)	4 (10%)	
Years per tenant in housing after placement	5.6	3.7	6.1	0.0008[c]

SNF = skilled nursing facility.

[a] *Signifies referent category.*

[b] *Fisher's exact test, two tailed.*

[c] *Mann–Whitney U-test.*

The 2013 public expenditure for rent and support services for the 51 DAH tenants (including operations, janitorial services, property management, and case management) was $785,114 ($462,280 in a local operating subsidy and $322,834 in a contract for support services). Tenants contributed $230,724 per year toward rent.

In summary, the government spent approximately $1.7 million dollars to provide hospital-based healthcare services for these 51 seniors the year before entering housing and an average of $1.2 million per year to provide housing, day health services, and hospital-based services annually after placement (exhibit 2).

As of January 2014, 23 (45 percent) of all the original tenants continue to reside at Mission Creek. Of the 12 tenants placed from the SNF and the 39 (43 percent) tenants placed from the community, 10 (83 percent) and 17 (43 percent), respectively, have exited since the building opened. Of the tenants placed from the SNF who have exited, 4 died in their apartments and the others left Mission Creek to return to LHH and subsequently died while residing there (1 tenant was evicted

but was subsequently admitted to the SNF). Tenants placed from the SNF resided in the facility for an average of 3.7 years, which was significantly less time compared with 6.1 years for seniors placed from the general community. Assuming that the tenants placed at Mission Creek from the SNF would have had no other placement options to exit the SNF and would have remained in the nursing facility instead of being placed at the supportive housing facility, we estimate that 16,433 days at the SNF were avoided by having access to this residential community setting.[1] This figure corresponds with a cost savings of $9.2 million to Medi-Cal for the past 7.0 years. The total cost (including rent, day health services, and hospital-based care) for all 51 tenants of Mission Creek while residing in the building between May 2006 and January 2014 was approximately $8.5 million.

Discussion

This study is consistent with other studies that demonstrate a significant reduction in healthcare costs when chronically homeless adults are placed in permanent supportive housing. The low level of hospital utilization after the first year in housing is sustained during the 6 subsequent years under review, particularly in the tenants placed from the SNF. For the 12 people who were at the SNF and then housed at Mission Creek, the costs that would have been incurred if they had remained at LHH are far more than the public cost needed to operate Mission Creek for all 51 DAH tenants during the 7 years the building has been operational. Most government-supported costs reported in the article come from rent with onsite services and adult day health services with modest expenses for in-hospital costs after placement in housing.

In many communities, the paucity of service-enriched permanent supportive housing targeting frail seniors exiting nursing homes markedly delays or eliminates the option to place seniors in the general community. These individuals used limited hospital-based resources while living in the general community and were able to remain autonomous in the general community with onsite services and outpatient medical care. In addition, placement in independent housing with a lease adheres to the intent of the Olmstead decision, which requires the public sector to place adults with disabilities in the least restrictive environment possible.

This study has limitations. One major limitation is that data on healthcare use were drawn only from the public healthcare system. Other tertiary care private and university hospitals in San Francisco and the surrounding area could have served the residents of Mission Creek. Nonetheless, in previous studies, we have found that fewer than 10 percent of homeless adults sought emergency room care or had inpatient days in hospitals outside the public sector (Bamberger and Dobbins, 2013). In addition, no other publically supported SNF exists in San Francisco, so it is unlikely that tenants of Mission Creek were able to access SNF services that were not assessed in this analysis. Next, although this analysis may not have captured all healthcare use, we found no systematic reason to hypothesize that the visits to the private sector would have been considerably different before or after placement in Mission Creek. Another limitation is the small sample size, especially because only 12 tenants came from the SNF. Another limitation is the lack of a control group that remained homeless or in an SNF to compare with the individuals who moved into Mission Creek.

[1] We recognize this statement is a strong assumption; please see Discussion section.

Having a comparison group could have helped to determine if the reduction in healthcare costs observed in the cohort was only a "regression to the mean" effect rather than a true reduction in healthcare costs because of the intervention. Although having an appropriate control group would have been particularly useful when comparing the healthcare use of the tenants referred from community sites, we think that using estimates of cost avoided for the tenants placed from the SNF provides an accurate model of the cost had these individuals been unable to be placed outside the institution.

With the implementation of the Affordable Care Act, many states are expecting managed care organizations (MCOs) to accept financial risk for providing health care to homeless adults. Although a small minority of homeless adults will require placement in a SNF based on medical needs, the probability that they will have extended stays in a SNF is a major threat to the financial bottom line for MCOs serving the Medicaid population. Whereas rental costs in an affordable housing setting could be covered by a portion of the public benefits provided to an individual in most communities, the remaining cost of supportive housing could be provided by an MCO in lieu of an extended stay in a SNF. This resource would provide not only a cost-effective option for MCOs but also a community-based alternative to an institutional setting as is required by the Americans with Disabilities Act.

Conclusion

The observed cost savings during the first year after placement of homeless seniors in supportive housing continues for many years. These data support that, hypothetically, by prioritizing access to supportive housing exclusively to seniors exiting nursing homes above other subsets of the homeless population, savings to the healthcare system could be even greater than reported here. Although we believe that all people with chronic medical conditions and homelessness would benefit from placement in high-quality supportive housing, prioritizing seniors exiting nursing homes will result in the greatest healthcare utilization reductions compared with other groups. For healthcare payment systems that are reluctant to use healthcare dollars to fund placement alternatives to nursing homes, starting with seniors who are stuck in nursing homes because of a lack of community alternatives would be a good initial entry to reducing systemic barriers between housing and healthcare providers. Systems that are built on a wait-list model rather than on clinical prioritization may create a more equitable strategy to access housing but will be unlikely to maximize the economic benefits of using housing as a healthcare intervention. Targeting seniors who are exiting a SNF for placement in supportive housing is a strategy that could markedly reduce the cost of serving homeless people, many of whom have recently enrolled in Medicaid as part of the Affordable Care Act. Frail seniors with a history of homelessness have a high mortality rate. Service-enriched, independent supportive housing such as Mission Creek can play an important role in caring for this highly vulnerable population so that their final years of life can be of the highest quality and with the greatest levels autonomy, and they can be less expensive than prolonged stays in nursing homes. As the homeless population ages, expanding this type of housing should be a focus of the healthcare system to create more alternatives to institutional end-of-life care for homeless seniors (Hahn et al., 2006). In addition, MCOs would significantly mitigate the financial risk that comes with the increased responsibility to provide health insurance to homeless seniors by supporting part of the cost of providing supportive housing and controlling access to this housing for their members.

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