

# Long-term Cost Effectiveness of Placing Homeless Seniors in Permanent Supportive Housing

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## **Abstract**

**Background:** Housing chronically homeless adults reduces homelessness, improves health outcomes, and reduces health care costs. The greatest reduction in health care costs after placement in supportive housing is seen among chronically homeless adults and seniors who are frequent users of the health care system and who are placed in high-quality housing programs. In this study, we report on the long-term costs in a Housing First program. We compare health care use between homeless seniors placed in housing from a skilled nursing facility (SNF) with those placed from the general community.

**Methods:** Housing outcomes and hospital costs were gathered from a centralized database. Data from 1 year prior to move-in was compared with data from the 7 years subsequent to moving into a new supportive housing facility

**Results:** For the 51 seniors placed in permanent supportive housing, there was a \$1.46 million cost reduction in hospital-based health care compared with the year prior to placement. By placing individuals in independent housing, we estimate that 16,433 days of care in an SNF was avoided, corresponding with a cost to Medicaid and Medicare of approximately \$9.2 million in a 7-year period.

**Conclusion:** Permanent supportive housing can be a highly cost-effective placement option for homeless seniors exiting SNFs, particularly as they approach the end of life. Prioritizing enriched, high-quality housing toward homeless seniors exiting institutions offers homeless adults the opportunity to live in a least-restrictive environment and can reduce the overall government expenditure for serving this vulnerable population. With managed care organizations increasingly taking on the financial responsibility for the health care of this population, investing in permanent supportive housing will reduce cost and mitigate the risk of insuring these individuals who are some of the most frequent users of the health care system.

## Background

Housing chronically homeless adults reduces homelessness, improves health outcomes, and reduces health care costs.<sup>1,2,3</sup> The US Secretary of Housing and Urban Development, Shaun Donovan, concluded that supportive housing is less expensive for the government than permitting chronically homeless people to stay on the street or in shelters.<sup>4</sup> 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 health care expenditures. Although supportive housing has been shown to reduce cost for homeless adults who are frequent users of the health care system, little attention has been given to how supportive housing might serve homeless adults as they approach the end of life.

Studies measuring health resource use among homeless people before and after placement in permanent housing have documented significant short-term reduction in public expenditures.<sup>5</sup> However, few studies report on the long-term effect on health and health care use following placement. In addition, most studies assessed resource use after housing homeless people from the streets or shelters, whereas 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. In May 2006, Mercy Housing opened Mission Creek Apartments, a new affordable housing development serving 139 seniors (older than 61 years) with 51 units reserved to serve homeless seniors through the DAH program (see Figure 1). The facility provides state-of-the-art studio and 1-bedroom apartments that overlook San Francisco Bay and are adjacent to the city’s professional baseball stadium (AT&T Park). Preliminary reports indicated a significant reduction in health care use for the DAH tenants in the first year of placement at Mission Creek.

*Figure 1. Mission Creek*



- 1 Larimer ME, Malone DK, Garner MD, et al. Health care and public service use and costs before and after provision of housing for chronically homeless persons with severe alcohol problems. *JAMA*. 2009;301(13):1349–1357.
- 2 Sadowski LS, Kee RA, VanderWeele TJ, Buchanan D. Effect of a housing and case management program on emergency department visits and hospitalizations among chronically ill homeless adults: A randomized trial. *JAMA*. 2009;301(17):1771–1778.
- 3 Holtgrave DR, Wolitski RJ, Pals SL, et al. Cost-utility analysis of the housing and health intervention for homeless and unstably housed persons living with HIV. *AIDS Behav*. 2013;17(5):1626–1631.
- 4 *The Daily Show*. Comedy Central. March 12, 2012.
- 5 Doran K, Misa E, Shah N. Housing as health care—New York’s boundary-crossing experiment. *N Engl J Med*. 2013; 369(25):2374–2377.

We present data on the health care use of these 51 seniors during the past 7 years since the building opened. In addition, we report on the housing outcomes, health care use, and health care 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 health care expenditures.

## Methods

As with other Housing First programs, tenants do not need to prove sobriety or compliance with treatment to qualify for the housing. For program eligibility, applicants must be homeless at the time of application submission to the DAH program or must have been homeless prior to entering an institution. Tenants agree to pay rent through a third-party rent payee. The rent amount is fixed at \$377 per month. Tenants who have income less than \$754 per month (double the rent) are ineligible for this facility (though they are eligible for other DAH buildings). Tenants are selected from a pool of referrals to the DAH Access and Referral Team, which assesses the clinical condition of each applicant and prioritizes applicants who have the most severe medical, psychiatric, and substance use conditions but are able to safely live independently. In addition to the 2 on-site case managers, DAH tenants may have outside case management from programs targeting seniors or frequent users of the health care system. Most tenants also have in-home support service providers to assist with house-keeping, food preparation, and medication reminders. The facility has an on-site adult day health program (in which functional activities, nursing services, food, physical therapy, occupational therapy, and socialization are provided). Entry to the day health program is based on tenant request to enroll and meeting medical eligibility for the 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.

Medical records maintained by the San Francisco Department of Public Health (Lifetime Clinical Record) were used to determine use of inpatient and emergency department services at San Francisco General Hospital—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.<sup>6</sup> 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 skilled-nursing facility, 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 post 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. The DAH program provided data on tenant demographics, as well as dates of housing entrance and exit (as applicable).

Estimation of medical care costs were based on 2012 median Medi-Cal (California’s Medicaid program) reimbursement rates for San Francisco General Hospital: \$502 per emergency room encounter; \$1,440 per night spent in an inpatient hospital ward; and \$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 a SNF, voluntary exit, or eviction. Statistical analysis was performed with Stata 12 (StataCorp, 2011), using 2-tailed,  $X^2$  tests and Fisher’s exact tests.<sup>7</sup>

## Results

In May 2006, 51 homeless seniors moved into Mission Creek Apartments. Average age of the tenants upon entry was 67 years; 67% were male, 47% were white, 29% were African American, 12% were Latino, and 14% were Asian/Pacific Islander (Table 1). Of the 12 (24%) referred from the SNF, all had an extensive history of

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6 San Francisco Planning and Urban Research Association. Homelessness in a progressive city. Available at [http://www.spur.org/publications/library/report/homelessnessinaprogressivecity\\_080102](http://www.spur.org/publications/library/report/homelessnessinaprogressivecity_080102). Accessed Feb. 23, 2014.

7 *Stata Statistical Software* [computer program]. Version 12. College Station, TX: StataCorp; 2011.

homelessness prior to an extended stay in the SNF. For the 51 seniors who initially moved into Mission Creek, the estimated cost to the public health care system to provide hospital (medical and psychiatric inpatient or emergency department) and SNF care the year prior to moving in to Mission Creek was \$1,710,430 (Table 2). Between the opening date and January 1, 2014, the tenants residing in Mission Creek used \$249,460 in public hospital or SNF care costs, which was \$1.46 million less than the cost to care for these 51 people in the year prior to placement.

Almost one-half (47%) of all the tenants of Mission Creek enrolled in the on-site adult day health program. A higher percentage of tenants referred from the general community (51%) attended day health compared with the tenants referred from the SNF (33%). Attendance 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 while they resided at Mission Creek.

The 2013 public expenditure for rent and support services for the 51 DAH tenants (including operations, janitorial services, property management, and case management) was \$792,114 (\$462,280 in a local operating subsidy and \$322,834 in a contract for support services) or approximately \$6.2 million since the building opened in 2006. Tenants contributed \$230,724 per year to rent.

As of January 2014, 23 (45%) of all the original tenants continue to reside at Mission Creek. Ten of the 12 (83%) tenants placed from the SNF and 17 of 39 (43%) of the tenants placed from the community have exited since the building opened ( $P = .12$ ). 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 ( $P = .0008$ ). 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. This figure corresponds with a cost savings of \$9.2 million to Medicaid and Medicare for the last 7 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 showing a significant reduction in health care costs when chronically homeless adults are placed in permanent supportive housing. The low level of hospital-based health care use after the first year of move-in is maintained during the 7 years of placement, particularly for the tenants placed from the SNF. The predicted cost avoided in SNF days for the 12 tenants placed in Mission Creek from the SNF was less than the public cost to support the housing and health care costs of all 51 DAH tenants during the 7 years the building has been operational. The majority of government-supported costs reported here come from rent with on-site services and adult day health services with modest expense of 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. While living in the general community, these individuals used limited hospital-based resources and were able to remain autonomous in the general community with on-site 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 health care use were drawn only from the public health care 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% of homeless adults sought emergency room care or had inpatient days in hospitals outside

of the public sector.<sup>8</sup> 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 health care 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 lack of a control group that remained homeless or in an SNF to compare with the individuals who moved into Mission Creek. Although having an appropriate control group would have been particularly useful when comparing the health care use of the tenants referred from community sites, 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 of 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 an SNF is a major threat to the financial bottom line for MCOs serving the Medicaid/Medicare 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 that is required by the Americans with Disabilities Act.

## Conclusion

The observed cost savings during the first year after placement of homeless people in supportive housing continues for many years. By prioritizing access to supportive housing exclusively to seniors exiting nursing homes over other subsets of the homeless population, savings to the health care system could be even greater than reported here. Systems that are built on a wait-list model rather than 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 health care intervention. Targeting seniors for placement in supportive housing who are exiting a SNF 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 last years of life can be of the highest quality, with the greatest levels autonomy, and can be less expensive than prolonged stays in nursing homes. As the homeless population ages,<sup>9</sup> expanding this type of housing should be a focus of the health care system to create more alternatives to institutional end-of-life care for homeless seniors. 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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8 Bamberger J. Paper presented at: North American HIV/Housing Conference; May 2013; Montreal, Canada.

9 Hahn JA, Kushel MB, Bangsberg DR, Riley E, Moss AR. The aging of the homeless population: Fourteen-year trends in San Francisco. *J Gen Intern Med.* 2006;21(7):775-778.



*Table 1. Tenant Demographics*

	<b>Total</b>	<b>Placement From SNF</b>	<b>Community Placement</b>	<b>P Value</b>
<b>Total (%)</b>	51	12 (24%)	39 (76%)	
<b>Sex</b>				.773
Male	34 (67%)	8	26	
Female	17 (33%)	4	13	
<b>Average Age (y)</b>	67	67	68	.890
<b>Race/Ethnicity</b>				.344
White	24 (47%)	4	20	
African American	15 (29%)	5	10	
Latino	6 (12%)	1	5	
Asian/Pacific Islander	7 (14%)	3	4	

Table 2. Estimated Costs

	<b>Total</b>	<b>Placement From SNF</b>	<b>Community Placement</b>	<b>P Value</b>
<b>Total Hospital-based Health Care Costs Year Before Placement (Average per Tenant)</b>	\$1,717,430 (\$33,537)	\$1,617,430 (\$134,202)	\$100,000 (\$2,564)	.0001
Inpatient days	152	63	89	
Emergency room episodes	5	2	3	
Skilled nursing days	2852	2852	0	
<b>Total Hospital-based Health Care Cost While Placed (Average per Tenant)</b>	\$249,460 (\$4,891)	\$4,400 (\$367)	\$245,060 (\$6,284)	.0019
Inpatient days	181	4	177	
Emergency room episodes	37	0	37	
Skilled nursing days	37	0	57	
<b>No. Who Participated in Day Health Program (%)</b>	24 (47)	4 (33)	20 (51)	.0253
Cost of day health while tenant resided in housing	\$ 2,046,314	\$ 409,396	\$ 1,636,918	
<b>No. Exiting Housing (%)</b>	27 (52)	10 (83)	17 (43)	.012
No. exiting to SNF (%)	11 (22)	5 (41)	6 (15)	
Deaths (%)	11 (22)	4 (33)	7 ((17)	
Evictions (%)	5 (10)	1 (8)	4 (10)	
<b>Years per Tenant in Housing After Placement</b>	5.6	3.7	6.1	.0008



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