The Emerging Crisis of Aged Homelessness:

Could Housing Solutions Be Funded by Avoidance of Excess Shelter, Hospital, and Nursing Home Costs?

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Contemporary homelessness is in large part a *birth cohort* phenomenon, disproportionately affecting people born in the latter half of the post-War baby boom (1955-1965).

Figure 1: Age Distribution of Adult Male Shelter Users in the United States
Source: Culhane et al. (2013)/ U.S. Census Bureau Decennial Census Special Tabulation

1 in 3 sheltered homeless single adult males was 46-54 in 2010 (1 in 5 in 2000, 1 in 8 in 1990)
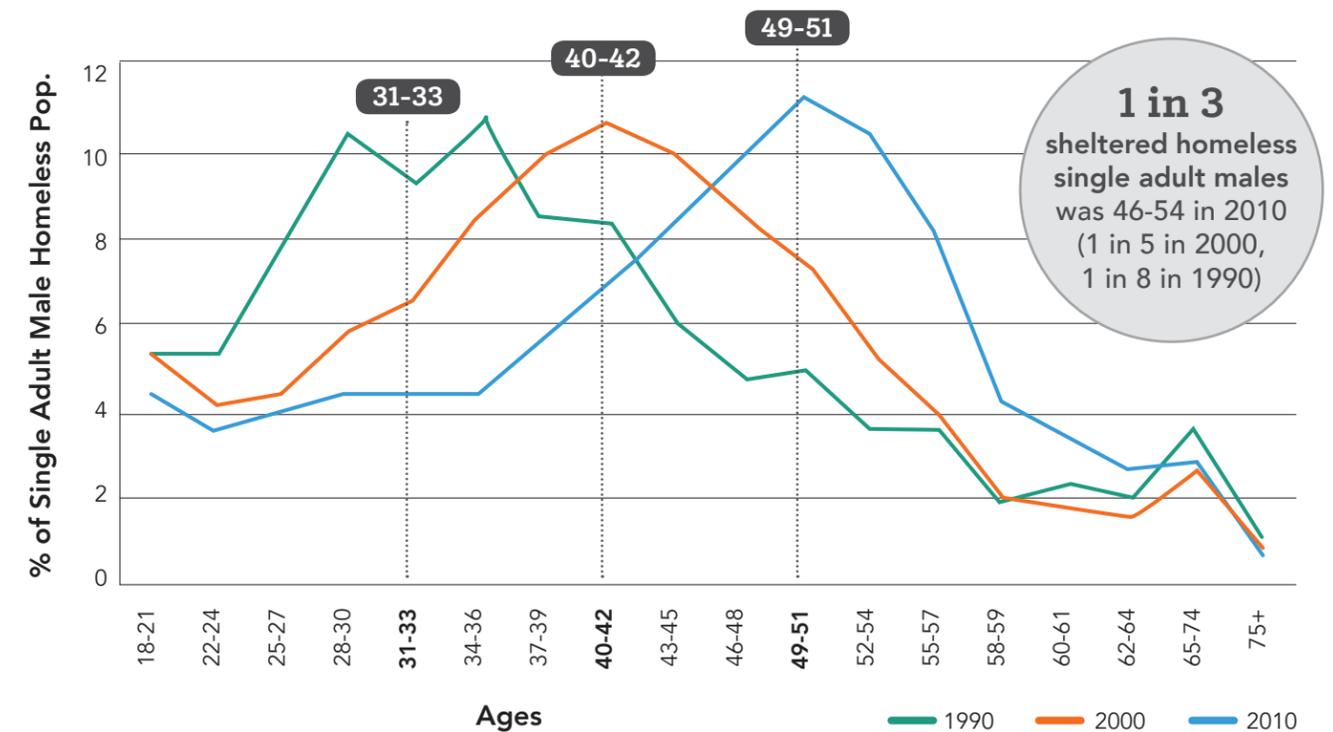
Data from three decennial censuses have revealed that contemporary homelessness among single adults is concentrated among persons born in the latter half of the post-War baby boom (1955-1965) and in the years immediately adjacent to that period (Culhane et al, 2013).[1] Demographers refer to this as a "cohort effect," or more specifically an "Easterlin cohort effect," named after the demographer Richard Easterlin. Easterlin hypothesized that individuals born after the peak of a baby boom are more likely to be economically disadvantaged relative to their predecessors due to an excess supply of workers at the time of their labor market entry, among other factors (Easterlin, 1987; Macunovich & Easterlin, 2008.).

[1] Figure 1 includes adult male shelter users only, as the decennial census data available could not disaggregate females who were single adults versus heads of family households, skewing the results toward the younger mothers.

Preceded by a surge in the supply of workers and in housing demand, people from the second half of the post-War baby boom faced crowded labor and housing markets with higher competition for employment, downward pressure on wages, and upward pressure on housing prices. Combined with back-to-back recessions in the late 1970s and early 1980s, young adults coming of age in the 1980s faced challenging economic circumstances. This was especially true for those with a high school education or less, as they were the least prepared to compete in these tightened marketplaces. Consider that young black men in their 20s had an unemployment rate of nearly 25% in 1983, a rate unmatched in recent history, and nearly double the rate ten years earlier or ten years later (U.S. Bureau of Labor Statistics, 2019).

Unemployed and underemployed young adults, many accompanied by their children, became the face of homelessness in the mid-1980s, as the problem was newly visible on our nation's streets for the first time in decades. As Figure 1 illustrates, this cohort effect has persisted for 30 years. While the people who experience homelessness are not the same from day to day--or even year to year--the 1980s saw the emergence of a generational dislocation that would sustain a heightened risk for homelessness among this birth cohort.

Now, that generation is prematurely aging and dying. Older homeless adults have medical ages that far exceed their biological ages. Research has shown that they experience geriatric medical conditions such as cognitive decline and decreased mobility at rates that are on par with those among their housed counterparts who are 20 years older (Brown et al., 2017; Brown, Kiely, Bharel, & Mitchell, 2012). As a result, health care and nursing home costs are likely to increase significantly over the next 15 years.

This report summarizes a multi-site study in three localities – Boston, New York City, and Los Angeles County – of the anticipated future of the aged homeless population, its likely impacts on health and shelter systems and resulting costs, and the potential for housing solutions. Specifically, this report summarizes the following analyses:

✚ Forecasts of the size of the aged homeless population to 2030

✚ Projected costs associated with the use of shelter, health care, and long-term care by this aged homeless population

✚ Segmentation of the forecasted aged population based on the intensity of health and shelter use by various subgroups

✚ Proposed housing and service intervention models matched to the varying level of housing and services needs of these subgroups

✚ Potential service cost reductions associated with housing interventions based on scenarios from prior literature

✚ The net cost of the proposed housing interventions based on the potential for shelter, health, and nursing home cost offsets

The report concludes with some considerations regarding how to pay for potential housing solutions, given the complexity of the various funding streams. Absent new housing solutions, substantial public resources will otherwise be spent unnecessarily on excess shelter, health, and long-term care use.

The aged homeless population is growing rapidly and will continue to grow for the next decade.

Figure 2: Forecasted Relative Change in the 65 and Older Homeless Population Compared to 2017
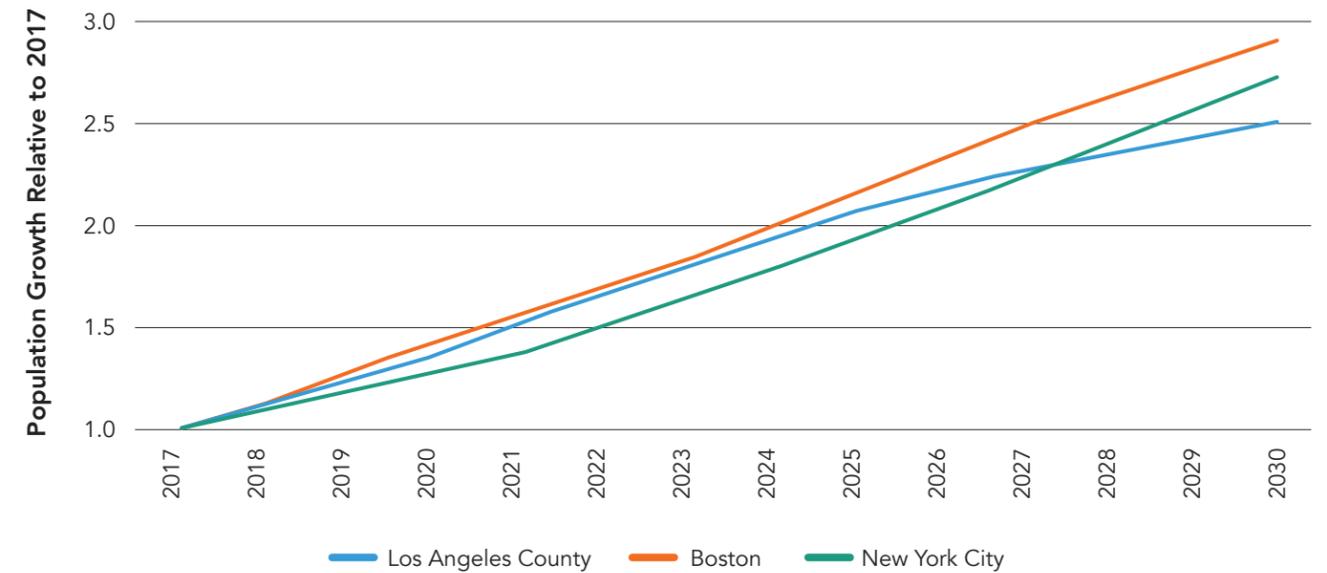
Recent historical shelter records from the three study localities were used to develop forecasts of shelter use by persons 55+ and 65+ through 2030. Multiple forecasting models were developed and tested by the research team with minor methodological differences between sites to account for site-specific factors (see the site-specific reports for details). The final forecasts reflect the intermediate estimates and incorporate expected declines in shelter use associated with death and other age-related exits.

The results, depicted in Figures 2, 3 and 4, project significant growth in aged homelessness, especially among people aged 65+. The forecasts appear quite similar across the three localities, with a nearly threefold growth rate in Boston for those aged 65+ at the higher end and a 2.5 times growth rate for Los Angeles County on the lower end (Figure 2).

In New York City (Figure 3a) the number of homeless adults 65+ will grow from 2,600 in 2017 to 6,900 by 2030. The corresponding growth in Boston (Figure 3b) is from roughly 570 in 2017 to roughly 1,560 by 2030, and in LA County (Figure 3c), 4,700 in 2015 to 13,900 in 2030.

Figure 3a:
New York City,
65+ 2011-2030
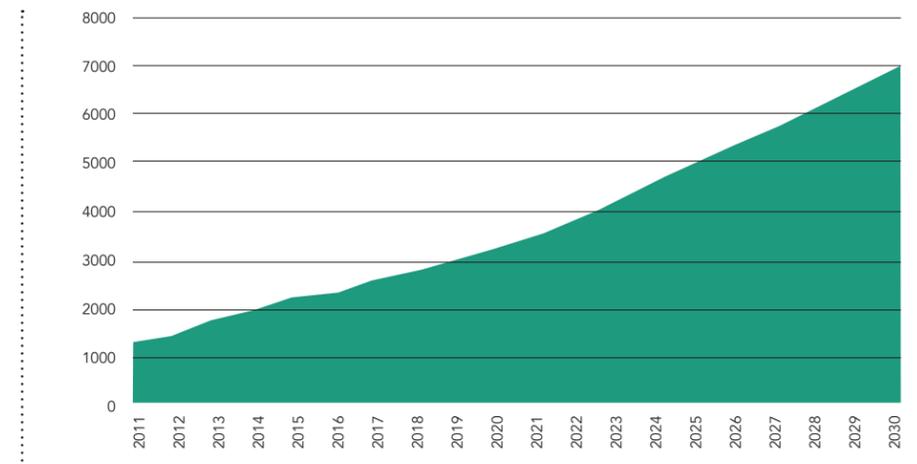
Figure 3b:
Boston, 65+
2011-2030
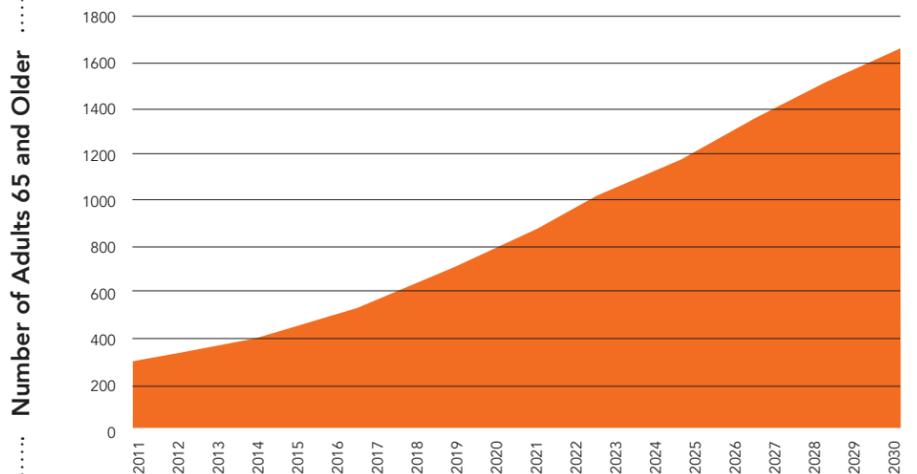
Figure 3c:
LA County, 65+
2011-2030

Number of Adults 65 and Older
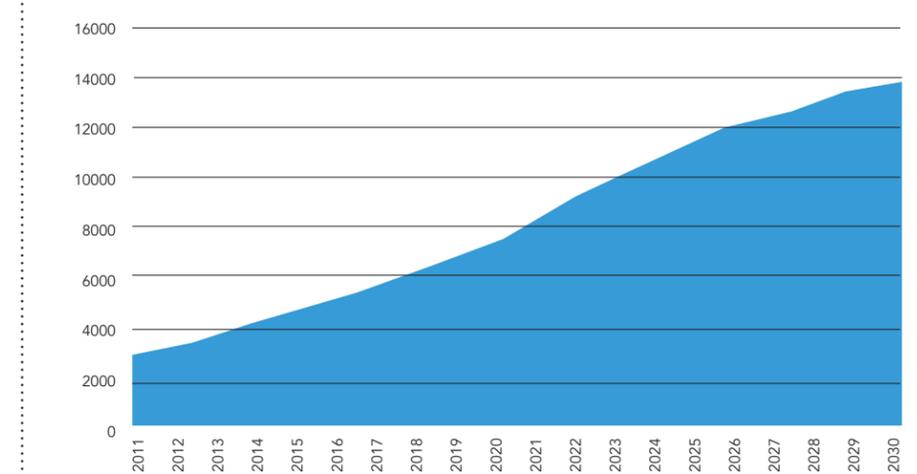
Figures 4 a, b, and c show the growth rate for the 55+ population, which includes the 65+ population. As expected, the growth of the age 55-64 population slows over time, as the impact of the post-War cohort on this age group tapers off by 2025. Importantly, these figures reveal that much of the impact of the post-War baby boom on the aged homeless population is already well underway. In other words, the growth in the 65+ homeless population does not reflect a newly increasing risk for homelessness among aged adults, but merely the continuation of unprecedented levels of homelessness among the late Baby Boom cohort from late middle age into older age.

Figure 4a:
New York City,
55+ 2011-2030

55-64   65+
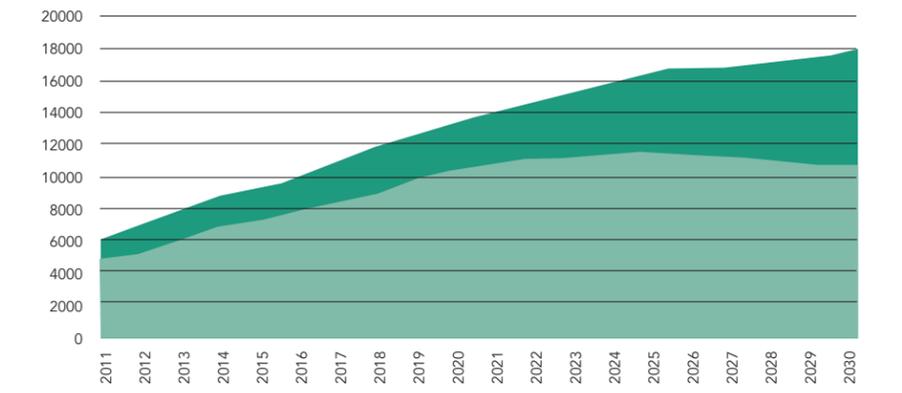
Figure 4b:
Boston, 55+
2011-2030

55-64   65+
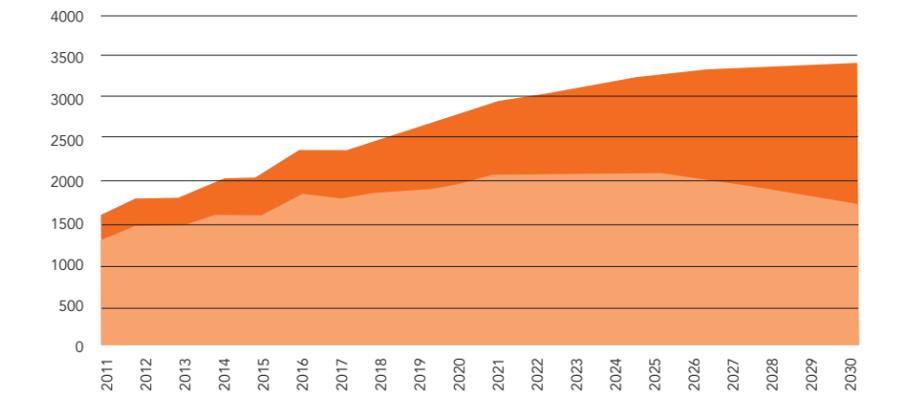
Figure 4c:
LA County, 55+
2011-2030

55-64   65+
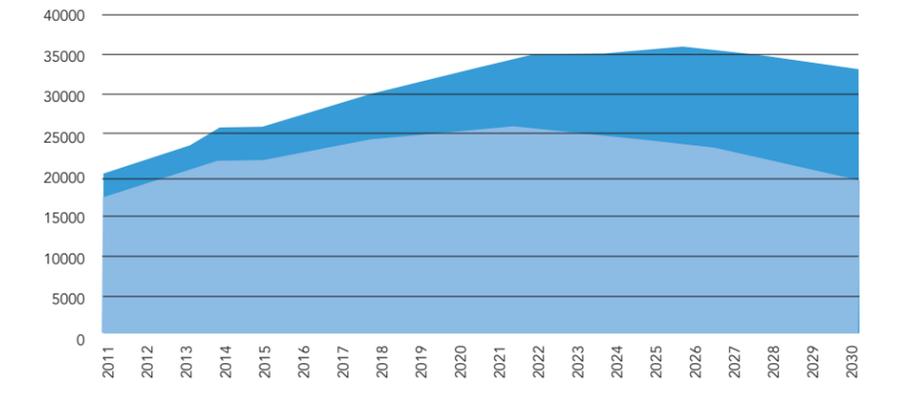
Los Angeles County is the only site in which the total 55+ population is likely to peak before 2030, growing by 75% from 20,550 in 2011 to 36,045 in 2025 before decreasing by 2,600 through 2030. This is primarily because the LA County homeless population is already older than the NYC and Boston populations. The 55+ population in Boston is expected to level off by 2029 and decrease thereafter, with New York expected to show decreases beginning in the early 2030s.

As aged homelessness grows, so too will service use and costs, including for hospital and nursing home stays.

Recent historic shelter data from the three study sites were merged with corresponding data on health services use, as well as from national nursing home data from US DHHS CMS for LA County and NYC.[2] In one important difference, the NYC and Los Angeles County sites were matched with the all-payer data in their respective states, thereby including Medicaid-, Medicare-, and private- or self-paid hospital services use. In Boston, however, health records were limited to Medicaid fee-for-service and Medicaid managed care encounter claims. Therefore, the Boston health records do not include health services use paid by Medicare or other insurers, representing a key limitation. In addition, the specific types of services (e.g., outpatient, inpatient, emergency department) available in the health care data varied somewhat among the three sites, meaning health care cost estimates for each site are not directly comparable to one another.

Figure 5a shows the average annual cost of the four services – shelter, emergency department (ED), inpatient hospitalization, and nursing homes, included in the NYC analysis for each 5-year age group in an average year.

Figure 5a: Average Annual Costs by Age, New York City

Figure 5b:
Average Annual
Costs by Age,
Boston
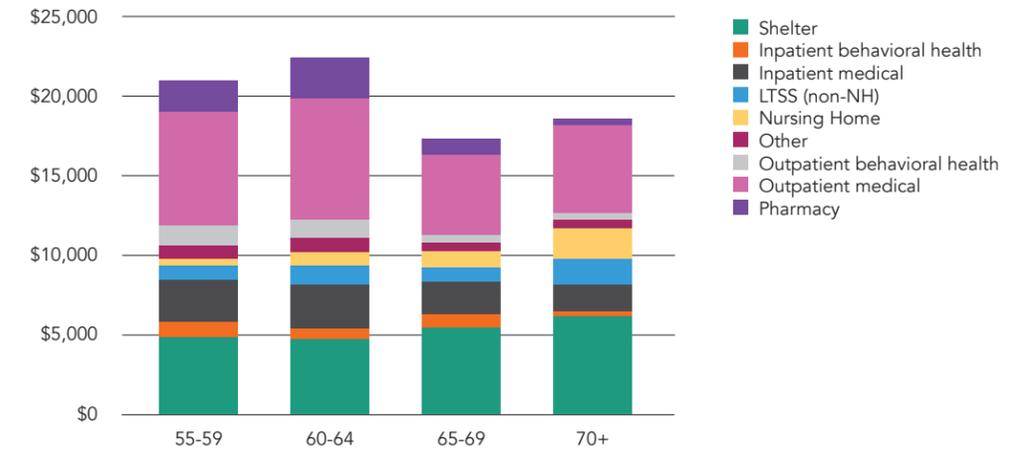
Figure 5c:
Average Annual
Costs by Age,
LA County
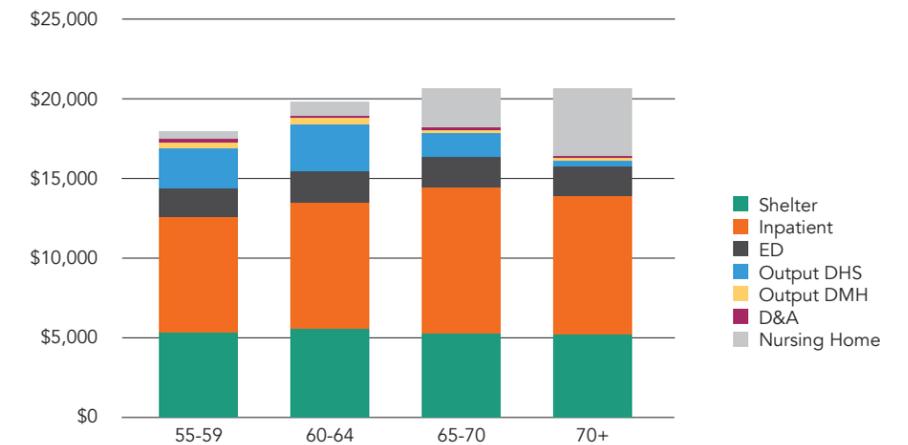
In general, costs increase with age. The overall costs are slightly higher in New York City than in Boston and LA County, owing to higher shelter and health care reimbursement rates there. But, the overall trend is consistent, with the one exception being Boston, where the lack of Medicare data is likely contributing to a drop in measured health services for persons 65+. Again, the site reports provide greater detail on measurement and cost estimates.

The increased use of nursing homes by age was a consistent trend across the three study localities. As seen in Figure 6 for LA County, for example, nursing home days shows a big jump at age 65 and continued growth as age progresses.

[2] See the site reports for details on the data sources and cost estimation methods. They can be accessed at https://www.aisp.upenn.edu/aginghomelessness/

Figure 6: Nursing Home Use by Age, LA County
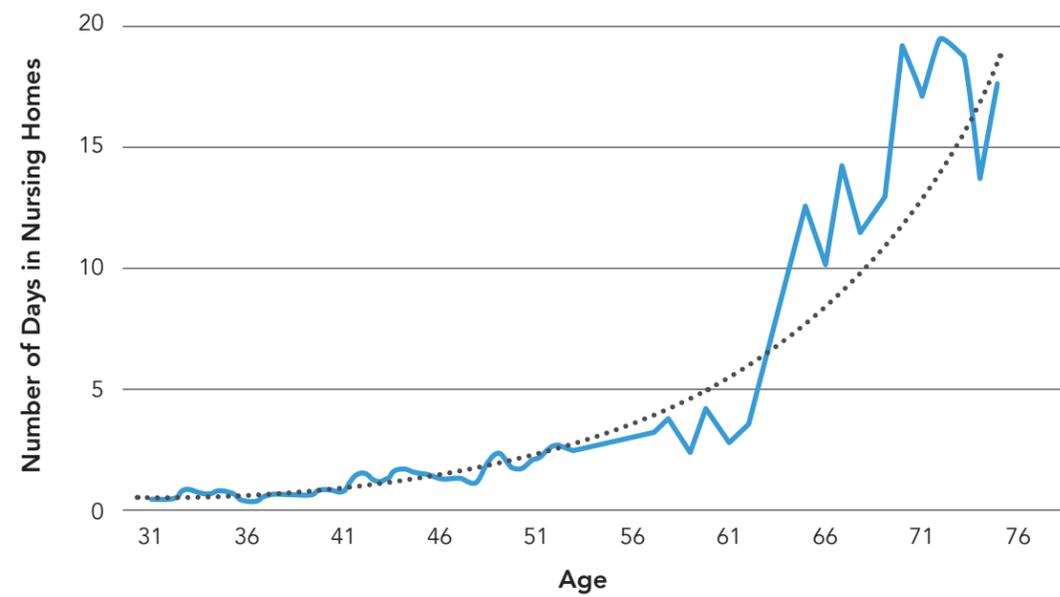
Combining annual shelter and health care costs with the population projections from the previous section allows us to estimate future costs across systems and time, as seen in Figures 7a, b, and c. Figure 7a, presenting New York City data, suggests that annual costs are projected to triple from 2011 to 2030, from approximately $150m to $461m annually.

Boston (Figure 7b) follows a similar trajectory, with costs more than doubling, from $33.2m in 2011 to $67.4m in 2030. Again, these projections do not include Medicare data and associated cost increases.

In LA County (Figure 7c), total shelter and healthcare service costs are likely to peak in 2026 at $540m, after increasing by 80% from 2011, and then slowly decline through 2030.

Figure 7a: NYC Combined Shelter & Healthcare Costs 2011-2030 (in millions of $)
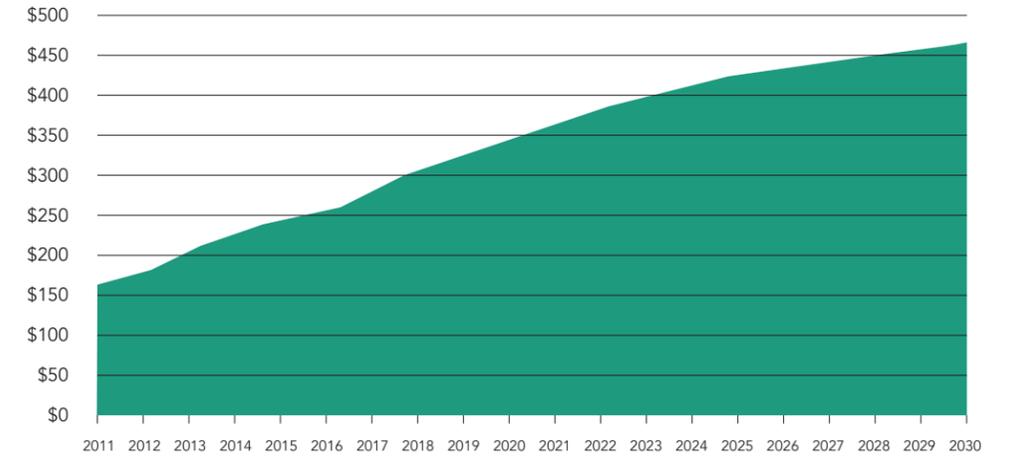
Figure 7b: Boston Combined Shelter & Healthcare Costs 2011-2030 (in millions of $)
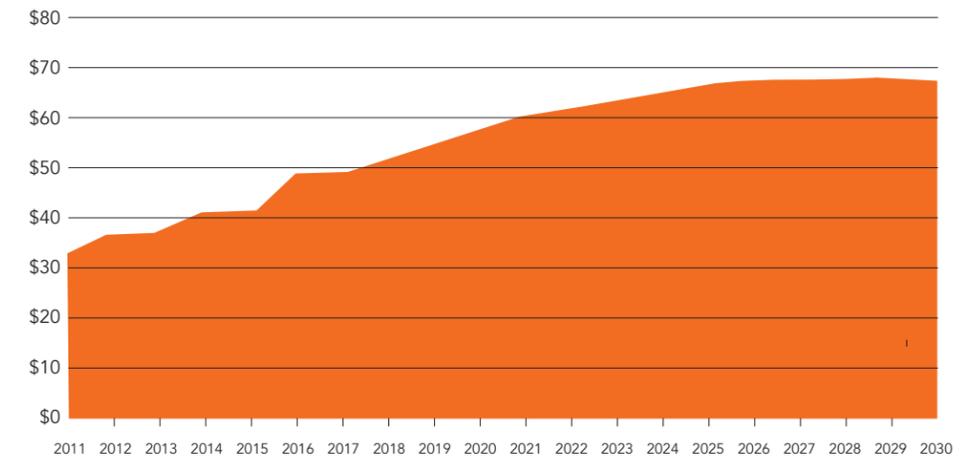
Figure 7c: LA County Combined Shelter & Healthcare Costs 2011-2030 (in millions of $)
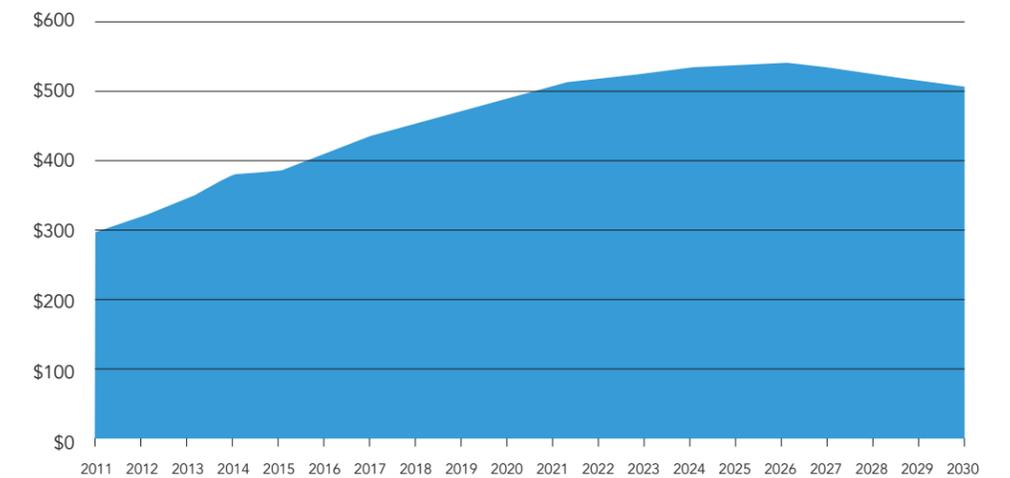
Subgroups among the aged homeless adult population can be segmented to reflect varying degrees of morbidity and intensity of shelter use.

Older adults experiencing homelessness remain a heterogenous population with respect to their housing, health care, social, and other needs. While there is an elevated level of health care need among older homeless adults in comparison with both their younger homeless and contemporary housed counterparts, there remains substantial variation in their use of health care services (Flaming, Burns, & Matsunaga, 2009). Also, homeless persons in general have different patterns of shelter use, with most people's total homeless experience lasting for one or two short episodes, but with substantial minorities experiencing longer and more frequent periods of homelessness (Kuhn & Culhane, 1998). This means that different subgroups of individuals will require different types of housing interventions to obtain housing stability. To better represent the varying needs of older homeless adults, a clustering algorithm was developed to group individuals based on combined shelter and health care use characteristics. Figure 8 presents results from NYC, as illustrative of the three sites, although the number of subgroups and relative distribution across subgroups differs slightly across the sites. Note that these subgroups represent cross-sections in an average year; people are expected to move across these groups over time.

✚ In NYC, four distinct groups of people categorized by their shelter and hospital service use emerged. The largest segment (85% of the sample) had moderate service use across the board, with an average of 44 shelter days, 3 inpatient days, 1 ED visit, and 9 nursing home days each year. Two groups (12% and 1% of the sample, respectively) used larger amounts of shelter (7 and 11 months average annually, respectively) while still having moderate hospital and nursing home use. Group 4, comprising 3% of the sample, had the lowest shelter use but the highest hospital and nursing home use and was, by a factor of nearly four, the most expensive group.

✚ As expected, costs in any given year are relatively concentrated among a small group of high-users. While group 1 represents 85% of the whole cohort, they account for only 62% of costs. Groups 2, 3, and particularly 4, on the other hand, account for a disproportionate share of the total costs. Group 4 makes up 18% of the total costs despite accounting for only 3% of our sample.

Figure 8: Understanding Distinct Groups of Service Users

	Group 1	Group 2	Group 3	Group 4
Percent of the Sample	85%	11%	1%	3%
Shelter Use	Moderate	High	Very High	Low
Hospital & Nursing Home Use	Moderate	Moderate	Moderate	High
Average Annual Costs	$18,536	$38,888	$48,919	$176,494
Percent of Service Costs	62%	18%	3%	18%
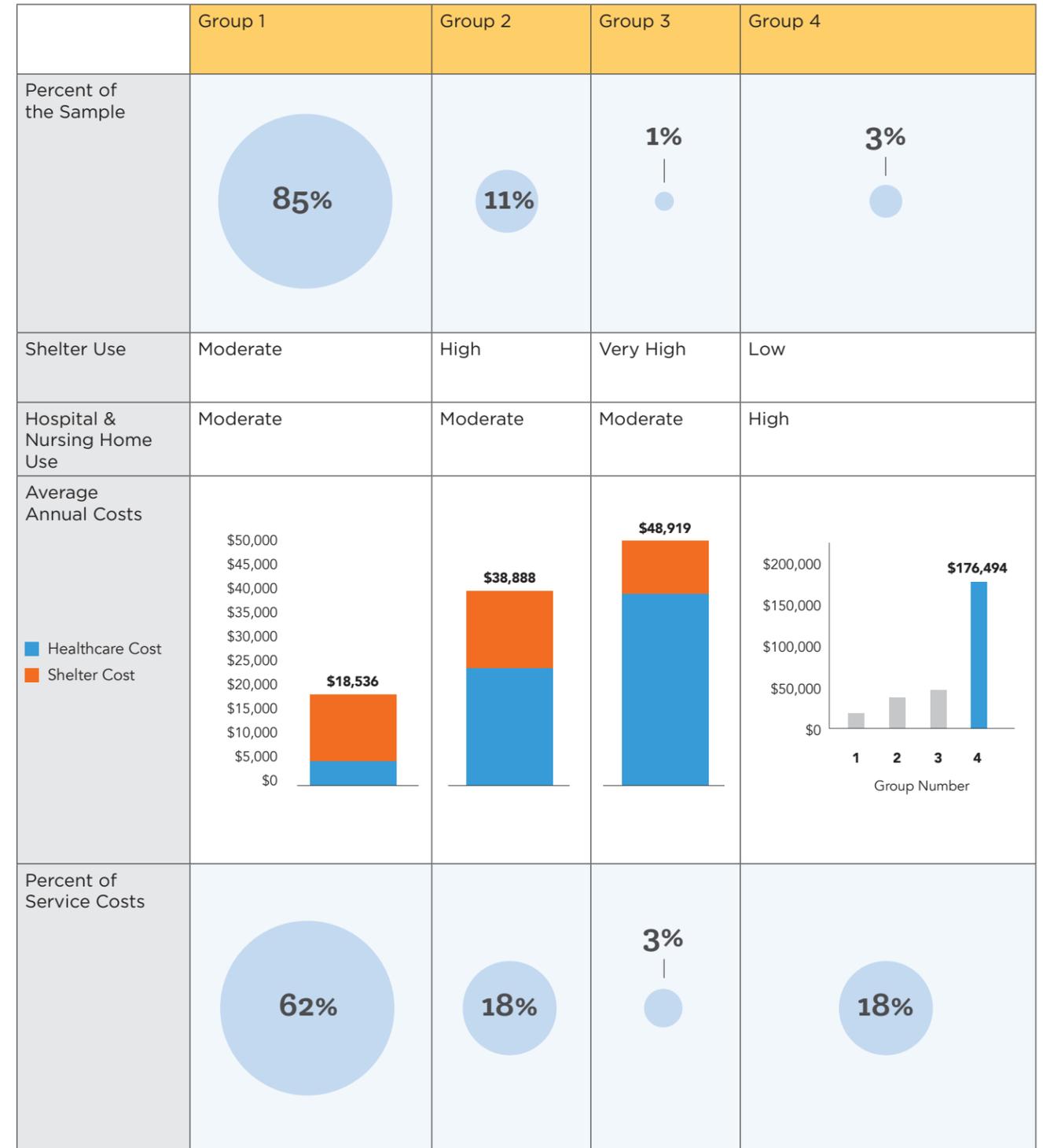
# Housing interventions could be targeted to these segments, with intervention intensity matching need.

The housing and health care use patterns for each of the subgroups correspond to housing approaches already operational in assisting older adults experiencing homelessness. Continuing to use New York City (NYC) as an example, seen in Figure 9, a progressive engagement model that matches intervention intensity to client needs is proposed[3]. It should also be noted that these models assume that nearly all of this population, and certainly those over the age of 65, will be eligible for some Social Security income, such as Supplemental Security Income (SSI), and that SSI outreach efforts like SOAR (SSI/SSDI Outreach, Access, and Recovery) will need to be expanded as part of the overall effort to address aged homelessness.

For Group 1, the largest group, a range of "light touch" case management and housing-oriented interventions are proposed, including rapid rehousing, shallow rental subsidies and standard rent vouchers. Previous research has found that most adult homelessness is temporary, and that a substantial minority of homelessness is self-resolved without formal intervention. Indeed, about one-third to one-half of people who experience sheltered homelessness will exit within 30 days without intervention or with only minimal assistance. Because not everyone who exits homelessness will exit to housing, this "self-resolving" group is estimated here conservatively as one-third of group 1. Other interventions provided to the remaining two-thirds of group 1 are proposed to distribute through a progressive engagement approach:

➕ Rapid Rehousing, for those needing relocation grants and case management services, and time-limited rental assistance as necessary (22% of group 1)

➕ Shallow rental subsidies with relocation and case management services for those who need ongoing, modest rental assistance for shared living arrangements (e.g. with family, friends, partners) (22% of group 1)

➕ Rental vouchers, like those available through HUD's Section 202 program, in addition to light case management, for those expected to be living alone (22% of group 1)

Groups 2, 3, and 4 are proposed to be candidates for Permanent Supportive Housing (PSH), justified by either high shelter use or health care use. All three of these groups will likely need support for enhanced case management and home care services to allow aging in place. In addition, the 3% of adults with the highest health care use in group 4 may also require palliative and nursing home transition services. It is worth noting that the assumption that all of these groups will require PSH is a likely overestimate, and will overstate expected costs, as many in these groups could be candidates for rapid rehousing and other lower cost housing interventions, through a progressive engagement approach.

[3] We use the "progressive engagement" approach as defined in Culhane, Metraux, & Byrne's "A Prevention Centered Approach to Homeless Assistance: A Paradigm Shift?" (2010). The progressive engagement model described does not reflect the current strategy employed by the Coordinated Entry system in the City of Boston

Figure 9: Potential Interventions by Group

	Group 1	Group 2	Group 3	Group 4
Group Descriptor	Moderate shelter & health care use	High shelter use, moderate health care use	Very high shelter use, moderate healthcare use	Low shelter use, high health care use
Percent of Population	85%	11%	1%	3%
Intervention Need	Housing-oriented Progressive Engagement Approach **Tier 1:** Self-resolve, housing advice only **Tier 2:** Rapid re-housing **Tier 3:** Shallow rental subsidy & light case management **Tier 4:** Housing voucher & light case management	Permanent Supportive Housing (PSH)	Permanent Supportive Housing (PSH)	PSH + additional supports like palliative care and nursing home transition services
Average Annual Per Person Costs of the Intervention	Tier 1: 0, Tier 2: $3,337, Tier 3: $8,000, Tier 4: $17,468, Total: $6,444 Costs: Housing / Service	$26,968 Costs: Housing / Service	$26,968 Costs: Housing / Service	$38,468 Costs: Housing / Service
Percent of Total Intervention Costs	43%	40%	5%	13%

Based on the published literature, the placement of people who are formerly homeless in permanent housing is associated with reduced use of shelter, health and nursing home services, and related expenditures.

Assuming that the proposed housing models are brought to scale in line with the approaches described above, excess service use costs associated with homelessness are expected to decline. To estimate this decline, data from 15 studies of permanent supportive housing were gathered to estimate the expected service cost reductions associated with housing placement. To incorporate the uncertainty around cost offset estimates from these prior studies, two scenarios were generated: a more conservative projection in which findings from all prior studies—including those identifying no change in health care costs in certain cost categories—were considered equally, and a less conservative projection that included only findings of significant cost reductions in calculating anticipated average cost offsets. This latter scenario represents cost reductions that might be expected should the implementation of the housing interventions have an effect more in line with what studies identifying relatively larger impacts have found. In both scenarios, the most methodologically rigorous studies received more weight than others (see the site-specific reports for a detailed list of the studies and weightings included in these estimates). The estimated offsets by service type are shown in Table 1, and more detailed information on which service costs are included for each locality is available in the site reports.

Table 1: Cost Offset Scenarios

Cost Category	Scenario 1 (more conservative)	Scenario 2 (less conservative)
Inpatient medical	-18%	-33%
Emergency Department	-6%	-45%
Outpatient medical	-6%	-45%
Outpatient behavioral health	48%	-29%
Inpatient behavioral health	-35%	-56%
Nursing home	-42%	-90%
Shelter	-71%	-71%

Figure 10a: Range of Cost Reductions Across Age Groups: LA County, Average Per Person, Per Year
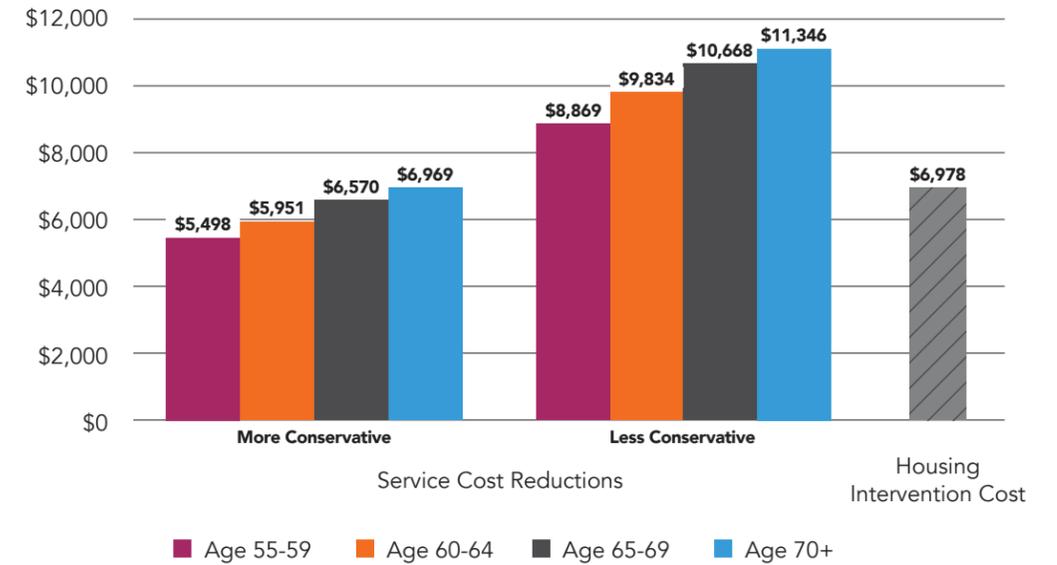
Because increasing age is associated with higher service use, cost reduction estimates also increase with age. Figure 10a shows the service cost savings, for each 5-year age group under each of the cost reduction scenarios in LA County, and suggests that the shelter and health care service costs recouped will grow as clients age. For those 55-59, the net offset (cost reductions minus the cost of the intervention) for a scaled intervention ranges from a cost of $1,500 ($5,498 - $6,978) in the more conservative scenario to a gain of nearly $2,000 ($8,869 - $6,978) in the less conservative scenario. For individuals 70 and older, the projection is for a break-even ($6,969 - $6,978) result in the more conservative projection and a net offset of approximately $4,400 ($11,346 - $6,978) in the less conservative scenario.

For ease of presentation, Figures 10b and 10c present similar findings, aggregated across age groups, for the other two sites.[4] As seen in Figure 10b, New York City's net offsets for a housing and services intervention scaled across all 55 and older homeless adults could be between -$1,900 per person per year in the more conservative scenario and a gain of approximately $2,200 per person per year with less conservative savings assumptions.

Figure 10b:
Cost Reduction Possibilities in NYC, Average Per Person Per Year

Service Cost Reductions
- More Conservative: $9,171
- Less Conservative: $13,214
- Housing Intervention Cost: $11,033
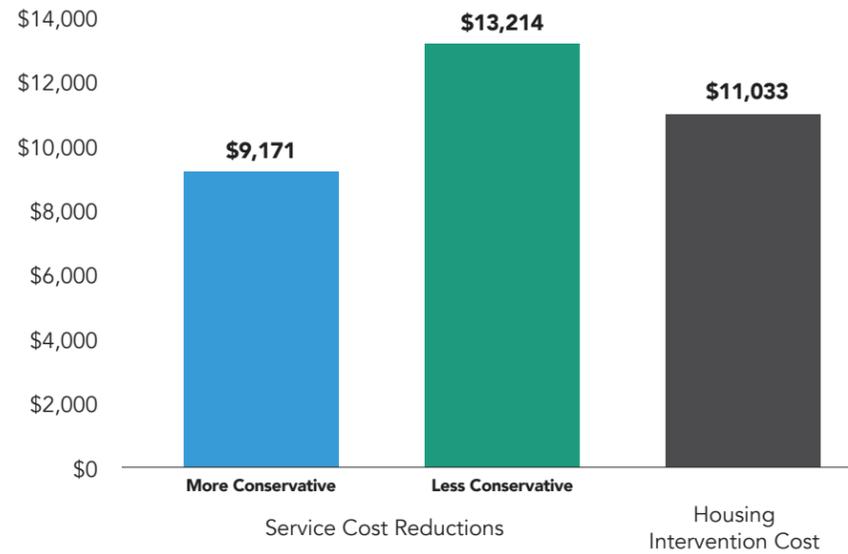
Figure 10c:
Cost Reduction Possibilities in Boston, Average Per Person Per Year

Service Cost Reductions
- More Conservative: $4,946
- Less Conservative: $9,073
- Housing Intervention Cost: $9,052
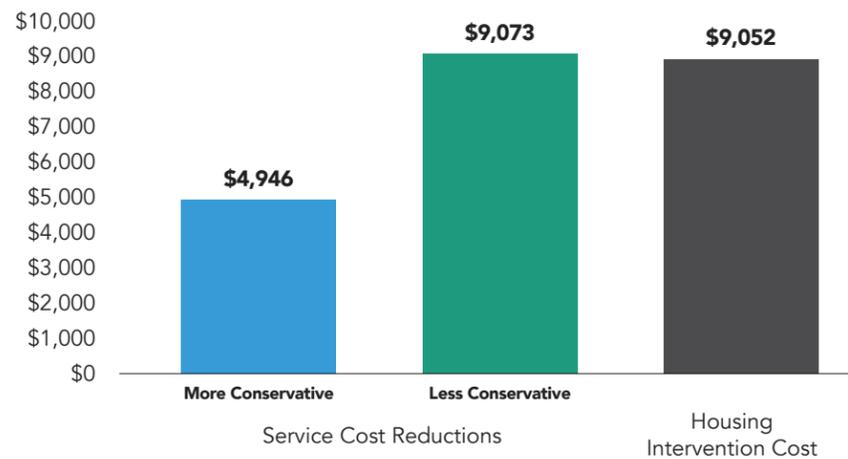
Figure 10c presents the potential cost offsets in Boston. Compared to New York City and Los Angeles County, the average service cost offsets are lower, especially in the more conservative scenario. This is mostly because Medicare reimbursement services were not included in the Boston analysis. In other words, the cost offsets in the Boston analysis represent a lower bound estimate of the actual health care cost offsets from the shelter and health care systems. A forthcoming estimate that includes potential Medicare contributions to these service cost reductions would suggest an estimate that is nearly break-even, even in the more conservative scenario.

[4] The site-specific reports contain detailed estimates by scenario and age group. They can be accessed at https://www.aisp.upenn.edu/aginghomelessness/

Figure 11 continues to use New York City's analysis to illustrate the distribution of people, service costs, housing intervention costs, and service cost reductions across the four population subgroups. As expected, the greatest per-person cost offsets are observed with the highest cost groups. But examining the proportion of intervention costs versus cost reductions across the sample reveals a different picture. While Group 1 has the lowest expected cost reductions, it also requires the least expensive intervention, and therefore accounts for a higher total share of the offsets (64%) relative to its share of intervention costs (43%). This suggests that a scaled intervention even for the lowest cost group could contribute to positive cost offsets overall, not to mention that being housed may increase the potential for avoidance of even higher cost services use in future years when needs among members in this group may change.

Figure 11: Potential Cost Offsets by Group

	Group 1	Group 2	Group 3	Group 4
Group Descriptor	Moderate shelter & health care use	High shelter use, moderate healthcare use	Very high shelter use, moderate healthcare use	Low shelter use, high healthcare needs
Percent of Population	85%	11%	1%	3%
Intervention Need	Housing-oriented Progressive Engagement Approach	Permanent Supportive Housing (PSH)	Permanent Supportive Housing (PSH)	PSH + additional supports like palliative care and nursing home transition services
Percent of Total Intervention Costs	43%	40%	5%	13%
Total Service Cost Reductions Per Person (average scenario)	$7,978	$21,072	$30,599	$49,639
Percent of Total Shelter & Health Care Service Cost Reductions	62%	22%	4%	12%

How can society invest in housing solutions to realize these potential offsets?

The purpose of this study was to engage in an empirically informed thought experiment and to foster dialogue about an impending public health crisis. A coming wave of aged homelessness among the latter half of Baby Boomers is certain, and with it will come an equally certain increase in their aging-related health care costs. The *excess* costs associated with their homelessness—not to mention the avoidable illnesses, exacerbated morbidity, premature disability, and accelerated mortality should compel us to reflect and act.

By simulating potential cost offset scenarios and comparing those to potential intervention costs, this report is calling for urgent reflection on how society could advance funding for housing solutions, from the future savings to be realized from the avoidance of excess shelter, health, and nursing home costs. The complex streams of funding that are currently accessed to address homelessness and health care among this aged cohort make this no easy task. However, that large sums of public funding will go toward this crisis whether we act or not should motivate us to find the best and most responsible use of those funds. We can spend those dollars on potentially unnecessary hospital and nursing home days, or we can improve the quality of life of these vulnerable citizens, reduce the daily demands on hospitals and emergency departments to care for them, and relieve shelters of the burden for large-scale, aging-related care for which they are ill-suited.

The three localities in this study enabled us to envision some of the parameters for this discussion. Table 2 provides a summary for each locality, including the average annual expected shelter, health, and long-term care spending should we do nothing, the average annual costs of a comprehensive housing strategy; and the cost offsets we might anticipate from implementing a comprehensive housing strategy (based on an average of the more and less conservative scenarios). The results for New York City and Los Angeles County are comparable, with estimated returns on investment of 13% and 14% of intervention costs, respectively. The Boston results indicate a net negative offset (or a positive cost) of 23% of the intervention cost. However, the Boston results do not include Medicare spending, and thus represent a lower bound estimate of actual health care cost offsets. Further, a forthcoming analysis of the Boston data, including an estimation of Medicare spending, would suggest that the negative offset may be entirely mitigated even in the conservative offset scenario. Therefore, the estimates here indicate that potentially all of the proposed intervention costs across the sites could be recouped from avoidance of future shelter, health, and nursing home costs.

Finally, for purposes of fostering further national discussion, the three locality projections in this study were projected to the U.S. as a whole based on Annual Homelessness Assessment Report (AHAR) data from 2017 (Figure 12). While this extrapolation should be treated with some caution, as the study localities are not representative of the nation, they suggest that the number of U.S. aged homeless over age 55 could grow to 225,000 by 2026, up from 170,000 in 2017. This growth is mostly driven by a 165% increase in the population 65 and older, from 40,000 in 2017 to 106,000 by 2030. Extrapolating the cost data from this study to the country as a whole, the aged homeless population could cost the nation $5 Billion on average annually in health and shelter use over the next decade.

Table 2: Annualized Average Projected Costs & Offsets (in millions of $)

|	Service Costs without an Intervention	Intervention Costs	Average Service Cost Reductions	Net Offsets (Service Cost Reductions – Intervention Costs)
NYC	$408	$157	$177	$20
Boston	$67	$39	$30	-$9
LA County	$621	$241	$274	$33

Figure 12: National Projections of Older Homeless Adults: 2017-2030
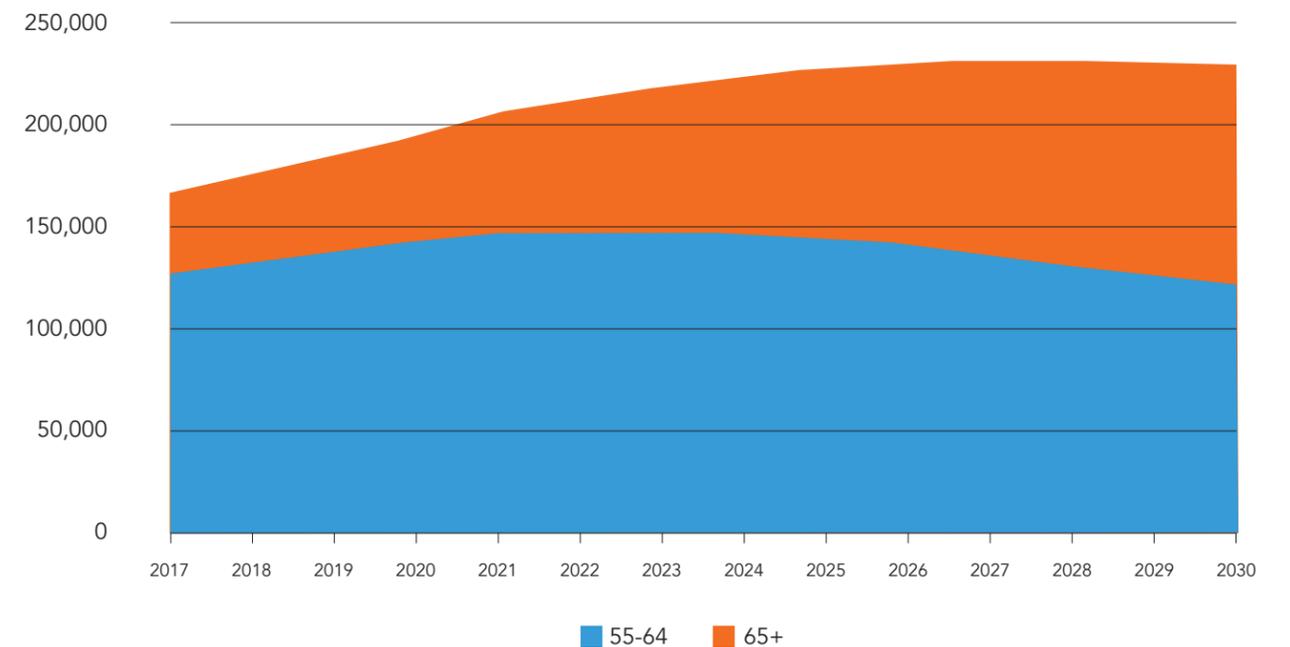
Key Questions for Further Consideration

In the hopes of advancing dialogue and action among relevant stakeholders, here are some concluding questions for consideration:

✚ What role can federal agencies, such as the Departments of Housing and Urban Development, Veterans Affairs, and Health and Human Services, play in supporting expanded access to permanent supportive housing for the highest need subgroups which require that level of subsidy and support?

✚ What role can private Medicaid Managed Care Organizations (MCOs) play in shifting some of their resources to housing solutions, such as rapid rehousing and shallow subsidies, insofar as they may stand to gain from health care cost avoidance associated with housing placement? What regulatory and other barriers do they face? What incentives can be provided? Could cost sharing or matching of funds by other entities, like local homelessness and hospital systems, entice their participation, recognizing that not all of the cost offsets studied here will be realized by MCOs?

✚ What role can hospitals play, as they are on the front lines of addressing the health needs of people who are aging and homeless, and which face care and cost burdens associated with longer-than-necessary hospital stays?

✚ What role can state Medicaid agencies play in planning and funding housing solutions for the aged homeless population, including enlisting MCO and hospital engagement?

✚ What role can local governments play, including agencies responsible for shelter and homeless services, in the outreach for, enrollment in, and deployment of housing solutions, especially rapid rehousing? Can local homeless programs contribute to housing intervention costs through the substitution of shelter funding for housing assistance?

Limitations

This study was based on historical shelter and health care records, and the forecasts for future population growth and costs involve some uncertainty. Intermediate estimates were used in choosing population projections, and conservative choices were made whenever possible to estimate health care costs (see site specific studies for methodological details). The averaging of cost offsets based on the more and less conservative scenarios, as provided in Figures 10b, 10c and 11, and in Table 2, is an intermediate estimate. Although the best available statistical methods were applied, actual population counts and costs in the future will be somewhat different than predicted, even if the projections are strongly anticipated to be in the direction and magnitude reported here. Also, the projections applied here assume no change in patterns of homelessness exits or health care use, and those may change due to unanticipated policy changes.

The analyses reported here are also limited in being cross-sectional. The study results are not based on following cohorts of individuals over time to estimate their trajectories of services use, or subgroups of persons and their trajectories. A study based on trajectories would yield more specific results than reported here; but such an approach was beyond the scope of this project and should be considered for future research. Policy and program planning based on this study will also require further analysis of the impact of varying eligibility and enrollment criteria, the trajectories of people across and between interventions, and the rates at which people will exit or accrue within programs (a "stock and flow" analysis). Such analyses were also beyond the scope here but would be needed to inform more discrete intervention planning decisions.

Finally, this study is limited in that it did not include data on people who are exclusively unsheltered. The Los Angeles County study results were generalized to include estimates for the unsheltered population, and the population projections were adjusted based on unsheltered Point-in-Time data, but it is possible that exclusively unsheltered persons may have patterns and costs of services use that are dissimilar to sheltered populations. Unsheltered persons also incur public costs from sanitation, policing, and emergency medical services, among other areas, and data on these costs were not available for this study and are typically not possible to track and allocate at an individual level. Such costs are therefore undercounted here.

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QUESTIONS?

Any questions or comments about this report should be directed to TC Burnett at burnettt@upenn.edu or 215.573.5827. To access a copy of this report online, as well as the technical site reports from Boston, NYC, and LA County, visit www.aisp.upenn.edu/aginghomelessness