

Tools for Identifying High-Cost, High-Need Homeless Persons

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Tools for Identifying High-Need, High-Cost Homeless Persons

EXECUTIVE SUMMARY

This paper provides tools for identifying homeless individuals with acute needs, the highest public costs when homeless, and the greatest reduction in public costs when housed.

An analysis of 10,193 homeless, destitute single adults in Los Angeles County – 1,007 of whom exited homelessness by entering supportive housing – was carried out in collaboration with the Los Angeles County Chief Executive Office, which linked records for these individuals across multiple public agencies, providing crucial information about their characteristics and the public costs for health, mental health, justice system, and welfare services they used. Supportive housing is permanent, affordable housing with on-site case management and additional on-site, or readily available, services such as health, mental health and substance abuse rehabilitation.

When we rank the overall population of homeless single adults by their public costs and break them into ten groups of equal size (deciles), we find that most have comparatively low public costs. However, the most expensive ten percent:

- Have *average public costs of \$8,083 per month*, compared to \$710 for the other 90 percent, because of extensive use of hospitals and medical and mental health jails;
- Account for *56 percent of all public costs* for homeless single adults; and
- Have *average cost reductions of \$5,731 per month, or 71 percent, when in supportive housing* – a decline in costs that is far greater than for the other nine deciles, both as an absolute dollar amount and as a percent of total costs when homeless.

When information about a person's recent history is available, it is possible to combine multiple characteristics of a homeless adult to estimate his or her likelihood of being in the highest decile. No single characteristic defines the tenth cost decile, but by using combinations of key characteristics it is possible to identify these individuals with reasonable certainty.

This data is most likely to be available in settings where intake information is obtained and case records are maintained. Hospitals and jails are particularly well positioned to identify homeless individuals who should be given high priority for housing and services because they have contact with many high-need, high-cost homeless adults and they are likely to have many pieces of information that identify high-need individuals.

Two tools have been developed for combining multiple characteristics to identify high need individuals. The first is a *look-up table* that shows results from profiling groups within the study population based on seven characteristics and determining the proportion of each group that is in the tenth cost decile, as well as in the combined ninth and tenth deciles. The second is a *calculating tool* derived from statistical analysis that uses sixteen pieces of information to determine the probability that an individual is in the highest cost decile.

The strength of using actual population profiles is that they are identifiable subgroups of the homeless population and provide historically observed data. A limitation, however, is that even with a population as large as in this study, there are only a limited number of subgroups with 30 or more people (the minimum for statistical reliability) that can be formed. The strengths of the calculating tool are that it captures more of the population-wide effects of a

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larger number of characteristics and it can produce probabilities for cases that are not found frequently enough in the study population to produce reliable data based on population profiles.

The critical trade-off in using this information to identify homeless individuals who should be given highest priority for housing and supportive services is between on the one hand setting too low a standard and mistakenly *including* individuals who are not in the highest cost decile, and on the other hand setting too high a standard and mistakenly *excluding* individuals who are in the highest cost decile. The factor of erroneous inclusion is known as “*burden*,” and the factor of erroneous exclusion is known as “*shortfall*.”

We recommend using a 0.40 cut-off point for the minimum proportion of targeted individuals estimated to be in the tenth cost decile. With this minimum cut-off level, only 4 people outside the ninth and tenth deciles will be selected for every ten people inside those deciles, meaning that the non-target population that is selected will be only 29 percent of the total number of people who are selected.

The findings from this analysis of high-cost, high-need homeless residents support seven major conclusions and action recommendations.

1. Identify homeless residents who are likely to have high levels of need and high public costs and give them high priority for admission to supportive housing. Private hospitals should be full partners along with public hospitals and jails in implementing referral protocols in each sub-region of the county.
2. Build face-to-face assessment and intensive housing placement services into the referral system to ensure that housing referrals are correctly matched to homeless individuals’ level of need and that high-need individuals are assisted in obtaining supportive housing.
3. Provide bridge housing for high-need individuals while their applications for supportive housing are going through the review and approval process.
4. Change the administrative plans of the Los Angeles city and county housing authorities to allow set-asides of supportive housing units for the highest need individuals rather than requiring applications to be considered solely on a first-come, first-served or lottery basis.
5. Change the policies of the Los Angeles city and county housing authorities that prevent Section 8 housing subsidies from going to homeless individuals with drug convictions. Roughly half of the tenth decile population may be prevented from receiving Section 8 housing support because of their substance abuse arrest records. It is contrary to the public interest in stabilizing these individuals to block their access to housing.
6. Support the outcomes achieved by supportive housing by assigning staff of the county departments of Health Services, Mental Health and Public Health or the staff of their contracted agencies to provide much needed on-site services for supportive housing residents.
7. Provide additional, intensive on-site services for unstable residents that are at high risk of leaving housing.

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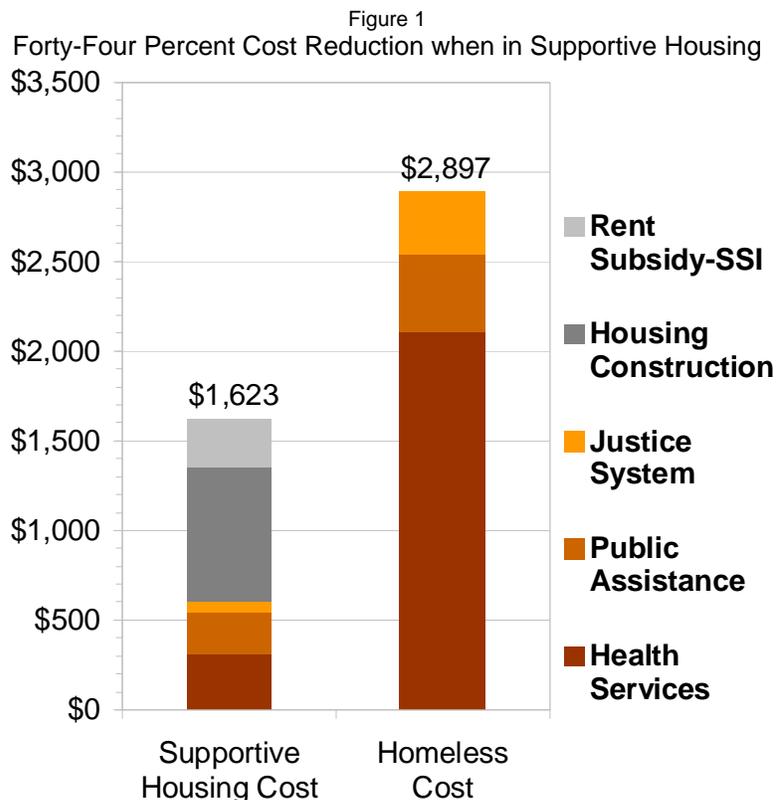
Public Costs for Homelessness

The human face of individuals who have experienced homelessness reflects much of the diversity of the overall population. Many find paths out of the acute poverty and personal crises that precipitated their fall into homelessness. For others, however, homelessness becomes an extended chapter, or even the entire story of their lives. There are compelling humanitarian and public balance sheet reasons for providing permanent supportive housing for these most vulnerable homeless residents.¹ This paper provides tools for identifying homeless single adults whose needs are most acute and who incur the greatest public costs when they remain homeless.²

An analysis of 10,193 homeless, destitute single adults in Los Angeles County – 1,007 of whom exited homelessness by entering supportive housing – was carried out in 2009 in collaboration with the county’s Chief Executive Office, which linked records for these individuals across multiple public agencies, providing crucial information about their characteristics and the public costs for services they used. The homeless study population is generally representative of LA’s population of homeless single adults who are U.S. citizens or legal immigrants.³

The study found that the typical local public cost for residents in supportive housing is \$605 a month. The typical public cost for similar homeless persons is \$2,897, five-times greater than their counterparts that are housed.⁴

Supportive housing is permanent, affordable housing with on-site case management and linkages to additional supportive services such as health, mental health and substance abuse services. Preferably, but not always, these additional supportive services are provided on-site. The individuals who entered supportive housing were primarily chronically homeless individuals, all of whom were disabled and many of whom were mentally ill.



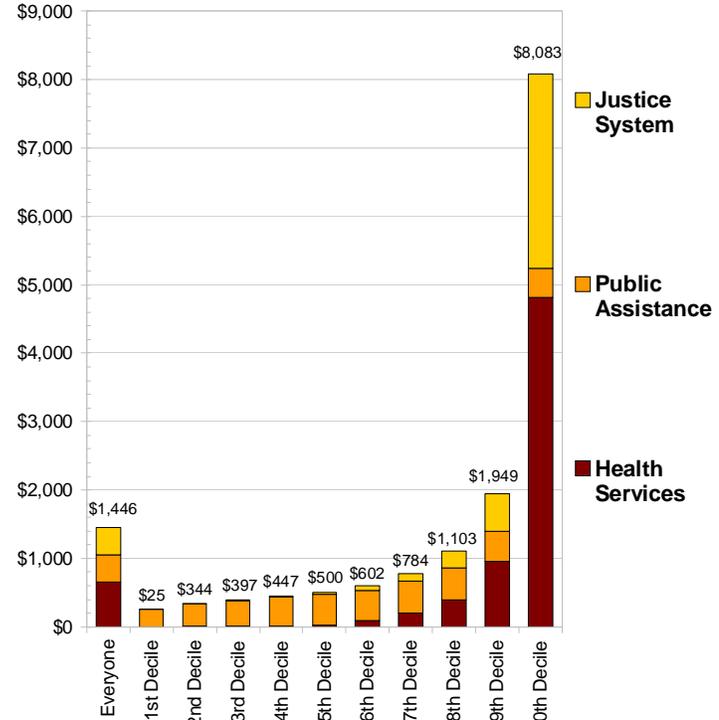
Source: 279 Matched pairs of supportive housing residents and homeless General Relief recipients. Costs shown in 2008 dollars. The rent subsidy shown is for residents receiving Supplemental Security Income (SSI).

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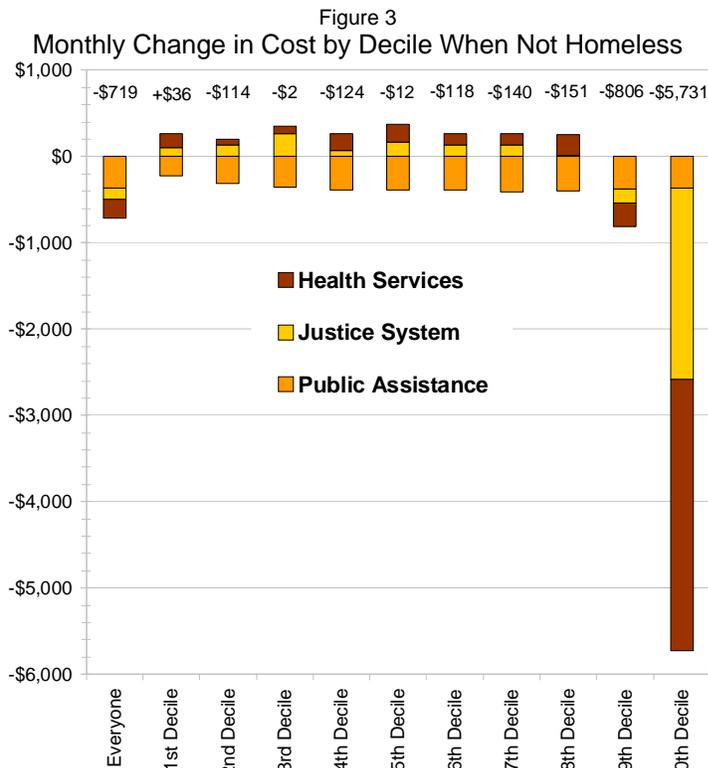
The stabilizing effect of housing plus supportive care for these individuals reduced local public costs by 79 percent.⁵ After including the costs of housing, which are paid largely by nonlocal funds, public costs for the housed population declined 44 percent, as shown in Figure 1 (supporting data for the graph is provided in the endnote).⁶ This demonstrates that there are significant benefits for the public when high need individuals are housed and public costs for addressing crises in their lives fall dramatically. It is particularly noteworthy that the health care costs of supportive housing residents decrease 85 percent.

The average costs shown in Figure 1 obscure wide variation in costs when individuals are homeless as well as savings when they are housed.

Figure 2
Average Monthly Cost by Decile for Homeless Single Adults



Source: 9,186 homeless General Relief recipients in Los Angeles County. Costs in 2008 dollars.



Source: 9,186 homeless General Relief recipients in Los Angeles County. Costs in 2008 dollars.

When we rank homeless single adults by their public costs and break them into ten groups of equal size, we find that most of the population has comparatively low public costs, as shown in Figure 2.⁷ Public costs for about half of homeless single adults are less than \$500 a month, representing modest cash grants plus the value of Food Stamps.

It is the extremely high average public costs of the most expensive 10 percent who make extensive use of hospitals and medical and mental health jails, \$8,083 per month, which raises the overall average for homeless single adults to \$1,446 per month. About 80 percent of homeless residents have costs below this average.

The decline in public costs when formerly homeless individuals are housed varies significantly among cost deciles, as shown in Figure 3.⁸ Individuals in the first eight cost deciles typically have higher justice system and health costs, apparently because of more frequent jail stints and greater use of public health facilities, and lower public assistance costs in months when they are not documented as being homeless. The net result for all but the first decile is modest public reductions in public costs when these individuals are not homeless.

All categories of public cost decline for individuals in the ninth and tenth cost deciles in months when they are not homeless. The cost reduction in these two highest deciles are far greater than in the other eight deciles, both as absolute dollar amounts and as a percent of total costs when homeless. Whereas costs in the lower eight deciles decline about \$100 a month, or 16 percent, when individuals are not homeless, costs in the ninth decile decline \$806, or 41 percent, and costs in the tenth decile decline \$5,731, or 71 percent.

It is important to be able to identify high-cost individuals because they are likely to have the most acute needs among homeless residents and because there is the greatest reduction in public costs when they are housed. These cost savings increase even more if higher levels of support services are provided for these high-need individuals after they are housed, thereby increasing the level of stability and reducing the level of unaddressed problems in their lives.⁹ In the next section, we explore the attributes associated with individuals in the tenth cost decile and provide tools for identifying this population.

Identifying Individuals in the Tenth Cost Decile

Identification Using a Single Characteristic

Individuals in the highest cost decile can be partially differentiated from other homeless residents based on attribute-by-attribute comparisons, as shown in Figure 4.¹⁰ There are ten characteristics that are at least 50 percent more frequent among persons in the tenth cost decile than among persons in the first through ninth deciles:

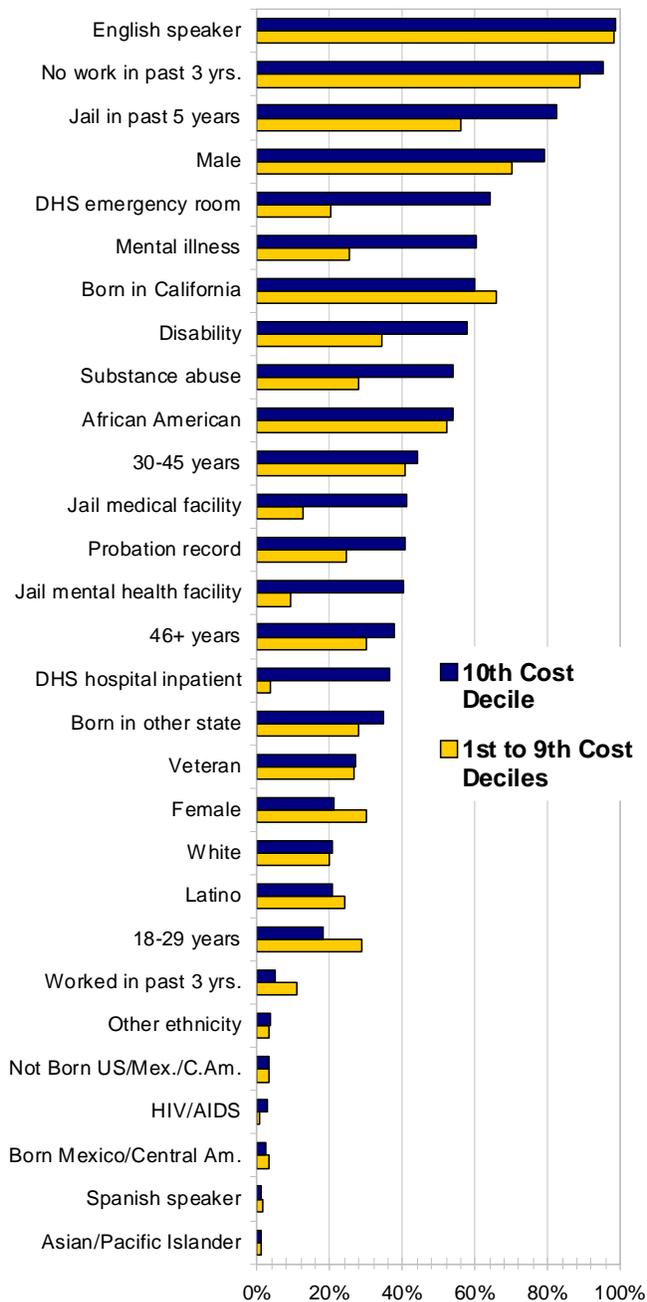
1. *Inpatient in a county hospital in the past 2 years:* 852 percent more frequent
2. *Incarcerated in jail mental health facility in past 5 years:* 343 percent more frequent
3. *Living with HIV/AIDS:* 319 percent more frequent
4. *Incarcerated in jail medical facility in the past 5 years:* 229 percent more frequent
5. *Visitor to county emergency room in past 2 years:* 216 percent more frequent
6. *Mental illness:* 139 percent more frequent
7. *Substance abuse problem:* 90 percent more frequent
8. *Disability:* 70 percent more frequent
9. *Probation record in past 3 years:* 70 percent more frequent
10. *Any type of jail in the past 5 years:* 50 percent more frequent

These characteristics identify key differences between the highest-need, highest-cost homeless residents and other homeless single adults. However, used singly, these characteristics are not sufficiently discriminating to reliably identify the neediest homeless adults. The percent of the single adult homeless population with each of these characteristics that is in the highest

cost decile, followed by the percent of people in the tenth decile with each characteristic, is as follows:

- 51 percent who were inpatients in a county hospital in the past 2 years were in the 10th decile; 37 percent of the 10th decile were inpatients
- 33 percent who were incarcerated in a jail mental health facility in past 5 years were in the 10th decile; 40 percent of the 10th decile were incarcerated in a jail mental health facility
- 32 percent who were living with HIV/AIDS were in the 10th decile; 3 percent in the 10th decile were living with HIV/AIDS
- 27 percent who were incarcerated in a jail medical facility in the past 5 years were in the 10th decile; 41 percent in the 10th decile were in a jail medical facility
- 26 percent who visited a county emergency room in past 2 years were in the 10th decile; 64 percent in the 10th decile had visited a county emergency room
- 21 percent with documented mental health problems were in the 10th decile; 60 percent of the 10th decile had documented mental health problems
- 18 percent with documented substance abuse problems were in the 10th decile; 54 percent in the 10th decile had documented substance abuse problems
- 16 percent with disabilities were in the 10th decile; 58 percent in the 10th decile had disabilities
- 16 percent with probation record in past 3 years were in the 10th decile; 41 percent of the 10th decile had probation records

Figure 4
Profile of Homeless Persons in the Tenth Cost Decile Compared to Persons in the First to Ninth Deciles



Source: 9,186 homeless General Relief recipients in Los Angeles County

- 14 percent with any type of jail record in the past 5 years were in the 10th decile; 82 percent of the 10th decile had a jail record in the past 5 years

The *single* characteristic most strongly associated with the tenth cost decile is having been an inpatient in a county hospital, but by itself this indicator would flag only about a third of the tenth decile population and would include an equal number of people outside that decile. To identify the highest-need, highest-cost individuals more comprehensively and with greater accuracy, it is necessary to combine *multiple* characteristics that distinguish this population.

Identification Using Population Profiles with Multiple Characteristics

When information about a person’s recent history is available, it is possible to combine multiple characteristics of a homeless adult to estimate his or her likelihood of being in the highest cost decile. This data is most likely to be available in settings where intake information is obtained and case information is maintained. Hospitals and jails are particularly well positioned to identify homeless individuals who should be given high priority for housing and services because they have contact with many high-need, high-cost homeless adults and they are likely to have many pieces of information that

Table 1
 High Cost Look-up Table for Groups of Homeless Single Adults with 40%+ of Group in 10th Decile or 65%+ of Group in the Combined 9th and 10th Deciles
 Universe: Single adults 18 years of age or older who are indigent, have been homeless in the past 2 years, and have not been employed in the past 3 years

Group Characteristics: Yes (Y) / No (N)							10th Decile			9th & 10th Deciles	
Mental Illness	Substance Abuse	Jail Medical Facility in Past 5 Years	Jail Mental Health Facility in Past 5 Years	Emergency Room User in Past 2 Years	Hospital Inpatient in Past 2 Years	Age	Percent of 10th Decile in Group	Percent of Group in 10th Decile	10th Decile Burden	Percent of Group in 9th & 10th Deciles	9th & 10th Decile Burden
N	N	N	N	Y	Y	30-45	3%	55%	0.81	70%	0.42
N	N	N	N	Y	Y	46+	5%	44%	1.26	64%	0.56
N	N	Y	N	Y	Y	All	1%	46%	1.18	79%	0.26
N	Y	N	N	Y	Y	All	3%	48%	1.10	69%	0.44
N	Y	Y	N	Y	Y	All	1%	41%	1.42	83%	0.21
Y	N	N	N	Y	Y	46+	2%	68%	0.48	87%	0.15
Y	N	N	Y	Y	Y	All	2%	55%	0.81	79%	0.26
Y	N	Y	Y	N	N	30-45	3%	44%	1.30	50%	1.00
Y	N	Y	Y	N	N	46+	2%	43%	1.31	46%	1.18
Y	N	Y	Y	Y	N	All	4%	42%	1.38	68%	0.47
Y	N	Y	Y	Y	Y	All	2%	70%	0.44	91%	0.10
Y	Y	N	N	Y	Y	All	5%	50%	1.00	73%	0.36
Y	Y	N	Y	Y	N	All	4%	37%	1.69	70%	0.42
Y	Y	N	Y	Y	Y	All	3%	74%	0.36	92%	0.09
Y	Y	Y	N	Y	N	All	1%	35%	1.88	65%	0.53
Y	Y	Y	N	Y	Y	All	1%	75%	0.33	94%	0.07
Y	Y	Y	Y	N	N	46+	1%	50%	1.00	58%	0.71
Y	Y	Y	Y	Y	N	All	4%	54%	0.85	78%	0.29
Y	Y	Y	Y	Y	Y	All	3%	63%	0.58	84%	0.19
All Groups in Table							50%	0.50%	1.02	71%	40

Source: 8,227 LA County General Relief recipients over 18 years of age who had been homeless in the past 2 years and had not been employed in the past 3 years

identify high-need individuals.

Permutations of seven key characteristics are shown in a high cost look-up table (Table 1) along with the proportion of people with each combination of characteristics that are in the tenth decile, and the proportion that are in the combined ninth and tenth deciles. The table also shows the “burden” associated with selecting tenth decile individuals using each combination of characteristics.¹¹ The burden is the number of individuals *not* in the tenth decile that are likely to be selected along with each person who *is* in the tenth decile, or the proportion not in the ninth or tenth decile when attempting to select individuals in those two combined highest deciles.

The seven characteristics used to define the groups in Table 1 are mental illness, substance abuse, incarceration in a jail medical facility in the past five years, incarceration in a jail mental health facility in the past five years, visitors to county hospital emergency rooms in the past two years, inpatients in county hospitals in the past two years, and age. Groups with these characteristics are drawn from the larger population of single adults 18 years of age or older who are indigent, have been homeless in the past 2 years, and have not been employed in the past 3 years.

The table includes all groups in which the proportion of people in the tenth decile is at least 40 percent, or in which the proportion in the combined ninth and tenth deciles is at least 65 percent. The groups shown in the table account for fifty percent of the population in the tenth decile and 71 percent of the population in the combined ninth and tenth deciles. A complete look-up table that includes groups with lower likelihood of being in the highest cost decile is provided in Table 1A in the Data Appendix.

The critical trade-off in using this information to identify homeless individuals who should be given highest priority for housing and supportive services is between on the one hand setting too low a standard and mistakenly including individuals who are not in the highest cost decile, and on the other hand setting too high a standard and mistakenly failing to include individuals who are in the highest cost decile. The factor of erroneous inclusion, or false positives, is known as “*burden*,” and the factor of erroneous exclusion, or false negatives, is known as “*shortfall*.”

A more detailed discussion of the trade-offs between burden and shortfall, with graphs that illustrate these tradeoffs is provided in the Data Appendix. Based on our analysis of these trade-offs, *we recommend using a 0.40 cut-off point for the minimum proportion of targeted individuals who will be in the tenth cost decile. With this minimum cut-off level, only 4 people outside the ninth and tenth deciles will be selected for every ten people inside those deciles, meaning that the non-target population that is selected will be only 29 percent of total number of people who are selected.*

Selection Based on Population Profiles vs. Statistical Models

The high cost look-up table (Table 1) and accompanying information about burden and shortfall (Figures 5 and 6 in the Data Appendix) are based on data derived from the actual cost distribution found among 9,186 homeless individuals studied by the Economic Roundtable. An alternative approach is to use statistical analysis to understand the relationship between the characteristics of homeless individuals and their probability of being in the tenth or ninth cost deciles.

The strength of using profiles is that the data is based on actual outcomes found in identifiable subgroups. One limitation is that even with a population as large as the one in this study, there are only a limited number of subgroups with 30 or more people (the minimum for statistical reliability) that can be formed. The subgroups in Table 1 are defined based on only seven characteristics, and even at that level of generality, several subgroups have under 30 people, as can be seen in Data Appendix Table 1A. A second limitation is that population subgroups reveal only part of the joint influence of different combinations of characteristics.

One strength of using statistical models is that they use the entire population sample to capture joint influences of a larger number of variables. A second strength is that models can produce probabilities for cases that are not found frequently enough in the study population to produce reliable profile data. A third strength of statistical models is that they provide a compact predictive tool that avoids the problem of having an extremely large look-up table that contains every combination of sixteen different client characteristics.

A disconcerting outcome that should be noted is that statistical models sometimes produce probabilities of being in the tenth decile, or combined ninth and tenth deciles, that vary from what we see in actual population subgroups. *We recommend using the look-up table if it covers the specific combination of client characteristics that need to be assessed, and using the statistical model for combinations of client characteristics not covered in the look-up table.*

Identification Using a Statistical Model

A calculating tool for estimating the likelihood that individuals are in the tenth decile, or ninth and tenth deciles combined, has been developed through statistical analysis of the strength of association between sixteen characteristics found among homeless individuals and the outcome of being in the highest deciles. The electronic spreadsheet that contains the tool can be downloaded from the Economic Roundtable web site (www.economicrt.org) for use by interested individuals and organizations.

The user interface for the tool is shown in Table 2. What is not shown in Table 2 is the computational component of the spreadsheet that uses logistic regression coefficients to produce estimated probabilities that individuals with whatever combination of characteristics is entered into the tool are in the highest cost deciles.¹²

In order to use the calculating tool with maximum accuracy, it is important to have information about all of the sixteen variables used in the tool. When less information is entered, the calculating tool usually produces outcomes that are more conservative. Using only the seven variables shown in the look-up table, the calculating tool produces probabilities that are about three-quarters as high as those shown in the table. When a variable is not entered, the tool assumes the opposite – that is, a non-yes means no. Since most of the model variables are risk factors, lack of information tends to lead to underestimates. In contrast, the look-up table lists only a portion of the attributes that are found in this population, but the effects of unlisted attributes still shape the outcomes, even though they are not shown in Table 1.

Table 2 shows examples of five different hypothetical individuals that have been entered into the calculating tool, producing five different sets of probabilities of being in the tenth decile or the combined ninth and tenth deciles. Having been a hospital inpatient in the past two years or incarcerated in a jail mental health facility in past five years have particularly strong effects

Table 2

Sixteen-Variable Tool for Calculating the Probability that a Person is in the 10th and 9th Cost Deciles

Estimates are applicable to indigent single adults who are over 18 years of age, have been homeless in the past two years, and have not been employed in the past 3 years

The variables 'Disabled only', 'Substance abuse only', and 'Disabled plus substance abuse' are mutually exclusive.

The variable "Jail and/or probation record" is used for the 9th/10th deciles calculation, but not the 10th decile.

The calculations include constant terms, resulting in small probability values when no characteristics are specified.

	Case 1	Case 2	Case 3	Case 4	Case 5
Born in state other than California			Y		
Born outside the United States				Y	
In jail in past 5 years	Y	Y	Y		
In jail medical facility in past 5 years		Y			
In jail mental health facility in past 5 years			Y	Y	Y
Jail and/or probation record in past 3 years	Y				Y
Female			Y		
Chronically homeless		Y			Y
HIV-positive				Y	Y
Disabled only					
Substance abuse only					
Disabled plus substance abuse	Y	Y		Y	Y
Mental health problems			Y		
Emergency room user in past 2 years	Y	Y			Y
Hospital inpatient in past 2 years			Y	Y	Y
Age 46+		Y			Y
Estimated probability for 10th Decile	0.11	0.25	0.42	0.62	0.74
Estimated probability for 9th or 10th Decile	0.43	0.62	0.56	0.80	0.92

Source: 8,227 Los Angeles County General Relief recipients over 18 years of age who had experienced homelessness in the past 2 years and had not been employed in the past 3 years. The estimating tool is derived from logistic regressions that specify the best variables from this dataset.

for predicting individuals who are likely to be in the tenth cost decile. The most significant factors for predicting individuals likely to be in the combined ninth and tenth deciles are having been a hospital inpatient in the past two years, being disabled plus having a substance abuse problem, and having been an emergency room user in the past two years.

The Data Appendix provides a detailed discussion of the trade-offs between burden and shortfall when using the calculating tool, with graphs (Figures 7 and 8) that map these tradeoffs.

This tool can be refined further based on feedback from users. For example, if any of the variables represent information that is rarely available when identifying high-priority referrals to supportive housing, the model can be altered to remove those variables. *Users of the tool are requested to provide information to the Economic Roundtable about their experiences with it and to utilize updated versions of the calculating tool as they are developed.* Based on actual experience using the tool it is possible, for example, to create a version that is more flexible for cases where some variables are unknown, or to create versions that are tailored specifically to jails or to hospitals.¹³

Conclusions and Recommendations

The findings from this analysis of high-cost, high-need homeless residents support seven major conclusions and action recommendations.

1. *Homeless residents who are likely to have high levels of need and high public costs should be identified and expeditiously admitted to supportive housing.*

Discharge planning staff at hospitals and jails have direct contact with many high-need homeless residents and should be trained and encouraged to identify homeless residents who are likely to be in the tenth cost decile, and to refer these individuals to supportive housing. *Private hospitals should be full partners* along with public hospitals and jails in implementing referral protocols.

Referral networks will be most effective at the community level, with referring organizations and housing providers in proximity with each other. For example, the downtown Los Angeles area is a feasible referral zone.

The referral process can be launched by holding a networking and training event at which discharge planning staff meet supportive housing intake staff, a directory of both discharge and intake contact persons is distributed, and training is conducted in using the screening tools provided in this report and on how to facilitate supportive housing placement.

There are an estimated 1,500 openings a year in supportive housing in Los Angeles County. Four to five hundred of these openings are in newly built supportive housing units that open in a typical year.¹⁴ In addition, approximately 1,000 openings are created by turnover in occupancy of existing supportive housing units.¹⁵ This indicates that there is an annual capacity to house and stabilize a significant share of the highest need homeless individuals. A systematic institutional effort to refer high-need homeless individuals to supportive housing can produce significant public cost savings and greatly improve the quality for these individuals.

This recommendation requires buy-in from supportive housing providers who do not have a *housing first* policy of providing stable housing first and addressing other issues after the individual is housed, or who have screening requirements such as sobriety or absence of a felony record.

This recommendation also requires expansion of the supportive housing inventory. Accessing supportive housing can be very difficult because wait lists are long, and at times closed.

It is recommended that the county departments of Health Services and Sheriff and their service delivery partners work with supportive housing providers in the downtown area to implement these recommendations on a pilot basis. It is further recommended that after the model has been refined and validated, referral networks be established in each sub-region of the county to route high-need homeless individuals to supportive housing.

The “Just In Reach” program sponsored by Sheriff’s Community Transition Unit and funded by Los Angeles County and the Robert Wood Johnson Foundation is well

suited for identifying high need individuals and linking them with supportive housing, provided that housing can be made more readily available. This program focuses on inmates who have been in jail three times within the past three years and homeless three times within the past five years, as well as individuals with co-occurring illnesses (mental health and addiction). Teams made up of case managers, housing locators, employment providers, treatment providers, and mentors work with this targeted population to help them find housing and build stable lives outside of jail.

It is important that housing providers begin working with screened and targeted individuals before they are discharged from the jail or hospital. Having this relationship in place before individuals are discharged increases the likelihood of a successful transition into supportive housing.

2. *Build a referral system with assessment capabilities and intensive housing placement services to match housing and service referrals to homeless individuals' level of need.*

It is necessary to build a referral system that routes individuals from gatekeeper institutions such as hospitals and jails to appropriate housing and service providers, and that includes individual assessments and advocacy for appropriate housing outcomes. In the absence of ongoing care by a homeless individual's family, the two most likely paths toward a stable future are through returning to the labor force and becoming employed or becoming certified as disabled, qualifying for Supplemental Security Income and entering supportive housing. A referral to supportive housing implicitly identifies an individual as someone who should be on the second path because he or she is disabled and unlikely to obtain employment. This referral should be based on an assessment of the individual's legal, financial, social, medical, psychological and other needs, disability status, and employment potential.

The screening tools provided in this report in the form of the look-up table and the calculating tool are likely to identify incorrectly some individuals as being in the highest need population, and to exclude incorrectly other individuals from that population. Hospital discharge nurses, for example, have the knowledge and case information to double check these outcomes against criteria for being in the highest need population, which include a permanently disabling condition and likelihood of continued health or social crises in the absence of ongoing case management.

Given the employment vs. disability fork in the road that faces most homeless individuals, programs providing emergency and transitional care should place much greater emphasis on helping individuals in the lowest eight cost deciles define meaningful career goals and become employed. This should include addressing legal, health and sobriety issues, vocational assessment, training and education, and help in finding a job.

If an individual is a high priority candidate for supportive housing, for example a person in the tenth cost decile, he or she will need a significant amount of assistance in completing the application process and documenting their eligibility. This includes providing identification and documenting homeless, disability and income status, housing and legal history, and health and daily living needs.

This housing assistance entails hard work and is resource intensive. Los Angeles County's Project 50 is a successful model of highly focused problem solving and legwork that expeditiously connects high-need individuals with housing.

- 3. Provide bridge housing for high-need individuals while their applications for supportive housing are going through the review and approval process.*

There is a waiting period of weeks or months while the applications of individuals for supportive housing go through the review and approval process, and then while a housing unit becomes available. Unstable individuals sometimes disappear and cannot be found by the time their applications are approved. It is critical that people are not lost during the period that they are applying for housing; this requires unusually high program accountability.

Bridge housing that maintains stable connections with high need individuals needs to be provided while their applications are approved. The Just In Reach program provides a model for bridge housing, using rehabilitation-oriented transitional housing programs such as Union Rescue Mission, Tarzana Treatment Center and Volunteers of America to provide immediate housing when individuals are discharged. This requires flexibility on the part of the transitional housing organization because an opening in permanent housing may become available at a time when an individual is midway through a rehabilitation program.

- 4. Change the administrative plans of the Los Angeles city and county housing authorities to allow supportive housing set-asides for the highest need individuals, rather than requiring applications to be considered on a first-come, first-served basis.*

The fair housing components of the city and county housing authorities' administrative plans require that applicants who receive housing subsidies be admitted on a first-come, first-served or lottery basis. This has the effect of channeling admissions to supportive housing toward higher functioning walk-in clients who are able to come to the housing intake office, provide identification and required certifications, complete an application, maintain their application as current (certifications expire after 30 and 60 days), check in with the intake office weekly, and make numerous appointments and interviews.

These fair housing provisions should be modified to allow supportive housing providers to set aside units for individuals who are screened referrals from agencies such as hospitals and jails that serve a large share of the highest-need population and who have been identified by those agencies as having a very high level of need.

It is recommended that the Los Angeles city and county housing authorities amend their administrative plans to allow set-asides high need homeless individuals referred by public and private hospitals and the jail system.

5. *Change the policies of the Los Angeles city and county housing authorities that prevent Section 8 housing subsidies from going to homeless individuals with drug convictions.*

The federal housing subsidies that flow from HUD to local housing authorities, and then to housing providers, known as Section 8, are an important source of subsidies for supportive housing. Local housing authorities have adopted policies prohibiting individuals with drug convictions from receiving these subsidies.

Fifty-four percent of individuals in the tenth cost decile have documented substance abuse problems and an additional number have problems that have not been documented. Of individuals with documented substance abuse problems, 87 percent have been incarcerated in the past five years. This means that close to half of the tenth decile population may be prevented from receiving Section 8 housing support because of this history.

Supportive housing helps stabilize individuals with substance abuse problems and facilitates their rehabilitation. This dramatically reduces the public costs that result from their recurrent crises when homeless. It is contrary to the public interest in stabilizing these individuals to block their access to housing subsidies.

It is recommended that Los Angeles city and county rescind prohibitions against providing Section 8 housing subsidies for high need homeless individuals referred for supportive housing by public and private hospitals and the jail system. It is further recommended that the U.S. Department of Housing and Urban Development adopt a best practices standard mandating that background information about high-need homeless individuals applying for Section 8 subsidies may be used to determine service needs but may not be used to screen otherwise eligible individuals out of housing.

6. *Strengthen the role of county Health, Public Health and Mental Health departments in providing on-site services and psychosocial case management.*

The preponderance of public costs that are avoided because of supportive housing for homeless individuals are in the county department of Health Services, followed by private hospitals. There are additional significant savings in the county departments of Mental Health and Public Health, and the county jail system.

It is difficult to convert the avoided costs of hospitals and other public agencies into cash that can be reallocated to underwrite supportive housing because the demand for these agencies' services often exceeds the number of people they can serve. The homeless person who is not served may simply open up a hospital bed for another sick person. However, there is a powerful public interest in housing homeless persons and reducing the public costs for crises in their lives. It is critically important to expand the role of public agencies in providing on-site services for supportive housing, including primary health care, mental health and drug and alcohol services, and SSI advocacy. It is also critically important to use available funds, such as General Relief, to house more homeless people.

The case management and psychosocial service budgets for supportive housing are typically put in place when the housing is built, with a predetermined portion of rental

income going to pay for these services. Often the amount of rental income that can be used to fund these services is limited by the loan repayment provisions in city, county, and state capital funding programs. The level of these services is often minimal, for example, one case manager for each 40 to 80 residents, with no funding to pay for badly needed on-site health or mental health services. These service needs and service deficits will become more acute as more of the highest-need population is referred to supportive housing. Unless this service shortfall is corrected, many supportive housing providers may refuse to accept the highest-need applicants because of a lack of services to ensure their housing stability.

It is recommended that the county departments of Health Services, Mental Health and Public Health establish countywide policies to support the outcomes achieved by supportive housing by assigning their own staff or the staff of contracted service providers to provide on-site services for high-need supportive housing residents.

7. *Provide intensive on-site services for unstable residents that are at high risk of leaving housing.*

Supportive housing organizations need public help in providing higher levels of on-site services to improve housing retention rates. Individuals with above-average risks of leaving housing include young adults less than 30 years of age, individuals with histories of criminal incarceration, and individuals with substance abuse problems.

Many of these individuals are socially isolated, distrustful of others, and prone toward eruptive life events that lead to confrontation or flight rather than problem solving. Innovative programs providing higher levels of case management, mental health and substance abuse services are needed to improve the housing retention rate for these individuals.

Data Appendix

BURDEN AND SHORTFALL IN TARGETING HIGH-NEED INDIVIDUALS

Burden and Shortfall Using the High Cost Look-up Table

The trade-offs between burden and shortfall at different cut-off points for the minimum proportion of targeted individuals who will be in the tenth cost decile, using the population profiles in Table 1, are shown in Figure 5.¹⁶ At the lowest cut-off point, 0, nobody in the tenth decile is excluded, but 8.6 people outside of the decile are selected for every one person inside the decile who is selected.

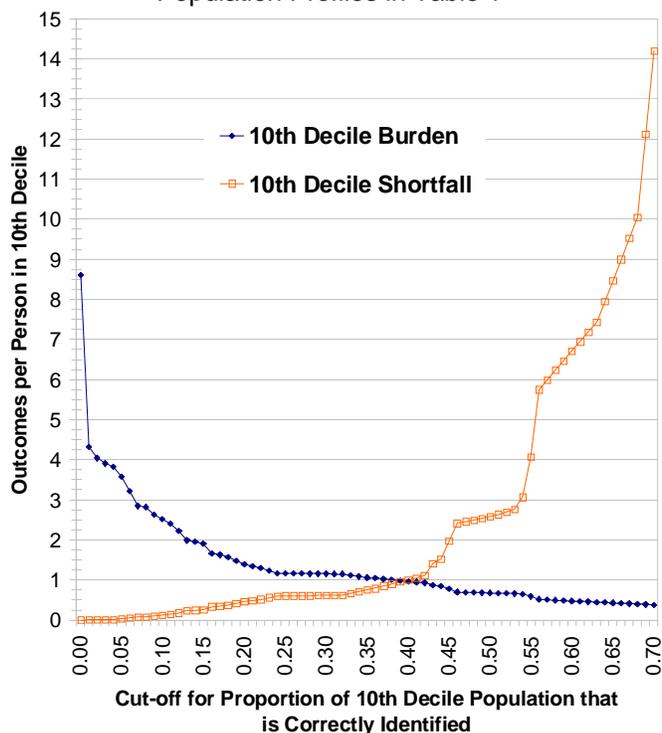
At the other extreme, using the standard that the minimum proportion of people selected who are in the tenth decile must be at least 70 percent, only 0.38 people outside of the decile are selected for each person inside the decile who is selected. However, for every one person in the tenth decile who is selected, 14.2 people in the decile are left out.

Burden and shortfall intersect in Figure 5 at the 0.40 cut-off point for the proportion of persons selected that are expected to be in the tenth decile. That cut-off produces a burden of 0.96 and a shortfall of 1.0.¹⁷

Thinking broadly about the issue of burden vs. shortfall, it is reasonable to consider it an acceptable outcome when people in the ninth cost decile are caught up in the tenth decile selection net. Looking back at Figure 3, public costs for people in the ninth decile are reduced by over \$800 a month when they are in supportive housing and many people in this decile may well be on a trajectory toward the tenth decile if they do not receive help. If we accept inclusion of ninth decile individuals in the selection process as an acceptable outcome, the level of burden is reduced by more than half; at the 0.40 cut-off level burden drops from 0.96 to 0.40, as shown in Figure 6. However, the shortfall of people in the combined ninth and tenth deciles who are not selected increases from 1.0 to 1.8.

Of the combined ninth and tenth decile populations selected when using a 0.40 cut-off to select people in the tenth decile, 69 percent are in the tenth decile and 31 percent are in the ninth decile. This

Figure 5
Outcomes from Targeting 10th Decile Individuals Using Population Profiles in Table 1



Source: 8,227 LA County General Relief recipients over 18 years of age who had been homelessness in the past 2 years and unemployed for the past 3 years

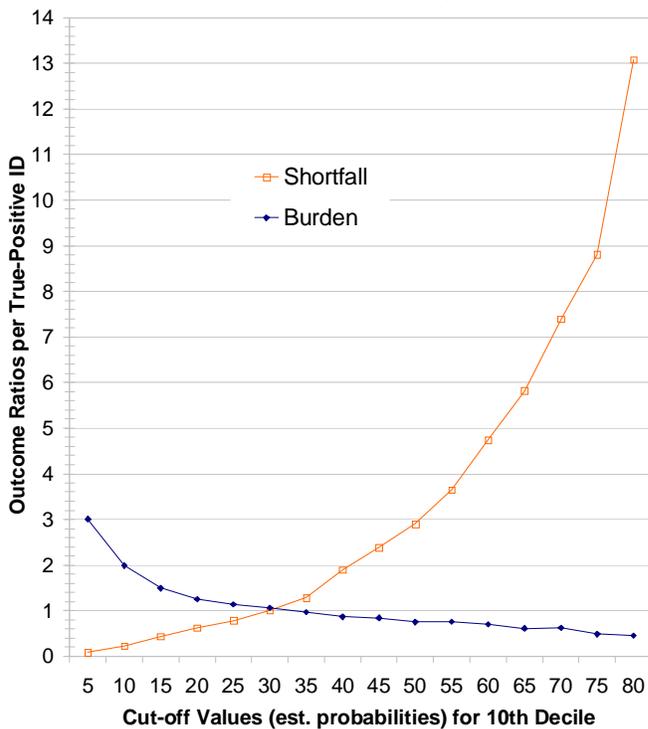
means that many people in the ninth decile are left out of the selection net, resulting in an elevated shortfall. Again, since the primary intent is to select people in the tenth decile, it is reasonable to see this as an acceptable outcome.

Burden and Shortfall Using the Calculating Tool

When selecting people in the tenth cost decile, the calculating tool produces significantly less burden and somewhat more shortfall than the look-up table. At the 0.40 probability cut-off for being in the tenth cost decile, there is 0.86 burden and 1.90 shortfall for each person correctly selected, as shown in Figure 7.¹⁸

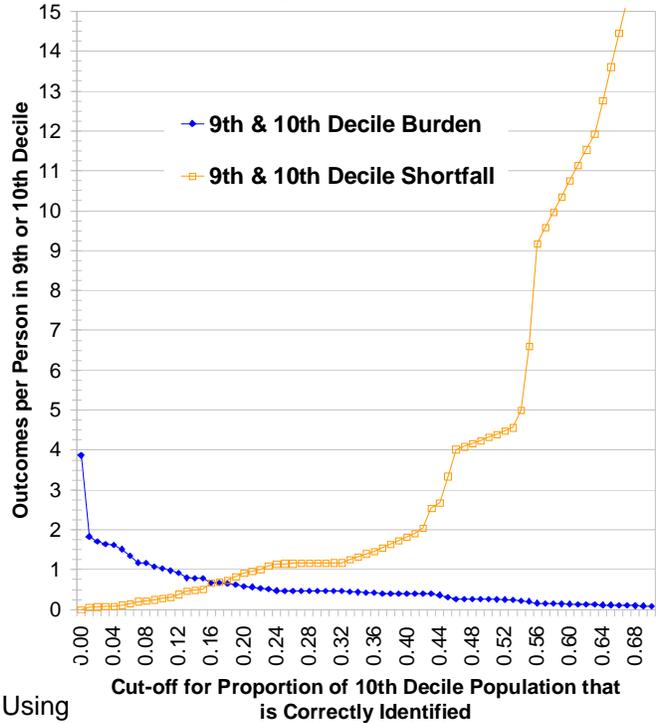
The calculating tool produces

Figure 7
10th Decile Burden and Shortfall Outcomes from Using the 16-Variable Calculating Tool



Source: 8,227 LA County General Relief recipients over 18 years of age who had been homelessness in the past 2 years and unemployed for the past 3 years

Figure 6
9th and 10th Decile Outcomes from Targeting 10th Decile Individuals Using Population Profiles in Table 1



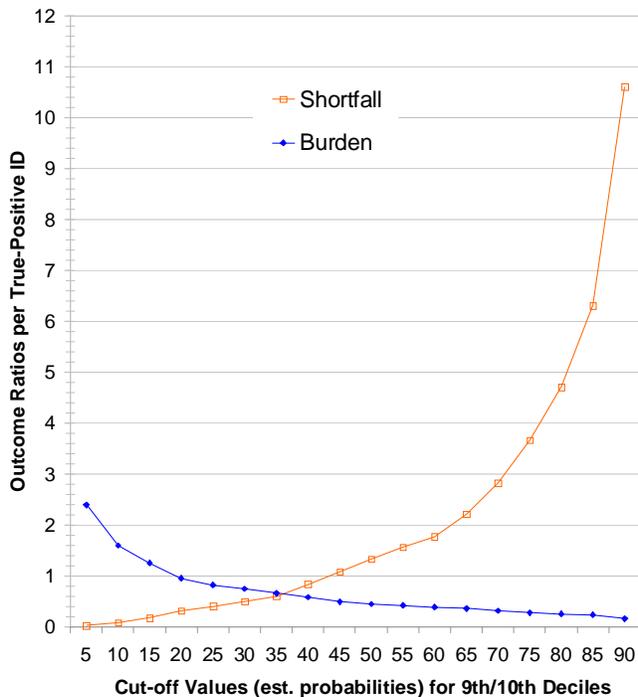
Source: 8,227 LA County General Relief recipients over 18 years of age who had been homelessness in the past 2 years and had not been employed in the past 3 years

different results than the look-up table because it reflects the effect that a characteristic is shown to have on the overall population rather than just on people in a particular group. Furthermore, the calculating tool brings together information about a broader array of characteristics than the look-up table.

When selecting people in the combined ninth and tenth deciles, the calculating tool produces more burden and less shortfall than the look-up table. At the 0.40 probability cut-off for these combined deciles, there is 0.58 burden and 0.84 shortfall for each person correctly selected, as shown in Figure 8.

The calculating tool performs at least on par with the look-up table, which uses data from population profiles. The particular strength of the calculating tool is that it produces estimates for the entire population of homeless single adults, including individuals with unusual combinations of characteristics. It also may be more robust in future use, as compared to the profiles, because of the larger number of variables and the explicit consideration of their joint effects.

Figure 8
9th and 10th Decile Burden and Shortfall Outcomes from Using the 16-Variable Calculating Tool



Source: 8,227 LA County General Relief recipients over 18 years of age who had been homeless in the past 2 years and had not been employed in the past 3 years

Table 1A
 LOOK-UP TABLE FOR PROPORTION OF GROUPS IN THE 10TH AND 9TH DECILES BASED
 ON POPULATION PROFILES

In addition to the characteristics listed below, all individuals in this table meet of the following criteria:

1. Are single adults 18 years of age or older
2. Are indigent
3. Have been homeless some time in the past 2 years
4. Have not been employed in the past 3 years

Characteristics of Group		Distribution by Cost Decile													10th Decile				9 th & 10 th Deciles						
Mental Illness	Substance Abuse	Jail Medical Facility in Past 5 Years	Jail Mental Health Facility in Past 5 Years	Emergency Room User in Past 2 Years	Hospital Inpatient in Past 2 Years	Age	Lowest Decile	Second Decile	Third Decile	Fourth Decile	Fifth Decile	Sixth Decile	Seventh Decile	Eighth Decile	Ninth Decile	Highest Decile	Total Records	Correctly Identified as 10th Decile	False Positive	10th Decile Proportion (% in 10 th decile)	10th Decile Burden	Correctly identified as 9th & 10th Deciles	False Positive	9th & 10th Decile Proportion (% in 9 th & 10 th)	9th & 10th Decile Burden
N	N	N	N	N	N	18-29	253	248	214	169	94	76	46	28	21	1	1,150	1	1,149	0.00	1,149	22	1,128	0.02	5
N	N	N	N	N	N	30-45	193	193	225	203	151	106	65	52	34	2	1,224	2	1,222	0.00	611	36	1,188	0.03	33
N	N	N	N	N	N	46+	128	165	142	166	192	95	49	36	17	4	994	4	990	0.00	248	21	973	0.02	46
N	N	N	N	Y	N	18-29	9	7	8	10	23	15	29	15	4	2	122	2	120	0.02	60	6	116	0.05	19
N	N	N	N	Y	N	30-45	10	9	9	13	7	31	31	22	9	7	148	7	141	0.05	20	16	132	0.11	8
N	N	N	N	Y	N	46+	2	3	5	7	13	28	40	22	15	2	137	2	135	0.01	68	17	120	0.12	7
N	N	N	N	Y	Y	18-29	1	0	0	1	2	4	4	0	4	5	21	5	16	0.24	3	9	12	0.43	1.3
N	N	N	N	Y	Y	30-45	0	1	2	0	2	1	2	6	7	26	47	26	21	0.55	0.8	33	14	0.70	0.4
N	N	N	N	Y	Y	46+	2	1	2	3	6	3	6	11	19	42	95	42	53	0.44	1.3	61	34	0.64	0.6
N	N	Y	N	N	N	18-29	10	10	12	7	14	6	12	16	16	14	117	14	103	0.12	7	30	87	0.26	3
N	N	Y	N	N	N	30-45	10	10	12	17	12	13	10	18	19	14	135	14	121	0.10	9	33	102	0.24	3
N	N	Y	N	N	N	46+	3	3	7	9	12	9	10	13	13	10	89	10	79	0.11	8	23	66	0.26	3
N	N	Y	N	Y	N	All	3	2	3	2	1	6	15	9	17	16	74	16	58	0.22	4	33	41	0.45	1.2
N	N	Y	N	Y	Y	All	0	1	0	0	0	0	2	2	8	11	24	11	13	0.46	1.2	19	5	0.79	0.3
N	Y	N	N	N	N	18-29	15	20	11	20	22	30	29	24	25	17	213	17	196	0.08	12	42	171	0.20	4
N	Y	N	N	N	N	30-45	20	27	27	32	40	60	69	53	39	23	390	23	367	0.06	16	62	328	0.16	5
N	Y	N	N	N	N	46+	10	16	26	22	34	43	31	37	30	10	259	10	249	0.04	25	40	219	0.15	5
N	Y	N	N	Y	N	18-29	2	2	0	3	2	3	7	4	5	5	33	5	28	0.15	6	10	23	0.30	2
N	Y	N	N	Y	N	30-45	4	1	2	2	8	8	13	24	21	21	104	21	83	0.20	4	42	62	0.40	1.5
N	Y	N	N	Y	N	46+	2	1	0	2	3	11	7	15	23	11	75	11	64	0.15	6	34	41	0.45	1.2
N	Y	N	N	Y	Y	18-45	1	2	0	1	0	1	2	3	9	14	33	14	19	0.42	1.4	23	10	0.70	0.4
N	Y	N	N	Y	Y	46+	1	0	1	1	1	1	2	3	5	17	32	17	15	0.53	0.9	22	10	0.69	0.5
N	Y	Y	N	N	N	18-29	0	0	2	3	1	7	4	5	9	6	37	6	31	0.16	5	15	22	0.41	1.5
N	Y	Y	N	N	N	30-45	6	5	6	2	11	10	12	14	27	21	114	21	93	0.18	4	48	66	0.42	1.4
N	Y	Y	N	N	N	46+	0	2	3	3	4	3	7	11	19	11	63	11	52	0.17	5	30	33	0.48	1.1
N	Y	Y	N	Y	N	All	0	3	1	0	1	5	2	13	16	5	46	5	41	0.11	8	21	25	0.46	1.2
N	Y	Y	N	Y	Y	All	1	0	0	0	0	0	0	4	12	12	29	12	17	0.41	1.4	24	5	0.83	0.2
Y	N	N	N	N	N	18-29	16	11	19	18	21	21	15	11	4	0	136	0	136	0.00		4	132	0.03	33
Y	N	N	N	N	N	30-45	8	7	16	23	27	45	25	19	8	0	178	0	178	0.00		8	170	0.04	21
Y	N	N	N	N	N	46+	9	3	4	13	24	27	18	11	6	1	116	1	115	0.01	115	7	109	0.06	16

20 High-Need, High-Cost Homeless Persons

Mental Illness	Substance Abuse	Jail Medical Facility in Past 5 Years	Jail Mental Health Facility in Past 5 Years	Emergency Room User in Past 2 Years	Hospital Inpatient in Past 2 Years	Age	Lowest Decile	Second Decile	Third Decile	Fourth Decile	Fifth Decile	Sixth Decile	Seventh Decile	Eighth Decile	Ninth Decile	Highest Decile	Total Records	Correctly Identified as 10th Decile	False Positive	10th Decile Proportion	10th Decile Burden	Correctly identified as 9th & 10th Deciles	False Positive	9th & 10th Decile Proportion	9th & 10th Decile Burden			
Y	N	N	N	Y	N	18-29	2	1	5	1	3	2	7	7	4	3	35	3	32	0.09	11	7	28	0.20	4			
Y	N	N	N	Y	N	30-45	1	0	0	3	0	12	20	24	13	2	75	2	73	0.03	37	15	60	0.20	4			
Y	N	N	N	Y	N	46+	0	0	1	0	6	6	16	13	16	7	65	7	58	0.11	8	23	42	0.35	2			
Y	N	N	N	Y	Y	18-45	2	0	0	3	1	0	0	5	6	10	27	10	17	0.37	2	16	11	0.59	0.7			
Y	N	N	N	Y	Y	46+	0	1	0	0	0	0	0	3	6	21	31	21	10	0.68	0.5	27	4	0.87	0.1			
Y	N	N	Y	N	N	18-29	6	9	4	2	4	5	5	9	7	5	56	5	51	0.09	10	12	44	0.21	4			
Y	N	N	Y	N	N	30-45	6	5	6	4	9	17	11	13	15	15	101	15	86	0.15	6	30	71	0.30	2			
Y	N	N	Y	N	N	46+	3	5	4	4	6	4	4	11	7	14	62	14	48	0.23	3	21	41	0.34	2			
Y	N	N	Y	Y	N	All	1	1	0	1	2	7	11	11	20	25	79	25	54	0.32	2	45	34	0.57	0.8			
Y	N	N	Y	Y	Y	All	0	0	0	0	1	1	1	3	7	16	29	16	13	0.55	0.8	23	6	0.79	0.3			
Y	N	Y	N	N	N	All	0	3	1	2	3	3	4	4	5	2	27	2	25	0.07	13	7	20	0.26	3			
Y	N	Y	Y	N	N	18-29	1	2	2	3	3	1	1	7	9	16	45	16	29	0.36	2	25	20	0.56	0.8			
Y	N	Y	Y	N	N	30-45	1	4	5	2	3	2	6	8	4	27	62	27	35	0.44	1.3	31	31	0.50	1.0			
Y	N	Y	Y	N	N	46+	0	3	4	3	0	4	2	4	1	16	37	16	21	0.43	1.3	17	20	0.46	1.2			
Y	N	Y	Y	Y	N	All	0	1	0	2	5	1	4	13	21	34	81	34	47	0.42	1.4	55	26	0.68	0.5			
Y	N	Y	Y	Y	Y	All	0	0	0	0	0	0	0	2	5	16	23	16	7	0.70	0.4	21	2	0.91	0.1			
Y	Y	N	N	N	N	18-29	3	2	2	2	8	8	17	8	7	8	65	8	57	0.12	7	15	50	0.23	3			
Y	Y	N	N	N	N	30-45	7	3	10	9	21	16	26	36	18	7	153	7	146	0.05	21	25	128	0.16	5			
Y	Y	N	N	N	N	46+	3	4	2	2	3	12	15	15	7	3	66	3	63	0.05	21	10	56	0.15	6			
Y	Y	N	N	Y	N	18-29	1	2	0	0	2	6	3	6	9	3	32	3	29	0.09	10	12	20	0.38	2			
Y	Y	N	N	Y	N	30-45	3	0	2	3	5	5	13	20	23	11	85	11	74	0.13	7	34	51	0.40	2			
Y	Y	N	N	Y	N	46+	2	0	0	2	0	5	12	9	17	10	57	10	47	0.18	5	27	30	0.47	1.1			
Y	Y	N	N	Y	Y	18-45	0	1	0	1	1	3	3	5	11	20	45	20	25	0.44	1.3	31	14	0.69	0.5			
Y	Y	N	N	Y	Y	46+	0	0	0	4	1	1	1	3	10	25	45	25	20	0.56	0.8	35	10	0.78	0.3			
Y	Y	N	Y	N	N	18-29	0	1	1	1	3	4	2	4	6	4	26	4	22	0.15	6	10	16	0.38	2			
Y	Y	N	Y	N	N	30-45	5	5	5	2	6	10	23	11	14	11	92	11	81	0.12	7	25	67	0.27	3			
Y	Y	N	Y	N	N	46+	0	3	0	1	3	3	4	5	8	6	33	6	27	0.18	5	14	19	0.42	1.4			
Y	Y	N	Y	Y	N	All	0	0	0	3	2	4	7	12	31	35	94	35	59	0.37	2	66	28	0.70	0.4			
Y	Y	N	Y	Y	Y	All	0	0	0	0	0	0	0	3	7	28	38	28	10	0.74	0.4	35	3	0.92	0.1			
Y	Y	Y	N	N	N	All	1	0	3	1	5	3	4	11	6	6	40	6	34	0.15	6	12	28	0.30	2			
Y	Y	Y	N	Y	N	All	0	0	1	1	0	0	1	5	7	8	23	8	15	0.35	2	15	8	0.65	0.5			
Y	Y	Y	N	Y	Y	All	1	0	0	0	0	0	0	3	12	16	12	4	0.75	0.3	15	1	0.94	0.1				
Y	Y	Y	Y	N	N	18-45	0	1	1	0	1	7	8	11	10	18	57	18	39	0.32	2	28	29	0.49	1.0			
Y	Y	Y	Y	N	N	46+	0	1	0	0	2	1	3	3	2	12	24	12	12	0.50	1	14	10	0.58	0.7			
Y	Y	Y	Y	Y	N	All	0	1	3	0	1	1	5	6	18	41	76	41	35	0.54	1	59	17	0.78	0.3			
Y	Y	Y	Y	Y	Y	All	1	1	0	0	2	0	1	1	8	24	38	24	14	0.63	1	32	6	0.84	0.2			
Total							769	813	821	814	840	822	804	812	829	851	8,175	851	7,324						1,680	6,495		

END NOTES

¹ There is a high correlation between level of cost and level of need; high costs are the result of extensive, recurrent problems that require expensive public services. However, cost is not an absolute or exclusive measure of need. Some homeless individuals have problems that have been neglected, and while they may have a high level of need, their needs are not reflected in a high level of public costs.

² Individuals were classified as homeless in any month in which one or more of the following four conditions were met: a) their mailing address was an office of the Los Angeles County Department of Public Social Services or a homeless shelter, b) they received a General Relief emergency housing voucher, c) they received services funded by the Los Angeles Homeless Services Authority, or d) they began a jail stint immediately following a month in which they were homeless. These tools for identifying homelessness are reliable but not complete. Some months when individuals were homeless, as well as some individuals who were homeless, were not identified.

³ The complex task of linking client records was carried out by the Service Integration Branch of Los Angeles County's Chief Executive Office through its Adult Linkages Project (ALP). Focusing on indigent adults participating in Los Angeles County's General Relief Program, the ALP linked administrative records across eight departments to provide information on client needs, service gaps, service costs, and utilization patterns. The ALP used an anonymous record linkage method that addressed the legal obstacles involved in sharing confidential information by de-identifying personal information provided in administrative data. Random project IDs are generated for each participant. These markers do not identify any client personally.

⁴ For a full description of the study see: Economic Roundtable (2009), *Where We Sleep*, www.economicrt.org.

⁵ Seventeen types of costs could be determined for all persons in this study, based on data provided by county departments and other agencies:

1. Los Angeles County Department of Health Services hospitals-inpatient
2. Los Angeles County Department of Health Services outpatient clinics
3. Los Angeles County Department of Health Services emergency rooms
4. Private hospitals-inpatient
5. Private hospitals-emergency room
6. Emergency Medical Transportation
7. Los Angeles County Department of Mental Health
8. Los Angeles County Department of Public Health
9. Los Angeles County Department of Public Social Services Food Stamps
10. Los Angeles County Department of public Social Services General Relief
11. Los Angeles County Department of Public Social Services GR Housing Vouchers
12. Los Angeles Homeless Services Authority services
13. Los Angeles County Probation Department
14. Los Angeles County Sheriff's Department general jail facilities and services
15. Los Angeles County Sheriff's Department medical jail facilities and services
16. Los Angeles County Sheriff's Department mental health jail facilities and services
17. Supportive housing costs of the Skid Row Housing Trust

Twelve types of costs could not be determined and are left out of this study:

1. Homeless services not in shown in the Los Angeles Consortium of Care Homeless Management Information System (HMIS) and not directly funded by LAHSA. These missing costs include a significant number of agencies funded by LAHSA, matching costs by all LAHSA service providers, and all nonprofit service providers not funded by LAHSA, including faith-based missions and food pantries.
2. Non-county outpatient clinics such as JWCH Institute or Homeless Health Care Los Angeles
3. Non-county substance abuse facilities
4. Non-county mental health facilities

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5. Veteran's Administrations services
6. State incarceration and parole
7. Federal incarceration
8. City of Los Angeles Police Department
9. Courts
10. Business environment impacts
11. Los Angeles City Business Improvement Districts
12. Costs outside of Los Angeles County

These twelve types of costs were unavailable for both housed and homeless individuals in this study, so the absence of this data did not create any asymmetry in cost comparisons. However, this missing data results in understating the amount of public costs for homeless residents, and where there are cost savings from housing homeless individuals, to understate the amount of those savings.

⁶ Supporting data for Figure 1, Forty-Four Percent Cost Reduction when in Supportive Housing, is as follows:

Cost Category	Cost Breakout	Supportive Housing	Homeless
Supportive Housing	Capital cost-supportive housing	\$750	\$0
	Rent subsidy-SSI recipient	\$268	\$0
	<i>Subtotal</i>	<i>\$1,018</i>	<i>\$0</i>
Justice System	Sheriff mental health jail	\$48	\$146
	Sheriff general jail	\$6	\$116
	Sheriff medical jail	\$4	\$84
	Probation	\$7	\$9
	<i>Subtotal</i>	<i>\$65</i>	<i>\$356</i>
Public Assistance	DPSS General Relief	\$138	\$183
	DPSS Food Stamps	\$91	\$172
	GR Housing Vouchers	\$1	\$83
	LAHSA homeless services	\$0	\$2
	<i>Subtotal</i>	<i>\$229</i>	<i>\$440</i>
Health Services	Los Angeles County Health Services hospital-inpatient	\$80	\$848
	Private hospitals-inpatient	\$76	\$424
	Los Angeles County Health Services outpatient clinic	\$25	\$191
	Los Angeles County Health Services – emergency room	\$13	\$118
	Private hospitals – emergency room	\$9	\$74
	Los Angeles County Mental Health	\$65	\$146
	Los Angeles County Public Health	\$20	\$134
	Los Angeles City Paramedics	\$22	\$167
<i>Subtotal</i>	<i>\$311</i>	<i>\$2,101</i>	
Total Average Monthly Costs		\$1,623	\$1,623

⁷ Supporting data for Figure 2, Average Monthly Cost by Decile for Homeless Single Adults (in months when homeless), is as follows:

Cost Category	Every-One	Lowest Decile	Second Decile	Third Decile	Fourth Decile	Fifth Decile	Sixth Decile	Seventh Decile	Eighth Decile	Ninth Decile	Highest Decile
HEALTH SERVICES TOTAL	\$651	\$3	\$5	\$10	\$15	\$31	\$94	\$199	\$393	\$958	\$4,811
Health Srv hospital-inpatient	\$230	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.23	\$5	\$88	\$2,211
Private hospitals-inpatient	\$121	\$0	\$0	\$0	\$0	\$0	\$0	\$1	\$16	\$161	\$1,035
Health Srv outpatient clinic	\$58	\$1	\$3	\$5	\$6	\$13	\$34	\$63	\$104	\$154	\$198
Health Srv - ER	\$42	\$0.3	\$0.1	\$1	\$2	\$3	\$11	\$27	\$49	\$98	\$227
Private hospitals-ER	\$28	\$0	\$0	\$1	\$1	\$2	\$8	\$19	\$34	\$65	\$146
Mental Health	\$38	\$1	\$1	\$1	\$2	\$5	\$15	\$30	\$59	\$73	\$195
Public Health	\$74	\$0.2	\$1	\$1	\$1	\$2	\$9	\$24	\$62	\$186	\$458
Paramedics	\$59	\$0	\$0	\$1	\$2	\$5	\$15	\$35	\$63	\$131	\$341
PUBLIC ASSISTANCE TOTAL	\$407	\$253	\$330	\$374	\$415	\$442	\$445	\$474	\$473	\$442	\$428
DPSS Food Stamps	\$165	\$127	\$158	\$163	\$171	\$180	\$176	\$172	\$172	\$169	\$162
DPSS General Relief	\$176	\$117	\$161	\$194	\$220	\$208	\$193	\$182	\$167	\$153	\$165
GR Housing Vouchers	\$65	\$8	\$11	\$17	\$23	\$52	\$74	\$118	\$132	\$119	\$98
LAHSA homeless services	\$1	\$1	\$0.3	\$0.3	\$1	\$1	\$1	\$1	\$3	\$2	\$2
JUSTICE SYSTEM TOTAL	\$387	\$3	\$8.7	\$14.1	\$18	\$28	\$64	\$111	\$237	\$549	\$2,844

Sheriff general jail	\$120	\$2	\$5	\$10	\$13	\$20	\$49	\$90	\$193	\$386	\$431
Sheriff medical jail	\$109	\$0	\$0.0	\$0.0	\$0.1	\$0.1	\$1	\$4	\$19	\$84	\$979
Sheriff mental health jail	\$149	\$0	\$0.0	\$0.0	\$0.1	\$0.3	\$1	\$3	\$11	\$62	\$1,418
Probation	\$10	\$2	\$4	\$4	\$5	\$8	\$13	\$14	\$15	\$17	\$16
AVERAGE TOTAL MONTHLY COST WHEN HOMELESS	\$1,446	\$259	\$344	\$397	\$447	\$500	\$602	\$784	\$1,103	\$1,949	\$8,083

⁸ Supporting data for Figure 3, Monthly Change in Cost When Not Homeless, is as follows:

	Cost Categories			
	Health Services	Public Assistance	Justice System	Total Cost Change
EVERYONE	-\$221	-\$361	-\$136	-\$718
Lowest Decile	\$164	-\$225	\$98	\$37
Second Decile	\$63	-\$310	\$132	-\$115
Third Decile	\$94	-\$356	\$260	-\$2
Fourth Decile	\$190	-\$385	\$71	-\$124
Fifth Decile	\$211	-\$391	\$168	-\$12
Sixth Decile	\$127	-\$385	\$140	-\$118
Seventh Decile	\$135	-\$408	\$133	-\$140
Eighth Decile	\$239	-\$402	\$12	-\$151
Ninth Decile	-\$270	-\$378	-\$159	-\$807
Highest Decile	-\$3,153	-\$367	-\$2,212	-\$5,732

⁹ Cost savings for residents in supportive housing with higher levels on on-site case management and health, mental health and substance abuse services compared with comparable residents receiving lower levels of services are documented in *Where We Sleep*, Economic Roundtable (2009), pp 41-42, www.economicrt.org.

¹⁰ Supporting data for Figure 4, Profile of Homeless Persons in the Tenth Cost Decile Compared to Persons in the First to Ninth Deciles.

	1st to 9th Cost Deciles	10th Cost Decile	Ratio
Asian/Pacific Islander	1%	1%	1.0
Spanish speaker	2%	1%	0.8
Born Mexico/Central America	3%	2%	0.7
HIV/AIDS	1%	3%	4.2
Not Born US/Mexico/Central America	3%	3%	1.0
Other ethnicity	3%	4%	1.2
Worked in past 3 years	11%	5%	0.4
18-29 years	29%	18%	0.6
Latino	24%	21%	0.9
White	20%	21%	1.1
Female	30%	21%	0.7
Veteran	27%	27%	1.0
Born in other state	28%	35%	1.3
DHS hospital inpatient	4%	37%	9.5
46+ years	30%	38%	1.3
Jail mental health facility	9%	40%	4.4
Probation record	24%	41%	1.7
Jail medical facility	13%	41%	3.3
30-45 years	41%	44%	1.1
African American	52%	54%	1.0
Substance abuse	28%	54%	1.9
Disability	34%	58%	1.7
Born in California	66%	60%	0.9
Mental illness	25%	60%	2.4
DHS emergency room	20%	64%	3.2
Male	70%	79%	1.1
Jail in past 5 years	56%	82%	1.5
No work in past 3 years	89%	95%	1.1
English speaker	98%	99%	1.0

¹¹ Shortfall factors, that is, the proportion of individuals who are actually in the tenth decile, or combined ninth and tenth deciles, but who are mistaken not shown as being part of those deciles are not shown in Table 1, whereas they are shown for Figures 5 to 8. This is because the concept of shortfall is applicable only to selection processes that screen the entire population, and not to selection processes that break out subgroups within the population, as is the case in Table 1.

¹² The coefficients used by the calculating tool are shown below. Calculations for the tenth decile alone, and the ninth and tenth deciles combined use different sets of coefficients.

	10th Decile Coefficients	9th and 10th Decile Coefficients
Born in state other than California	0.2747	0.2262
Born outside the United States	0.2610	0.2530
In jail in past 5 years	0.3706	0.5727
In jail medical facility in past 5 years	1.0623	1.1078
In jail mental health facility in past 5 years	1.1852	0.8519
Jail and/or probation record		0.2496
Female	-0.1529	-0.2018
Chronically homeless	-0.1719	-0.1472
HIV-positive	0.3611	0.6196
Disabled only	0.6090	0.5310
Substance abuse only	0.8443	1.0223
Disabled plus substance abuse	1.0013	1.2556
Mental health problems	0.2961	0.3860
Emergency Room User in Past 2 Years	0.9058	1.1846
Hospital Inpatient in Past 2 Years	2.0121	1.9455
Age 46+	0.0705	0.0772
constant term	-4.3249	-3.5553

¹³ For a hospital-based model that draws on data about the frequency and intervals of prior hospital and emergency room use, primary and specialty care patterns, and presence of multiple chronic conditions to predict future hospital admissions for adult disabled Medicaid patients, see: John Billings (December 2006), "Identifying High Cost Patients for Interventions to Improve Health and Social Care Services," NYU Center for Health and Public Service Research, New York, NY. Comparable data is available for the population in this study, making it possible to further refine the work presented in this paper by developing screening tools specifically tailored for identifying high-cost homeless individuals from among the hospital population or from among the jail population.

¹⁴ The City of Los Angeles alone is producing 400 to 500 units of supportive housing in a typical year. Additional housing production in other cities in the county increases this number, but countywide data is not readily available.

¹⁵ The number of openings in existing supportive housing units is determined by the total size of this inventory and the rate at which units turn over. The most conservative estimate of the size of the supportive housing inventory comes from the Los Angeles County Homeless Services Authority's 2008 Continuum of Care report for Los Angeles County, which excludes Glendale, Long Beach and Pasadena. This document reports a total of 2,116 units (attachment 4C, Continuum of Care Housing Performance, page 108). A much higher estimate of the inventory size comes from a forthcoming study by Martha Burt, carried out for the Corporation for Supportive Housing, which reports that there are approximately 10,000 units of supportive housing in Los Angeles County, of which 3,000 to 4,000 are in scattered sites and unsuitable for housing high-need individuals. The Continuum of Care report shows that 320 of the 2,116 units shown in the report turned over during the course of the year, for a 15 percent turnover rate. On the other hand, anecdotal reports from supportive housing programs that serve high-need individuals indicate that about 20 percent of units turn over in the course of a year. If we apply the 20 percent turnover rate to a mid-range estimate of 5,000 supportive housing units, we get 1,000 annual vacancies created by turnover.

¹⁶ Supporting data for Figures 5 and 6, Outcomes from Targeting 10th Decile Individuals Using Population Profiles in Table 1 and 9th and 10th Decile Outcomes from Targeting 10th Decile Individuals Using Population Profiles in

Table 1, is shown below. Figures shown in red are interpolations rather than actual data points from the homeless population profile.

10th Decile Proportion	Figure 5 Data		Figure 6 Data	
	10th Decile Burden with Interpolations	10th Decile Shortfall with Interpolations	9th & 10th Decile Burden with Interpolations	9th & 10th Decile Shortfall with Interpolations
0.00	8.606	0.000	3.866	0.000
0.01	4.323	0.008	1.828	0.057
0.02	4.042	0.012	1.709	0.073
0.03	3.908	0.014	1.641	0.078
0.04	3.830	0.017	1.619	0.088
0.05	3.576	0.029	1.516	0.117
0.06	3.219	0.051	1.352	0.156
0.07	2.846	0.081	1.176	0.208
0.08	2.822	0.084	1.168	0.214
0.09	2.629	0.108	1.077	0.252
0.10	2.519	0.124	1.032	0.281
0.11	2.404	0.145	0.979	0.315
0.12	2.230	0.180	0.923	0.387
0.13	1.987	0.237	0.801	0.472
0.14	1.948	0.247	0.790	0.495
0.15	1.910	0.257	0.780	0.518
0.16	1.665	0.338	0.677	0.662
0.17	1.632	0.351	0.665	0.687
0.18	1.577	0.375	0.651	0.739
0.19	1.483	0.418	0.619	0.827
0.20	1.390	0.462	0.586	0.916
0.21	1.342	0.490	0.564	0.964
0.22	1.294	0.517	0.541	1.012
0.23	1.226	0.561	0.512	1.095
0.24	1.168	0.603	0.474	1.151
0.25	1.165	0.605	0.472	1.154
0.26	1.163	0.606	0.471	1.157
0.27	1.160	0.608	0.470	1.160
0.28	1.158	0.610	0.469	1.164
0.29	1.156	0.612	0.467	1.167
0.30	1.153	0.614	0.466	1.170
0.31	1.151	0.616	0.465	1.173
0.32	1.148	0.618	0.464	1.176
0.33	1.118	0.666	0.450	1.252
0.34	1.088	0.714	0.436	1.328
0.35	1.058	0.762	0.422	1.403
0.36	1.044	0.792	0.420	1.456
0.37	1.017	0.854	0.405	1.549
0.38	0.999	0.904	0.403	1.640
0.39	0.981	0.955	0.400	1.730
0.40	0.963	1.005	0.398	1.821
0.41	0.944	1.056	0.395	1.912
0.42	0.930	1.117	0.403	2.038
0.43	0.870	1.404	0.394	2.537
0.44	0.849	1.518	0.365	2.668
0.45	0.774	1.968	0.314	3.342
0.46	0.699	2.418	0.263	4.015
0.47	0.693	2.457	0.263	4.090
0.48	0.688	2.497	0.263	4.166
0.49	0.682	2.536	0.263	4.241
0.50	0.676	2.576	0.263	4.316
0.51	0.671	2.639	0.256	4.399
0.52	0.665	2.702	0.249	4.481
0.53	0.659	2.765	0.242	4.563
0.54	0.641	3.072	0.225	5.000
0.55	0.589	4.065	0.208	6.602

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0.56	0.516	5.754	0.158	9.182
0.57	0.506	5.993	0.153	9.573
0.58	0.496	6.232	0.148	9.965
0.59	0.486	6.470	0.143	10.357
0.60	0.476	6.709	0.138	10.748
0.61	0.466	6.948	0.133	11.140
0.62	0.456	7.187	0.128	11.531
0.63	0.446	7.426	0.123	11.923
0.64	0.437	7.951	0.119	12.767
0.65	0.428	8.476	0.115	13.611
0.66	0.420	9.001	0.110	14.455
0.67	0.411	9.527	0.106	15.299
0.68	0.403	10.052	0.102	16.143
0.69	0.389	12.124	0.093	19.402
0.70	0.375	14.196	0.085	22.662
0.71	0.369	28.126	0.083	44.746
0.72	0.363	42.057	0.082	66.831
0.73	0.356	55.987	0.081	88.915
0.74	0.350	69.917	0.080	111.000
0.75	0.333	69.92	0.067	111.000

¹⁷ Cumulatively combining the 0.40 cut-off point for the proportion of persons selected that are expected to be in the tenth decile with all higher cut-off points, which is the effective result of setting a minimum threshold for using the proportion score to prioritize individuals for referral to supportive housing, produces a lower level of burden (0.96) than is shown in Tables 1 and 1A for the 0.41 proportion level (1.42). This is because the lower level of burden associated with the higher cut-off levels produces an overall average burden that is lower than that for the 0.40 or 0.41 levels by themselves.

¹⁸ Supporting data for Figures 7 and 8, 10th Decile Burden and Shortfall Outcomes from Using the 16-Variable Calculating Tool and 9th and 10th Decile Burden and Shortfall Outcomes from Using the 16-Variable Calculating Tool, is as follows:

Cutoff %	Decile 10 Data		Deciles 9 and 10 Data	
	Shortfall	Burden	Shortfall	Burden
5	0.08	3.01	0.02	2.39
10	0.22	1.99	0.08	1.60
15	0.43	1.49	0.17	1.25
20	0.62	1.25	0.31	0.95
25	0.78	1.14	0.40	0.82
30	1.00	1.06	0.50	0.74
35	1.28	0.96	0.60	0.66
40	1.90	0.86	0.84	0.58
45	2.38	0.84	1.07	0.49
50	2.90	0.75	1.33	0.45
55	3.64	0.76	1.56	0.42
60	4.74	0.70	1.77	0.39
65	5.82	0.61	2.22	0.36
70	7.39	0.63	2.83	0.31
75	8.81	0.48	3.67	0.27
80	13.08	0.45	4.71	0.25
85	23.25	0.58	6.31	0.23
90	29.10	0.55	10.61	0.16
95	872.00	0.00	27.16	0.13