

Homeless in Los Angeles

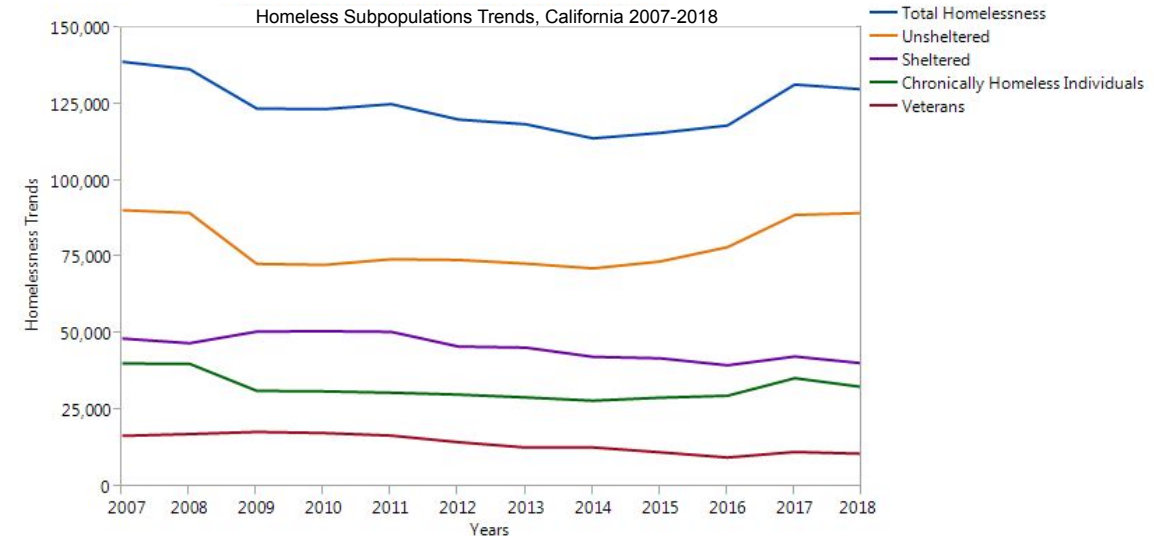
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Homeless Subpopulations

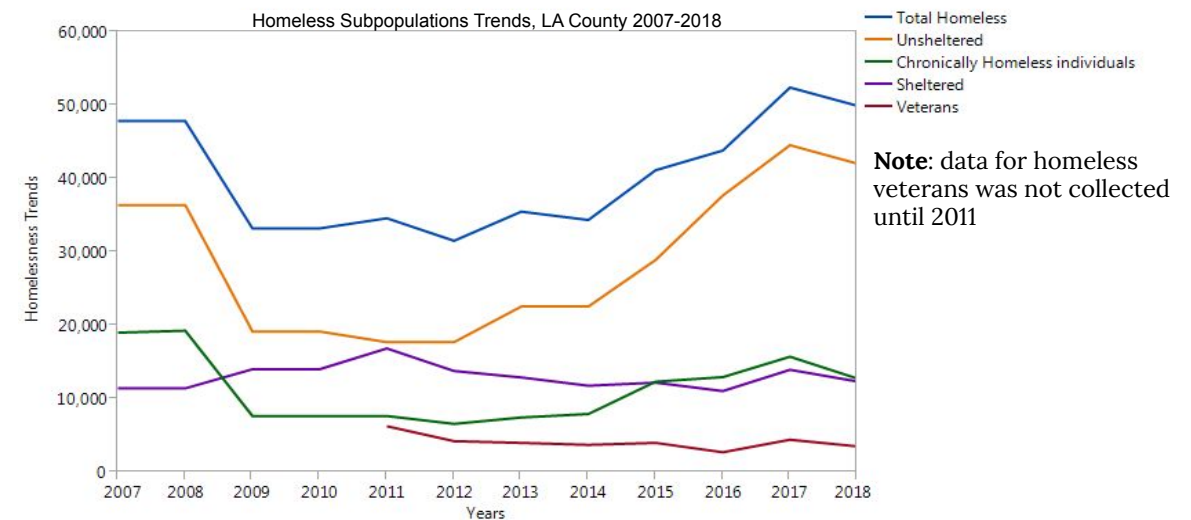
California

- ❖ All subpopulations of homelessness show a steep decrease from 2008-2009 except for sheltered homelessness
- ❖ Chronically homeless individuals experienced relatively no change from 2009-2016
- ❖ Total homelessness shows a concerning rise in recent years since 2016
- ❖ In 2018, the homelessness population in California outnumbered the combined homeless populations of Florida, Illinois, Washington, Pennsylvania, Massachusetts, and Texas.



Los Angeles County

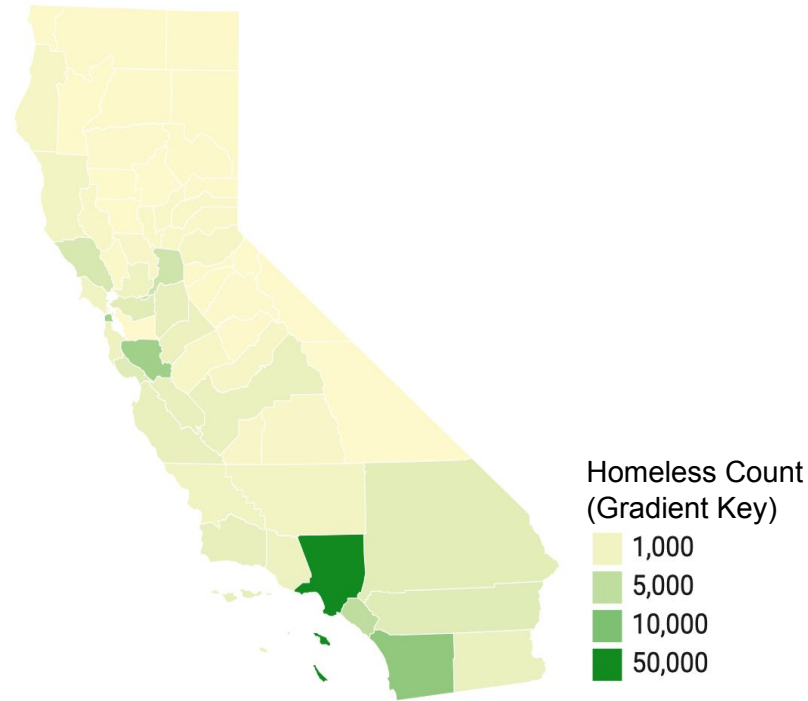
- ❖ Total homelessness experienced a steep drop from 2008-2009; subsequently, each subpopulation experienced a drop except sheltered homelessness
- ❖ Sheltered homelessness shows an increase from 2007-2011, and then a general decline from 2011-2016
- ❖ Note: data for homeless veterans was not collected until 2011
- ❖ Total homelessness shows a steep increase from 2012-2017
- ❖ In 2018, Los Angeles accounted for a resounding 39.25% of California's total homeless population



**Although we consider the data to be reliable due to its sheer volume over so many years, it's important to acknowledge potential flaws in the snapshot-style point-in-time data collection procedure. All homelessness counts were collected on a single night in January, and weather could be a confounding factor here. If it was raining, snowing, or simply too cold outside, many people would have sought shelter (formal or informal) when they normally don't, shifting the subpopulations in a way not reflected during the other three seasons or the average night.*

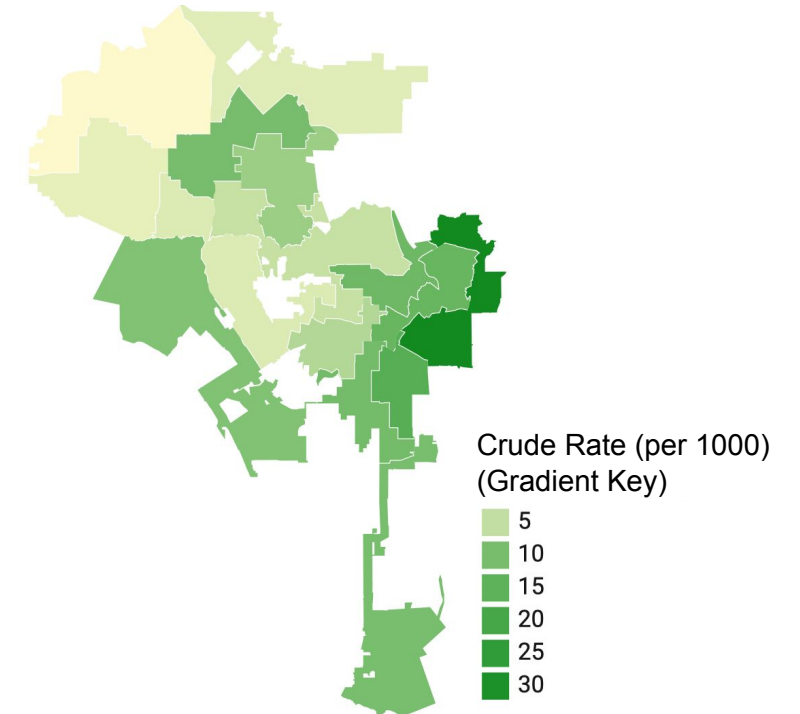
California & LA Homelessness Counts

Total Homelessness Count by CA County, 2019



This choropleth map depicts the total homelessness count in California by county. The most urban and populated counties—San Francisco County, Santa Clara County, Los Angeles County, and San Diego County—held the highest totals of homelessness. Specifically, we can see that there is a distinctively higher count in the Los Angeles County compared to the 58 other counties in California.

Crude Rate of Homelessness by LA City Council District, 2019



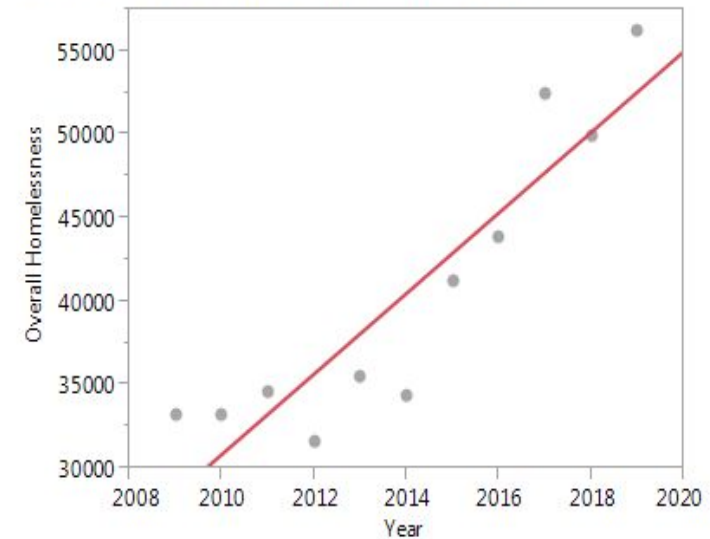
This choropleth map depicts the crude rate of homelessness in the city of Los Angeles by Council Districts, calculated by dividing total homelessness count by total district population and multiplying by 1,000. The most prevalent areas of homelessness are Northeast (Skid Row) and Downtown Los Angeles.

Predicting LA County Homelessness

- ❖ Conditions of simple linear regression model:
 - Distribution of e at any particular x value has mean value 0
 - Standard deviation of e same is same for any particular value of x
 - Distribution of e at any particular x value is normal
 - Random deviations associated with different observations are independent of one another
- ❖ **Regression equation:**
 $\hat{y} = -4338141 + 2173.897x$
- ❖ $R \approx 0.9104$ indicates that there is a **positive, strong linear association** between time (year) and overall homelessness in the LA County
- ❖ $R^2 \approx 0.8288$ indicates that **82.88% of the variability** in the overall homelessness in the LA County can be explained by its approximately linear relationship with time (year)
- ❖ **Predicting 2020 homeless population:**
 $\hat{y}(2020) = -4338141 + 2173.897(2020)$
 $\hat{y}(2020) \approx 55,057$ **homeless people**
- ❖ According to our regression model, the predicted 2020 overall homelessness will be a slight improvement from the reported 2019 homelessness
- ❖ However, when considering how two of the last three annual counts have exceeded prediction, it's very possible our model's prediction for 2020 will turn out to be an underestimation of the actual 2020 overall homelessness

Year	Overall Homelessness
2020*	55,057*
2019	56,257
2018	49,955
2017	52,442
2016	43,854
2015	41,174
2014	35,524
2013	35,524
2012	34,622
2011	34,622
2010	33,243
2009	33,243

Bivariate Fit of Overall Homelessness By Year



— Linear Fit

Linear Fit

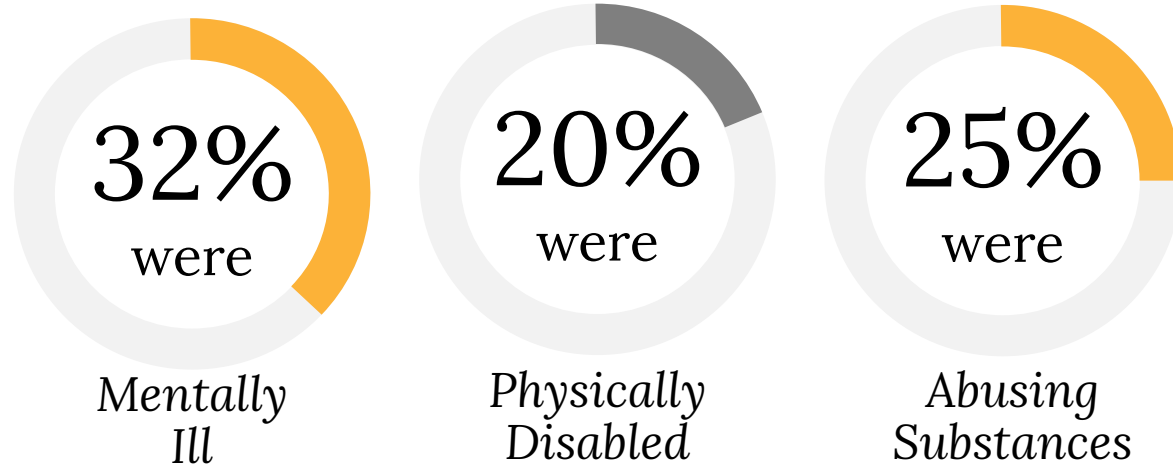
Overall Homelessness = $-4822875 + 2414.8182 \cdot \text{Year}$

Summary of Fit

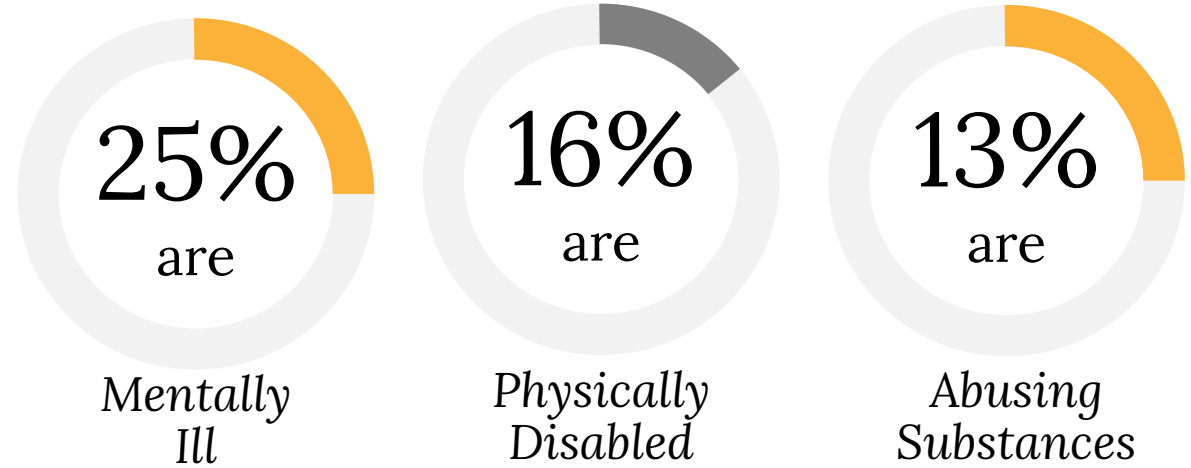
RSquare	0.828823
RSquare Adj	0.809804
Root Mean Square Error	3836.639
Mean of Response	40569.09
Observations (or Sum Wgts)	11

Homeless Health Conditions

Proportions of Health Issues within LA Homeless Population, 2015



Proportions of Health Issues within LA Homeless Population, 2019



Much of the data on the LA homeless population are point-in-time estimates. Wanting as comprehensive and accurate data as possible, we calculated three different confidence intervals for the proportion of the LA homeless population that are mentally ill, physically disabled, and abuse substances. Based on the data collected for 2015, we are 95% confident that:

- the **true proportion** of the LA homeless population **who suffered from mental illness was between 31.566% and 32.434%**
- the **true proportion** of the LA homeless population **who suffered from a physical disability was between 19.628% and 20.372%**
- the **true proportion** of the LA homeless population **who suffered from substance abuse is between 24.597% and 25.403%**

*Conditions are met through simple random sample and sufficiently large sample size

Based on the data collected for 2019, we are 95% confident that:

- the **true proportion** of the LA homeless population **who suffer from mental illness is between 24.650% and 25.350%**
- the **true proportion** of the LA homeless population **who suffer from a physical disability is between 15.704% and 16.296%**
- the **true proportion** of the LA homeless population **who suffer from substance abuse is between 12.728% and 13.272%**

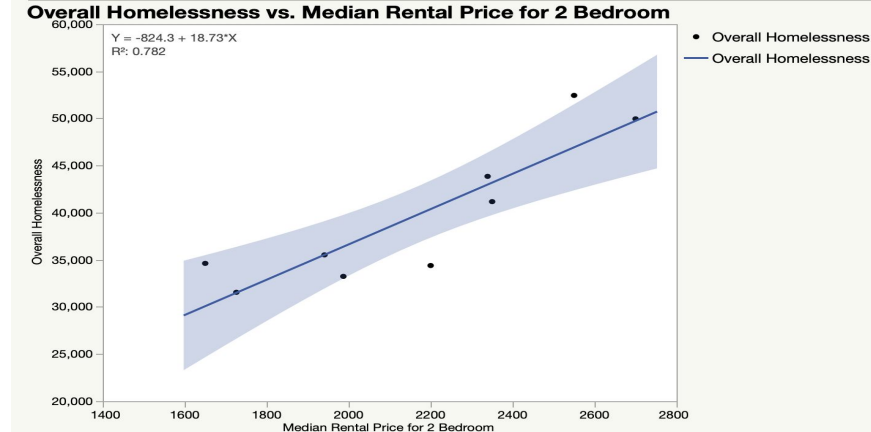
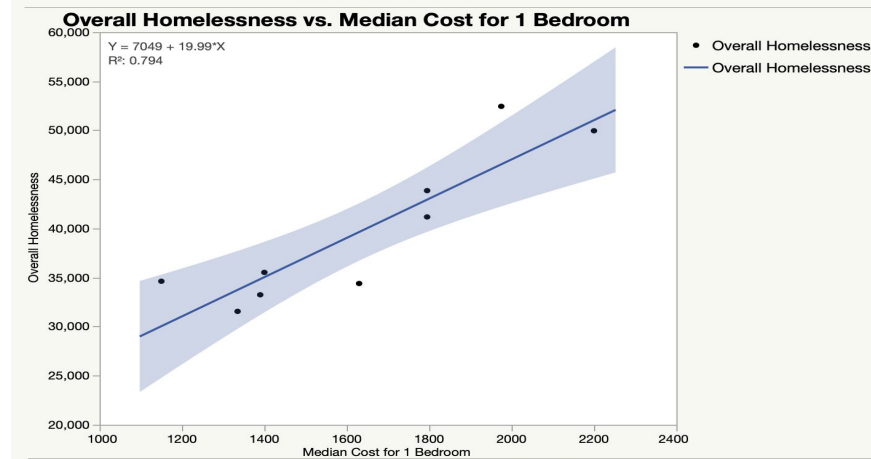
Since there is no overlap between the corresponding confidence intervals of either year, it's reasonable to conclude there is a **clear improvement** across all three conditions within the homeless population between 2015 and 2019. This is **absolutely surprising** considering how LA's overall homeless population has actually increased in the same amount of time. This **juxtaposition hints at another explanatory variable** so predominant that it undermines the progress made in health conditions—**unaffordable housing**.

Unaffordable Housing

- ❖ LA is **third most rent burdened metro area in the nation.**
- ❖ In LA metro area, **median rental price was \$1,340** in 2018.
- ❖ An individual needs to **make over \$53,600 per year to afford that** without spending 30%+ of their monthly income
 - **Typical renter in LA makes \$44,000 per year**
- ❖ Fewer affordable rental units available to median-earning renters than any other metro areas

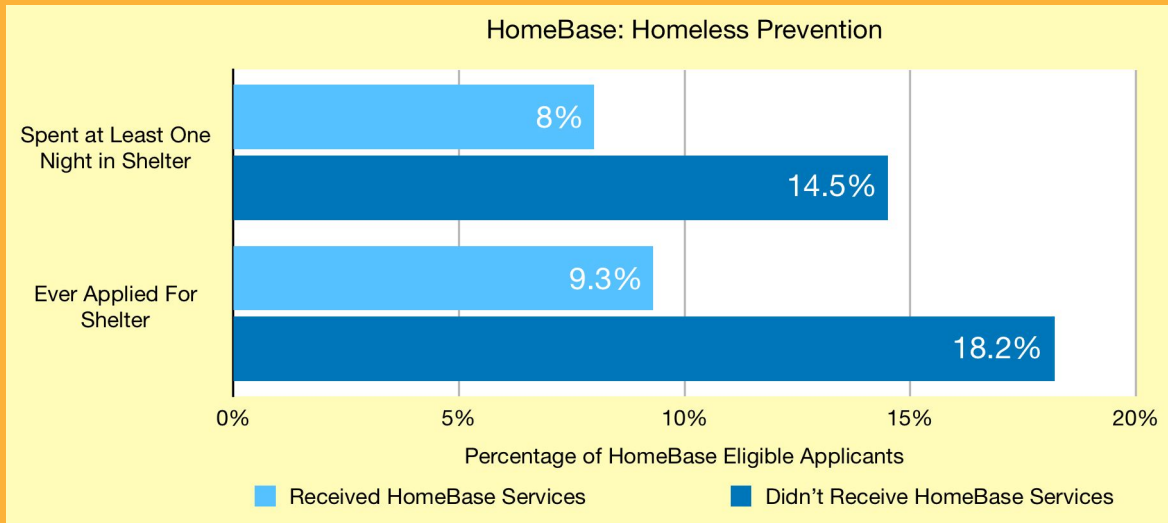
OUR GRAPHS

- ❖ Conditions of simple linear regression model
 - Distribution of e at any particular x value has mean value 0
 - Standard deviation of e same is same for any particular value of x
 - Distribution of e at any particular x value is normal
 - Random deviations associated with different observations are independent of one another
- ❖ Taking a look at these graphs, it is reasonable assume (based on this small sample) that the assumptions are met
- ❖ We created 3 graphs plotting price of overall homeless numbers from 2010-2018 against median rental costs in Los Angeles for studio, 1 bedroom, and 2 bedroom.
- ❖ We found **R²-values of 0.899, 0.794, and 0.782**, respectively.
 - An average variability of 82.5% in the overall homelessness can be explained by its approximately linear relationship with the median rental costs.
- ❖ We found R-values of **0.948, 0.891, and 0.884**, respectively.
 - We see a **strong, positive correlation** between the two variables across as three housing options; as median costs of housing increases, overall homelessness increases, as well.



HomeBASE Program: Preventing Homelessness

The best way to combat homelessness is to prevent homelessness. The HomeBASE program **connects at-risk individuals and households** to a **vast network** of agencies and community organizations to help maintain housing **before** an episode of homelessness.



(Based on data from a study of HomeBASE effectiveness w/ 27-month follow-up period)

- Those who are eligible for HomeBASE services and receive it are **6.5 percentage points (8% vs. 14.5%) less likely to spend at least one night in a shelter** than those who did not receive HomeBASE services—an impressive **44.8% reduction**.
- Those who are eligible for HomeBASE services and receive it are **8.9 percentage points (9.3% vs. 18.2%) less likely to ever apply for a shelter** than those who did not receive HomeBASE services—a **48.9% reduction**.

Aspects of HomeBASE Services



Short-term Financial Aid provides financial assistance that helps individuals and families cover rent, rental arrears, and other housing costs.



Eviction Prevention includes financial assistance, legal representation, or landlord-tenant mediation services to prevent housing displacement.



Rapid Rehousing helps individuals and families quickly exit homelessness should they enter it—ensuring that if homelessness is unavoidable, it's at least brief.



Critical Time Intervention provides comprehensive case management to connect individuals with mental illnesses to psychiatric care.

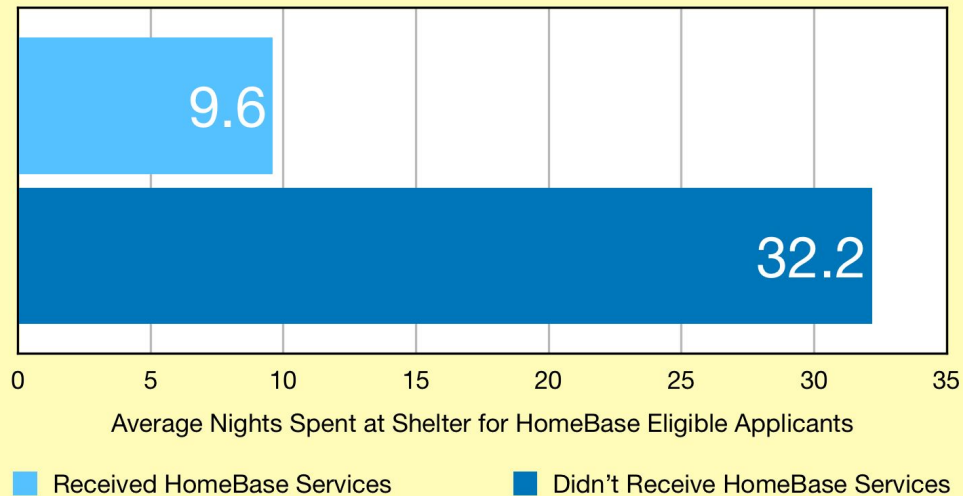


Proactive Screening of At-Risk Populations with follow-up services (such as employment training) to help individuals and families maintain housing.

Rapid Rehousing

The second best way to combat homelessness is through rapid rehousing. If an episode of homelessness cannot be prevented, the next best option is to ensure its brevity, helping families and individuals **quickly exit homelessness** should they enter it.

HomeBase: Rapid Rehousing



- Those who are eligible for HomeBase services and receive it spend, on average, **22.6 less nights in a homeless shelter** than those who did not receive HomeBase services—an incredible **70.2% reduction**.

Saving Costs

The HomeBase program is not only effective, it's cost effective. A study by the University of Notre Dame suggests that every additional dollar spent preventing homelessness would save \$2. The saved costs of preventing homelessness comes from avoiding the costs of providing shelter, health care, police and incarceration, food stamps, etc.

The money saved could be used to expand and improve HomeBase services (currently there are none in the Los Angeles Area) as well as be spent on further research on homelessness. Other explanatory variables may be explored, leading to even more comprehensive solutions and subsequent policies.

Ratio of cost of preventing a spell of homelessness vs. monetary benefit of preventing a spell of homelessness:

\$1 : \$2

The Battle Against Homelessness

Prevention, Rehousing, Saving Costs, Furthering Research

- ❖ Despite being one of the wealthier cities in the world, Los Angeles suffers from a homeless crisis that's only getting worse.
- ❖ Upon learning this, we carefully investigated the historical, present, and prospective context of the issue matter along with closely related issues, such as physical & mental health, as well as the rising cost of housing.
- ❖ Subsequently, we explored potential evidence-based solutions and presented a comprehensive, multifaceted coalition of services to combat homelessness through the HomeBASE program.
- ❖ As previously mentioned, there are currently no HomeBASE sites in the Los Angeles area. In order to implement our solutions, state funding would have to be allocated to establish and sustain the program's infrastructure in the Los Angeles area.
- ❖ Our solutions will not only save costs, but will offer families and individuals the basic right of a fair shot at a dignified life free of the clutches of homelessness.



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