HOUSING THE HOMELESS:

THE EFFECT OF PLACING SINGLE ADULTS EXPERIENCING

HOMELESSNESS ON FUTURE HOMELESSNESS AND

SOCIOECONOMIC OUTCOMES

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Appendix Material – For On-line Publication Only

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A. Homelessness in Los Angeles County: Overview

Los Angeles County's homeless population is the second largest in the United States. Although the composition of its homeless population is quite different compared to other communities in the country, the characteristics of its single adult homeless population, as well as the federal funding levels per homeless person counted, are similar to those in many other communities.

Figure A.1 graphs Los Angeles Continuum of Care's (CoC) homeless rate over time.[48] Panel (a) includes both unsheltered and sheltered homeless individuals, while panel (b) includes only unsheltered homeless individuals.[49] In 2010, there were an estimated 360 homeless individuals per 100,000 in Los Angeles CoC. This rate has increased by 70 percent over time, with a rate of 608 per 100,000 in 2019, with 460 of them unsheltered. In 2019, Los Angeles CoC had the nation's second largest homeless population (approximately 60,000 individuals) and the largest unsheltered homeless population. The figure also plots the time trend in homeless rates for the New York City CoC and the rest of the country. For comparison, New York City CoC, which has the largest homeless population in the nation, has also experienced a similar increase over this period, although its increase was driven by sheltered homeless, since it has a right-to-shelter policy. In contrast, when considering the rest of the U.S., the homeless rate has declined by 21 percent, from 184 per 100,000 in 2010 to 144 per 100,000 in 2019.[50]

Comparing Los Angeles County and New York City to the rest of the CoCs shows that despite their extraordinary large homeless populations, they share some similarities with other communities in the U.S., as can be seen in Figure A.2, which plots homeless rates versus designated homeless beds (in both temporary and permanent housing programs) for 371 CoCs in 2019. The dashed line in the figure presents the fitted line from a linear regression of beds rate on homeless rate. The fitted line has a positive slope, implying that CoCs with a higher rate of beds per capita have a higher homeless rate. In particular, there are several CoCs with a similar homeless and beds rates to that of Los Angeles CoC.

The homeless population in Los Angeles CoC is somewhat different compared to that in the rest of the U.S. along some dimensions. Columns 1-2 of Table A.1 present the characteristics of the homeless populations of Los Angeles CoC and the rest of the United States, as of 2019, respectively. The first important difference between Los Angeles and the rest of the U.S. is that only 25% of

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[48]Continuum of Cares (CoCs) are geographic units at which providers of homelessness assistance jointly apply for federal resources and develop a strategic plan to address homelessness within their jurisdiction. CoCs vary in size and composition and can be comprised of single cities, individual counties, several counties, or entire states. In 2019, there were 394 CoCs in the United States and its territories.

[49]An unsheltered homeless is defined as an individual spending the night in a place not meant for human habitation (e.g., street). A sheltered homeless is defined as an individual spending the night in a temporary housing program (e.g., emergency shelter).

[50]Evans, Phillips and Ruffini (2021) and O'Flaherty (2019) show that the large increases in homeless rates in Los Angeles CoC and New York City CoC cannot be explained by the rising housing prices in these CoCs alone, and call for additional research trying to find additional determinants of homelessness in these CoCs, which together comprise 25% of the entire homeless population in the U.S.
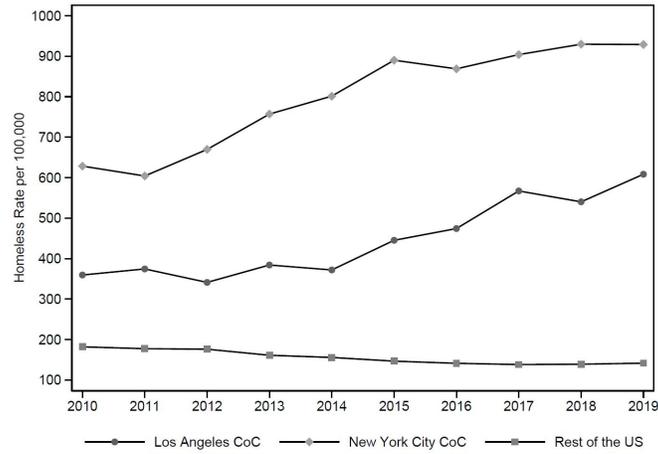
(a) Overall Homeless Rate
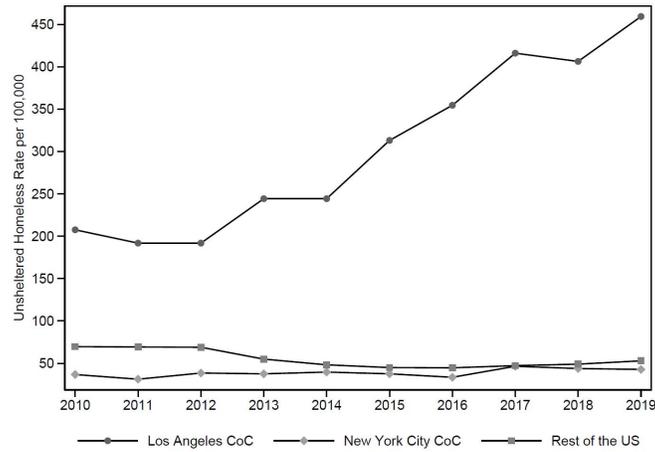
(b) Unsheltered Homeless Rate

Figure A.1. : Homeless Trends in LA CoC, NYC CoC, and the Rest of the U.S

Note: Los Angeles CoC (Continuum of Care) includes all of Los Angeles County, excluding the cities of Glendale, Long Beach, and Pasadena. NYC CoC refers to the New York City continuum of care, and the rest of the US includes 372 CoCs that have available data from 2010-2019. CoC population is defined as the average estimates from the 2013-2017 ACS. The 374 CoCs included in this analysis cover 97.5% of the U.S. population. Panel (a) includes unsheltered homeless individuals and individuals receiving temporary housing assistance. Panel (b) includes only unsheltered homeless individuals.

Los Angeles' homeless population is sheltered, compared to 68% of the homeless population in the rest of the country. It is not clear why the unsheltered homeless population in Los Angeles CoC is so large, but several explanations include high
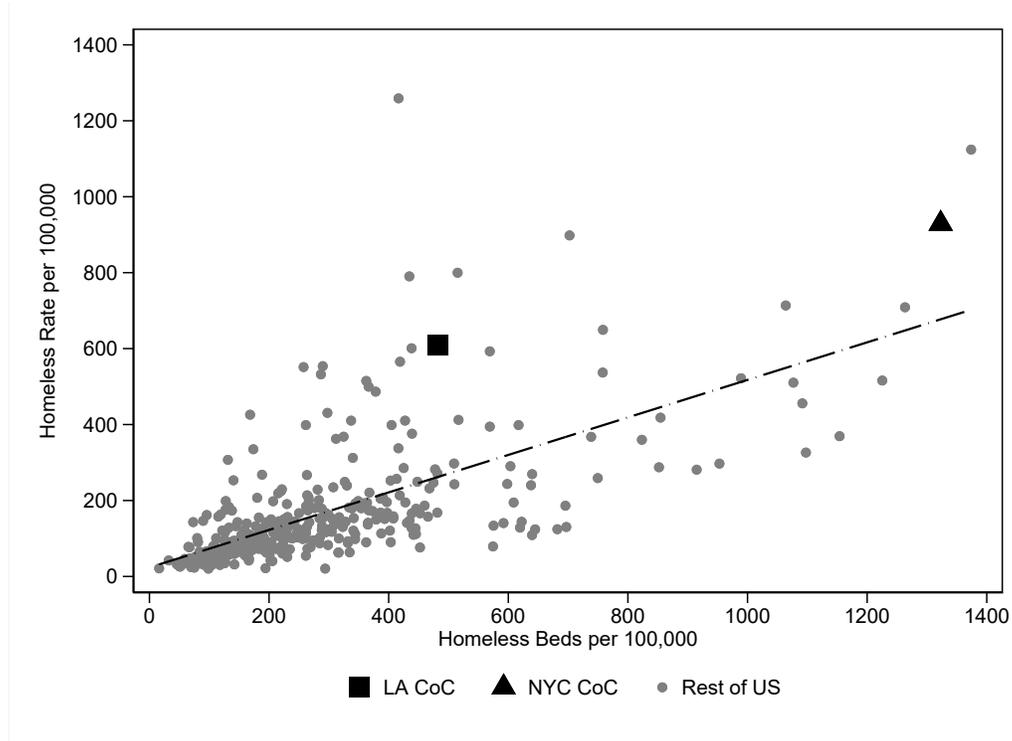
Figure A.2. : Homeless Rates versus Homeless Beds Per Capita, 2019.

Note: Sample consists of 371 CoCs with available data on homeless counts and designated homeless beds counts (both temporary and permanent housing programs included). The dashed line presents the linear fit between homeless rate and beds rate, with a 0.5 coefficient and .028 standard error. 3 CoCs with a homeless beds rate per 100,000 larger than 1,500 are excluded from the figure.
source: Byrne et al. (2013), US Department of Housing and Urban Development (HUD) Point-in-Time (PIT).

housing prices, lack of designated homeless housing, zoning laws and NIMBYism, and the moderate climate (See Byrne et al., 2013; Corinth, 2017; Corinth and Lucas, 2018). Additionally, homeless individuals in Los Angeles CoC are less likely to be female (31% compared to 40% in the rest of the U.S.), more likely to be part of a minority group (10% consider themselves non-Hispanic whites compared to 28% in the rest of the country), less likely to be part of a family (15% of individuals compared to 32% in the rest of the country), more likely to be chronically homeless (28% compared to 18% in the rest of the country), and more likely to suffer from severe mental illness (27% compared to 20% in the rest of the country).[51]

[51]Chronically homeless individual refers to an individual with a disability who has been continuously homeless for one year or more or has experienced at least four episodes of homelessness in the last three years, with a combined time homeless of at least 12 months (Henry et al., 2020).

Table A.1—: Characteristics of Individuals Experiencing Homelessness, 2019.

| | Overall Population | | Single Individuals | |
	Los Angeles CoC	Rest of US	Los Angeles CoC	Rest of US
	(1)	(2)	(3)	(4)
Overall Homeless Population	56,257	490,904	47,810	334,050
Homeless Rate (per 100,000)	608	164	517	112
Shelter Type:				
Sheltered	0.25	0.68	0.15	0.56
Unsheltered	0.75	0.32	0.85	0.44
Gender:				
Females	0.31	0.40	0.26	0.30
Males	0.67	0.60	0.71	0.69
Race/Ethnicity:				
Black	0.43	0.40	0.40	0.34
Hispanic	0.36	0.20	0.36	0.16
White	0.10	0.28	0.21	0.47
Other Race/Ethnicity	0.11	0.12	0.03	0.03
Household Type:				
Families	0.15	0.32	-	-
Anyone Else	0.85	0.68	-	-
By Age:				
Under 18 Years Old	0.09	0.20	0.001	0.01
18-24 Years Old	0.06	0.08	0.06	0.09
> 24 Years Old	0.85	0.72	0.93	0.90
Special Populations (18+ Years Old):				
Chronically Homeless	0.28	0.18	0.31	0.23
Veterans	0.06	0.07	0.07	0.10
Severely Mentally Ill*	0.27	0.20	-	-
Chronic Substance Abuse*	0.16	0.16	-	-
HIV Positive*	0.02	0.07	-	-

Note: Column 1-4 show different demographic characteristics of individuals experiencing homelessness. Columns 1-2 consider the overall homeless population, while columns 3-4 consider the single individuals homeless population. Columns 1 and 3 show demographics for Los Angeles CoC, while columns 3 and 4 show demographics for the rest of the US.

source: United States Department of Housing and Urban Development (HUD) 2019 Point-in-Time (PIT) Report, Los Angeles Homeless Services Authority (LAHSA) Point-in-Time Report, Byrne et al. (2013), and Table 1 from Evans, Phillips and Ruffini (2021).

Columns 3-4 of Table A.1 compare the characteristics of single adults experiencing homelessness in Los Angeles CoC and the rest of the country, respectively. This is more relevant for my study since it focuses on the single adult homeless population.[52] Even when restricting attention to single adults, a lot fewer are sheltered in Los Angeles CoC (15%) compared to the rest of the country (56%). However, Los Angeles CoC's single adults experiencing homelessness share some similarities with single individuals experiencing homelessness in the rest of the country. For example, approximately 70% are male, blacks are over-represented (40% in Los Angeles CoC and 34% in the rest of the US), and the share of chroni-

[52]To be precise, my definition of single adult excludes individuals under 25 or above 70, while the single individuals category does not.

cally homeless is larger compared to the general homeless population (31% in Los Angeles CoC and 23% in the rest of the country).

Homeless programs and services have three main sources of funding: federal, local, and private. Federal funding supports homeless programs through multiple agencies, the largest the Department of Housing and Urban Development (HUD), which provides approximately 40% of overall federal funding (USICH, 2019). In addition, local governments (states, counties and cities) provide their own funding. Unfortunately, consistent data on local and private funding does not exit at the CoC level and one must rely on federal funding data to make comparisons across CoCs. The largest of the federal grants is the Continuum of Care (CoC) Program Grant, which distributes more than $2 billion dollars for homeless programs annually. In 2018, the average CoC received $5.6 million dollars in CoC grants, or $5,000 dollars per homeless person counted. Los Angeles CoC received slightly more than $123 million dollars, the second largest grant after New York City, but this was translated to only $2,476 per homeless person counted.

The significant increase in the homeless population and the low federal spending rates per homeless person counted in LA County have led decision makers, backed up by the public, to allocate more resources to address the problem of homelessness.[53] As a result, for example, the county's overall budget for homelessness in 2018 was $619 million, with only $130 million (approximately 20 percent) granted by HUD, implying that LA County spent on average $11,000 per homeless person counted in 2018.

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[53]County voters have supported increasing homeless spending by approving billions of dollars in bonds that would provide tens of thousands of affordable housing units and services for the homeless. Some of the important propositions and measures are worth mentioning. In 2016, more than 77 percent of L.A. City voters supported Proposition HHH, a $1.2 billion housing bond, to fund 10,000 units of supportive housing over the next decade. Then, in March of 2017, 69 percent of L.A. County voters approved Measure H, a $3.5 billion tax-funded measure for homeless services and rental subsidies that would provide permanent housing for 45,000 families and individuals, while preventing homelessness for 30,000 others. In addition, other affordable housing measures were approved by city, county, and state voters, including Measure JJJ in 2016, State Propositions 1 and 2 in 2018, and L.A. City's linkage fee on housing developers in 2017.

Table A.2—: Summary of Influential Literature Evaluating Housing Programs for the Homeless and Comparison to this Study.

Study	Type	Target Population	Intervention	Comparison Group	Follow-Up	Main Findings
This Study	Observational	Single Adults Experiencing Homelessness (N = 15,990)	Enrollment in one of the following housing programs within one month on intake: - Permanent Housing (PH) (N = 135) - Temporary Housing (TH) (N = 875)	Individuals who were not housed within one month of intake	- 10 months (N= 15,990) - 20 months (N = 7,584)	Relative to comparison, 10 (20) months after assignment: Homelessness: - 21% (26%) reduction in future returns to homeless system - PH: no significant effect on future homelessness - RRH/TH: 60% (54%) reduction in future returns to homelessness Crime: - 26% (36%) reductions in jail bookings, criminal charges, or probation PH: 50% (65%) reductions in jail bookings, criminal charges, or probation - RRH/TH: 21% (26%) reductions in jail bookings, criminal charges, or probation Health: - no significant effect on public health services utilization, emergency department visits, mental health care
Gubits et al. (2018) (Family Options Study)	RCT	Families with Children (N = 2,282)	Priority access to one of three: - Long-term rent subsidies (PH) (N = 530) - Short-term rent subsidies (RRH) (N = 455) - Transitional Housing (TH) (N = 294)	Usual Care	- 20 months (N= 1,857) - 37 months (N = 1,784)	Relative to Usual Care, 20 months after assignment: Homelessness: - PH: 55% reduction in shelter stays - RRH: 9% reduction in shelter stays (insignificant) - TH: 35% reduction in shelter stays Health: - PH: no effect on reported health, 13% reduction in psychological distress, 27% reduction in alcohol or drug dependence - RRH/TH: no significant effect on reported health, psychological distress, or substance dependence Self Sufficiency: - PH: 19% reduction in employment likelihood, no effect on total family income - RRH: no effect on employment, 13% increase in total family income - TH: no effect on employment or total income
Tsemberis & Eisenberg (2000); Greenwood et al. (2005); Gulcur et al. (2003); Padgett et al. (2006); Tsemberis et al. (2004) (Pathways to Housing)	RCT	Individuals with psychiatric disabilities who are homeless and living on the street (N = 1,842)	- Supportive Housing (Housing + Services) - Housing First (not required to participate in services) (N = 242)	Usual Care	5 years	Homelessness: - over 50% increase in likelihood of remaining housed Health: - Significant decline in the number of hospitalizations within 24 months - no significant effect on substance use or psychiatric symptoms
Rosenheck et al. (2003); Montgomery et al. (2013) (Veterans Affairs Supportive Housing)	RCT	Homeless veterans with psychiatric and/or substance abuse disorders (N = 460)	Assignment to one of three groups: - Long-term rent subsidies (PH) with intensive case management (N= 182) - Intensive case management only (n = 90)	Usual Care	3 years	Homelessness: - PH: 36% reduction in days homeless in past 90 days; large effect after 2 years and then attenuation over time - Case Management only: no significant effect Health: - no siginifcant effect on psychiatric health or substance use. - PH: increase in inpatient mental health days, no effect on urgent care use
Aubry et al. (2015); Stergiopoulous et al. (2015); Currie et al. (2014) (At Home/Chez Soi-Canada)	RCT	Individuals with severe mental illness experiencing homelessness (N = 2,148)	Permanent Supportive Housing (PSH) - Housing First model - not required to receive services	Usual Care	2 years	Homelessness: - Spend twice as much time stably housed compared to usual care (32 percent) Non-Housing Outcomes: - 50% decrease in emergency department use within one year - Some reductions in alcohol use over two-year

Note: The table provides information regarding the most influential studies to date evaluating homeless housing programs, in addition to providing information on this study. For each study listed, the study type (observational or RCT), target population, intervention (treatment), comparison group, follow-up period, and main findings are reported.

B. Data Description and Construction

B1. Data Sources

The analysis relies on data from several administrative sources. Table B.1 lists each administrative source, files provided, and the time period covered by the associated files.

Table B.1—: List of Data Sources.

Source	Data	Time Period
Los Angeles Continuum of Care (CoC) Homeless Support System	(1) Homeless Single Adults Intakes (VI-SPDAT)	
	- Demographics (age, race, gender, veteran status)	01/2016-12/2018
	- Acuity indicators (homeless history, disabilities)	
	- Location of intake (SPA)	
	- Intake Date	
	- Case worker name	01/2016-02/2018
	- Agency name	
	(2) Homeless Management Information System (HMIS)	01/2010-06/2019
	- Homeless programs placements (housing and non-housing)	
	- Program start date and end date (when relevant)	
	- Program information (agency, name, type)	
	- Intake and exit interviews (demographics, health, employment and income, social benefits receipt, destination)	
Enterprise Linakge Project (ELP)	(3) Los Angeles County Department of Health Services (DHS)	01/2006-05/2018
	- Services received by DHS	
	- Facility, claim amount, type of service, start/end date	
	(4) Los Angeles County Department of Mental Health (DMH)	01/2006-08/2018
	- Services received by DMH	
	- Facility, claim amount, type of service, start/end date	
	(5) Los Angeles County Department of Public and Social Services (DPSS)	02/2010-08/2018
	- General Relief (GR) amount paid monthly	
	- Homelessness Indicator	
	(6) Los Angeles County Sheriff Department (LASD)	04/2005-08/2018
	- Criminal charges	
	- Arrests	
	- Incarceration history	
	(7) Los Angeles County Department of Probation	01/2005-08/2018
	- Start and end date of probation service	

Note: This table lists data sources, files, and the time period covered by the associated files.

1. Vulnerability Index - Service Prioritization Decision Assistance Tool (VISPDAT). – Information on the initial interaction between a client and a case worker comes from the Vulnerability Index - Service Prioritization Decision Assistance Tool (VI-SPDAT) assessments data, which correspond to a survey conducted to single adults seeking assistance from the county's homeless support system. The dataset contains information for all assessments over the period 2016-2018. The VI-SPDAT survey is a pre-screening tool that guides case workers

to determine the level of acuity of a particular client, which in the case of single adults ranges from a score of 0 to 17. Higher levels of the VI-SPDAT score indicate a higher level of acuity and, hence, a higher need for assistance. In addition, the VI-SPDAT contains a client's unique identifier assigned by the system, the date of the assessment, the acuity score, demographic characteristics of the clients such as age, race, gender, disabilities and veteran status. It also contains each of the questions that determine the acuity score. Finally, it contains the names of the case workers assigned to conduct the assessments, the organization where they conduct the survey and the location of the organization.

2. Homeless Management Information System (HMIS). – The Homeless Management Information System (HMIS) contains complete records of all homeless services provided by service providers in Los Angeles County's homeless response system. The HMIS is a local information technology system used to collect client-level data and data on the provision of housing and services to homeless individuals and families and persons at risk of homelessness. I have access to this data for the Los Angeles Continuum of Care from 2010 through June 2019. The HMIS reports information for all people considered homeless, that is families, single adults and youth, and each observation corresponds to an individual who can be tracked in time using a unique individual identifier. For each person in the HMIS, I observe demographic characteristics such as age, gender, disabilities, veteran status, chronic homeless status and type of service and/or housing program (street outreach, shelter, temporary housing, long-term housing, and non-housing services). For each program I observe the enrollment date, the exit date when the service has finished, and the amount of the subsidy if it corresponds. For a subsample of the population in the HMIS I observe reported information on income, employment, social benefits receipt, as well as health status.

3. Los Angeles County Department of Health Services (DHS) Service Records. – The Los Angeles County Department of Health Services (DHS) is the second largest municipal health system in the nation. DHS's mission is to ensure access to high-quality, patient-centered, cost-effective health care to Los Angeles County residents. DHS is as an integrated health system, operating 26 health centers and four acute care hospitals, in addition to providing health care to youth in the juvenile justice system and inmates in the LA County jails. Moreover, DHS runs the County's 911 emergency response system. Across the network of DHS's directly operated clinical sites and through partnerships with community-based clinics, DHS cares for about 750,000 unique patients each year, employs over 22,000 staff, and has an annual operating budget of $6.2 billion. The DHS service records contain information on facility, type of service (inpatient, outpatient, emergency department), payee, and start and end dates of services. Additionally, the records contain diagnosis and procedure codes.

4. Los Angeles County Department of Mental Health (DMH) Service Records. – The Los Angeles County Department of Mental Health is

the largest county-operated mental health department in the United States, directly operating programs at more than 85 sites, and further providing services through contract programs and DMH staff at approximately 300 sites co-located with other County departments, schools, courts and various organizations. Each year, the County contracts with close to 1,000 organizations and individual practitioners to provide a variety of mental health-related services. On average, more than 250,000 County residents of all ages are served every year. Its mission is to enhance the well-being of LA's most vulnerable populations (such as the homeless). The DMH service records contain information on mental health services provided, including assessments, case management, crisis intervention, medication support, peer support, psychotherapy and other rehabilitative services. In addition, they include information on the facility, claim amount, and start and end date of services.

5. General Relief (GR) Records. – General Relief is an emergency cash assistance program operated through the Department of Public and Social Services (DPSS), the department responsible for providing social service benefits in Los Angeles County. DPSS provides services like Cash Assistance (CalWorks), Food and Nutrition (CalFresh), Health Assistance, Job Assistance (GROW), General Relief (GR), and other community services. DPSS serves 10 million residents with an annual budget of $3.9 Billion. The General Relief records contain the monthly benefits each member of a household receives, as well as two indicator variables that can be used to identify homeless recipient. General Relief is distributed via EBT card. Eligible for General Relief are those individuals who are unable to work and are not eligible for other state or federal cash assistance programs. GR includes a monthly grant of $221 for a single person.

6. Los Angeles County Sheriff's Department (LASD) Records. – The Los Angeles Sheriff's Department (LASD) provides general law enforcement services to 40 contract cities; 90 unincorporated communities; 216 facilities, hospitals, and clinics located throughout the County; nine (9) community colleges; the Metropolitan Transit Authority; and 47 Superior Courts. LASD also provides services such as laboratories and academy training to smaller law enforcement agencies within the County. Additionally, LASD is responsible for securing approximately 18,000 inmates daily in 7 custody facilities, which includes providing food and medical treatment.[54] The LASD records contain information on the population of charged and incaracerated individuals in Los Angeles County (2005-2018). The dates of each unique sentence are observed, as well as the type of charge and the total sentence length. Specifically, the data contain records of criminal charges, arrests (jail bookings), and incarceration history. For criminal charges, date and type of crime committed are specified.

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[54]The Sheriff's data will not contain data for Los Angeles city jails except for those arrestees who remain in custody after arraignment. These individuals are remanded to the custody of the LA County Sheriff's department.

7. Los Angeles County Probation Department Records. – The Probation Department is responsible for enhancing public safety, ensuring victim's rights, and effecting positive probationer behavioral change. The Probation Department provides several adult services like supervision after release, investigations, AB 109, and specialized treatments for moderate-to-high-risk clients. In addition, they provide juvenile services such as diversion and prevention, supervision and school based programs. They operate on a $935 million budget and in 50 different facilities, working with 82,000 adults and 1000 juveniles. The probation records contain information on whether an individual is under probation in a given month and the facility at which they are serving the probation period.

B2. Data Cleaning and Sample Construction

This section provides detailed steps of the cleaning and restrictions I impose on different data sources use in the study. Table B.2 tabulates the steps and describes the effect of each step on sample size.

1. Vulnerability Index - Service Prioritization Decision Assistance Tool (VISPDAT).

1) Combine four different versions of the VI-SPDAT intake data that were given to me at different points in time, each version containing all previous intakes in addition to new intakes.

   a) Label all variables and variable values, drop observations with serious data entry mistakes (no personal ID, missing values in all fields, etc.).

   b) Standardize variable types and names across all four versions.

2) Combine four data versions into one version.

   a) Keep record from most recent version in case of duplicates.

   b) Combined data sets contain 87,500 records of new intakes.

3) Drop duplicates or multiple same-day intakes.

4) Keep intakes conducted for single adults age 25-70 with non-missing demographics.

5) Remove veteran cases since their assignment does not affect case worker housing placement rate (they are automatically referred to the VA homeless system).

6) Drop cases with missing case worker, organization, and site information.

7) Keep intakes conducted in 2016-2017.

8) Clean agency and case worker names and assign identifiers.

a) Agency and case worker names available for intakes from 01/2016 through 02/2018.

b) Manually standardize names: convert strings to uppercases, remove special characters, fix spelling mistakes, change acronyms to full provider names, change nicknames to full names.

c) Assign agency identifier and worker-agency identifier (do not allow for case workers to work on multiple agencies).

d) Link clean agency and case-worker identifiers to main intake data.

e) Overall, there are 343 sites (defined as agency-area combination) and 3,269 unique case workers.

9) Keep sites with at least 2 case workers conducting intakes in a given month. This is done in order to keep only cases that were as-good-as-randomly assigned to case workers.

10) Keep case workers with more than 30 non-veteran cases handled in 2016-2017. I impose this restriction to avoid concerns regarding small cell sizes.

11) Keep site-month cells with more than one observation.

12) Restrict to cases with at least 10 (20) months of observed outcomes.

Table B.2—: Sample Restrictions

	Sample Sizes (Remaining after each restriction)			
	Number of Cases	Number of Clients	Number of Case Workers	Number of Sites
	(1)	(2)	(3)	(4)
Full Assessments Data	87,500	67,171	3,269	343
A. Data Cleaning Restrictions				
1. Drop Duplicates	86,079	67,161	3,262	342
2. Drop cases with multiple assessments on the same date	85,513	67,008	3,256	342
3. Restrict to individuals age 25-70 with known demographics	76,166	58,977	3,090	331
4. Drop veteran cases	64,575	50,264	2,603	295
5. Restrict to cases with non-missing case worker and site	41,787	32,704	2,558	278
6. Restrict to cases from 2016 to 2017	38,445	30,110	2,383	272
B. Research Design Restrictions				
7. Restrict to sites with at least 2 case workers in a given month	35,659	28,077	2,122	136
8. Drop if the case worker handled less than 30 cases	25,078	20,546	286	76
9. Keep the first case of an individual in the homeless system	19,292	19,292	286	76
10. Drop singleton site-month cells	19,195	19,195	285	75
C. Short and Medium-Term Samples				
12. Restrict to cases with at least 10 months of observed outcomes	15,990	15,990	269	73
13. Restrict to cases with at least 20 months of observed outcomes	7,584	7,584	194	62

Note: The table summarizes the data restrictions and the resulting number of cases, clients, case workers and sites present in the Los Angeles County Homelessness Initial Intake records after imposing the associated restriction.

2. Homeless Management Information System (HMIS).
The HMIS consists of 12 different files, each recording different items: Client, Disabilities, Employment and Education, Enrollment, Exit, Funder, Health and Domestic Violence, Income and Benefits, Inventory, Project, Services, and Site. The steps involved in creating and cleaning the combined HMIS data:

1) Combine four different versions of each file in the HMIS that were given to me at different points in time, each version containing all previous intakes in addition to new intakes.

   a) Label all variables and variable values, drop observations with serious data entry mistakes (no personal ID, missing values in all fields, etc.).

   b) Standardize variable types and names across all four versions.

2) Combine four data versions into one version and merge all files into one "master" HMIS data based on enrollment identifier which links all data files.

   a) Keep record from most recent version in case of duplicates.

3) Keep records only for individuals in the intake data (both intake and HMIS data use similar personal identifiers).

4) For programs with missing date, compute end date based on the following algorithm:

   a) If last service date is found, assign it to be exit date.

   b) Assign median program length in cases with no exit date or last service date that time from enrollment surpassed maximum length of stay for program (for example, 3 months for emergency shelter).

   c) Assign last date of data (06/31/2019) to programs with no exit date or last service date, where the time passed from enrollment date is lower than maximum duration of the program.

5) Construct a panel dataset at the case-monthly data.

The key variables from the HMIS data are:

1) Housing assistance receipt: enrollment (yes/no), number of program enrollments, number of housing assistance days. This is done for housing assistance in general, and separately for temporary and permanent housing assistance programs.

2) Return to homeless system: defined as emergency shelter stay, new intake (Intakes data) or a new enrollment in a street outreach program (these are programs that serve individuals who live on the streets, implying the individual is homeless again).

3) Benefits, employment, and income: Individuals report whether they receive social benefits, whether they are employed, and what their monthly income is.

3. Enterprise Linkage Project (ELP).

The linkage process of records between the various administrative sources and the HMIS records is a complex process. Each month, the individual county agencies run an encryption code that scrambles the names, birthdates, and social security numbers of the individuals in their data. The de-identified data is then uploaded to a secure server for inclusion into the ELP. Staff in the Research and Evaluation Services division of the Service Integration branch then run a matching code that uses the encrypted identifiers to link people together across agencies. The linkage process uses a combination of perfect and fuzzy matches based on combinations of SSN, and date of birth (Hess and Carollo, 2017).

The following steps were done in cleaning and constructing the various outcomes for the different ELP data sources:

1) Label all variables and variable values, drop observations with serious data entry mistakes (no personal ID, missing values in all fields, etc.).

2) Keep records only for individuals in the intake data (both intake and HMIS data use similar personal identifiers).

3) Remove duplicate records.

4) Construct a panel dataset of the case-monthly data, collapsing services for each agency.

5) Merge all monthly panel data for each agency into one large panel dataset.

The key variables from the ELP data are:

1) Health (DHS, DMH): any service received (yes/no), number of services received, duration of services received.

2) Crime: Criminal charges, jail bookings (arrests), jail days, probation days.

3) Social Benefits: General relief receipt.

B3. Case Worker Characteristics

As detailed in Section II and Table B.2, I create a sample of 15,990 cases of single adults who are seeking assistance from the Los Angeles County homeless support system from 2016 to 2017. There are 269 case workers associated with these cases. Table B.3 reports statistics for the cases used to construct the instrumental variable in panel A and for all the cases handled by the case worker in Panel B. I

Table B.3—: Descriptive Statistics of Case Workers.

	Mean (1)	p10 (2)	p50 (3)	p90 (4)
A. Instrument Sample:				
Number of Months Active	12.2	6	11	19
Number of Cases	93.5	33	55	227
Number of Housing Placements (within 1 month)	6.3	0	2	18
Number of Colleagues	6.2	2	6	11
B. All Intakes:				
Number of Months Active	13.9	7	13	22
Number of Cases	119.3	40	69	296
Number of Housing Placements (within 1 month)	8.4	0	3	22
Number of Colleagues	6.2	2	6	11
Number of Case Workers	269	269	269	269
Number of Sites	73	73	73	73

Note: The table summarizes the data restrictions and the resulting number of cases, clients, case workers and sites present in the Los Angeles County Homelessness Initial Intake records after imposing the associated restriction.

provide statistics for both the sample and all cases of case workers because I use both in to define different versions of the instrumental variable.

The average case worker is active in 12 months of the 24 months covered in the sample (2016-2017). The average case worker handles 93 cases and placed 6 individuals over this period. The average case worker is working in a site with 6 additional colleagues. An additional feature is that the distribution of number cases and housing placements for case workers is skewed, with the 10th percentile for number of cases and housing placements is 33 and 0, respectively, and the 90th percentile is 227 and 18, respectively.
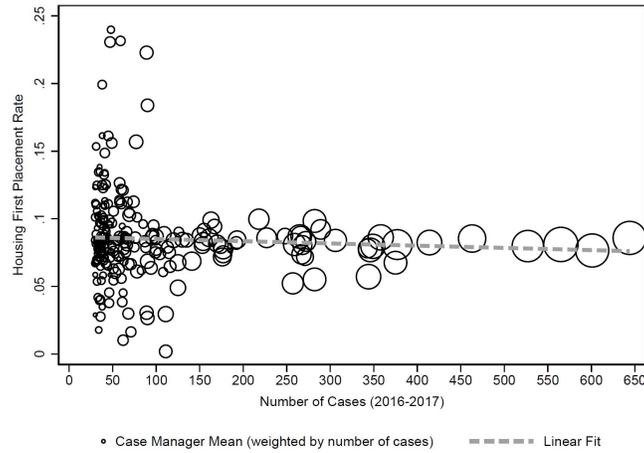
(a) Number of Cases
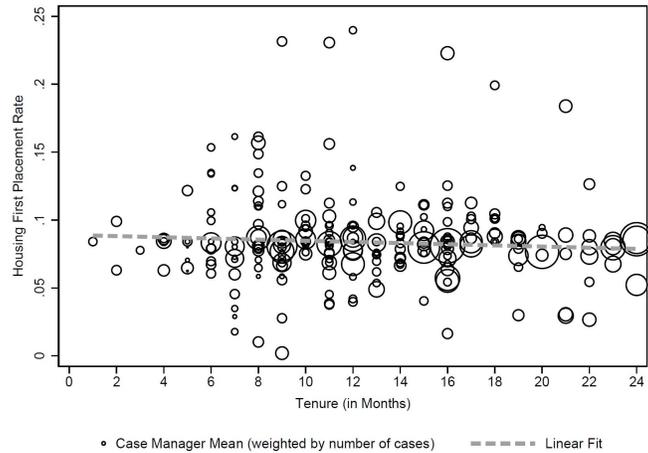
(b) Tenure (Number of Days Active)

Figure B.1. : Case Worker Housing Program Placement Rate versus Number of Cases and Tenure.

Note: Panel (a) plots case worker housing program placement rate against the total number of cases handled by each case worker in 2016-2017. Panel (b) plots case worker housing placement rate against the proxy for tenure (in days) of each case worker. Tenure is defined as the number of days between the case worker's first and last observed cases. There are 269 unique case workers, and on average, each case worker has handled a total of 120 cases in 2016-2017. Housing program placement rates are standardized by subtracting off service site by month of intake means and case level covariates listed in Table 1. Dot size is proportional to the number of cases the case worker has in the estimation sample, which is slightly smaller than the overall number of cases.

C. Additional Figures and Tables

C1.   Figures
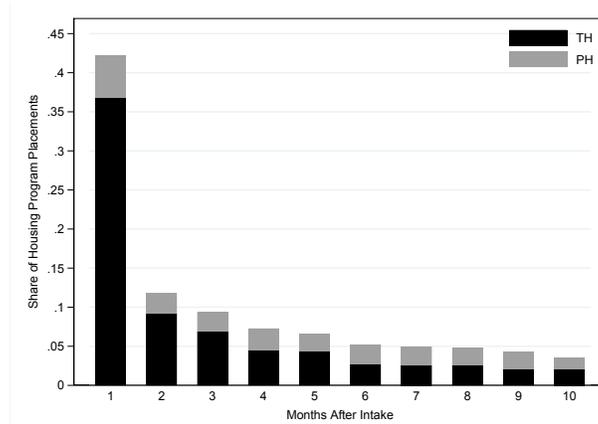
(a) Short-term Sample (10 Months)
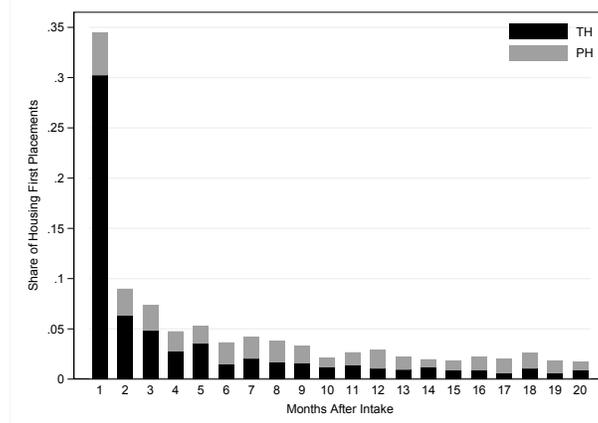
(b) Medium-Term Sample (20 Months)

Figure C.1. : Time to Housing Program Enrollment In Baseline Samples (Housed Cases Only)

Note: The figures plot the share of cases enrolling in a housing program in each month after intake. The cases included in the figures are only those that enroll in a housing program within 10 months of intake (panel a) and 20 months of intake (panel b). Black bars represent the share of temporary housing placements among all cases, and the grey bars represent permanent housing programs placements.
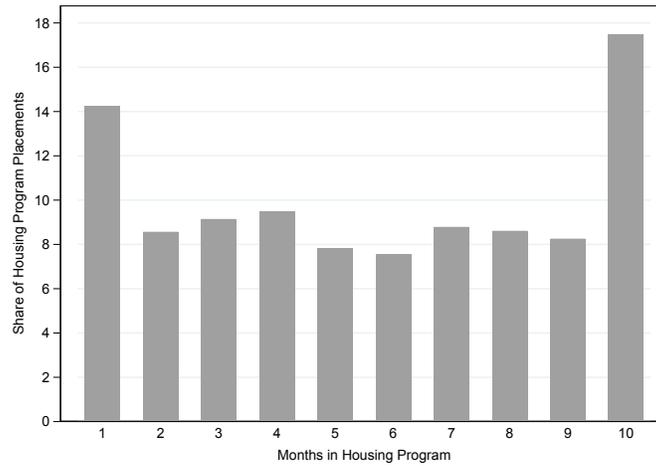
(a) Short-term Sample (10 Months)
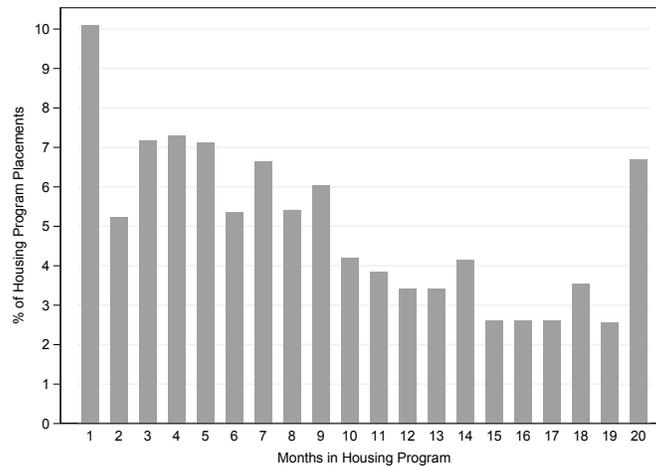
(b) Medium-Term Sample (20 Months)

Figure C.2. : Duration of Housing Assistance (in Months) In Baseline Samples (Housed Cases Only)

Note: The figures plot the share of cases with by duration of housing assistance (in months), censored at 10 and 20 months. The cases included in the figure are only those that enroll in a housing program within 10 months of intake (panel a) and 20 months of intake (panel b).
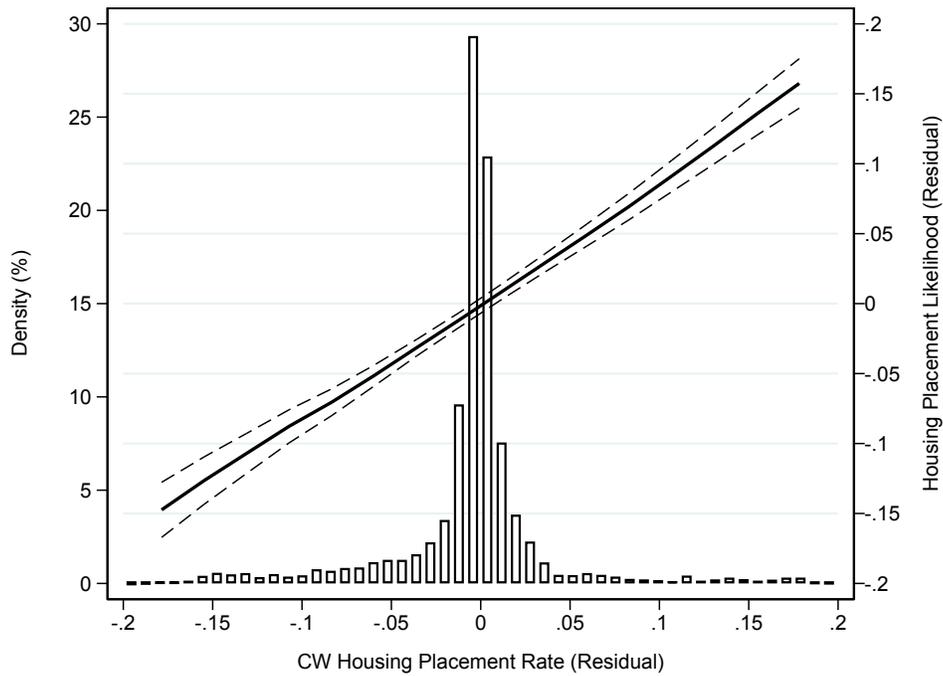
Figure C.3. : First Stage Graph of Housing Assistance Receipt on Case Worker Housing Program Placement Rate - Medium Term Sample.

Note: The figure plots the distribution of case worker housing placement rate for the medium-term sample (top and bottom 2% excluded). The values are mean-standardized residuals from regressions on site by intake month fixed effects and all variables listed in Table 1. Housing placement likelihood is plotted on the right y-axis against leave-out mean case worker housing placement rate of the assigned case worker shown along the x-axis. The solid line shows a local linear regression of housing program placement on case worker housing placement rate. Dashed lines show 95% confidence intervals.
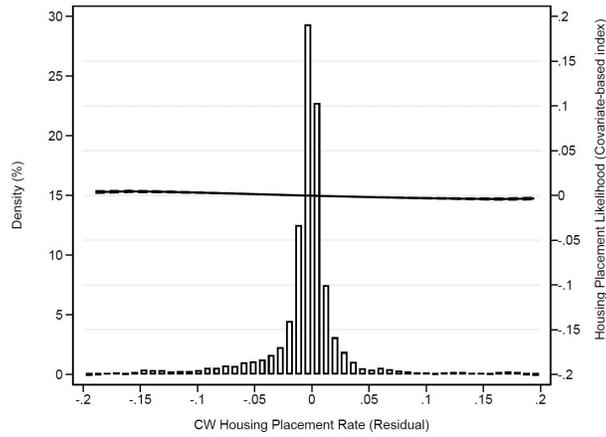
(a) Short-term Sample (10 Months)
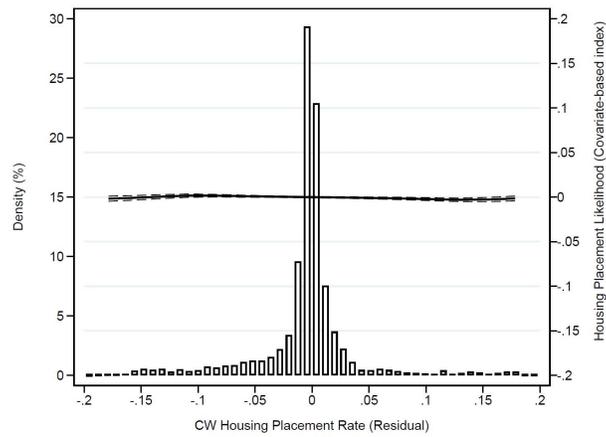
(b) Medium-Term Sample (20 Months)

Figure C.4. : Graph of Predicted Housing Assistance Receipt (Covariate-Based Index) on Case Worker Housing Program Placement Rate.

Note: The figures plot the distribution of case worker housing placement rate for the short-term sample in panel a and medium-term sample in panel b (top and bottom 2% excluded). The values are mean-standardized residuals from regressions on site by intake month fixed effects and all variables listed in Table 1. Predicted housing placement likelihood is the fitted value from a regression where the outcome is housing program placement (within 1 month of intake date) and the explanatory variables are service site by month of intake fixed effects and the covariates listed in Table 1. The predicted likelihood is plotted on the right y-axis and is standardized to have a zero mean. The leave-out mean case worker housing placement rate of the assigned case worker is shown along the x-axis. The solid line shows a local linear regression of the covariates-based index of housing program placement on case worker housing placement rate. Dashed lines show 95% confidence intervals.

Short-Term (10 Months)   Medium-Term (20 Months)
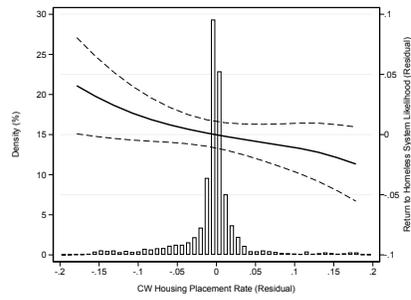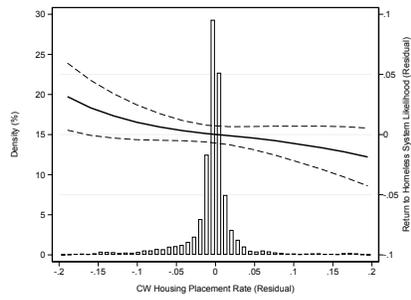
Outcome 1: Any Return to Homeless System
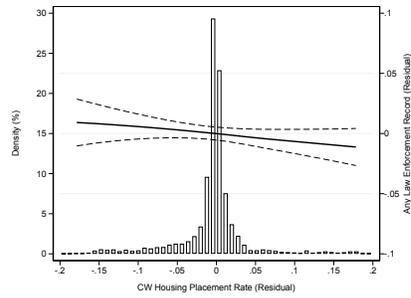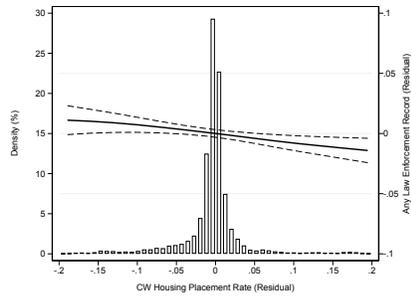
Outcome 2: Any Law Enforcement Record
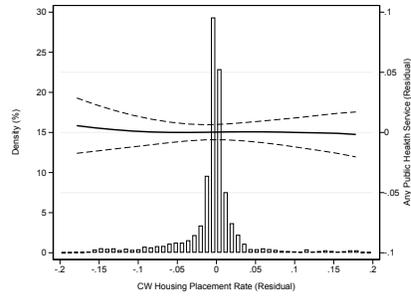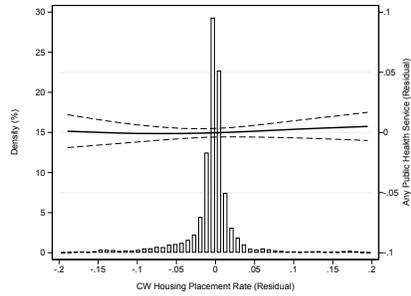
Outcome 3: Any Public Health Treatment

Figure C.5. : Reduced Form Graphs of Main Outcomes on Case Worker Housing Placement Rate.

Note: Outcomes of interest (all measured at 2-10 months after intake on the left column and 2-20 months on the right column) are plotted on the right y-axis against leave-out mean case worker housing program placement rate of the assigned case worker shown along the x-axis. The plotted values are mean-standardized residuals from regressions on service site by month of intake fixed effects and all variables listed in Table 3. The solid line shows a local linear regression of the outcome of interest on case worker housing program placement rate. Dashed lines show 95% confidence intervals. The histogram shows the density of case worker placement rates along the left y-axis (top and bottom 2% excluded).

Short-Term (10 Months)   **Medium-Term (20 Months)**
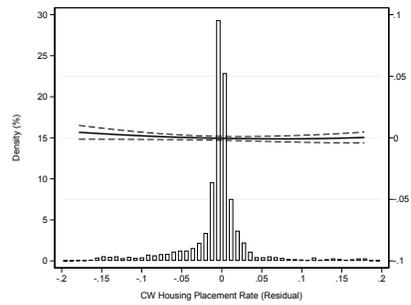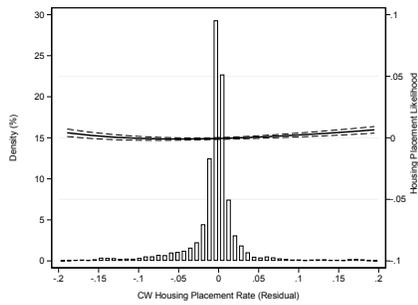
Outcome 1: Any Return to Homeless System
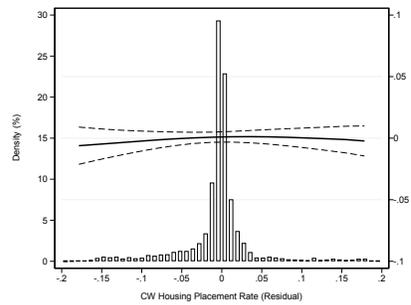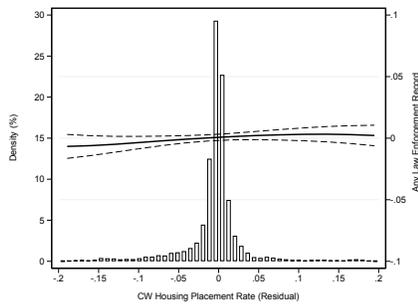
Outcome 2: Any Law Enforcement Record
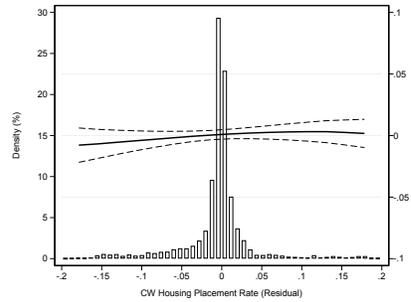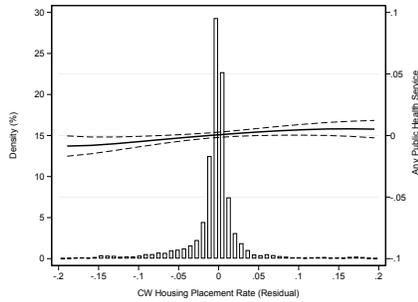
Outcome 3: Any Public Health Treatment

Figure C.6. : Graphs of Covariates-Based Predicted Outcomes (Covariates-Based Index) on Case Worker Housing Program Placement Rate.

Note: Predicted covariate-based likelihood outcome is the fitted value from a regression of the outcome of interest on the explanatory variables of service site by month of intake fixed effects and the covariates listed in Table 1. The predicted likelihood is plotted on the right y-axis and is standardized to have a zero mean. The leave-out mean case worker housing placement rate of the assigned case worker is shown along the x-axis. The solid line shows a local linear regression of the index of the outcome on case worker housing placement rate. Dashed lines show 95% confidence intervals.
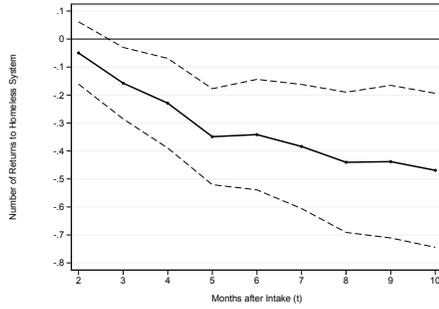
Short-Term (10 Months)   **Medium-Term (20 Months)**
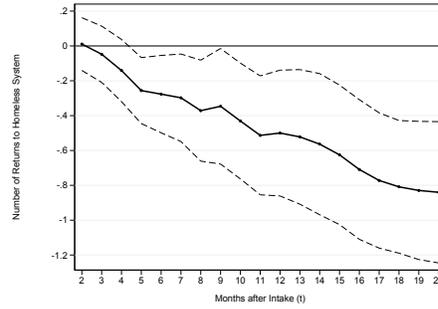
Outcome 1: Number of Returns to Homeless System
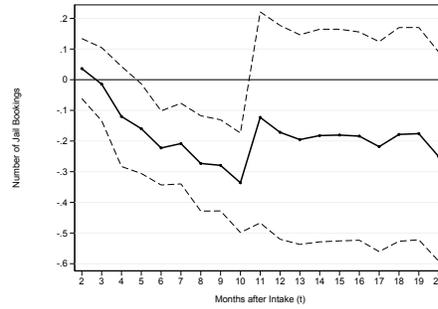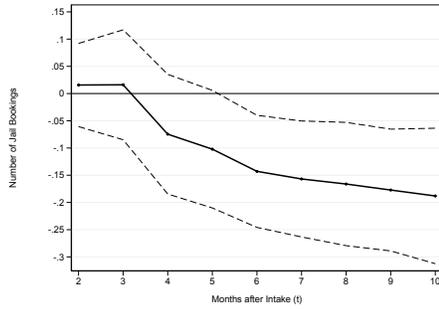
Outcome 2: Number of Jail Bookings
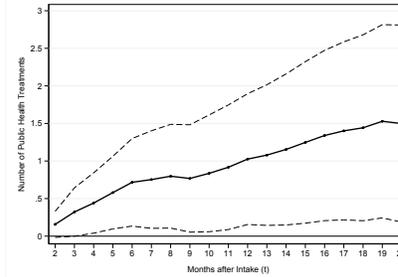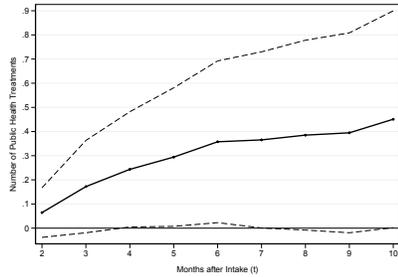
Outcome 3: Number of Public Health Treatments

Figure C.7. : IV Estimates of the Intensive Margin Effect of Housing Assistance on Homelessness, Crime, and Health.

Note: The figures present IV estimates of the effect of housing assistance on various outcomes. Short-term outcomes (left column) are measured at 2-10 months after intake. Medium-term outcomes (right column) are measured at 2-20 months after intake. Each dot represents an IV estimate where the outcome is measured as counts of the number of occurrences of the event of interest from 2 months to t months after intake. Dashed lines show 95% confidence intervals.
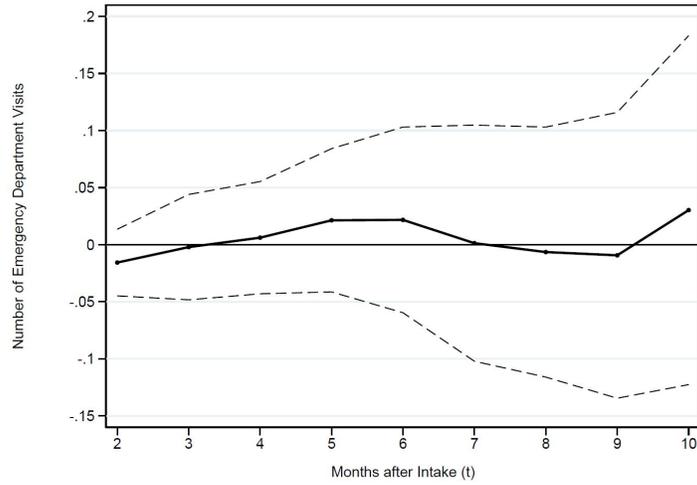
(a) Short-Term Sample (10 Months)
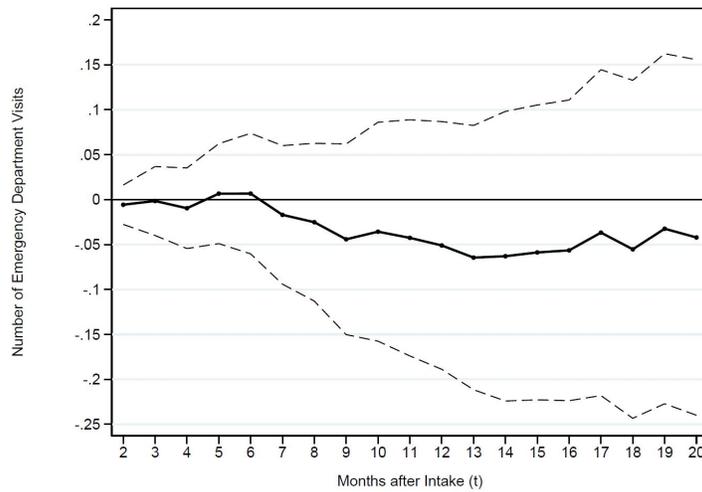
(b) Medium-Term Sample (20 Months)

Figure C.8. : IV Estimates of the Effect of Housing Assistance on Emergency Department Visits

Note: The figures present IV estimates of the effect of housing assistance on the number of DHS emergency department visits. Panel (a) presents short-term outcomes measured at 2-10 months after intake. Panel (b) presents medium-term outcomes measured at 2-20 months after intake. Each dot represents an IV estimate where the outcome is measured as any occurrence of the event of interest from 2 months to t months after intake. Dashed lines show 95% confidence intervals.
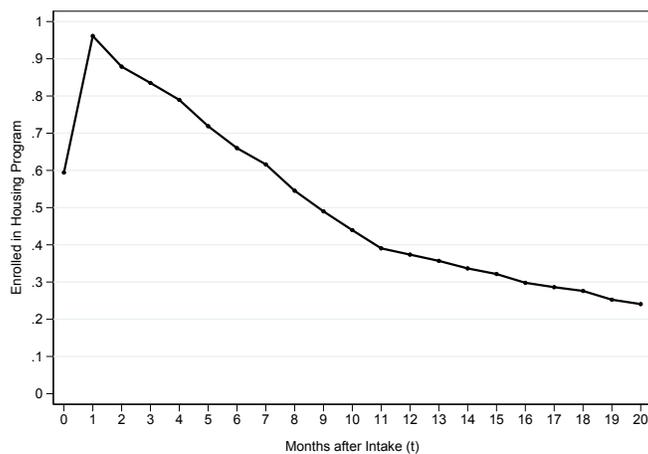
(a) Enrolled in Housing Program in Month t (Among Treated)
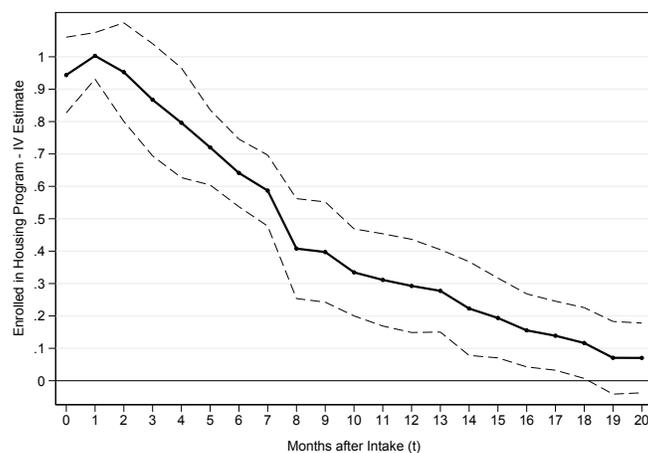
(b) IV Estimates - Enrolled in Housing Program in Month t

Figure C.9. : Enrollment in Housing Programs Over Time

Note: Panel (a) plots the share of individuals enrolled in a housing program in a given month after intake for the individuals that were placed in a housing program within one month after intake. Panel (b) plots the IV estimates where the outcome is being enrolled in a housing program at a given month after intake for the full sample. The cases considered here are the medium-term sample cases (20 months of post-intake outcomes). Dashed lines show 95% confidence intervals.
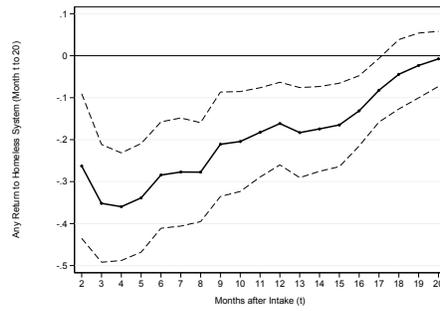
(a) Any Return to Homeless System
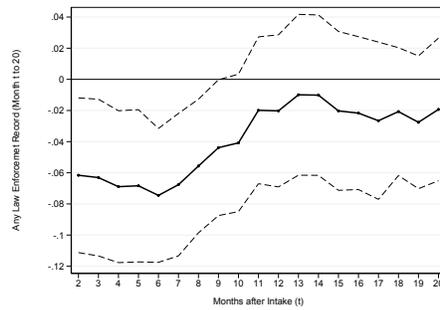
(b) Any Law Enforcement Record
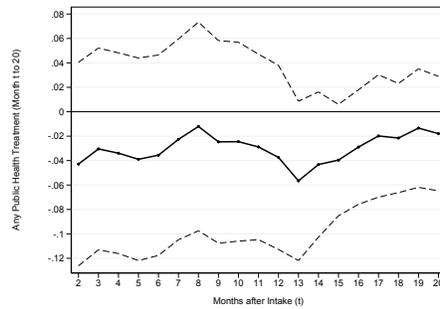
(c) Any Public Health Treatment

Figure C.10. : IV Estimates - Post Treatment Effects (Month t through 20).

Note: The figures present IV estimates of the effect of housing assistance on various outcomes for the medium-term sample (20 months). To identify post-treatment effects, outcomes are measured from month t after intake through month 20 at any given month. Each dot represents an IV estimate where the outcome is measured as any occurrence of the event of interest from t months to 20 months after intake. Dashed lines show 95% confidence intervals.
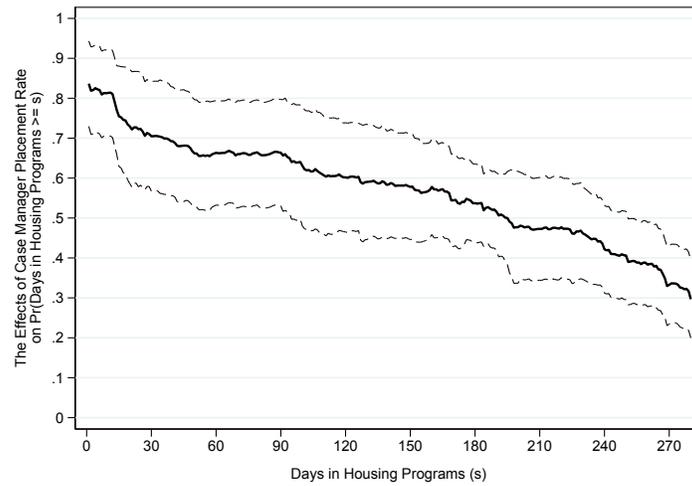
(a) Short-Term Sample (10 Months)
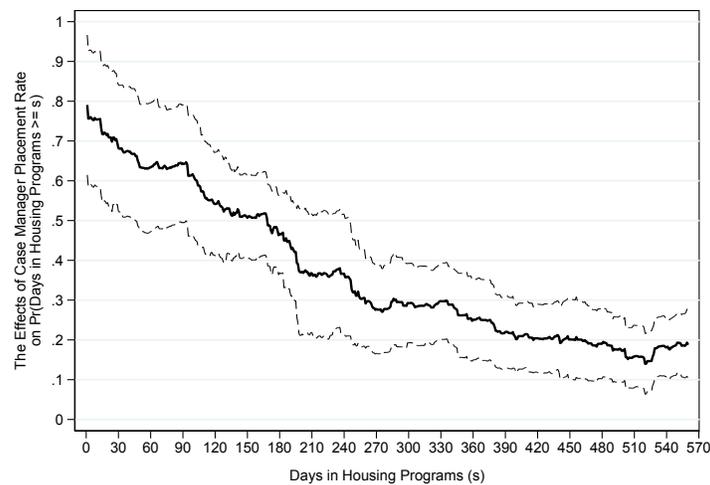
(b) IVMedium-Term Sample (20 Months)

Figure C.11. : The Relationship Between Program Duration and Case Worker Placement Rate.

Note: The figures plot estimates from a regression of the probability that the duration of housing assistance will exceed a given number of days (including zeros) as a function of the case worker housing program placement rate instrument. Panel (a) plots the estimates for the short-term sample (10 months) and panel (b) plots the estimates for the medium-term sample (panel b). All regressions include service site by month of intake fixed effects and case level covariates listed in Table 1. Dashed lines show 95% confidence intervals.

C2.   Tables

Table C.1—: Reduced Form Estimates and Sample Selection Tests.

Dependent Variable:	Housing Placement	Return to Homeless System	Any Law Enforcement Record	Any Public Health Treatment
Time Period (relative to intake):	1 Month	2-10/20 Months	2-10/20 Months	2-10/20 Months
	(1)	(2)	(3)	(4)
A. Short-Term Sample (10 Months)				
A.1. Reduced Form				
Case Worker Housing Placement Rate	0.896***	-0.201***	-0.074**	-0.017
	(0.052)	(0.054)	(0.030)	(0.020)
A.2. Predicted Probability (Propensity Score)				
Case Worker Housing Placement Rate	0.015	-0.013	-0.020	-0.029
	(0.009)	(0.008)	(0.020)	(0.019)
Dependent mean	0.06	0.30	0.07	0.07
Number of Cases	15,990	15,990	15,990	15,990
B. Medium-Term Sample (20 Months)				
B.1. Reduced Form				
Case Worker Housing Placement Rate	0.896***	-0.228***	-0.068*	-0.068*
	(0.064)	(0.077)	(0.037)	(0.039)
B.2. Predicted Probability (Propensity Score)				
Case Worker Housing Placement Rate	0.010	0.005	-0.014	-0.030
	(0.014)	(0.021)	(0.028)	(0.026)
Dependent mean	0.08	0.46	0.09	0.11
Number of Cases	7,584	7,584	7,584	7,584

Note: The table presents regression reduced form relationship results (panels A.1 and B.1) and results from tests whether a covariates-based predicted probability measure of different outcomes (propensity score) are correlated with the case worker housing placement rate (panel A.2 and B.2) for the short-term (10 months) and medium-term (20 months) samples in panel A and Panel B, respectively. The predicted probabilities created using the estimates from a linear regression of the outcome on the set of controls listed in Table 3. The outcome in column 1 is defined as any placement in a housing assistance program within one month of initial intake. The outcome in column 2 is any return to the homeless support system. The outcome is column 3 is any law enforcement record by Los Angeles Sheriff Department or Probation Department. The outcome in column 4 is any public health treatment received by the Department of Health Services or the Department of Mental Health. All specifications include site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.2—: Exclusion Restriction Tests.

Dependent Variable:	Housing Program Placement Type			Duration	Other Placements	
	PSH	RRH	TH	Days in Housing Programs	EH	Non-Housing Programs
Time Period (relative to intake):	1 Month	1 Month	1 Month	1-10/20 Months	1 Month	1 Month
	(1)	(2)	(3)	(4)	(5)	(6)
A. Housed (within 1 month), Short-Term Sample (10 Months)						
Case Worker Housing Placement Rate	-0.0969	0.126	0.00280	22.43	-0.0373	0.0379
	(0.165)	(0.164)	(0.0128)	(23.57)	(0.0403)	(0.0337)
Dependent mean	0.13	0.88	0.05	178.10	0.12	0.06
Number of Cases	1,010	1,010	1,010	1,010	1,010	1,010
B. Housed (within 1 month), Medium-Term Sample (20 Months)						
Case Worker Housing Placement Rate	-0.0588	0.105	-0.0798	-16.40	-0.0575	0.0661
	(0.225)	(0.227)	(0.0531)	(56.22)	(0.0440)	(0.0652)
Dependent mean	0.13	0.88	0.08	266.95	0.15	0.05
Number of Cases	594	594	594	594	594	594

Note: The table presents regression results testing whether housing placement type (columns 1-3), duration (column 4), and placement in emergency housing (column 5) and non housing services programs (column 6) are correlated with the case worker housing placement rate for the short-term (10 months) and medium-term (20 months) samples in panel A and Panel B, respectively. The samples used in the analysis have been limited to the set of individuals who were placed in a housing program within one month of their initial intake with the case worker. The outcomes in columns 1 through 3 are defined as any placement in a Permanent Supportive Housing (PSH), Rapid Re-Housing (RRH), and Transitional Housing (TH) programs within one month of intake, respectively. The outcome in column 4 is the overall number of days in housing programs in the first 10 or 20 months after initial intake with the case worker. The outcome in column 5 is an indicator for whether the individual was placed in an emergency shelter (EH) program, and the outcome in column 6 is an indicator for placement in a non-housing services program. All specifications include case characteristics and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.3—: Controlling for Case Worker Rates in Additional Treatment Margins.

Controls:	Outcome Variable: Housed (within 1 month) = 1		
	Baseline	Add NH Placement Rate	Add NH+EH Placement Rates
	(1)	(2)	(3)
A. Short-Term Sample (10 Months)			
Case Worker Housing Placement Rate	0.885***	0.883***	0.886***
	(0.0511)	(0.0512)	(0.0514)
Dependent mean	0.06	0.06	0.06
Housing Placement Rate	0.07	0.07	0.07
NH Placement Rate	0.06	0.06	0.06
EH Placement Rate	0.38	0.38	0.38
Number of Cases	15,990	15,990	15,990
B. Medium-Term Sample (20 Months)			
Case Worker Housing Placement Rate	0.888***	0.888***	0.892***
	(0.0654)	(0.0653)	(0.0649)
Dependent mean	0.08	0.08	0.08
Housing Placement Rate	0.09	0.09	0.09
NH Placement Rate	0.06	0.06	0.06
EH Placement Rate	0.38	0.38	0.38
Number of Cases	7,584	7,584	7,584

Note: The table presents the sensitivity to other treatment margins of the first-stage estimates of case worker housing placement rate on housing placement. Column 1 presents the baseline first-stage estimates as reported in column 4 of Table 2. Column 2 adds the case worker placement rate for non-housing programs, defined as the leave-out mean placement of cases handled by the case worker in non-housing programs (within one month of initial intake). Column 3 adds the case worker placement rate for emergency housing programs (emergency shelter), defined as the leave-out mean placement of cases handled by the case worker in emergency housing programs (within one month of initial intake). Placements are not mutually exclusive and a case can have multiple placements. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.4—: Tests for the Monotonicity Assumption (Short-Term Sample).

Instrument Type:	**Outcome Variable: Housed (within 1 month) = 1**			
	Baseline (1)	Reverse-Sample (2)	Baseline (3)	Reverse-Sample (4)
	Males		**Females**	
Estimate	0.838***	0.862***	0.765***	0.706***
(SE)	(0.084)	(0.086)	(0.092)	(0.122)
Dependent mean	0.07	0.07	0.10	0.10
Number of Cases	4,692	4,252	2,774	2,698
	Whites		**Not-Whites**	
Estimate	0.715***	0.768***	0.826***	0.458***
(SE)	(0.105)	(0.096)	(0.068)	(0.077)
Dependent mean	0.06	0.06	0.09	0.09
Number of Cases	2,858	2,860	4,607	4,575
	Blacks		**Not-Blacks**	
Estimate	0.820***	0.665***	0.698***	0.762***
(SE)	(0.074)	(0.068)	(0.116)	(0.096)
Dependent mean	0.09	0.09	0.06	0.06
Number of Cases	4,241	4,241	3,226	3,227
	Hispanics		**Not-Hispanics**	
Estimate	0.663***	0.813***	0.851***	0.626***
(SE)	(0.151)	(0.191)	(0.060)	(0.077)
Dependent mean	0.06	0.06	0.08	0.08
Number of Cases	1,600	1,600	5,884	5,845
	Age ≤ Median (48)		**Age > Median (48)**	
Estimate	0.748***	0.806***	0.754***	0.872***
(SE)	(0.070)	(0.083)	(0.088)	(0.099)
Dependent mean	0.08	0.08	0.08	0.08
Number of Cases	3,817	3,817	3,651	3,651
	Low Acuity Score (< 8)		**High Acuity Score (≥ 8)**	
Estimate	0.755***	0.780***	0.872***	0.349**
(SE)	(0.076)	(0.148)	(0.110)	(0.157)
Dependent mean	0.09	0.09	0.06	0.06
Number of Cases	4,530	4,494	2,951	2,848
	Chronic Homeless		**Not Chronic Homeless**	
Estimate	0.836***	0.592***	0.596***	0.808***
(SE)	(0.080)	(0.071)	(0.120)	(0.151)
Dependent mean	0.08	0.08	0.08	0.08
Number of Cases	4,611	4,566	2,881	2,882

Note: The table presents the first-stage estimates of case worker housing placement rate on housing placement within one month from intake for selected subgroups. Subgroups are selected based on the list of characteristics in Table 1. All specifications in this table include individuals with at least 10 months of observed post-intake outcomes (short-term sample). The case worker housing placement rates in columns 1 and 3 are calculated as a leave-out mean within each subgroup. The case worker housing placement rates in columns 2 and 4 are calculated using the complement of each subgroup ("reverse" sample definition). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.5—: Tests for the Monotonicity Assumption (Medium-Term Sample).

Instrument Type:	**Outcome Variable: Housed (within 1 month) = 1**			
	Baseline (1)	Reverse-Sample (2)	Baseline (3)	Reverse-Sample (4)
	Males		**Females**	
Estimate	0.754***	0.737***	0.781***	0.796***
(SE)	(0.0734)	(0.0843)	(0.0663)	(0.0796)
Dependent mean	0.06	0.06	0.10	0.10
Number of Cases	10,395	9,459	5,384	5,205
	Whites		**Not-Whites**	
Estimate	0.799***	0.810***	0.762***	0.531***
(SE)	(0.0976)	(0.0902)	(0.0515)	(0.0839)
Dependent mean	0.06	0.06	0.08	0.08
Number of Cases	6,443	6,445	9,328	9,296
	Blacks		**Not-Blacks**	
Estimate	0.743***	0.539***	0.776***	0.788***
(SE)	(0.0599)	(0.0734)	(0.0978)	(0.0960)
Dependent mean	0.09	0.09	0.06	0.06
Number of Cases	8,369	8,369	7,419	7,420
	Hispanics		**Not-Hispanics**	
Estimate	0.738***	0.965***	0.795***	0.575***
(SE)	(0.104)	(0.105)	(0.0535)	(0.0679)
Dependent mean	0.06	0.06	0.08	0.08
Number of Cases	3,770	3,772	12,002	11,946
	Age ≤ Median (48)		**Age > Median (48)**	
Estimate	0.772***	0.862***	0.741***	0.784***
(SE)	(0.0636)	(0.0695)	(0.0795)	(0.0819)
Dependent mean	0.07	0.07	0.07	0.07
Number of Cases	8,633	8,633	7,153	7,153
	Low Acuity Score (< 8)		**High Acuity Score (≥ 8)**	
Estimate	0.721***	0.791***	0.803***	0.453***
(SE)	(0.0610)	(0.109)	(0.0861)	(0.109)
Dependent mean	0.09	0.09	0.06	0.06
Number of Cases	9,342	9,252	6,462	6,217
	Chronic Homeless		**Not Chronic Homeless**	
Estimate	0.805***	0.630***	0.556***	0.756***
(SE)	(0.0612)	(0.0642)	(0.0921)	(0.0987)
Dependent mean	0.07	0.07	0.08	0.08
Number of Cases	9,477	9,395	6,320	6,324

Note: The table presents the first-stage estimates of case worker housing placement rate on housing placement within one month from intake for selected subgroups. Subgroups are selected based on the list of characteristics in Table 1. All specifications in this table include individuals with at least 20 months of observed post-intake outcomes (medium-term sample). The case worker housing placement rates in columns 1 and 3 are calculated as a leave-out mean within each subgroup. The case worker housing placement rates in columns 2 and 4 are calculated using the complement of each subgroup ("reverse" sample definition). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level.*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.6—: Characteristics of Compliers.

Sample:	Short-Term (10 Months)		Medium-Term (20 Months)	
	$P(X=x)$ (1)	$P(X=x\|complier)$ (2)	$P(X=x)$ (3)	$P(X=x\|complier)$ (4)
Demographics:				
Female	0.345	0.345	0.375	0.336
	(0.004)	(0.019)	(0.006)	(0.036)
White	0.410	0.427	0.386	0.376
	(0.004)	(0.026)	(0.005)	(0.041)
African American	0.531	0.516	0.568	0.578
	(0.004)	(0.025)	(0.006)	(0.045)
Other Race	0.086	0.037	0.076	0.013
	(0.002)	(0.031)	(0.003)	(0.044)
Hispanic	0.246	0.279	0.221	0.215
	(0.004)	(0.023)	(0.005)	(0.031)
Initial Assessment:				
Housing First Recommendation (Score ≥ 8)	0.410	0.404	0.396	0.383
	(0.004)	(0.030)	(0.007)	(0.039)
Any Homeless History	0.705	0.705	0.721	0.729
	(0.004)	(0.023)	(0.005)	(0.033)
Any Reported Disability (Physical or Mental)	0.802	0.790	0.813	0.805
	(0.003)	(0.022)	(0.004)	(0.029)
Substance Abuse Problem	0.266	0.259	0.238	0.257
	(0.003)	(0.028)	(0.005)	(0.037)
Chronic Homeless	0.596	0.575	0.612	0.597
	(0.004)	(0.029)	(0.006)	(0.036)
Individual history with public agencies:				
Emergency health service (6 months)	0.519	0.487	0.548	0.501
	(0.004)	(0.025)	(0.005)	(0.041)
Any jail time (6 months)	0.229	0.179	0.158	0.112
	(0.003)	(0.036)	(0.004)	(0.043)
Any emergency/crisis service (6 months)	0.432	0.395	0.432	0.349
	(0.004)	(0.029)	(0.006)	(0.041)
Public health (DHS/DMH) treatment (5 years)	0.246	0.246	0.240	0.250
	(0.003)	(0.028)	(0.004)	(0.041)
Sheriff/Probation (5 years)	0.151	0.160	0.146	0.155
	(0.003)	(0.019)	(0.004)	(0.033)
Emergency cash assistance (General Relief) receipt (5 years)	0.168	0.143	0.173	0.147
	(0.003)	(0.021)	(0.005)	(0.036)

Note: The table reports the characteristics of compliers in the short-term (10 months) and medium-term (20 months) samples. I define compliers as individuals whose housing placement decision would have been different had they been assigned a case worker with the highest versus the lowest placement rate. To identify compliers, I follow Abadie (2003), Dahl, Kostøl and Mogstad (2014), Bhuller et al. (2020) and Bald et al. (2022). I assign the 95th percentile of the instrument as the highest placement rate and the 5th percentile as the lowest placement rate. The share of compliers is estimated as the coefficient on the instrument from the first-stage times the difference between the top and bottom percentiles of the instrument. The table reports the average characteristic (binary variables) for the full sample in columns 1 and 3, and for compliers in columns 2 and 4. Standard errors are obtained using 200 bootstrap replications.

Table C.7—: The Effect of Housing Program Placement on Homelessness, Crime, and Health, By Subgroup.

Sample:	Gender		Race/Ethnicity		Homeless History		Recent Jail History		Health Emergency	
	Males	Females	White	Non-White	Yes	No	Yes	No	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A. Short-Term Sample (2-10 Months After Intake)										
Any Return to Homeless System	-0.048	-0.295***	-0.029	-0.338***	-0.233***	-0.117	-0.308	-0.194***	-0.226***	-0.187**
	(0.083)	(0.064)	(0.116)	(0.069)	(0.069)	(0.098)	(0.204)	(0.068)	(0.082)	(0.072)
Mean Dependent Variable	0.28	0.33	0.29	0.31	0.30	0.31	0.24	0.32	0.33	0.27
Complier mean if not housed	0.20	0.39	0.16	0.42	0.32	0.36	0.29	0.34	0.36	0.27
Any Law Enforcement Record (LASD/Probation)	-0.068**	-0.038*	-0.051*	-0.081***	-0.060**	-0.048	-0.036	-0.064***	-0.037	-0.097***
	(0.033)	(0.022)	(0.030)	(0.028)	(0.028)	(0.056)	(0.045)	(0.023)	(0.034)	(0.024)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.13	0.10	0.15	0.13	0.13	0.15	0.14	0.13	0.13	0.13
Any Public Health (DHS/DMH) Treatment	0.034	0.009	0.033	0.016	0.001	0.026	0.041	0.019	0.002	0.033
	(0.032)	(0.036)	(0.028)	(0.040)	(0.025)	(0.046)	(0.090)	(0.028)	(0.034)	(0.026)
Mean Dependent Variable	0.08	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.08	0.07
Complier mean if not housed	0.05	0.07	0.05	0.06	0.07	0.01	0.05	0.05	0.06	0.04
F-statistic (Instrument)	163	246	100	268	251	73	26	352	152	129
F-statistic (Joint Test)	1.07	0.67	1.07	0.81	0.99	1.31	0.69	1.12	1.38	0.92
Number of Cases	10,395	5,384	6,445	9,328	11,224	4,574	3,469	12,292	8,218	7,577
B. Medium-Term Sample (2-20 Months After Intake)										
Any Return to Homeless System	-0.163	-0.391***	-0.237	-0.289***	-0.246***	-0.081	-0.673	-0.221**	-0.291**	-0.290**
	(0.107)	(0.123)	(0.157)	(0.109)	(0.093)	(0.179)	(0.443)	(0.095)	(0.131)	(0.128)
Mean Dependent Variable	0.40	0.45	0.41	0.43	0.43	0.40	0.36	0.44	0.45	0.39
Complier mean if not housed	0.44	0.58	0.40	0.55	0.50	0.52	0.74	0.48	0.56	0.49
Any Law Enforcement Record (LASD/Probation)	-0.065*	-0.035	-0.023	-0.106***	-0.058**	-0.059	-0.180	-0.055**	-0.058	-0.048
	(0.036)	(0.042)	(0.034)	(0.035)	(0.029)	(0.076)	(0.139)	(0.027)	(0.045)	(0.047)
Mean Dependent Variable	0.08	0.08	0.08	0.09	0.08	0.08	0.08	0.09	0.09	0.08
Complier mean if not housed	0.14	0.14	0.12	0.16	0.15	0.15	0.22	0.13	0.12	0.15
Any Public Health (DHS/DMH) Treatment	0.002	-0.087	0.024	-0.107*	-0.071	0.045	-0.190	-0.029	-0.045	-0.010
	(0.055)	(0.075)	(0.050)	(0.064)	(0.045)	(0.125)	(0.301)	(0.043)	(0.053)	(0.059)
Mean Dependent Variable	0.10	0.09	0.09	0.09	0.09	0.10	0.09	0.10	0.10	0.09
Complier mean if not housed	0.09	0.14	0.02		0.15	-0.12	0.13	0.10	0.12	0.08
F-statistic (Instrument)	128	67	67	135	166	38	8	197	87	124
F-statistic (Joint Test)	0.87	0.83	1.08	0.61	0.55	0.69	0.73	0.39	0.80	0.86
Number of Cases	4,692	2,774	2,860	4,607	5,451	2,035	1,108	6,357	4,113	3,366

Note: The table reports two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) on any return to the homeless system, any record with law enforcement agencies, and any treatment receipt from public health system, as defined in Tables 4-6. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Each column presents the results for a subsample of cases based on a specific characteristic. In addition to reporting the 2SLS coefficient on housing program placement, the table reports the mean of the outcome variable and the mean outcome variable for the complier population if not placed in housing. F-statistic of the first stage and for the joint test of significance of controls in a regression where the outcome is the instrument (see Table 3) are reported. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.8—: First Stage Estimates of IV Model with Three Treatment Options (Permanent Housing, Temporary Housing, and No Housing Assistance).

Outcome (within 1 month):	PH Placement (1)	TH Placement (2)
A. Short-Term Sample (10 Months)		
PH Placement Rate	0.869***	0.072
	(0.137)	(0.088)
TH Placement Rate	-0.009	0.903***
	(0.016)	(0.050)
SW F-stat (instrument)	42.72	42.72
Dependent mean	0.01	0.06
PH Placement Rate	0.01	0.01
TH Placement Rate	0.06	0.06
Number of Cases	15,990	15,990
B. Medium-Term Sample (20 Months)		
PH Placement Rate	0.909***	0.158
	(0.143)	(0.138)
TH Placement Rate	0.0002	0.897***
	(0.0265)	(0.071)
SW F-stat (instrument)	41.13	41.13
Dependent mean	0.01	0.07
PH Placement Rate	0.01	0.01
TH Placement Rate	0.07	0.07
Number of Cases	7,584	7,584

Note: The table presents the first-stage estimates of case worker placement rates in different treatment margins on treatment placement. The two treatment margins are permanent housing (PH) program placement and temporary housing (TH) program placement. Placement rates for these two treatment margins are defined as the leave-out mean placement of cases handled by the case worker in each program type (within 1 month of initial intake). The outcomes in column 1-2 are permanent housing program placement and temporary housing program placement, respectively. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.9—: IV Estimates of IV Model with Three Treatment Options (Permanent Housing, Temporary Housing, and No Housing Assistance).

Outcome:	Any Return to Homeless System	Any Law Enforcement Record	Any Public Health Treatment
	(1)	(2)	(3)
A. Short-Term Sample (10 Months)			
PH Placement	-0.033	-0.139*	0.046
	(0.177)	(0.075)	(0.081)
TH Placement	-0.215***	-0.057***	0.013
	(0.060)	(0.021)	(0.025)
Dependent mean	0.30	0.07	0.07
Complier mean if not housed	0.36	0.27	0.01
SW F-stat (instrument)	42.72	42.72	42.72
Number of Cases	15,990	15,990	15,990
B. Medium-Term Sample (20 Months)			
PH Placement	0.002	-0.125	0.032
	(0.221)	(0.095)	(0.083)
TH Placement	-0.280***	-0.050**	-0.048
	(0.087)	(0.025)	(0.042)
Dependent mean	0.46	0.09	0.11
Complier mean if not housed	0.52	0.19	0.11
SW F-stat (instrument)	41.13	41.13	41.13
Number of Cases	7,584	7,584	7,584

Note: The table presents the two-stage least squares (2SLS) estimates of treatment placements on any return to the homeless system, and record with law enforcement agencies, and any public health system utilization. The three treatment margins are permanent housing (PH) program placement and temporary housing (TH) program placement. Placement rates for these two treatment margins are defined as the leave-out mean placement of cases handled by the case worker in each program type (within 1 month of initial intake). The outcomes in column 1-3 are any return to the homeless support system, any record with law enforcement agencies in LA county (Sheriff and Probation), and any public health treatment in LA county (DHS and DMH), respectively. All outcomes are measured starting 2 months after initial intake. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.10—: Intensive Margin Effect of Housing Program Placement on Homelessness.

Outcome	Dep. Mean	Complier Mean	OLS	RF	2SLS
	(1)	(2)	(3)	(4)	(5)
A. Short-Term Sample (2-10 Months After Intake)					
Number of Returns to Homeless System	0.60	0.94	-0.182***	-0.415***	-0.469***
			(0.041)	(0.123)	(0.140)
Emergency Shelter Stays	0.22	0.50	-0.059***	-0.228***	-0.258***
			(0.019)	(0.076)	(0.088)
Emergency Shelter Days	24.48	28.36	-10.081***	-15.337**	-17.328**
			(2.329)	(5.993)	(6.713)
Street Outreach Events	0.16	0.39	-0.058***	-0.135***	-0.152***
			(0.014)	(0.040)	(0.045)
Number of Subsequent Intakes	0.22	0.16	-0.071***	-0.066	-0.074
			(0.018)	(0.051)	(0.057)
Months of GR Receipt	0.52	1.41	0.054	-0.150	-0.170
			(0.049)	(0.150)	(0.174)
Number of Cases	15,990	15,990	15,990	15,990	15,990
B. Medium-Term Sample (2-20 Months After Intake)					
Number of Returns to Homeless System	1.03	1.56	-0.278***	-0.746***	-0.840***
			(0.074)	(0.193)	(0.207)
Emergency Shelter Stays	0.37	0.57	-0.093***	-0.284***	-0.320***
			(0.035)	(0.089)	(0.103)
Emergency Shelter Days	37.02	37.53	-7.986**	-1.999	-2.250
			(3.154)	(14.432)	(16.271)
Street Outreach Events	0.28	0.69	-0.069**	-0.369***	-0.415***
			(0.027)	(0.095)	(0.103)
Number of Subsequent Intakes	0.37	0.31	-0.129***	-0.118	-0.133
			(0.032)	(0.092)	(0.100)
Months of GR Receipt	1.06	2.31	0.109	-0.817	-0.920
			(0.151)	(0.527)	(0.608)
Number of Cases	7,584	7,584	7,584	7,584	7,584

Note: The table reports OLS, Reduced-Form (RF), and two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) on a set of homelessness-related outcomes. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Column 1 reports the mean of the outcome variable, column 2 reports the mean outcome variable for the complier population if not placed in housing, column 3 reports the OLS coefficient on housing program placement, column 4 reports the reduced form coefficient on the case worker housing placement rate, and column 5 reports the two-stage least squares coefficient on housing program placement. The outcome variables are defined as count variables equal of the events of interest that occur at any time between 2 and 10 (or 20) months after the initial intake. Any return to the Los Angeles County homeless support system includes any emergency shelter stay, street outreach program, or new intake with a case worker. Any receipt of emergency cash assistance (general relief) is defined as having at least one month of receipt in the period of interest. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.11—: Intensive Margin Effect of Housing Program Placement on Crime Outcomes.

Outcome:	Dep. Mean	Complier Mean	OLS	RF	2SLS
	(1)	(2)	(3)	(4)	(5)
A. Short-Term Sample (2-10 Months After Intake)					
Number of Jail Bookings (LASD)	0.19	0.70	0.008	-0.166***	-0.188***
			(0.035)	(0.058)	(0.063)
Number of Jail Days (LASD)	0.78	3.36	0.045	-0.747***	-0.844***
			(0.152)	(0.286)	(0.324)
Number of Criminal Charges (LASD)	0.12	0.43	-0.017	-0.088**	-0.099**
			(0.020)	(0.040)	(0.047)
Number of Probation Months	0.19	0.67	-0.064	-0.196*	-0.221*
			(0.039)	(0.101)	(0.113)
Number of Cases	15,990	15,990	15,990	15,990	15,990
B. Medium-Term Sample (2-20 Months After Intake)					
Number of Jail Bookings (LASD)	0.27	0.75	0.056	-0.222	-0.250
			(0.061)	(0.160)	(0.174)
Number of Jail Days (LASD)	1.04	2.38	-0.018	-0.799	-0.900
			(0.210)	(0.548)	(0.586)
Number of Criminal Charges (LASD)	0.18	0.44	-0.050	-0.221***	-0.249***
			(0.039)	(0.074)	(0.081)
Number of Probation Months	0.35	1.05	-0.092	-0.374	-0.421*
			(0.102)	(0.237)	(0.253)
Number of Cases	7,584	7,584	7,584	7,584	7,584

Note: The table reports OLS, Reduced-Form (RF), and two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) on a set of crime-related outcomes. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Column 1 reports the mean of the outcome variable, column 2 reports the mean outcome variable for the complier population if not placed in housing, column 3 reports the OLS coefficient on housing program placement, column 4 reports the reduced form coefficient on the case worker housing placement rate, and column 5 reports the two-stage least squares coefficient on housing program placement. The outcome variables are defined as count variables of the events of interest at any time between 2 and 10 (or 20) months after the initial intake. Any law enforcement record includes any jail booking or criminal charge by the Los Angeles County Sheriff Department and any Probation service in Los Angeles County. All specifications include the set of controls listed inTable 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.12—: Intensive Margin Effects of Housing Program Placement on Public Health Utilization.

Outcome:	Dep. Mean	Complier Mean	OLS	RF	2SLS
	(1)	(2)	(3)	(4)	(5)
	A. Short-Term Sample (2-10 Months After Intake)				
Public Health (DHS/DMH) Treatments	0.34	0.45	0.022	0.399**	0.451**
			(0.075)	(0.195)	(0.229)
DHS Treatments	0.22	0.29	0.017	0.053	0.059
			(0.039)	(0.095)	(0.107)
Emergency Department Visits	0.06	0.16	0.001	0.027	0.030
			(0.015)	(0.069)	(0.078)
Number of Cases	15,990	15,990	15,990	15,990	15,990
	B. Medium-Term Sample (2-20 Months After Intake)				
Public Health (DHS/DMH) Treatments	0.60	0.71	0.307	0.331**	0.499**
			(0.211)	(0.581)	(0.669)
DHS Treatments	0.38	0.43	0.139	0.179	0.201
			(0.118)	(0.198)	(0.221)
Emergency Department Visits	0.10	0.12	0.039	-0.037	-0.042
			(0.037)	(0.089)	(0.101)
Number of Cases	7,584	7,584	7,584	7,584	7,584

Note: The table reports OLS, Reduced-Form (RF), and two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) on a set of public health utilization outcomes. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Column 1 reports the mean of the outcome variable, column 2 reports the mean outcome variable for the complier population if not placed in housing, column 3 reports the OLS coefficient on housing program placement, column 4 reports the reduced form coefficient on the case worker housing placement rate, and column 5 reports the two-stage least squares coefficient on housing program placement. The outcome variables are defined as count variables of the events of interest at any time between 2 and 10 (or 20) months after the initial intake. Any public health treatment includes any Department of Health Services (DHS) and Department of Mental Health (DMH) hospital or clinic visit. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.13—: The Effect of Housing Program Duration (in Months) on Homelessness, Crime, and Health.

Outcome:	Dep. Mean	Complier Mean	OLS	RF	2SLS
	(1)	(2)	(3)	(4)	(5)
	A. Short-Term Sample (2-10 Months After Intake)				
Any Return to Homeless System	0.30	0.32	0.001	-0.188***	-0.034***
			(0.002)	(0.054)	(0.011)
Any Law Enforcement Record (LASD/Probation)	0.07	0.12	-0.001	-0.054***	-0.010***
			(0.001)	(0.018)	(0.003)
Any Public Health (DHS/DMH) Treatment	0.07	0.05	0.000	0.012	0.002
			(0.001)	(0.022)	(0.004)
Mean Duration if Housed (Months)	5.93	5.93	5.93	5.93	5.93
Number of Cases	15,990	15,990	15,990	15,990	15,990
	B. Medium-Term Sample (2-20 Months After Intake)				
Any Return to Homeless System	0.42	0.49	0.004**	-0.233***	-0.032**
			(0.002)	(0.080)	(0.013)
Any Law Enforcement Record (LASD/Probation)	0.08	0.14	0.001	-0.055**	-0.007**
			(0.001)	(0.023)	(0.003)
Any Public Health (DHS/DMH) Treatment	0.09	0.11	0.001	-0.038	-0.005
			(0.001)	(0.037)	(0.005)
Mean Duration if Housed (Months)	8.98	8.98	8.98	8.98	8.98
Number of Cases	7,584	7,584	7,584	7,584	7,584

Note: The table reports OLS, Reduced-Form (RF), and two-stage least squares (2SLS) results of the impact of housing program duration in months on homelessness, crime, and public health utilization. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Column 1 reports the mean of the outcome variable, column 2 reports the mean outcome variable for the complier population if not placed in housing, column 3 reports the OLS coefficient on housing program duration, column 4 reports the reduced form coefficient on the case worker housing placement rate, and column 5 reports the two-stage least squares coefficient on housing program duration. The outcome variables are defined as indicator variables equal to 1 if the event of interest occurs at any time between 2 and 10 (or 20) months after the initial intake. Any public health treatment includes any Department of Health Services (DHS) and Department of Mental Health (DMH) hospital or clinic visit. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.14—: Main IV Results and Robsutness to Changes in Sample Definition.

Sample:	Baseline	Cases Handled by Case Worker:			Cases Included:		
		≥ 35 Cases	≥ 40 Cases	≥ 45 Cases	Veteran Cases	Ages > 70	Multiple Intakes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	A. Short-Term Sample (2-10 Months After Intake)						
Any Return to Homeless System	-0.213***	-0.174***	-0.193***	-0.180**	-0.207***	-0.228***	-0.192***
	(0.060)	(0.061)	(0.060)	(0.071)	(0.049)	(0.061)	(0.061)
Mean Dependent Variable	0.30	0.30	0.29	0.29	0.30	0.30	0.33
Complier mean if not housed	0.32	0.29	0.31	0.31	0.35	0.31	0.35
Any Law Enforcement Record (LASD/Probation)	-0.061***	-0.057***	-0.058***	-0.076***	-0.056***	-0.066***	-0.069***
	(0.021)	(0.021)	(0.021)	(0.022)	(0.014)	(0.019)	(0.022)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.12	0.12	0.12	0.13	0.09	0.12	0.11
Any Public Health (DHS/DMH) Treatment	0.014	0.005	0.005	0.013	-0.003	0.008	0.014
	(0.025)	(0.025)	(0.025)	(0.033)	(0.018)	(0.025)	(0.018)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.05	0.06	0.06	0.05	0.06	0.05	0.06
F-statistic (Instrument)	300	312	314	197	561	339	543
F-statistic (Joint Test)	0.99	0.89	0.99	1.12	1.44	1.16	1.13
Number of Cases	15,990	15,207	14,334	13,751	19,453	16,365	20,756
	B. Medium-Term Sample (2-20 Months After Intake)						
Any Return to Homeless System	-0.263***	-0.245***	-0.257***	-0.178**	-0.253***	-0.255***	-0.217**
	(0.088)	(0.087)	(0.085)	(0.088)	(0.056)	(0.093)	(0.084)
Mean Dependent Variable	0.42	0.42	0.42	0.41	0.42	0.42	0.45
Complier mean if not housed	0.49	0.49	0.50	0.48	0.51	0.48	0.50
Any Law Enforcement Record (LASD/Probation)	-0.062**	-0.058**	-0.054**	-0.046*	-0.006	-0.068**	-0.053**
	(0.025)	(0.025)	(0.024)	(0.028)	(0.018)	(0.029)	(0.024)
Mean Dependent Variable	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Complier mean if not housed	0.14	0.14	0.13	0.13	0.10	0.14	0.12
Any Public Health (DHS/DMH) Treatment	-0.043	-0.047	-0.052	-0.052	0.007	-0.034	-0.051
	(0.042)	(0.042)	(0.042)	(0.056)	(0.032)	(0.044)	(0.041)
Mean Dependent Variable	0.09	0.09	0.09	0.09	0.10	0.09	0.09
Complier mean if not housed	0.11	0.11	0.11	0.10	0.10	0.10	0.11
F-statistic (Instrument)	184	184	184	157	248	194	260
F-statistic (Joint Test)	0.79	0.82	0.83	0.74	1.12	0.80	0.75
Number of Cases	7,584	7,175	6,753	6,416	9,480	7,771	9,113

Note: The table reports two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) on any return to the homeless system, any record with law enforcement agencies, and any treatment receipt from public health system, as defined in Tables 4-6. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Each column presents a deviation from the baseline sample (column 1) based on different criteria. In columns 2-4, the sample is altered such that only case workers that handled more than 35, 40, or 45 cases in 2016-2017 are included in the sample, respectively. In columns 5-7, cases that were not included in the baseline sample are added to the analysis: veteran cases in column 5, individuals older than 70 years old in column 6, and the sample of second or more intake for a given individual (baseline sample includes only the first intake for each individual) in column 7. In addition to reporting the 2SLS coefficient on housing program placement, the table reports the mean of the outcome variable and the mean outcome variable for the complier population if not placed in housing. F-statistic of the first stage and for the joint test of singificance of controls in a regression where the outcome is the instrument (see Table 3) are reported. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level and are two-way clustered at the case worker and individual level in column 7. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table C.15—: Main IV Results and Robsutness to Changes in Fixed Effects and Treatment Timing.

Sample:	Baseline (1)	Fixed Effects:		Treatment Timing (Relative to Intake):		
		Site x Quarter (2)	Org. x Month (3)	4 Months (4)	6 Months (5)	10 Months (6)
	A. Short-Term Sample (2-10 Months After Intake)					
Any Return to Homeless System	-0.213***	-0.220***	-0.242***	-0.246***	-0.268***	-0.274***
	(0.060)	(0.055)	(0.056)	(0.064)	(0.065)	(0.070)
Mean Dependent Variable	0.30	0.30	0.29	0.30	0.30	0.30
Complier mean if not housed	0.32	0.33	0.33	0.32	0.33	0.32
Any Law Enforcement Record (LASD/Probation)	-0.061***	-0.056**	-0.043**	-0.066***	-0.066***	-0.072***
	(0.021)	(0.023)	(0.021)	(0.021)	(0.022)	(0.024)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.12	0.12	0.11	0.12	0.12	0.13
Any Public Health (DHS/DMH) Treatment	0.014	0.022	-0.023	0.012	0.011	0.023
	(0.025)	(0.022)	(0.020)	(0.025)	(0.027)	(0.027)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.05	0.06	0.08	0.06	0.06	0.04
F-statistic (Instrument)	300	353	434	236	214	157
F-statistic (Joint Test)	0.99	0.90	0.94	1.58	1.48	1.27
Number of Cases	15,990	16,482	17,307	15,990	15,990	15,990
	B. Medium-Term Sample (2-20 Months After Intake)					
Any Return to Homeless System	-0.263***	-0.277***	-0.254***	-0.202*	-0.197*	-0.211**
	(0.088)	(0.084)	(0.078)	(0.102)	(0.101)	(0.103)
Mean Dependent Variable	0.42	0.42	0.41	0.42	0.42	0.42
Complier mean if not housed	0.49	0.49	0.49	0.48	0.48	0.50
Any Law Enforcement Record (LASD/Probation)	-0.062**	-0.072***	-0.040*	-0.066**	-0.072**	-0.080**
	(0.025)	(0.022)	(0.023)	(0.029)	(0.029)	(0.031)
Mean Dependent Variable	0.08	0.08	0.08	0.08	0.08	0.08
Complier mean if not housed	0.14	0.14	0.12	0.15	0.13	0.12
Any Public Health (DHS/DMH) Treatment	-0.043	-0.018	-0.072**	-0.031	-0.036	-0.031
	(0.042)	(0.040)	(0.030)	(0.048)	(0.048)	(0.049)
Mean Dependent Variable	0.09	0.09	0.09	0.09	0.09	0.09
Complier mean if not housed	0.11	0.10	0.13	0.10	0.11	0.09
F-statistic (Instrument)	184	181	225	134	139	121
F-statistic (Joint Test)	0.79	0.79	0.50	1.24	1.28	1.03
Number of Cases	7,584	7,796	8,160	7,584	7,584	7,584

Note: The table reports two-stage least squares (2SLS) results of the impact of housing program placement on any return to the homeless system, any record with law enforcement agencies, and any treatment receipt from public health system, as defined in Tables 4-6 (measured from 2 months after intake as in the baseline specification). Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Each column presents a deviation from the baseline sample (column 1) based on different criteria. In columns 2-3, the sample is altered such that site by quarter of intake (instead of month of intake) fixed effects are included (column 2) or organization (instead of site of intake) by month of intake fixed effects are included (column 3). In columns 4-6, the definition of treatment is changed such that individuals are considered treated (placed in a housing program) within 4, 6, or 10 months after initial intake (compared to 1 month in the baseline sample), respectively. In addition to reporting the 2SLS coefficient on housing program placement, the table reports the mean of the outcome variable and the mean outcome variable for the complier population if not placed in housing. F-statistic of the first stage and for the joint test of significance of controls in a regression where the outcome is the instrument (see Table 3) are reported. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.16—: Main IV Results and Robsutness to Using Flexible Measures of Case Worker Placement Rate.

IV Version (Varies By):	Baseline	Gender	Minority	Disability	Homeless History
	(1)	(2)	(3)	(4)	(5)
A. Short-Term Sample (2-10 Months After Intake)					
Any Return to Homeless System	-0.213***	-0.232***	-0.193***	-0.166**	-0.163**
	(0.060)	(0.060)	(0.061)	(0.067)	(0.066)
Mean Dependent Variable	0.30	0.30	0.30	0.30	0.30
Complier mean if not housed	0.32	0.33	0.29	0.31	0.30
Any Law Enforcement Record (LASD/Probation)	-0.061***	-0.062***	-0.062***	-0.049**	-0.055***
	(0.021)	(0.022)	(0.022)	(0.022)	(0.021)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.12	0.11	0.13	0.12	0.12
Any Public Health (DHS/DMH) Treatment	0.014	0.018	0.011	0.010	-0.003
	(0.025)	(0.027)	(0.026)	(0.025)	(0.025)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.05	0.06	0.05	0.08	0.07
F-statistic (Instrument)	300	189	215		185
F-statistic (Joint Test)	0.99	1.10	1.16	1.41	1.80
Number of Cases	15,990	15,989	15,989	15,978	15,985
B. Medium-Term Sample (2-20 Months After Intake)					
Any Return to Homeless System	-0.263***	-0.271***	-0.235**	-0.154	-0.185*
	(0.088)	(0.092)	(0.093)	(0.099)	(0.103)
Mean Dependent Variable	0.46	0.46	0.46	0.46	0.46
Complier mean if not housed	0.49	0.48	0.47	0.45	0.48
Any Law Enforcement Record (LASD/Probation)	-0.062**	-0.067**	-0.056*	-0.043	-0.052*
	(0.025)	(0.032)	(0.031)	(0.032)	(0.031)
Mean Dependent Variable	0.09	0.09	0.09	0.09	0.09
Complier mean if not housed	0.14	0.13	0.12	0.14	0.13
Any Public Health (DHS/DMH) Treatment	-0.043	-0.047	-0.043	-0.058	-0.052
	(0.042)	(0.044)	(0.043)	(0.041)	(0.044)
Mean Dependent Variable	0.11	0.11	0.11	0.11	0.11
Complier mean if not housed	0.11	0.11	0.10	0.12	0.13
F-statistic (Instrument)	184	134	156	162	166
F-statistic (Joint Test)	0.79	1.31	1.04	1.01	1.40
Number of Cases	7,584	7,584	7,583	7,575	7,583

Note: The table reports two-stage least squares (2SLS) results of the impact of housing program placement on any return to the homeless system, any record with law enforcement agencies, and any treatment receipt from public health system, as defined in Tables 4-6 (measured from 2 months after intake as in the baseline specification). Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Each column presents a flexible version to the case worker housing program placement rate (the instrument) where the instrument allows to vary by gender (column 2), minority (white vs. non-white in column 3), disability (column 4), and homeless history (column 5). In addition to reporting the 2SLS coefficient on housing program placement, the table reports the mean of the outcome variable and the mean outcome variable for the complier population if not placed in housing. F-statistic of the first stage and for the joint test of significance of controls in a regression where the outcome is the instrument (see Table 3) are reported. All specifications include the set of controls listed inTable 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.17—: Main IV Results and Robsutness to Using Alternative Instruments.

IV Version:	Baseline (1)	1-Year Period (2)	First Intakes (3)	Residualized (4)	Split Sample (5)
	A. Short-Term Sample (2-10 Months After Intake)				
Any Return to Homeless System	-0.213***	-0.180***	-0.233***	-0.197***	-0.280***
	(0.060)	(0.057)	(0.062)	(0.055)	(0.070)
Mean Dependent Variable	0.30	0.30	0.30	0.30	0.30
Complier mean if not housed	0.32	0.30	0.34	0.32	0.37
Any Law Enforcement Record (LASD/Probation)	-0.061***	-0.062***	-0.063***	-0.052***	-0.066***
	(0.021)	(0.020)	(0.021)	(0.018)	(0.021)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.07
Complier mean if not housed	0.12	0.11	0.12	0.15	0.11
Any Public Health (DHS/DMH) Treatment	0.014	0.012	0.015	0.014	0.038
	(0.025)	(0.023)	(0.026)	(0.022)	(0.034)
Mean Dependent Variable	0.07	0.07	0.07	0.07	0.08
Complier mean if not housed	0.05	0.06	0.06	0.04	0.04
F-statistic (Instrument)	300	278	380	514	211
F-statistic (Joint Test)	0.99	1.08	0.94	1.02	1.01
Number of Cases	15,990	15,985	15,990	15,990	7,885
	B. Medium-Term Sample (2-20 Months After Intake)				
Any Return to Homeless System	-0.263***	-0.201**	-0.293***	-0.235***	-0.418***
	(0.088)	(0.087)	(0.083)	(0.080)	(0.114)
Mean Dependent Variable	0.46	0.46	0.46	0.46	0.46
Complier mean if not housed	0.49	0.45	0.52	0.49	0.56
Any Law Enforcement Record (LASD/Probation)	-0.062**	-0.065***	-0.064***	-0.051**	-0.029
	(0.025)	(0.023)	(0.024)	(0.023)	(0.037)
Mean Dependent Variable	0.09	0.09	0.09	0.09	0.09
Complier mean if not housed	0.14	0.13	0.14	0.15	0.09
Any Public Health (DHS/DMH) Treatment	-0.043	-0.003	-0.043	-0.035	-0.018
	(0.042)	(0.042)	(0.041)	(0.038)	(0.052)
Mean Dependent Variable	0.11	0.11	0.11	0.11	0.11
Complier mean if not housed	0.11	0.09	0.11	0.11	0.07
F-statistic (Instrument)	184	264	234	211	109
F-statistic (Joint Test)	0.79	0.78	0.76	0.91	0.82
Number of Cases	7,584	7,580	7,584	7,584	3,730

Note: The table reports two-stage least squares (2SLS) results of the impact of housing program placement on any return to the homeless system, any record with law enforcement agencies, and any treatment receipt from public health system, as defined in Tables 4-6 (measured from 2 months after intake as in the baseline specification). Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Each column presents a different version to the case worker housing program placement rate (the instrument). In column 2, the case worker placement rate is calculated using a 1-year window of cases (instead of 2-year window for the baseline instrument). In column 3, the instrument is calculated using the sample of first cases for individuals (the baseline uses first and subsequent cases). In column 4, I construct the instrument in a similar way to the baseline instrument using the predicted residuals from a regression of housing program placement on site and month of intake fixed effects. In column 5, I split the sample into two random samples and assign the mean housing placement rate for a case worker in the first half of the sample to cases in the other half of the sample, so called a "split-sample" instrument. In addition to reporting the 2SLS coefficient on housing program placement, the table reports the mean of the outcome variable and the mean outcome variable for the complier population if not placed in housing. F-statistic of the first stage and for the joint test of significance of controls in a regression where the outcome is the instrument (see Table 3) are reported. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level.*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.18—: First Stage Estimates of IV Model with Four Treatment Options (Housing Assistance, Non-Housing Services Only, Emergency Housing, and No Assistance).

Outcome (within 1 month):	HP Placement (1)	NH Placement (2)	EH Placement (3)
A. Short-Term Sample (10 Months)			
HP Placement Rate	0.886***	-0.00726	-0.0330
	(0.0514)	(0.0209)	(0.0396)
NH Placement Rate	-0.0705	0.628***	0.0760
	(0.0552)	(0.108)	(0.0832)
EH Placement Rate	0.0142	0.0349	0.928***
	(0.0203)	(0.0309)	(0.0509)
SW F-stat (instrument)	336.85	38.62	144.06
Dependent mean	0.06	0.06	0.06
HP Placement Rate	0.07	0.07	0.07
NH Placement Rate	0.06	0.06	0.06
EH Placement Rate	0.38	0.38	0.38
Number of Cases	15,990	15,990	15,990
B. Medium-Term Sample (20 Months)			
HP Placement Rate	0.892***	0.0206	0.0248
	(0.0649)	(0.0231)	(0.0475)
NH Placement Rate	-0.0563	0.560***	0.230
	(0.0852)	(0.156)	(0.156)
EH Placement Rate	0.0151	0.0373	0.957***
	(0.0300)	(0.0400)	(0.0719)
SW F-stat (instrument)	211.88	15.00	41.70
Dependent mean	0.08	0.08	0.08
HP Placement Rate	0.09	0.09	0.09
NH Placement Rate	0.06	0.06	0.06
EH Placement Rate	0.38	0.38	0.38
Number of Cases	7,584	7,584	7,584

Note: The table presents the first-stage estimates of case worker placement rates in different treatment margins on treatment placement. The three treatment margins are housing program (HP) placement, non-housing services (NH) program placement, and emergency housing (EH) program placement. Placement rates for these three treatment margins are defined as the leave-out mean placement of cases handled by the case worker in each program type (within 1 month of initial intake). The outcomes in column 1-3 are housing program placement, non-housing services program placement, and emergency housing placement, respectively. All placements are within 1 month of initial intake with the case worker. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table C.19—: IV Estimates of IV Model with Four Treatment Options (Housing Assistance, Emergency Housing, Non-Housing Services Only, and No Assistance).

Outcome:	Any Return to Homeless System (1)	Any Law Enforce-ment Record (2)	Any Public Health Treatment (3)
A. Short-Term Sample (10 Months)			
HP Placement	-0.231***	-0.061***	0.005
	(0.064)	(0.021)	(0.025)
NH Placement	-0.301*	-0.041	0.030
	(0.164)	(0.062)	(0.082)
EH Placement	-0.017	0.006	-0.033*
	(0.053)	(0.016)	(0.018)
Dependent mean	0.30	0.07	0.07
Complier mean if not housed	0.36	0.27	0.01
SW F-stat (instrument)	336.85	336.85	336.85
Number of Cases	15,990	15,990	15,990
B. Medium-Term Sample (20 Months)			
HP Placement	-0.266***	-0.070***	-0.063
	(0.091)	(0.027)	(0.045)
NH Placement	-0.417	0.170	0.382**
	(0.284)	(0.149)	(0.165)
EH Placement	-0.051	-0.027	-0.067*
	(0.059)	(0.030)	(0.035)
Dependent mean	0.46	0.09	0.11
Complier mean if not housed	0.52	0.19	0.11
SW F-stat (instrument)	211.88	211.88	211.88
Number of Cases	7,584	7,584	7,584

Note: The table presents the two-stage least squares (2SLS) estimates of treatment placements on any return to the ho. The three treatment margins are housing assistance (HP) program placement, non-housing services (NH) program placement, and emergency housing (EH) program placement. Placement rates for these three treatment margins are defined as the leave-out mean placement of cases handled by the case worker in each program type (within 1 month of initial intake). The outcomes in column 1-3 are any return to the homeless support system, any record with law enforcement agencies in LA county (Sheriff and Probation), and any public health treatment in LA county (DHS and DMH), respectively. All outcomes are measured starting 2 months after initial intake. All placements are within 1 month of initial intake with the case worker. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

D. Income, Employment, and Benefits Sample Results

Table D.1—: First Stage Estimates for the Income and Employment Samples.

| Sample: | Outcome Variable: Housed (within 1 month) = 1 | | | |
| | Baseline Samples | | Income and Employment Samples | |
	Short-Term (1)	Medium-Term (2)	Short-Term (3)	Medium-Term (4)
Case Worker Housing Placement Rate	0.885***	0.888***	0.710***	0.858***
	(0.0511)	(0.0654)	(0.0976)	(0.178)
Dependent mean	0.06	0.08	0.05	0.04
F-stat (Instrument)	300.28	184.50	53.01	23.33
R-Squared	0.310	0.298	0.256	0.358
Number of Cases	15,990	7,584	5,190	1,538

Note: The table presents the first-stage estimates of case worker housing placement rate on housing program placement within 1 month from intake. Columns 1 and 2 show estimates for the baseline samples of individuals with at least 10 months of observed post-intake outcomes (short-term sample) and at least 20 months of observed post-assessment outcomes (medium-term), respectively. Columns 3 and 4 limit the baseline samples to the sample with any self-reported information on income and employment in the first 10 months after assessment (short-term) and between 11 and 20 months after assessment (medium-term). Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table D.2—: Testing for Random Assignment of Cases to Case Workers.

	Dependent Variable: CW Housing Placement Rate			
	Baseline Samples		Income and Employment Samples	
	Short-Term (10 Months)	Medium-Term (20 Months)	Short-Term (10 Months)	Medium-Term (20 Months)
	(1)	(2)	(3)	(4)
Demographics:				
Female	0.0015	-0.0004	-0.0035*	-0.0022
	(0.0015)	(0.0017)	(0.0018)	(0.0026)
White	-0.0005	-0.0007	-0.0048	0.0014
	(0.0033)	(0.0047)	(0.0051)	(0.0068)
African American	0.0053	0.0050	-0.0044	0.0020
	(0.0043)	(0.0059)	(0.0065)	(0.0070)
Other Race	0.0019	-0.0003	0.0005	-0.0054
	(0.0038)	(0.0057)	(0.0054)	(0.0067)
Hispanic	0.0017	0.0008	0.0009	0.0025
	(0.0020)	(0.0026)	(0.0025)	(0.0030)
Age (25-70)	-0.0001	-0.0001	0.0001*	0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Initial Assessment:				
Acuity Score (0-17)	-0.0004	0.0010	-0.0013	-0.0005
	(0.0009)	(0.0010)	(0.0013)	(0.0011)
Housing First Recommendation (Score $\geq = 8$)	-0.0013	-0.0077*	0.0012	-0.0005
	(0.0024)	(0.0044)	(0.0041)	(0.0071)
Any Homeless History	0.0012	-0.0014	-0.0020	0.0072
	(0.0035)	(0.0032)	(0.0040)	(0.0082)
Any Reported Disability (Physical or Mental)	-0.0017	-0.0003	-0.0078	-0.0004
	(0.0030)	(0.0029)	(0.0048)	(0.0041)
Substance Abuse Problem	-0.0019	-0.0007	-0.0036	-0.0039
	(0.0021)	(0.0034)	(0.0032)	(0.0048)
Chronic Homeless	-0.0030	0.0018	0.0021	-0.0103
	(0.0045)	(0.0031)	(0.0047)	(0.0085)
Individual history with public agencies:				
Emergency health service (6 months)	0.0001	-0.0008	0.0016	-0.0042
	(0.0013)	(0.0017)	(0.0019)	(0.0029)
Any jail time (6 months)	-0.0002	-0.0036	-0.0027	-0.0015
	(0.0015)	(0.0025)	(0.0026)	(0.0036)
Any emergency/crisis service (6 months)	-0.0003	0.0000	-0.0001	0.0007**
	(0.0002)	(0.0003)	(0.0003)	(0.0003)
Public health (DHS/DMH/DPH) treatment (1 year)	-0.0021	-0.0014	-0.0051	-0.0065
	(0.0019)	(0.0025)	(0.0050)	(0.0062)
Public health (DHS/DMH/DPH) treatment (2-5 years)	-0.0021	-0.0017	0.0034	0.0015
	(0.0022)	(0.0018)	(0.0030)	(0.0041)
Sheriff/Probation (1 year)	-0.0020	0.0002	-0.0034	0.0082
	(0.0027)	(0.0033)	(0.0037)	(0.0053)
Sheriff/Probation (2-5 years)	0.0013	-0.0001	0.0074**	0.0023
	(0.0020)	(0.0023)	(0.0033)	(0.0030)
Emergency cash assistance (General Relief) receipt (1 year)	-0.0005	-0.0032	0.0003	-0.0045
	(0.0027)	(0.0037)	(0.0034)	(0.0047)
Emergency cash assistance (General Relief) receipt (2-5 years)	0.0020	0.0028	-0.0045	-0.0004
	(0.0024)	(0.0029)	(0.0033)	(0.0041)
F-statistic for joint test	0.99	0.79	0.86	1.14
p-value	0.48	0.73	0.65	0.31
Mean CW Placement Rate	0.070	0.070	0.069	0.069
Site-Month Fixed Effects	Yes	Yes	Yes	Yes
R-Squared	0.6715	0.7288	0.6785	0.8169
Observations	15,990	7,584	5,190	1,538

Note: The table reports tests of random case assignment to case workers. Columns 1 and 2 show estimates for the baseline samples of individuals with at least 10 months of observed post-intake outcomes (short-term sample) and at least 20 months of observed post-intake outcomes (medium-term), respectively. Columns 3 and 4 limit the baseline samples to the sample with any self-reported information on income and employment in the first 10 months after intake (short-term) and between 11 and 20 months after intake (medium-term). The estimated coefficients in the table are from a regression of case worker housing program placement rate (the instrument) on the set of case characteristics and site by month fixed effects. The F-statistics and p-values reported are from a test of joint significance of all controls excluding site by month fixed effects. Standard errors are clustered at he case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table D.3—: Exclusion Restriction Tests (Income and Employment Samples).

Dependent Variable:	Housing Program Placement Type			Duration	Other Placements	
	PSH	RRH	TH	Days in Housing Programs	EH	Non-Housing Programs
Time Period (relative to intake):	1 Month	1 Month	1 Month	1-10/20 Months	1 Month	1 Month
	(1)	(2)	(3)	(4)	(5)	(6)
A. Housed (within 1 month), Short-Term Sample (10 Months)						
Case Worker Housing Placement Rate	-0.510	0.461	0.161	78.64	-0.0679	0.235
	(0.423)	(0.418)	(0.171)	(75.08)	(0.202)	(0.161)
Dependent mean	0.25	0.76	0.10	155.07	0.20	0.10
Number of Cases	259	259	259	259	259	259
B. Housed (within 1 month), Medium-Term Sample (20 Months)						
Case Worker Housing Placement Rate	-0.545	0.545	-0.454	280.9	0.322	-0.226
	(0.414)	(0.414)	(0.637)	(314.2)	(0.423)	(0.441)
Dependent mean	0.22	0.78	0.29	221.24	0.31	0.18
Number of Cases	72	72	72	72	72	72

Note: The table presents the analogous of Table C.2 for the income and employment samples, which are subsets of the baseline samples to those with any self-reported information on income and employment in the first 10 months after intake (short-term) and between 11 and 20 months after intake (medium-term). The table presents regression results testing whether housing placement type (columns 1-3), duration (column 4), and placement in emergency housing (column 5) and non housing services programs (column 6) are correlated with the case worker housing placement rate for the short-term (10 months) and medium-term (20 months) samples in panel A and Panel B, respectively. The samples used in the analysis have been limited to the set of individuals who were placed in a housing program within one month of their initial intake with the case worker. The outcomes in columns 1 through 3 are defined as any placement in a Permanent Supportive Housing (PSH), Rapid Re-Housing (RRH), and Transitional Housing (TH) programs within one month of intake, respectively. The outcome in column 4 is the overall number of days in housing programs in the first 10 or 20 months after initial intake with the case worker. The outcome in column 5 is an indicator for whether the individual was placed in an emergency shelter (EH) program, and the outcome in column 6 is an indicator for placement in a non-housing services program. All specifications include case characteristics and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table D.4—: Tests for the Monotonicity Assumption (Short-Term, Income Sample).

Instrument Type:	Outcome Variable: Housed (within 1 month) = 1			
	Baseline (1)	Reverse-Sample (2)	Baseline (3)	Reverse-Sample (4)
	Males		**Females**	
Estimate	0.564***	0.492***	0.650***	0.724***
(SE)	(0.133)	(0.115)	(0.150)	(0.171)
Dependent mean	0.04	0.05	0.06	0.06
Number of Cases	3,091	2,761	1,851	1,781
	Whites		**Not-Whites**	
Estimate	0.669***	0.738***	0.547***	0.395***
(SE)	(0.170)	(0.133)	(0.100)	(0.0792)
Dependent mean	0.05	0.05	0.05	0.05
Number of Cases	1,837	1,837	3,121	3,114
	Blacks		**Not-Blacks**	
Estimate	0.559***	0.399***	0.632***	0.685***
(SE)	(0.112)	(0.0885)	(0.173)	(0.125)
Dependent mean	0.05	0.05	0.05	0.05
Number of Cases	2,922	2,922	2,030	2,030
	Hispanics		**Not-Hispanics**	
Estimate	0.685***	0.836***	0.634***	0.443***
(SE)	(0.189)	(0.219)	(0.107)	(0.0875)
Dependent mean	0.05	0.05	0.05	0.05
Number of Cases	951	951	4,016	4,000
	Age $\leq$ Median (48)		**Age $>$ Median (48)**	
Estimate	0.438***	0.602***	0.619***	0.658***
(SE)	(0.115)	(0.115)	(0.107)	(0.101)
Dependent mean	0.05	0.05	0.05	0.05
Number of Cases	2,459	2,459	2,474	2,474
	Low Acuity Score ($<$ 8)		**High Acuity Score ($\geq$ 8)**	
Estimate	0.569***	0.578***	0.725***	0.220
(SE)	(0.114)	(0.148)	(0.183)	(0.145)
Dependent mean	0.05	0.05	0.05	0.05
Number of Cases	2,975	2,947	1,994	1,904
	Chronic Homeless		**Not Chronic Homeless**	
Estimate	0.688***	0.444***	0.420***	0.639***
(SE)	(0.149)	(0.0976)	(0.128)	(0.164)
Dependent mean	0.05	0.05	0.05	0.05
Number of Cases	3,030	3,008	1,949	1,949

Note: The table presents the first-stage estimates of case worker housing placement rate on housing program placement within 1 month from intake for selected subgroups. Subgroups are selected based on the list of characteristics in Table 1. All specifications include cases from the short-term income and employment samples, which are subsets of the baseline samples to those with any self-reported information on income and employment in the first 10 months after intake, as described in Section **??**. The case worker housing placement rate in columns 1 and 3 is calculated as a leave-out mean within each subgroup. The case worker housing placement rates in columns 2 and 4 are calculated using the complement of each subgroup ("reverse" sample definition). All specifications include the controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table D.5—: Tests for the Monotonicity Assumption (Medium-Term Sample).

Instrument Type:	Outcome Variable: Housed (within 1 month) = 1			
	Baseline (1)	Reverse-Sample (2)	Baseline (3)	Reverse-Sample (4)
	Males		**Females**	
Estimate	0.740***	0.787***	0.884***	0.855***
(SE)	(0.152)	(0.149)	(0.156)	(0.198)
Dependent mean	0.04	0.05	0.04	0.04
Number of Cases	1,050	931	695	669
	Whites		**Not-Whites**	
Estimate	0.695***	0.679***	0.860***	0.698***
(SE)	(0.193)	(0.179)	(0.140)	(0.163)
Dependent mean	0.04	0.04	0.04	0.04
Number of Cases	638	638	1,107	1,104
	Blacks		**Not-Blacks**	
Estimate	0.784***	0.684***	0.760***	0.713***
(SE)	(0.146)	(0.157)	(0.191)	(0.178)
Dependent mean	0.04	0.04	0.04	0.04
Number of Cases	1,058	1,058	688	688
	Hispanics		**Not-Hispanics**	
Estimate	0.878***	1.192***	0.842***	0.577***
(SE)	(0.157)	(0.194)	(0.107)	(0.107)
Dependent mean	0.05	0.05	0.04	0.04
Number of Cases	367	367	1,384	1,381
	Age $\leq$ Median (48)		**Age $>$ Median (48)**	
Estimate	0.815***	0.897***	0.848***	0.729***
(SE)	(0.154)	(0.127)	(0.146)	(0.180)
Dependent mean	0.04	0.04	0.04	0.04
Number of Cases	853	853	894	894
	Low Acuity Score ($<$ 8)		**High Acuity Score ($\geq$ 8)**	
Estimate	0.703***	0.974***	0.824***	0.341**
(SE)	(0.150)	(0.194)	(0.167)	(0.147)
Dependent mean	0.04	0.04	0.05	0.05
Number of Cases	1,022	1,018	732	703
	Chronic Homeless		**Not Chronic Homeless**	
Estimate	0.918***	0.548***	0.646***	0.934***
(SE)	(0.153)	(0.118)	(0.170)	(0.145)
Dependent mean	0.04	0.04	0.04	0.04
Number of Cases	1,085	1,077	664	664

Note: The table presents the first-stage estimates of case worker housing placement rate on housing program placement within 1 month from intake for selected subgroups. Subgroups are selected based on the list of characteristics in Table 1. All specifications include cases from the medium-term income and employment samples, which are subsets of the baseline samples to those with any self-reported information on income and employment between 11-20 months after intake, as described in Section **??**. The case worker housing placement rate in columns 1 and 3 is calculated as a leave-out mean within each subgroup. The case worker housing placement rates in columns 2 and 4 are calculated using the complement of each subgroup ("reverse" sample definition). All specifications include the controls listed in Table 3 and site and month of intake fixed effects (not interactions). Standard errors are clustered at the case worker level. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

Table D.6—: The Effect of Housing Program Placement on Homelessness, Crime, and Health (Income and Employment Sample).

Outcome:	Dep. Mean	Complier Mean	OLS	RF	2SLS
	(1)	(2)	(3)	(4)	(5)
A. Short-Term Sample (2-10 Months After Intake)					
Any Return to Homeless System	0.30	0.32	-0.082**	-0.126	-0.178
			(0.034)	(0.124)	(0.168)
Any Law Enforcement Record (LASD/Probation)	0.07	0.12	-0.014	-0.070***	-0.099***
			(0.011)	(0.024)	(0.033)
Any Public Health (DHS/DMH) Treatment	0.07	0.15	0.026	-0.042	-0.059
			(0.021)	(0.043)	(0.061)
Number of Cases	5,190	5,190	5,190	5,190	5,190
B. Medium-Term Sample (2-20 Months After Intake)					
Any Return to Homeless System	0.42	0.49	0.003	-0.177	-0.206
			(0.026)	(0.175)	(0.226)
Any Law Enforcement Record (LASD/Probation)	0.08	0.18	0.014	-0.123	-0.143
			(0.028)	(0.097)	(0.114)
Any Public Health (DHS/DMH) Treatment	0.09	0.21	0.057	-0.123	-0.144
			(0.040)	(0.136)	(0.164)
Number of Cases	1,538	1,538	1,538	1,538	1,538

Note: The table reports OLS, Reduced-Form (RF), and two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) for the subsample of individuals who self-report income, employment, and social benefits receipt. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Column 1 reports the mean of the outcome variable, column 2 reports the mean outcome variable for the complier population if not placed in housing, column 3 reports the OLS coefficient on housing program placement, column 4 reports the reduced form coefficient on the case worker housing placement rate, and column 5 reports the two-stage least squares coefficient on housing program placement. The outcome variables are defined as indicator variables equal to 1 if the event of interest occurs at any time between 2 and 10 (or 20) months after the initial intake. Any public health treatment includes any Department of Health Services (DHS) and Department of Mental Health (DMH) hospital or clinic visit. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

Table D.7—: The Effect of Housing Program Placement on Income, Employment, and Benefits Outcomes (Self-Reported).

Outcome:	Dep. Mean	Complier Mean	OLS	RF	2SLS
	(1)	(2)	(3)	(4)	(5)
A. Short-Term Sample (2-10 Months After Intake)					
Non-Zero Income = 1	0.82	0.70	0.023	0.065	0.092
			(0.027)	(0.106)	(0.152)
Employed = 1	0.11	0.13	-0.001	0.150*	0.211
			(0.023)	(0.086)	(0.138)
Any Social Benefits = 1	0.48	0.59	0.017	-0.304***	-0.428***
			(0.035)	(0.086)	(0.136)
SSI = 1	0.04	0.08	-0.007	-0.032	-0.046
			(0.010)	(0.036)	(0.054)
SSDI = 1	0.02	0.02	-0.004	0.002	0.003
			(0.010)	(0.019)	(0.026)
Number of Cases	5,190	5,190	5,190	5,190	5,190
B. Medium-Term Sample (2-20 Months After Intake)					
Non-Zero Income = 1	0.83	0.75	-0.010	0.194*	0.226
			(0.038)	(0.108)	(0.145)
Employed = 1	0.12	0.13	0.119**	0.379	0.441
			(0.056)	(0.255)	(0.290)
Any Social Benefits = 1	0.48	0.54	0.160*	0.424*	0.494*
			(0.084)	(0.240)	(0.278)
SSI = 1	0.05	0.08	-0.031	-0.046	-0.053
			(0.035)	(0.133)	(0.152)
SSDI = 1	0.02	0.02	0.001	0.019	0.022
			(0.021)	(0.076)	(0.089)
Number of Cases	1,538	1,538	1,538	1,538	1,538

Note: The table reports OLS, Reduced-Form (RF), and two-stage least squares (2SLS) results of the impact of housing program placement (within 1 month of initial intake) on a set of self-reported income, employment, and social benefits receipt outcomes for the subsample of individuals who report these outcomes as described in Section **??**. Panel A shows estimates for the sample of individuals with at least 10 months of observed post-intake outcomes (short-term sample), and Panel B shows estimates for the sample of individuals with at least 20 months of observed post-intake outcomes (medium-term sample). Each row presents results for an outcome variable. Column 1 reports the mean of the outcome variable, column 2 reports the mean outcome variable for the complier population if not placed in housing, column 3 reports the OLS coefficient on housing first placement, column 4 reports the reduced form coefficient on the case worker housing placement rate, and column 5 reports the two-stage least squares coefficient on housing first placement. The outcome variables are defined as indicator variables equal to 1 if the event of interest occurs at any time between 2 and 10 (or 20) months after the initial intake. All specifications include the set of controls listed in Table 3 and site by month of intake fixed effects. Standard errors are clustered at the case worker level. $*p < 0.1$, $**p < 0.05$, $***p < 0.01$.

E. Cost-Benefit Analysis

The most relevant policy implication is whether the positive effects from housing programs for the homeless this study finds are cost-effective and is there a difference in the cost-effectiveness of different housing program types. It is difficult to estimate the benefits of reductions in homelessness and costs of housing assistance, with the few studies attempting to do so imposing strong assumptions and extrapolations to their computations (Culhane, Metraux and Hadley, 2002; Evans, Sullivan and Wallskog, 2016; Khadduri et al., 2010). I attempt to conduct a simple cost-benefit calculation of housing programs for the homeless based on the results of this study. My calculations suggest that 50 to 100 percent of average program costs are offset by corresponding benefits in the short- and medium-term, respectively.

To calculate the costs of housing assistance programs reported in Table E.1, I multiply the number of housing assistance days received for each individual in the sample during the 10-month or 20-month period after intake by the average cost per day of each program type, such that direct housing costs are set $40 per day for temporary housing, and $50 per day for permanent housing programs (Los Angeles Homelessness Services Authority, 2017). The IV estimate, which uses this outcome, measures a cost of $7,369 per housing program enrollment in the short-term and $9,635 in the medium-term. This measure captures the average cost of housing programs and not the marginal cost, which I would ideally estimate. In Panels A.2 and B.2, I break housing programs by type (temporary and permanent) and estimate the cost of each using the two instruments I used when estimating the impact of temporary versus permanent housing programs in Section IV.E. The IV estimates measure short- and medium-term average costs of $6,933 and $8,242 for temporary housing program enrollment and $13,851 and $20,690 per permanent housing program enrollment. On the benefits side, I measure four broad categories. First, there is a reduction in homeless support system spending on emergency shelter stays and future housing assistance due to fewer returns to the homeless support system. For emergency shelter days, I estimate savings of $850 per housing program enrollment in the short-term, and these savings reduce to an insignificant $170 in the medium-term. Second, I compute the savings in housing costs per homeless system return avoided as the average housing assistance cost of an assessment in the sample. Homeless support system average savings in housing assistance costs are estimated to be $800 per intake. I then create an outcome variable that takes the total number of returns to the homeless support system in the 10- and the 20 months after intake multiplied by $800. Using this measure, I estimate savings of $693 and $1,621 in the short- and medium-term per housing program enrollment, respectively.

The second and third categories of benefits I compute are related to the utilization of public health and services and interaction with law enforcement agencies. I use estimates of Los Angeles County on the costs of the various treatments and services I explore in the ELP data. For example, the estimate for a day in jail is

Table E.1—: The Costs and Benefits of Housing Assistance.

	Direct Costs	Benefits - Public Agencies Expenditures (Indirect)					Net Cost
		Homeless Support System		Other Public Agencies		Total	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable:	Days in Housing Programs	Emergency Shelter Days	Future Returns to Homeless System	Health	Law Enforcement	Overall	Direct + Indirect
A. Short-Term (1-10 Months After Intake)							
A.1. Housing Assistance - All Types							
IV: Housing Assistance	7,369***	-848.4***	-693.2***	-2,151	-650.7***	-3,534*	3,835**
	(786.6)	(284.1)	(163.3)	(1,891)	(191.0)	(1,875)	(1,728)
A.2. Housing Assistance - By Type							
IV: Permanent Housing (PH)	13,851***	4,782*	-736.3	-19,765	-1,408	-22,051	-8,200
	(1,493)	(2,499)	(518.5)	(18,095)	(929.4)	(17,582)	(17,067)
IV: Temporary Housing (TH)	6,933***	-1,063***	-672.9***	-1,254	-624.7***	-2,587**	4,346***
	(746.2)	(282.9)	(163.6)	(1,102)	(202.6)	(1,134)	(1,207)
Dependent mean	1,007	1,175	798	1,342	476	2,728	3,734
Number of Intakes	15,990	15,990	15,990	15,990	15,990	15,990	15,990
B. Medium-Term (1-20 Months After Intake)							
B.1. Housing Assistance - All Types							
IV: Housing Assistance	9,635***	-169.2	-1,621***	-5,841	-1,170***	-8,800	834.7
	(1,472)	(606.8)	(522.2)	(6,627)	(400.2)	(6,663)	(6,044)
B.2. Housing Assistance - By Type							
IV: Permanent Housing (PH)	20,690***	5,469**	-2,290*	-40,390	-871.4	-43,615	-22,925
	(1,907)	(2,732)	(1,172)	(38,112)	(1,061)	(37,753)	(37,283)
IV: Temporary Housing (TH)	8,242***	-745.0	-1,509***	-1,454	-1,175***	-4,314	3,929
	(1,152)	(501.8)	(506.8)	(2,771)	(413.3)	(2,828)	(2,796)
Dependent mean	2,021	1,613	2,464	2,393	831	5,905	7,926
Number of Intakes	7,584	7,584	7,584	7,584	7,584	7,584	7,584

Note: Baseline sample and specification with all controls. Standard errors are clustered at the case worker and individual level. Direct housing costs are set to $35 per day for emergency housing, $40 per day for temporary housing, and $50 per day for permanent housing, according to the 2017 Los Angeles Housing Gap Analysis. Future returns costs are estimated based on an average housing cost of $798 per return, based on direct housing costs computed in (1). Public agencies expenditures are the sum of DHS, DMH, Jail, Probation, and General Relief costs, where estimates are taken as described in the text.*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$.

$200 per day. I then define public health costs as the sum of DHS and DMH costs and law enforcement costs as the sum of jail days and probation months, where I use county estimates multiplied by the number of treatments or occurrences of each type of service. The IV estimates of these savings are $2,151 and $5,841 for health costs and $650 and $1,1170 for law enforcement costs in the short- and medium-term, respectively. The IV estimates of the health savings are driven by permanent housing programs, and the estimates for law enforcement cost savings are driven by temporary housing programs.

Overall, I find that the savings offset a substantial portion of housing program costs to public agencies in both the 10 and 20 months following intake. I note that these savings are likely to be even more significant, as I ignore the indirect benefits of reducing street homelessness. Moreover, these benefits are likely to accumulate over time and become larger since the cost of homelessness increases exponentially with time (Flaming, Toros and Burns, 2015). Finally, I note that these savings are substantial in both temporary and permanent housing programs. On the other hand, the expansion of these programs might lead to reduction in savings if adverse selection and moral hazard concerns realize.