

Homelessness Analytics Initiative Methodology

Last Updated: 5/3/2013

Methods and Data Sources Overview

The Homelessness Analytics Initiative (HAI) synthesizes information from an array of federal government and other data sources. Indicators included in HAI are measured at the state, county or Continuum of Care (CoC) level, although the geography level(s) for which specific indicators are available varies. In addition, the locations of U.S. Department of Veterans Affairs (VA) Medical Centers, and other VA health care clinics/providers are represented as points in the Homelessness Analytics Application, and some limited information about each of these facilities is available in the HAI.

Most of the data indicators included in the HAI are publicly available from their respective sources. However, some indicators were calculated using data from one or more data sources. This process was used primarily to create CoC level measures of demographic, health, behavioral health, economic and housing market conditions from county level data sources; and to calculate rates of homelessness.

The remainder of this document provides comprehensive details about the methodology and data sources used to create the HAI including:

- An explanation of the levels of geography represented in the Homelessness Analytics Application
- Descriptions of the various data sources from which HAI indicators were obtained
- A complete list of indicators included in the HAI
- A description of procedures used to transform county level data sources into CoC level indicators
- A description of procedures used to calculate rates of homelessness and other indicators from multiple sources
- A description of the procedures used to create the HAI's forecasting tool

Levels of Geography in the Homelessness Analytics Initiative

Indicators included in the HAI are available at one or more of the following levels of geography:

- Continuum of Care (CoC)
- County
- State
- VA Medical Centers and other VA facilities (point level data)

The level of geography at which specific indicators included in the HAI are available varies. This is largely because the various data sources used to create the HAI collect and report counts of homelessness and other economic, housing and social indicators at varying levels of geography, which do not always align with one another. However,

as the CoC is the smallest geographic unit at which annual point-in-time counts of the number of persons experiencing homelessness are available, efforts were made to include as many indicators as possible at that geographic level.

Unlike geographies such as counties and states, whose boundaries are effectively permanent, the universe of CoCs and their particular boundaries can change slightly from year to year as some CoCs merge with one another, some disband, and others are created.¹ The HAI includes the universe of CoCs that were in existence in 2012, and therefore provides data for all years only for the 2012 CoCs.

In addition to the indicators available at the CoC, county and state level, the locations of U.S. Department of Veterans Affairs Medical Centers, and other VA health care clinics/providers are represented as points in the HAI's map interface. Users can access information about these facilities by selecting a location of interest in the map interface.

Planned future updates of the HAI will expand the number of indicators that are available at the CoC, county and state level and will also add other geographies (e.g. Census tracts or block groups). In addition, future updates will enhance the scope of information available about VA Medical Centers/clinics.

Data Sources

The data sources used to select indicators included in the HAI are described below. Where possible, links are provided to each data source.

50th Percentile Rent Estimates

The U.S. Department of Housing and Urban Development (HUD) estimates 50th percentile rents, which are defined as the dollar amount of gross rents at the 50th percentile of the rent distribution (i.e. the median rent) for housing units of varying size, on an annual basis using data from the Census Bureau and telephone surveys. 50th percentile rent estimate data are used in the HAI to obtain rent level indicators and are available at: <http://www.huduser.org/portal/datasets/50per.html>

American Community Survey (ACS)

The U.S. Census Bureau's American Community Survey (ACS) is a population-based survey that collects information on demographic, social economic and housing characteristics from a representative sample of American households. In contrast to the Decennial Census, which is conducted once every 10 years, the ACS is conducted on annual basis. The HAI primarily uses the ACS 5-year estimates, which, unlike the 1-year and 3-year estimates, are available for every county in the United States, to obtain

¹ In cases where a 2012 CoC was created by the merger of two or more CoCs that occurred in a year prior to 2012, counts of homeless populations and sub-populations were retroactively summed across the merged CoCs for all years for which such counts were available. For example, CA-610 became part of the CA-601 CoC in 2011. Although counts of homelessness were reported separately for these two CoCs prior to 2011, the counts provided in the HAI for CA-601 for years prior to 2011 include the counts for the now defunct CA-610 CoC.

demographic, economic and housing related indicators. The 1-year estimates were used in calculating rates of homelessness at the state level. Note that the year of availability denoted in the HAI for indicators that were obtained from the ACS is the last year of the period from which the estimates were derived (e.g. 2009 for the 2005-2009 5-year estimates). The ACS data are available at: <http://factfinder2.census.gov>

Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System (BRFSS) is a telephone-based survey administered by the Centers for Disease Control (CDD) that collects uniform, state-level data on preventative health practices and risk behaviors that are linked to chronic and infectious diseases as well as injuries. BRFSS data are used in the HAI for select indicators of population health and are available at: www.cdc.gov/brfss/.

Community Health Status Indicators (CHSI)

The Community Health Status Indicators (CHSI) Report collates county-level indicators of public health. It is published by the U.S. Department of Health and Human Services (HHS) and uses a variety of Federal data sources, as well as other sources, which have been vetted by HHS. The life expectancy indicator included in the HAI is from the CHSI Report. The CHSI Report can be accessed at: <http://www.communityhealth.hhs.gov>

County Health Rankings

The County Health Rankings is a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. The County Health Rankings uses a scientific approach to rank counties within states with respect to health outcomes and health factors. The County Health Rankings also provide a wide array of county-level health and socioeconomic related measures and indicators, which are collected from a number of public and private sources. For the HAI, the County Health Rankings are used to obtain select public health and economic indicators. The County Health Rankings are available at: www.countyhealthrankings.org

Decennial Census

Beginning with the 1990 Census, The U.S. Census Bureau has enumerated persons in emergency and transitional shelters as part of its Decennial Census. Although not intended as an official count of the entire homeless population, The Census provides national level age and gender stratified counts of persons enumerated at emergency shelters and transitional housing programs. For the HAI, County level age and gender stratified counts of persons in emergency shelter and transitional housing were obtained from the Census Bureau via a special tabulation request. Additional information about Census enumeration of persons in emergency shelter and transitional housing, including national level estimates, are available at:

<http://www.census.gov/prod/cen2010/reports/c2010sr-02.pdf>

Department of Veterans Affairs (VA) Homeless Program Data

The U.S. Department of Veterans Affairs (VA) operates and funds a number of residential homeless assistance programs for veterans experiencing homelessness. Data from the Compensated Work Therapy/ Transitional Residence (CWT/TR),

Domiciliary Care for Homeless Veterans (DHCV), Grant and Per Diem (GPD), Health Care for Homeless Veterans (HCHV), HUD-VA Supportive Housing (HUD-VASH), and Supportive Service for Veteran Families (SSVF) programs, were used to obtain information about the number of beds/units in each of these program types.

Fair Market Rents (FMRs)

The U.S. Department of Housing and Urban Development (HUD) estimates fair market rents (FMRs), which are defined as the dollar amount of gross rents at the 40th percentile of the rent distribution for housing units of varying size, on an annual basis using data from the Census Bureau and telephone surveys. FMRs are used to determine payment amounts for various housing assistance programs. FMR data are used in the HAI to obtain rent level indicators and are available at:

<http://www.huduser.org/portal/datasets/fmr.html>

FBI Uniform Crime Reports (UCR)

The Federal Bureau of Investigation's Uniform Crime Reports (UCR) provide are official measures of crime in the United States. They provide an array of crime statistics and are based on reports from state, county and local law enforcement agencies. UCR data is used in the HAI for select crime indicators. UCR data are available at:

<http://www.fbi.gov/about-us/cjis/ucr/ucr>

Housing Inventory Chart

Each Continuum of Care (CoC) provides a Housing Inventory Chart (HIC) to HUD on an annual basis. The HIC reports the results of a point-in-time count of the inventory of all beds and residential units dedicated to serve persons who meet HUD's homeless definition. The inventory count is required to take place during a single night in the last 10 days of January (the same night as the point-in-time count of homelessness). The HIC provides the number of residential beds within each community, stratified by target population and bed/unit type (i.e. emergency shelter, transitional housing, permanent supportive housing, rapid re-housing, safe haven). Housing Inventory data are available at: <http://www.hudhre.info>

National Association of State Budget Officers' State Expenditure Report

The National Association of State Budget Officers is the professional organization for state budget and finance officers. Their annual State Expenditure Report provides statistics of state spending in a number of domains including education, public assistance, corrections, Medicaid, and transportation. Select measures of social program spending included in the HAI are obtained from the Expenditure Report. The data are available at: <http://www.nasbo.org/publications-data/state-expenditure-report/>

National Survey on Drug Use and Health (NSDUH)

The National Survey on Drug Use and Health (NSDUH), which is sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), is an annual national survey of a random sample of 70,000 persons ages 12 and older. The NSDUH provides state-level data on the use of tobacco, alcohol and illicit drugs and mental

health status. The HAI uses NSDUH data for select behavioral health indicators. NSDUH data are available at: <https://nsduhweb.rti.org/>

Point-In-Time (PIT) Estimates of Homelessness

The U.S. Department of Housing and Urban Development (HUD) publishes point-in-time (PIT) estimates of homelessness on an annual basis. The PIT estimates are available at the Continuum of Care (CoC) level. CoCs are required to report PIT counts to HUD as part of their annual applications for federal funding for homeless assistance programs. The counts must take place during a single night in the last 10 days of January, and must enumerate certain sub-groups of the homeless population (e.g. individuals, families, veterans, persons experiencing chronic homelessness). HUD requires that CoCs conduct counts of sheltered homeless people each year and counts of unsheltered homeless people in odd-numbered years. However, many CoCs undertake both sheltered and unsheltered counts on annual basis. The PIT estimates are available at: <http://www.hudhre.info>

Picture of Subsidized Households Dataset

The Picture of Subsidized Households is a U.S. Department of Housing and Urban Development Dataset that provides data on the number of low rent and Section 8 Housing Choice Voucher Program units in PHAs administered by HUD. It is used in HAI to provide indicators of the availability of public and subsidized housing. The PHA Inventory dataset can be accessed at:

<http://www.huduser.org/portal/picture2008/index.html>

Supplemental Nutrition Assistance Program (SNAP) Data

The U.S. Department of Agriculture's Food and Nutrition Service Program provides national and state level data about the Supplemental Nutrition Assistance Program (SNAP), the new name for the federal Food Stamp Program. SNAP data are used by the HAI for information about the amount of the average monthly SNAP benefit provided to SNAP recipients. SNAP data can be accessed at:

<http://www.fns.usda.gov/pd/snapmain.htm>

Social Security Administration (SSA) Annual Statistical Supplement

The Social Security Administration (SSA) publishes an Annual Statistical Supplement that provides a wide array of data on expenditures, enrollment, and utilization of SSA administered programs. The HAI uses the Annual Statistical Supplement for select social safety net indicators. The data are available at:

<http://www.ssa.gov/policy/docs/statcomps/supplement/>

Veterans Benefit Administration (VBA) Compensation and Pension by County Dataset

The Department of Veterans Affairs's Veterans Benefit Administration (VBA) Compensation and Pension by County dataset provides counts of the number of veterans receiving disability compensation or pension payments from the VA for each county in the United States. The HAI uses this dataset to construct a measure of the proportion of veterans receiving such benefits. The VBA Compensation and Pension

dataset is available at: <https://explore.data.gov/Social-Insurance-and-Human-Services/FY08-Veterans-Compensation-and-Pension-by-County/xx6t-m2j9>

Complete List of Indicators Included in the Homelessness Analytics Initiative

The table below provides a complete list of the indicators that are available in the HAI—with data sources, level(s) of geography and years of availability for each indicator. This table is also available for download in an Excel spreadsheet on the HAI website. Planned future updates to the HAI will expand the number of available metrics and levels of geography.

List of Data Indicators Included in the VA-HUD Homelessness Analytics Initiative

Last Update Date: 5/3/13

INDICATOR	DATA SOURCE	YEARS OF DATA	LEVEL OF GEOGRAPHY		
			CoC	County	State
HOMELESSNESS COUNT AND RATE VARIABLES					
Number of Persons with HIV/AIDS-Sheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of Persons with HIV/AIDS-Unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of Persons with HIV/AIDS-Total	PIT Estimates of Homelessness	2006-2012	X		X
Number of Chronically Homeless-Sheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of Chronically Homeless-Unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of Chronically Homeless-Total	PIT Estimates of Homelessness	2006-2012	X		X
Number of Persons with Chronic Substance Abuse-Sheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of Persons with Chronic Substance Abuse-Unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of Persons with Chronic Substance Abuse-Total	PIT Estimates of Homelessness	2006-2012	X		X
Number of households with dependent children in emergency shelter	PIT Estimates of Homelessness	2006-2012	X		X
Number of households with dependent children in transitional housing	PIT Estimates of Homelessness	2006-2012	X		X
Number of households with dependent children that are unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of individual households (i.e. households without children or households with only children) in emergency	PIT Estimates of Homelessness	2007-2012	X		X

shelter					
Number of individual households (i.e. households without children or households with only children) in transitional housing	PIT Estimates of Homelessness	2007-2012	X		X
Number of individual households (i.e. households without children or households with only children) that are unsheltered	PIT Estimates of Homelessness	2007-2012	X		X
Number of individuals (i.e.without dependent children or only children) in emergency shelter	PIT Estimates of Homelessness	2006-2012	X		X
Number of individuals (i.e.without dependent children or only children) in transitional housing	PIT Estimates of Homelessness	2006-2012	X		X
Number of individuals (i.e.without dependent children or only children) that are unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons in households with dependent children in emergency shelter	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons in households with dependent children in transitional housing	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons in households with dependent children that are unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Total Sheltered Persons Count	PIT Estimates of Homelessness	2006-2012	X		X
Number of households with dependent children that are sheltered (in emergency shelter or transitional housing)	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons in households with dependent children that are sheltered (in emergency shelter or transitional housing)	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons with severe mental illness-Sheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons with severe mental illness-Unsheltered	PIT Estimates of Homelessness	2006-2012	X		X
Number of persons with severe mental illness-Total	PIT Estimates of Homelessness	2006-2012	X		X
Number of Homeless Persons-Total (Sheltered & Unsheltered)	PIT Estimates of Homelessness	2006-2012	X		X
Number Households with dependent children-Total (Sheltered & Unsheltered)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Persons in households with dependent children -Total (Sheltered & Unsheltered)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of individual households (i.e. households without children or households with only children)-Total (Sheltered & Unsheltered)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X

Number of individuals (i.e.without dependent children or only children)-Total (Sheltered & Unsheltered)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Unsheltered Persons Count	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Victims of Domestic Violence-Sheltered	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Victims of Domestic Violence-Unsheltered	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Victims of Domestic Violence-Total	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Veteran-Sheltered	PIT Estimates of Homelessness, American Community Survey	2009-2012	X		X
Number of Veterans-Unsheltered	PIT Estimates of Homelessness, American Community Survey	2009-2012	X		X
Number of Veterans-Total	PIT Estimates of Homelessness, American Community Survey	2009-2012	X		X
Number of Unaccompanied Youth-Sheltered	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Unaccompanied Youth-Unsheltered	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Number of Unaccompanied Youth-Total	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with HIV/AIDS-Sheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with HIV/AIDS-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with HIV/AIDS-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Chronically Homeless-Sheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Chronically Homeless-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Chronically Homeless-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Chronic Substance Abuse-Sheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Chronic Substance Abuse-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Chronic Substance Abuse-Total (rate per	PIT Estimates of Homelessness,	2006-2012	X		X

10,000 people)	American Community Survey				
Family Households-Emergency Shelter (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Transitional Housing (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individual Households-Emergency Shelter (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2007-2012	X		X
Individual Households-Transitional Housing (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2007-2012	X		X
Individual Households-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2007-2012	X		X
Individuals-Emergency Shelter (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individuals-Transitional Housing (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individuals-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Emergency Shelter (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Transitional Housing (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Sheltered Persons (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Sheltered (ES & TH) (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Sheltered (ES & TH) (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Severe Mental Illness-Sheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Severe Mental Illness-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Severe Mental Illness-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Homeless Persons (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X

Family Households-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individual Households-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individuals-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Unsheltered Persons (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Victims of Domestic Violence-Sheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Victims of Domestic Violence-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Victims of Domestic Violence-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Veterans-Sheltered (rate per 10,000 veterans)	PIT Estimates of Homelessness, American Community Survey	2009-2012	X		X
Veterans-Unsheltered (rate per 10,000 veterans)	PIT Estimates of Homelessness, American Community Survey	2009-2012	X		X
Veterans-Total (rate per 10,000 veterans)	PIT Estimates of Homelessness, American Community Survey	2009-2012	X		X
Unaccompanied Youth-Sheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Unaccompanied Youth-Unsheltered (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Unaccompanied Youth-Total (rate per 10,000 people)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with HIV/AIDS-Sheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with HIV/AIDS-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with HIV/AIDS-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Chronically Homeless-Sheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Chronically Homeless-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Chronically Homeless-Total (rate per 10,000 persons in	PIT Estimates of Homelessness,	2006-2012	X		X

poverty)	American Community Survey				
Persons with Chronic Substance Abuse-Sheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Chronic Substance Abuse-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Chronic Substance Abuse-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Emergency Shelter (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Transitional Housing (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individual Households-Emergency Shelter (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2007-2012	X		X
Individual Households-Transitional Housing (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2007-2012	X		X
Individual Households-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2007-2012	X		X
Individuals-Emergency Shelter (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individuals-Transitional Housing (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individuals-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Emergency Shelter (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Transitional Housing (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Sheltered Persons (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Sheltered (ES & TH) (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Sheltered (ES & TH) (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Severe Mental Illness-Sheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X

Persons with Severe Mental Illness-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons with Severe Mental Illness-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Homeless Persons (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Family Households-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Persons in Families-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individual Households-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Individuals-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Total Unsheltered Persons (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Victims of Domestic Violence-Sheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Victims of Domestic Violence-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Victims of Domestic Violence-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Unaccompanied Youth-Sheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Unaccompanied Youth-Unsheltered (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
Unaccompanied Youth-Total (rate per 10,000 persons in poverty)	PIT Estimates of Homelessness, American Community Survey	2006-2012	X		X
HOUSING INVENTORY VARIABLES					
Number of VA CWT/TR Beds	VA Homeless Program Data	2012	X		X
Number of Domiciliary Care for Homeless Veterans Beds	VA Homeless Program Data	2012	X		X
Number of VA Grant and Per Diem Beds	VA Homeless Program Data	2012	X		X
VA Supportive Services for Veterans Families (SSVF) Grant Totals (\$)	VA Homeless Program Data	2012			X
Number of Emergency Shelter Beds for Families	Housing Inventory Chart	2006-2012	X		X
Number of Emergency Shelter Beds for Individuals	Housing Inventory Chart	2006-2012	X		X
Number of Permanent Housing Units Reserved for Chronically Homeless Individuals	Housing Inventory Chart	2006-2012	X		X

Number of Permanent Housing Units for Families	Housing Inventory Chart	2006-2012	X		X
Number of Permanent Housing Units for Individuals	Housing Inventory Chart	2006-2012	X		X
Number of Transitional Housing Beds for Families	Housing Inventory Chart	2006-2012	X		X
Number of Transitional Housing Beds for Individuals	Housing Inventory Chart	2006-2012	X		X
Number of Safe Haven Beds for Individuals	Housing Inventory Chart	2006-2012	X		X
Number of Safe Haven Beds for Families	Housing Inventory Chart	2006-2012	X		X
Number of HUD-VASH vouchers allocated in year	VA Homeless Program Data	2008-2012	X		X
Total number of HUD-VASH vouchers	VA Homeless Program Data	2012	X		X
COMMUNITY DEMOGRAPHIC, HEALTH AND BEHAVIORAL HEALTH VARIABLES					
# Motor vehicle thefts per 100,000 people	FBI Uniform Crime Reports	2009			X
Total population 18-65 years	American Community Survey	2009	X		
Total population <18 years	American Community Survey	2009	X		
Total population 65+ years	American Community Survey	2009	X		
% Total population that is Asian	American Community Survey	2009	X		
% Total population that is of black race alone	American Community Survey	2009-2010	X		
% of Adult population that are Veterans	American Community Survey	2009	X		
% Total population that is Hispanic/Latino	American Community Survey	2009-2010	X		
% Total population that is Hawaiian and other Pacific Islander	American Community Survey	2009	X		
% Total population that is American Indian or Alaska Native	American Community Survey	2009	X		
% Total population that is some other race alone	American Community Survey	2009	X		
% of occupied units occupied by householder living alone	American Community Survey	2009-2010	X		
% Total population that is two or more races	American Community Survey	2009	X		
% Total population that is of white race alone, not Hispanic	American Community Survey	2009	X		
Total population	American Community Survey	2006-2011	X (2009 only)		X
Total veterans in civilian population	American Community Survey	2006-2011	X (2009 only)		X
% of population in poverty that is foreign-born	American Community Survey	2009	X		
Average life expectancy (in years)	Community Health Status Indicators	2009	X		
% Adults >=1 drinks last 30 days	Behavioral Risk Factor Surveillance System	2009			X
Number of 18+ year old illicit drug users in past month	National Survey on Drug Use and	2008			X

per 100,000 people	Health				
% of population with fair or poor health	County Health Rankings	2009	X		
Gini coefficient of income inequality (household)	County Health Rankings	2007	X		
Number of Age-adjusted deaths due to homicide per 100,000 people	Community Health Status Indicators	2009	X		
County designated as a health professional shortage area	Community Health Status Indicators	2009	X		
Number of Liquor stores per 10,000 people	County Health Rankings	2006	X		
% of population who are Medicaid beneficiaries	Community Health Status Indicators	2009	X		
% of births to unmarried women	Community Health Status Indicators	2009	X		
Number Primary care providers per 100,000 people	County Health Rankings	2006	X		
% of 18-65 year olds without health insurance	County Health Rankings	2005	X		
% Adults with vigorous activity in last week	Behavioral Risk Factor Surveillance System	2009			X
ECONOMIC AND HOUSING CONDITION CONDITIONS VARIABLES					
Median household income (2009 dollars)	American Community Survey	2009	X		
Median property value--owner-occupied housing units (2009 dollars)	American Community Survey	2009	X		
% Population with income below 50% of poverty threshold in past 12 months	American Community Survey	2009	X		
% of the population at or below poverty threshold	American Community Survey	2009	X		
Total number of persons with income at or below poverty threshold	American Community Survey	2006-2011	X (2009 only)		X
Unemployment rate among civilians in labor force	American Community Survey	2009	X		
Fair Market Rent: efficiency unit	Fair Market Rents	2008-2011	X		
Fair Market Rent: one-bedroom	Fair Market Rents	2008-2011	X		
Fair Market Rent: two-bedroom	Fair Market Rents	2008-2011	X		
Fair Market Rent: three-bedroom	Fair Market Rents	2008-2011	X		
Fair Market Rent: four-bedroom	Fair Market Rents	2008-2011	X		
Median rent: efficiency	50th Percentile Rent Estimates	2008-2011	X		
Median rent: 1-bedroom	50th Percentile Rent Estimates	2008-2011	X		
Median rent: 2-bedroom	50th Percentile Rent Estimates	2008-2011	X		
Median rent: 3-bedroom	50th Percentile Rent Estimates	2008-2011	X		
Median rent: 4-bedroom	50th Percentile Rent Estimates	2008-2011	X		
% Occupied housing units that are overcrowded (i.e.,	American Community Survey	2009	X		

more than 1 person/room)					
% Occupied housing units lacking complete plumbing facilities	American Community Survey	2009	X		
% Occupied housing units that are renter-occupied	American Community Survey	2009-2010	X		
% Occupied housing units that are owner occupied	American Community Survey	2009	X		
% Occupied housing units with gross rent 30% or more of income	American Community Survey	2009-2010	X		
% Occupied housing units with gross mortgage costs 30% or more of income	American Community Survey	2009	X		
% Housing units that are vacant	American Community Survey	2009	X		
Total housing units	American Community Survey	2009	X		
SAFETY NET VARIABLES					
Average monthly Food Stamp benefit, for state	Supplemental Nutrition Assistance Program Data	2009			X
Average monthly state supplement to SSI payment	Social Security Administration Annual Statistical Supplement	2009			X
% of households in poverty that received food stamps in the past 12 months	American Community Survey	2009	X		
Public Assistance expenditures as percent of total state spending	National Association of State Budget Officers' State Expenditure Report	2009			X
% of households in poverty that received public assistance income in the past 12 months	American Community Survey	2009	X		
% of households in poverty that received SSI income in the past 12 months	American Community Survey	2009	X		
Per capita Expenditures on TANF cash assistance from state general fund	National Association of State Budget Officers' State Expenditure Report	2009			X
Per capita Medicaid Expenditures	National Association of State Budget Officers' State Expenditure Report	2009			X
Medicaid expenditures as % of total state spending	National Association of State Budget Officers' State Expenditure Report	2009			X
Ratio of Total Public Housing units and Section 8 vouchers to households in poverty	Picture of Subsidized Households; American Community Survey	2008	X		
% veterans receiving either VA compensation or VA pension payments	VBA Compensation and Pension By County Dataset, American Community Survey	2008	X		
AGE DISTRIBUTION OF SHELTERED HOMELESS POPULATION					
Number of homeless males ages 18-21	Decennial Census	2010		X	X

Number of homeless males ages 22-24	Decennial Census	2010		X	X
Number of homeless males ages 25-27	Decennial Census	2010		X	X
Number of homeless males ages 28-30	Decennial Census	2010		X	X
Number of homeless males ages 31-33	Decennial Census	2010		X	X
Number of homeless males ages 34-36	Decennial Census	2010		X	X
Number of homeless males ages 37-39	Decennial Census	2010		X	X
Number of homeless males ages 40-42	Decennial Census	2010		X	X
Number of homeless males ages 43-45	Decennial Census	2010		X	X
Number of homeless males ages 46-48	Decennial Census	2010		X	X
Number of homeless males ages 49-51	Decennial Census	2010		X	X
Number of homeless males ages 52-54	Decennial Census	2010		X	X
Number of homeless males ages 55-57	Decennial Census	2010		X	X
Number of homeless males ages 58-59	Decennial Census	2010		X	X
Number of homeless males ages 60-61	Decennial Census	2010		X	X
Number of homeless males ages 62-64	Decennial Census	2010		X	X
Number of homeless males ages 65-74	Decennial Census	2010		X	X
Number of homeless males ages 75+	Decennial Census	2010		X	X
Number of homeless males total	Decennial Census	2010		X	X
Percent of total homeless male population between ages 18-21	Decennial Census	2010		X	X
Percent of total homeless male population between ages 22-24	Decennial Census	2010		X	X
Percent of total homeless male population between ages 25-27	Decennial Census	2010		X	X
Percent of total homeless male population between ages 28-30	Decennial Census	2010		X	X
Percent of total homeless male population between ages 31-33	Decennial Census	2010		X	X
Percent of total homeless male population between ages 34-36	Decennial Census	2010		X	X
Percent of total homeless male population between ages 37-39	Decennial Census	2010		X	X
Percent of total homeless male population between ages 40-42	Decennial Census	2010		X	X
Percent of total homeless male population between ages 43-45	Decennial Census	2010		X	X

Percent of total homeless male population between ages 46-48	Decennial Census	2010		X	X
Percent of total homeless male population between ages 49-51	Decennial Census	2010		X	X
Percent of total homeless male population between ages 52-54	Decennial Census	2010		X	X
Percent of total homeless male population between ages 55-57	Decennial Census	2010		X	X
Percent of total homeless male population between ages 58-59	Decennial Census	2010		X	X
Percent of total homeless male population between ages 60-61	Decennial Census	2010		X	X
Percent of total homeless male population between ages 62-64	Decennial Census	2010		X	X
Percent of total homeless male population between ages 65-74	Decennial Census	2010		X	X
Percent of total homeless male population between ages 75+	Decennial Census	2010		X	X
Percent of homeless male population, total	Decennial Census	2010		X	X

Procedures Used to Transform County Level Data Sources Into CoC Level Indicators

Continuums of Care (CoCs) are geographic units at which providers of homelessness assistance share federal resources and work collaboratively to 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. CoCs are also the smallest geographic unit at which the official point-in-time counts of the homeless population are collected and reported by the Department of Housing and Urban Development (HUD). These CoC level counts are then aggregated to provide state, and national estimates of the size of the overall homeless population and homeless sub-populations.

As CoCs constitute geographies that often have irregular boundaries, CoC-level indicators of demographic, health, economic, housing and safety net characteristics are virtually non-existent in other data sources. Therefore, the HAI team used county level data to construct the CoC-level measures of demographic, health, behavioral health, economic housing and safety net characteristics that are included in the HAI. County level data sources were transformed into CoC level indicators using a two-step process described below (No transformation was required for PIT estimates of homelessness and housing inventory variables, which were available at the CoC level).

Step 1: Matching CoC and County Boundaries

The HAI team used Geographic Information Systems (GIS) software and spatial matching procedures to link all counties with their appropriate CoC. To complete the matches, we superimposed county centroids (i.e., points representing the geographic center of counties) on a map of CoC boundaries. This revealed three types of possible relationships between county and CoC boundaries:

1. The boundary for a single CoC and a single county was identical;
2. A single CoC may be comprised of an aggregation of two or more counties;
and
3. Multiple CoCs fell within a single county.

Step 2: Statistical Adjustment

After appropriately matching CoCs and counties, the HAI team statistically adjusted the CoCs that fit the second and third types of relationships described above to complete the construction of CoC-level variables from county measures (no adjustments were necessary for the CoCs that met the criteria for the first type of relationship). In the case of the second type of relationship, the HAI team constructed CoC-level variables from county measures by taking either the sum or a population-weighted average of the county measures from all of the counties within a given CoC.

For the third type of relationship, where possible, measures were obtained at the sub-county level to match the exact boundaries of the multiple boundaries of CoCs that were nested within a single county. For the most part, this entailed obtaining measures at the

city or town level, and taking the sum or population weighted average of these measures when a CoC boundary included more than one town or city. However, there were certain measures that were not available at geographies smaller than the county. As a result, for such measures, in instances where there are multiple CoCs within a single county, all CoCs in that county were assigned the county level value, and should be interpreted cautiously. The indicators included in the HAI that were not available at the sub-county level are listed below:

- Average life expectancy (in years)
- % of population with fair or poor health
- Gini coefficient of income inequality (household)
- Number of Age-adjusted deaths due to homicide per 100,000 people
- County designated as a health professional shortage area
- Number of Liquor stores per 10,000 people
- % of population who are Medicaid beneficiaries
- % of births to unmarried women
- Number Primary care providers per 100,000 people
- % of 18-65 year olds without health insurance
- % veterans receiving either VA compensation or VA pension payments

Procedures Used to Calculate Rates of Homelessness and Other Indicators From Multiple Sources

Raw counts of the number of persons experiencing homelessness do not account for population size, and therefore have a number of limitations as metrics for understanding the extent of homelessness in a given community. They also make it difficult to compare the severity of the problem of homelessness across communities with different population sizes. Therefore, for each homelessness indicator, the HAI includes both a raw, unadjusted count and a rate per 10,000 persons and per 10,000 persons in poverty. For the indicators of veteran homelessness, the rate is calculated per 10,000 members of the veteran population. Calculating these rate indicators required combining the HUD point-in-time estimates of homelessness (used in the numerator) and American Community Survey data on size of the overall, poverty and veteran populations (used in the denominator). Note that in calculating these rate variables at the CoC level, the 2005-2009 5-Year ACS estimates were used in the denominator for all years for which homeless count data were available. However, in calculating rates of homelessness at the state level, the 1-year ACS estimates from the corresponding year were used in the denominator, with the exception of 2012, where the 2011 ACS state populations were used because 2012 estimates were not yet available.

A small number of other indicators included in the Homelessness Analytics Application were constructed in a similar fashion, using data from one source in the numerator and another source (usually the American Community Survey) in the denominator. For indicators that were created using the procedures described above, all data sources used in their calculation are noted in the complete list of data indicators.

Procedures Used to Create the Forecasting Tool

Overview

The forecasting tool in the HAI is based on a series of statistical models that were estimated to examine the relationship between eight homeless outcome variables and clusters of variables in three primary domains of interest: 1) demographic, behavioral, and public health; 2) economic; and 3) safety net. Separate models were estimated for each of the eight outcome variables and each of the three predictor clusters. The results of these 24 statistical models provided “weights” (i.e. regression parameter estimates) for each community level indicator. These weights provide an estimate of how much the homeless outcome variable is predicted to change given a one-unit change (either an increase or decrease) in a particular community level indicator. In turn, these weights are used in the forecasting tool to allow users to view the expected impact on homelessness of changes in one or more community level indicator. More detailed information about the procedures used to estimate these models is provided below.

Homeless outcome variables

We estimated separate models for the following homeless outcome variables, which were constructed using the 2009 PIT counts were used in constructing:

- Veterans-Total (rate per 10,000 veterans)
- Individuals-Total (rate per 10,000 people)
- Single Adults-Total (rate per 10,000 adults)
- Single Adults-Total (rate per 10,000 adults in poverty)
- Family Households-Total (rate per 10,000 family households)
- Family Households-Total (rate per 10,000 family households in poverty)
- Total Unsheltered Persons (rate per 10,000 people)
- Total Unsheltered Persons (rate per 10,000 people in poverty)

In estimating these models, we applied a natural logarithmic transformation to each outcome variable due to their highly skewed nature.

Community predictors

In developing the HAI, we collected a large number of indicators at the county or state level from the sources described above pertaining to the three primary domains of interest (i.e. demographic, behavioral, and public health; economic; and safety net). Given the large number of predictors that were initially collected in each of these domains, we conducted initial variable screening procedures using univariable linear mixed-effects models. Only those variables that were considered to be modifiable, non-redundant with other predictors ($r < .80$), and had a p-value $< .20$ from univariable models were included in the multivariable models. Variables were removed from multivariable models if they were not statistically significant in any of the models.

The final set of predictors are presented below:

Demographic, Behavioral, and Public health	Economic	Safety Net
% Adult heavy drinkers (men ≥ 2 drinks/day, women ≥ 1 drink/day) last 30 days	Unemployment rate among civilians in labor force	% of households in poverty that received SSI income in the past 12 months
Number of 18+ year old illicit drug users in past month per 100,000 people	Median rent: 2-bedroom	Ratio of Total Public Housing units and Section 8 vouchers (HCV) to households in poverty
Number of Liquor stores per 10,000 people	% Occupied housing units that are overcrowded (i.e., more than 1 person/room)	Expenditures on Medicaid as percent of total state spending
% of births to unmarried women	% Housing units with a mortgage having owner costs 30% or more of income	Per capita Expenditures on TANF cash assistance from state general fund
Number of Age-adjusted deaths due to homicide per 100,000 people	Median property value, owner-occupied housing units	
# Motor vehicle thefts per 100,000 people	% Occupied housing units with gross rent 30% or more of income	
County designated as a health professional shortage area	% Occupied housing units that are renter-occupied	
	% Occupied housing units lacking complete plumbing facilities	

Analysis approach

After identifying the final set of predictors using the procedures described above, the HAI team estimated a final set of multivariable regression models. Because CoCs are nested within states, data from CoCs located within the same state are not considered to be independent from one another and this clustering violates the basic assumption of independence in ordinary least squares (OLS) regression. Therefore, in estimating the models used for the forecasting tool, the HAI team employed a linear mixed-effects modeling approach (i.e., multilevel modeling) with random intercepts for U.S. states. In doing so, the HAI team stratified CoCs by metropolitan and non-metropolitan status based on the U.S. Department of Agriculture's rural-urban continuum codes and conducted analyses separately for each stratum. In turn, the forecasting tool is based on the results of the models estimated for the metropolitan CoCs.

Model Results

The results for the models that were estimated for each outcome variable (which were all log-transformed) and in each domain are provided below. The unstandardized regression coefficients are shown for each variable, and these unstandardized coefficients served as the weights in developing the forecasting tool. Given that the outcome variables are log-transformed, the regression coefficients can be interpreted as follows: the outcome variable changes by 100*(coefficient) percent for a one unit increase in the predictor variable while all other variable in the model are held constant. For example, a one unit increase in the number of age adjusted deaths due to homicides per 100,00 people is associated with roughly a 4.8% increase in the number of total homeless veterans per 10,000 veterans. It is important to note that not all of the predictor variables were found to be statistically significant at the $p < .05$ level in every model, but that the all variables (regardless of their level of significance) were used in developing the forecasting tool.

Demographic, Behavioral, and Public health								
	Veterans- Total (rate per 10,000 veterans)	Individuals- Total (rate per 10,000 people)	Single Adults- Total (rate per 10,000 adults)	Single Adults-Total (rate per 10,000 adults in poverty)	Family Households- Total (rate per 10,000 family households)	Family Households- Total (rate per 10,000 family households in poverty)	Total Unsheltered Persons (rate per 10,000 people)	Total Unsheltered Persons (rate per 10,000 people in poverty)
Intercept	0.9126000	0.8971000	2.7697883	4.8690000	0.3956000	3.6150000	-10.7400000	-7.5920000
% Adult heavy drinkers (men ≥ 2 drinks/day, women ≥ 1 drink/day) last 30 days	0.0506100	0.0467300	0.0052460	0.0576100	0.08874*	0.1868*	-0.0944600	-0.0395400
Number of 18+ year old illicit drug users in past month per 100,000 people	0.0000638	0.0001181*	0.0001145*	0.00009086*	0.0001073*	0.00008636*	0.0001837*	0.0001601*
Number of Liquor stores per 10,000 people	0.0417300	0.0227200	-0.0583607	-0.0730600	0.1216*	0.1959*	-0.0853400	-0.0620900
% of births to unmarried women	0.01553*	0.01304*	0.014694*	-0.0070360	0.01077*	-0.02779*	0.0129600	-0.01853*
Number of Age- adjusted deaths due to homicide per	0.04822*	0.0159100	0.0162470	0.03076*	0.0010420	0.0056130	0.0280200	0.0322000

100,000 people								
# Motor vehicle thefts per 100,000 people	0.0013360	0.001332*	0.0017172*	0.002049*	0.0005580	0.0004287	0.004048*	0.003961*
County designated as a health professional shortage area	-0.6439*	-0.2834*	-0.3000746*	-0.5232*	-0.1812000	-0.3074*	-0.0127900	-0.1186000
R²	0.37	0.41	0.54	0.49	0.18	0.40	0.53	0.50
Economic								
	Veterans- Total (rate per 10,000 veterans)	Individuals- Total (rate per 10,000 people)	Single Adults- Total (rate per 10,000 adults)	Single Adults-Total (rate per 10,000 adults in poverty)	Family Households- Total (rate per 10,000 family households)	Family Households- Total (rate per 10,000 family households in poverty)	Total Unsheltered Persons (rate per 10,000 people)	Total Unsheltered Persons (rate per 10,000 people in poverty)
Intercept	-0.1150	0.7152	2.2180	4.3700	0.1134	3.2580	-10.7600	-7.5340
Unemployment rate among civilians in labor force	0.0250	0.0413	0.0437	0.0368	0.0334	-0.0553	0.1510	0.09387*
Median rent: 2-bedroom	0.0004	-0.0002	-0.0003	0.0002	-0.0004	-0.0001	0.0004406*	0.0009
% Occupied housing units that are overcrowded (i.e., more than 1 person/room)	-0.0315	-0.05386*	0.0540	0.06891*	-0.07353*	-0.1271*	0.0096	-0.0159
% Housing units with a mortgage having owner costs 30% or more of income	0.0092	0.0006	-0.0017	0.0064	-0.0034	-0.0022	0.0151	0.0215
Median property value, owner-occupied housing units	0.0000	0.000001361*	0.0000	0.000001688*	0.0000	0.00000303*	0.0000	0.0000
% Occupied housing units with gross rent 30% or more of income	-0.0026	0.0153*	0.02731*	0.0053	0.02624*	0.0236	-0.0110	-0.0263

% Occupied housing units that are renter-occupied	0.06469*	0.03624*	0.02474*	0.0100	0.02966*	0.01098*	0.0238	0.0029
% Occupied housing units lacking complete plumbing facilities	-0.0201	0.0911	-0.0022	-0.1425	0.2119*	0.1285	0.04147*	-0.0402
R²	0.47	0.51	0.56	0.49	0.34	0.45	0.57	0.55
Safety Net								
	Veterans- Total (rate per 10,000 veterans)	Individuals- Total (rate per 10,000 people)	Single Adults- Total (rate per 10,000 adults)	Single Adults-Total (rate per 10,000 adults in poverty)	Family Households- Total (rate per 10,000 family households)	Family Households- Total (rate per 10,000 family households in poverty)	Total Unsheltered Persons (rate per 10,000 people)	Total Unsheltered Persons (rate per 10,000 people in poverty)
Intercept	3.16778	3.140567	5.159641	6.1368787	2.35404	4.298514	-7.61221	-5.906792
% of households in poverty that received SSI income in the past 12 months	-0.030252*	-0.015461*	-0.014532*	0.0028219	-0.01397*	-0.006696	-0.007682	0.008591
Ratio of Total Public Housing units and Section 8 vouchers (HCV)to households in poverty	0.03514653*	0.01987729*	0.01781122*	0.025452442*	0.0140782*	0.01755728*	0.01780478*	0.01942534*
Expenditures on Medicaid as percent of total state spending	-0.026796	-0.016955	-0.030768*	-0.0359124*	-0.005866	-0.007914	-0.041473	-0.045644
Per capita Expenditures on TANF cash assistance from state general fund	0.011297*	0.006362	0.004158	0.0006448	0.009964*	0.013446	-0.003239	-0.003554
R²	0.37	0.43	0.4	0.5	0.26	0.36	0.55	0.53

*=Statistically significant at the p<.05 level

Using Model Results to Generate Forecasted Values

We used the weights obtained from the regression models to generate forecasted values for each of the outcome variables using the formula below:

$$Y_{\text{forecast}} = Y_{\text{observed}} \times (1 + \beta X)$$

Where:

- Y_{forecast} is the forecasted value for a particular homeless outcome variable for a given CoC
- Y_{observed} is the observed value for a particular homeless outcome variable for a given CoC (based on 2012 PIT counts)
- β represents the coefficients for the full set of community level predictors within a given domain (i.e. Demographic, Behavioral, and Public health; economic; safety net)
- X indicates the unit change in each predictor, relative to a starting value of 0 (i.e. no change)

In effect, the tool works by calculating the cumulative percent by which the outcome variable would be expected to change given increases or decreases in the full set of predictor variables, and then multiplying this by the observed value. As an example of how the forecasting tool works in practice, consider the example of a CoC with an observed 40 homeless veterans per 10,000 veterans in 2012. Assuming one unit increases in each of the safety net predictors, the forecasted value for the number of veterans per 10,000 veterans would be calculated as follows:

$$Y_{\text{forecast}} = 40 \times (1 + (1 \times -0.03 + 1 \times 0.04 + 1 \times -0.03 + 1 \times 0.01))$$

$$Y_{\text{forecast}} = 40 \times (1 + -0.01)$$

$$Y_{\text{forecast}} = 39.6$$