



# **Data Discovery: Snapshot of Social Determinants of Health in Public Housing Primary Care Communities**



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## **DISCLAIMER**

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## Key Terms

Listed below are some common key terms that will be used throughout this document:

**Alcohol-related driving deaths** defined as percentage of driving deaths with alcohol involvement.

**Drug overdose mortality rate** defined as number of drug poisoning deaths per 100,000 population.

**Excessive drinking** defined as percentage of adults reporting binge or heavy drinking.

**Frequent mental distress** defined as percentage of adults reporting 14 or more days of poor mental health per month.

**High school completion** defined as percentage of adults ages 25 and over with a high school diploma or equivalent.

**High school graduation rates** defined as percentage of ninth-grade cohort that graduates in four years.

**Income inequality** defined as the ratio of household income at the 80th percentile to income at the 20th percentile.

**Severe housing cost burden** defined as the percentage of households that spend 50% or more of their household income on housing.

**Mentally unhealthy days** defined as average number of mentally unhealthy days reported in past 30 days (age-adjusted).

**Smokers** are defined as percentage of adults who are current smokers.

**Top U.S. performers** refers to the value for which only 10% of counties in the country are doing better, i.e., the 90th percentile or 10th percentile, depending on whether the measure is framed positively (e.g., high school graduation) or negatively (e.g., adult smoking).

## About This Brief

This brief describes the findings of an online mapping resource that shows the distribution of Social Determinants of Health (SDOH) indicators across counties with Public Housing Primary Care (PHPC) health centers. The publication will summarize the importance of SDOH on the behavioral health of public housing residents, highlight the online mapping resource developed by National Center for Health in Public Housing (NCHPH), and describe the geographic distribution of SDOH-related indicators that impact behavioral health in counties with PHPC health centers.

## Background on SDOH

Social determinants of health (SDOH) are conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes.<sup>1</sup> Many individuals that receive public housing assistance live in neighborhoods with low access to high quality health care and social services, or in areas that are unsafe. These environments play a large role in determining the physical and behavioral health status of public housing residents.



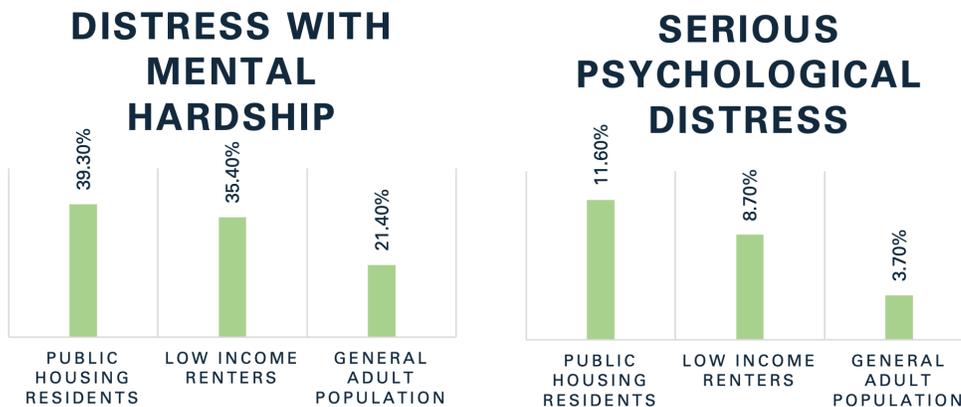
# Health Status of Public Housing Residents

In general, individuals that receive housing or rental assistance from the U.S. Department of Housing and Urban Development (HUD) are more likely to have chronic health conditions and are higher utilizers of health care than the rest of the U.S. population, including other low-income renters.<sup>2</sup> They are more likely to be in fair or poor health, overweight or obese, and have a disability or diabetes.<sup>3</sup>

Prevalence of select health conditions in HUD-assisted adults			
	HUD-Assisted	Low-Income Renters	All Adults
Fair/Poor Health	35.8%	24%	13.8%
Overweight/ Obese	71%	60%	64%
Disability	61%	42.8%	35.4%
Diabetes	17.6%	8.8%	9.5%
Chronic Obstructive Pulmonary Disease (COPD)	13.6%	8.4%	6.3%
Asthma	16.3%	13.5%	8.7%

Source: A Health Picture of HUD-Assisted Adults, 2006–2012

Individuals that receive housing or rental assistance from HUD are also disproportionately more likely to suffer from poor mental health. They have a higher probability of reporting feelings of anxiety, depression, and hopelessness, and those feelings are predicted to interfere with daily activities compared to the general population.<sup>4</sup>



Source: A Health Picture of HUD-Assisted Adults, 2006–2012 | HUD USER

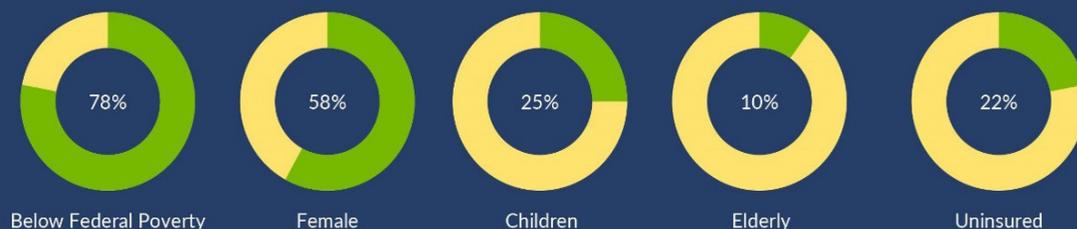
Mental health and physical health are closely connected. Depression and anxiety can impact an individual's ability to engage in healthy behaviors, while physical health conditions can create additional obstacles to accessing mental health care. Therefore, efforts to improve health outcomes for public housing residents should focus on physical and mental health conditions, as well as environmental and neighborhood factors.

## About PHPC Health Centers

PHPC health centers offer a unique and critical role in the health care safety net. They provide comprehensive health services to individuals living in or immediately accessible to public housing and are often co-located on public housing sites.

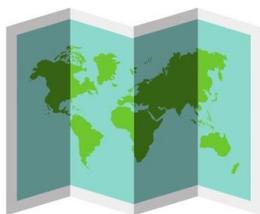
### Public Housing Primary Care (PHPC) Health Centers:

PHPC Health Centers served **866,859** patients living in public housing communities in 2020. Approximately **78%** of patients were living at or below the poverty line, **58%** were female, **25%** were children, **10%** were elderly, and **22%** were uninsured.



*Source: 2020 Special Populations Funded Programs ([hrsa.gov](https://hrsa.gov))*

## Interactive Maps of SDOH



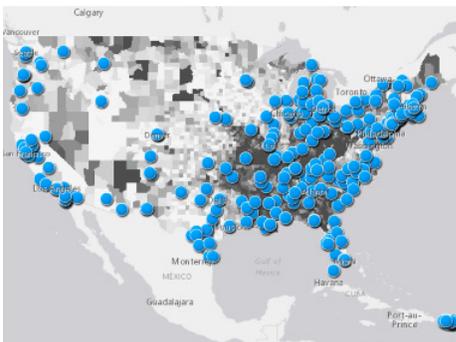
To help PHPC health centers understand the burden and geographic distribution of SDOH-related variables in their service areas, NCHPH developed a series of interactive maps that include the location of health centers, public housing development sites and clinical and SDOH data. The maps were designed to assist PHPC health centers in investigating and developing public health interventions that are most in need for their communities. Health center staff can zoom into their service areas and find the proximity of each clinic to the public housing development. They can also find more detailed information on the name of the site, number of units at the public housing development, and demographic information, such as income, racial and ethnic background, and household composition.

NCHPH has created three interactive maps that provide SDOH-related indicators:



### **Socioeconomic Health Factors and Public Housing**

This map contains county level data on SDOH from the County Health Rankings and Roadmaps. It includes violent crime rates, income ratios, severe housing problem rates, and firearm fatality rates.



### **Health Behaviors and Public Housing**

This map contains county level data on health behaviors from the County Health Rankings and Roadmaps. It includes adult smoking rates, drug overdose rates, teen birth rates, food insecurity rates, excessive drinking rates, physical inactivity, and adult obesity rates.



### **2020 City Health Behaviors and Outcomes**

This map contains data from the Centers for Disease Control and Prevention's (CDC) PLACES Project, formerly known as the 500 Cities Project. It provides city- and census tract-level small area estimates for chronic disease risk factors, health outcomes, and clinical preventive services use for the largest 500 cities in the United States.

## Methods

While there are many indicators PHPC health centers can explore through the interactive maps, several are closely related to the behavioral health of patients living in or accessible to public housing. To give a snapshot of the issues and challenges these residents may face, NCHPH used data from 2021 County Health Rankings and the Health Resources and Services Administration, identified the counties where PHPC health centers were located and compared them to the healthiest counties in the U.S.<sup>5</sup>

Specifically, NCHPH analyzed:



**Housing Challenges:**

Cost burden and housing problems



**Mental Health:**

Mental distress and mentally unhealthy days



**Tobacco and Alcohol Use:**

Smoking rates and excessive drinking



**Substance-Use Related Mortality:**

Driving deaths with alcohol involvement  
and drug overdose deaths

## SDOH Indicators in Counties with PHPC Health Centers

### Demographic Findings

In 2020, there were 107 PHPC health centers located across the country. On average, 19% of the population living in counties with PHPC health centers were children (less than 18 years of age) and 16% of the population were age 65 and older.<sup>6</sup> The age breakdown in PHPC health center counties was similar to age distribution in the country. Overall, in the U.S., approximately 22% of the population were children under 18 and 17% were over the age of 65.<sup>7</sup>

Age	Counties with PHPC	U.S. Avg.
Less than 18 Years of Age	19%	22%
Age 65 and Older	16%	17%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System

The racial and ethnic breakdown of individuals living in PHPC health center counties reflect a similar distribution in the U.S., apart from the Hispanic population. Nationally, 18% of the U.S. population identified as Hispanic compared to 12% of the population living in counties with PHPC health centers.<sup>8</sup>

Race and Ethnicity	Counties with PHPC	U.S. Avg.
Non-Hispanic White	57%	60%
Black	13%	13%
American Indian and Alaska Native	2%	1%
Asian	4%	6%
Native Hawaiian Other Pacific Islander	0%	0%
Hispanic	12%	19%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System

## Education

NCHPH found that counties with PHPC health centers had lower high school graduation rates and percentage of individuals completing high school compared to top U.S. county performers.

Educational Attainment	Counties with PHPC	U.S. Avg.
Completed High School*	77%	94%
High School Graduation Rate*	81%	95%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System

\*See "Key Terms" Section for definition.

### Why This Matters:



Educational level is associated with better physical health, such as lower rates of diabetes and improved self-reported health.<sup>9</sup>

# Income

Counties with PHPC health centers also experienced larger gaps or inequities in income compared to top U.S. County performers. They had higher unemployment rates and higher percentage of children living in poverty.

Income and Employment	Counties with PHPC	U.S. Avg.
Completed High School	4%	2.6%
Income Ratio*	5	3.7
Children in Poverty*	19%	10%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System  
 \*See "Key Terms" Section for definition.

## Why This Matters:



Inequalities in income in a community can serve as a social stressor and result in a loss of social connectedness, as well as decreased trust, social support, and a sense of community for all residents.<sup>10</sup>

# Housing Challenges

Counties with PHPC health centers also fared differently in terms of housing quality and housing cost. Approximately 15% of the population living in counties with PHPC health centers reported having severe housing problems compared to 9% in top performing counties. Severe housing problems could include overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities. Approximately 12% of the population in counties with PHPC health centers reported a severe housing cost burden compared to 7% in the top performing counties.

Housing Challenges	Counties with PHPC	U.S. Avg.
Severe Housing Cost Burden*	12%	7%
Severe Housing Problems	15%	9%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System  
 \*See "Key Terms" Section for definition.

## Why This Matters:



Homes that are safe and free from physical hazards can provide individuals with a sense of privacy, security, stability and control.<sup>11</sup> On the other hand, households experiencing severe housing cost burdens may face difficulties meeting other basic needs, which can lead to increased stress levels and emotional strain.<sup>12</sup> High housing costs can also increase risk of homelessness, leading to exposures that increase risk of communicable disease, malnutrition, and violence.<sup>13</sup>

## Behavioral Health Indicators in Counties with PHPC Health Centers

### Mental Health

PHPC health centers are located in communities that experience a greater level of mental distress and mentally unhealthy days. NCHPH found that 15% of individuals living in counties with PHPC health centers report frequent mental distress compared to 12% of the population in the healthiest U.S. counties. They also had an average of five mentally unhealthy days compared to 3.8 in the top U.S. counties.

Mental Health	Counties with PHPC	U.S. Avg.
Frequent Mental Distress*	15%	12%
Average Number of Mentally Unhealthy Days*	5	3.8

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System

\*See "Key Terms" Section for definition.

## Why This Matters:



The number of unhealthy days can be a proxy for broader concerns. A study by Jia et al. found that counties with more unhealthy days were likely to have higher unemployment, poverty, percentage of adults who did not complete high school, higher mortality rates, and prevalence of disability than counties with fewer unhealthy days.<sup>14</sup>

# Tobacco and Alcohol Use

PHPC health centers are in counties with slightly higher smoking and excessive drinking rates compared to the top U.S. counties. Approximately 18% of the adults living in counties with PHPC health centers are current smokers and 17% report binge drinking.

Tobacco and Alcohol Use	Counties with PHPC	U.S. Avg.
Smokers*	18%	16%
Excessive Drinking*	17%	15%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System  
 \*See "Key Terms" Section for definition.

### Why This Matters:



Smoking causes cancer, heart disease, stroke, lung diseases, diabetes, and chronic obstructive pulmonary disease.<sup>15</sup> Measuring the prevalence of tobacco use in the population can alert PHPC health centers to the need for cessation programs or the effectiveness of existing tobacco control programs.<sup>16</sup> While excessive drinking is a risk factor for a number of adverse health outcomes, such as sexually transmitted infections, unintended pregnancy, suicide, interpersonal violence, and motor vehicle crashes.<sup>17</sup>

# Substance-Related Mortality

Despite only slight differences between rates of smoking and drinking in counties with PHPC health centers compared to top U.S. performers, NCHPH found larger differences in substance-use related mortality. Approximately 24% of driving deaths in PHPC health center counties were alcohol related compared to 11% in the top U.S. counties. While the drug overdose mortality rate in PHPC health center counties was 21% compared to 11% in the top U.S. counties.

Substance-Related Mortality	Counties with PHPC	U.S. Avg.
Driving Deaths with Alcohol Involvement*	24%	11%
Drug Overdose Mortality Rate*	21%	11%

Source: Author tabulations from 2021 County Health Rankings and 2020 Health Resources and Services Administration Uniformed Data System  
 \*See "Key Terms" Section for definition.

## Why This Matters:



Motor vehicle crashes are one of the leading causes of death in the U.S. Providing effective alcohol-related programs could prevent many deaths in the community. Likewise, opioid related deaths are also preventable. Examining the drug overdose rates in the county can determine need for substance use counseling and treatment.

## Conclusion

Health center patients have complex health issues that are linked to their socioeconomic status and their neighborhood conditions, often leading to higher risk of poor physical and behavioral health. Public housing residents are particularly vulnerable, with two to three times the prevalence of many chronic conditions compared to the general public and other low income renters. NCHPH's online mapping tools can provide PHPC health centers with county and city-level data on the critical SDOH related factors that are impacting health care access and outcomes of their patients. For health centers, these findings may provide valuable information on the most pressing health needs for individuals living in their community. These maps may also be used to augment health center efforts to identify targeted programming to improve mental health and behavioral health of their patients through efforts aimed at addressing SDOH factors.

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# Appendix A

Table of interactive map indicators, data source, and geographic level.

Map	Indicator	Source	Year	Geographic Level
<b>Socioeconomic Health Factors and Public Housing</b>				
	Violent Crime Rate	<a href="#">Uniform Crime Reporting, FBI</a>	2012-14	County
	Income Ratio	<a href="#">American Community Survey</a>	2011-15	County
	Severe Housing Problems Rate	<a href="#">Comprehensive Housing Affordability Strategy (CHAS)</a>	2009-13	County
	Firearm Fatalities Rate	<a href="#">CDC Wonder Mortality Data</a>	2011-15	County
<b>Health Behaviors and Public Housing</b>				
	Adult Smoking Rates	<a href="#">Behavioral Risk Factor Surveillance System</a>	2015	County
	Drug Overdose Rates	National Center for Health Statistics - Mortality Files		County
	Teen Birth Rates	<a href="#">National Center for Health Statistics - Natality files</a>	2008-2014	County
	Food Insecurity Rates	<a href="#">Map the Meal Gap</a>	2014	County
	Excessive Drinking Rates	<a href="#">Behavioral Risk Factor Surveillance System</a>	2015	County
	Physical Inactivity Rates	<a href="#">CDC Diabetes Interactive Atlas</a>	2013	County
	Adult Obesity Rates	<a href="#">CDC Diabetes Interactive Atlas</a>	2013	County
<b>City Health Behaviors and Outcomes</b>				
	Adult Binge Drinking Rates	<a href="#">CDC</a>	2017	City and census tract
	Adult Smoking Rates	<a href="#">CDC</a>	2017	City and census tract
	Adult Physical Activity	<a href="#">CDC</a>	2017	City and census tract
	Adult Obesity Rates	<a href="#">CDC</a>	2017	City and census tract
	Lack of health insurance	<a href="#">CDC</a>	2017	City and census tract
	Adult Asthma Rates	<a href="#">CDC</a>	2017	City and census tract

Map	Indicator	Source	Year	Geographic Level
	Adult Chronic Obstructive Pulmonary Disease (COPD)	<a href="#">CDC</a>	2017	City and census tract
	Adult Diabetes Rates	<a href="#">CDC</a>	2017	City and census tract
	Poor Mental Health	<a href="#">CDC</a>	2017	City and census tract
	Poor Physical Health	<a href="#">CDC</a>	2017	City and census tract