

Geographic Data Sources for Assessing Health-Related Social Risk Factors

IN BRIEF

This resource summarizes publicly available data sources that can be used to further understand community-level health-related social risk factors better understand needs of potential high-risk populations. It is a product of the Center for Health Care Strategies' *Complex Care Innovation Lab* — a national initiative made possible by Kaiser Permanente Community Health that brings together leading innovators in improving care for low-income individuals with complex medical and social needs.

To identify high-risk populations, health care systems have long used algorithms that rely on traditional sources of data, such as claims and utilization. Spurred by an increased recognition of how social and environmental forces outside health care can impact risk, many health care organizations are now seeking to also use information on health-related social needs to better identify potential high-risk populations. Understanding the populations' lived environment — including socioeconomic status, housing, and access to transportation and nutritious food — can help shed further light on the medical and behavioral health issues a patient may be experiencing, and on what interventions may be useful to effectively address them. Increasingly, health care stakeholders are including social risk factors into health assessment approaches at the individual level. Gathering this information on an individual level, however, can be challenging. Publicly available data sources that provide sociodemographic snapshots of a specific community at the zip code or neighborhood level can offer a valuable resource for population-level analyses. These resources could, for example, allow a provider to better understand why a patient has trouble controlling their diabetes if they see that the patient lives in a food desert or a neighborhood where walkability is low.

This resource summarizes several publicly available surveys, indices, and other geographically based data sources that provide insight into some of the social determinants of health affecting communities. These data sources may serve as useful proxies for incorporating social determinants of health data into risk segmentation or stratification models, or serve as another data point to help approximate social risk at a population level. Incorporating social risk allows for algorithms to have more of a health equity focus. This detailed breakdown of demographic information is helpful for highlighting existing inequalities and some of the external conditions and forces that may contributing to them. Health plans or health care organizations can then develop targeted and ideally culturally appropriate upstream interventions to better serve populations with fewer resources.

With the support of Kaiser Permanente Community Health, this resource was developed under Center for Health Care Strategies' [Rising Risk Initiative](#), a project of the [Complex Care Innovation Lab](#). Under this initiative, CHCS worked with Innovation Lab sites to: (1) develop analytical approaches for [identifying impactable rising risk populations](#); and (2) gain insights into tailoring interventions to meet the needs of these individuals.

| Name | Description | Included variables | Data Sources |
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| American Community Survey <i>(See Appendix A for more detail)</i> | This yearly survey, conducted by the US Census Bureau, collects information on the economic, social, housing, and demographic characteristics of communities. | <ul style="list-style-type: none"> ■ Age and sex / aging ■ Ancestry ■ Disability ■ Commuting to work ■ Education ■ Employment ■ Family/relationships ■ Health insurance ■ Housing, financial characteristics ■ Housing, physical characteristics ■ Income and earnings ■ Language ■ Migration /mobility ■ Place of birth ■ Poverty ■ Race and ethnicity ■ Veterans | Responses gathered online, by mail, phone, and in-person interviews. Currently available through 2018. |
| Area Deprivation Index <i>(See Appendix B for more detail)</i> | A 17-indicator area-based measure of socioeconomic disadvantage, created by Health Resources & Services Administration (HRSA) and the University of Wisconsin-Madison, that includes income, education, employment, and housing quality. Includes rankings of neighborhoods (defined as census block groups) by socioeconomic status disadvantage. | <ul style="list-style-type: none"> ■ Socioeconomic Status - Income, education, poverty ■ Household Conditions - Employment, single parent households, households without a telephone or vehicle ■ Housing Stock - Home value, rent, home ownership rate | American Community Survey Five- Year Estimates. |
| CDC's Social Vulnerability Index | Indicates the relative vulnerability of every census tract, produced by the CDC, based on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four categories: <ul style="list-style-type: none"> ■ Socioeconomic status ■ Housing composition and disability ■ Minority status and language ■ Housing and transportation | <ul style="list-style-type: none"> ■ Below poverty ■ Unemployed ■ Income ■ No high school diploma ■ Aged 65 or older ■ Aged 17 or younger ■ Civilian with a disability ■ Single-parent households ■ Minority ■ Speak English “less than well” ■ Multi-unit structures ■ Mobile homes ■ Crowding ■ No vehicle ■ Group quarters | 2012-2016 American Community Survey |
| Community Indicator Report | The Community Indicator Report(s), created by Community Commons, tracks key indicators of economic, health, social, and environmental well-being of the region for each county and region in the US. | <ul style="list-style-type: none"> ■ Demographics – basic ■ Demographics – education ■ Income & employment ■ Demographics – housing ■ Adverse childhood experiences ■ Chronic diseases ■ Preventive services ■ Nutrition, physical activity, obesity, diabetes ■ Environment ■ Transportation | American Community Survey; Community Health Needs Assessment; County Health Rankings, (University of Wisconsin Population Health Institute); Area Health Resource File; HRSA Data Warehouse; USDA Food Access Research Atlas; USDA Food Environment Atlas |
| Neighborhood Stress Score | Developed by Arlene Ash, PhD, of the University of Massachusetts Medical School, the Neighborhood Stress Score attempts to determine the amount of economic stress that the people in a census tract are experiencing. Used by MassHealth (Massachusetts’ Medicaid agency) as part of its risk adjustment for its Medicaid accountable care organization payments. | Seven Census Variables for each tract: <ul style="list-style-type: none"> ■ % of families with incomes <100% FPL ■ % of families with incomes <200% FPL ■ % of adults who are unemployed ■ % of households receiving public assistance ■ % of households with no car ■ % of households with children and a single parent ■ % of people age 25 or older who have no HS degree Standardized (mean = 0, standard deviation = 1) | Derived from Medicaid beneficiaries’ addresses and geocoded at the census tract level. |

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|--|--|---|---|
| Social Deprivation Index | <p>A composite measure of area-level deprivation, developed by the Robert Graham Center, used to quantify socio-economic variation in health outcomes. Calculated at four geographic levels: county, census tract, aggregated Zip Code Tabulation Area (ZCTA), and Primary Care Service Area.</p> <p>Measure based on seven demographic domains:</p> <ul style="list-style-type: none"> ■ Income ■ Education ■ Employment ■ Housing ■ Household Characteristics ■ Transportation ■ Demographics | <ul style="list-style-type: none"> ■ % living less than 100% Federal Poverty Level ■ % 25 years or older with less than 12 years of education ■ % single parent household with dependents <18 ■ % living in rented housing unit ■ % living in overcrowded housing unit ■ % of households without a car ■ % of population that is African American ■ % high needs population- under 5 years, and/or 65+ | <p>Five-year estimates from the 2008-2012 and the 2011-2015 American Community Survey</p> |
| Uniform Data System Mapper | <p>An online mapping tool developed by HRSA, John Snow, Inc., and the American Academy of Family Physicians to provide access to maps, data, and analysis using Uniform Data System (UDS) and other relevant data to visualize service area information for Health Center Program (HCP) awardees and look-alikes. This tool compares HCP awardee and look-alike data to community/ population data and shows spatial relationships between the program, community attributes, and other resources.</p> | <ul style="list-style-type: none"> ■ Patients by insurance type by ZIP code ■ Total population count ■ Poverty and low-income ■ Race and ethnicity ■ Uninsured by income level ■ Insurance status ■ Age ■ Non-employment ■ Limited English proficiency ■ Less than high school education ■ Low birth rate ■ % of target population going to health centers ■ Population not served by health centers ■ Change in patients and population over time ■ Health center count and health center dominance | <p>UDS data are submitted to HRSA by HCP awardees and lookalikes every calendar year.</p> |

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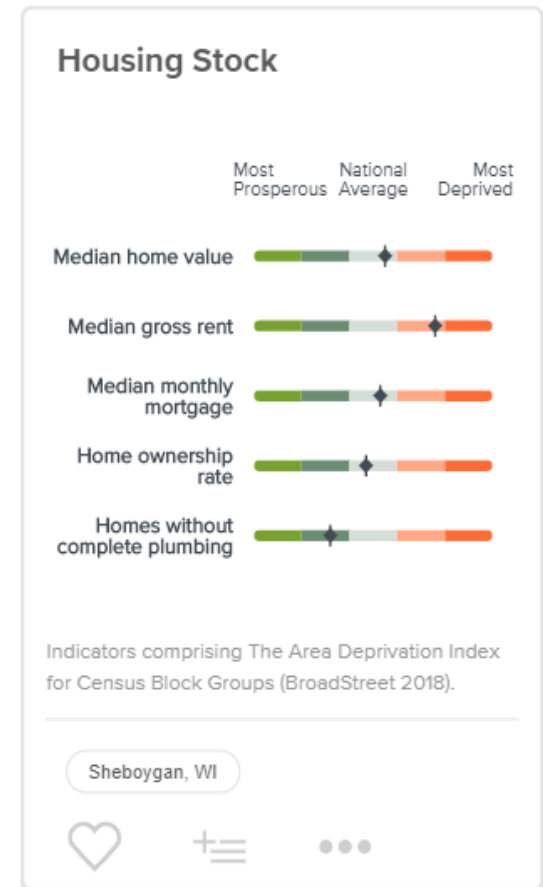
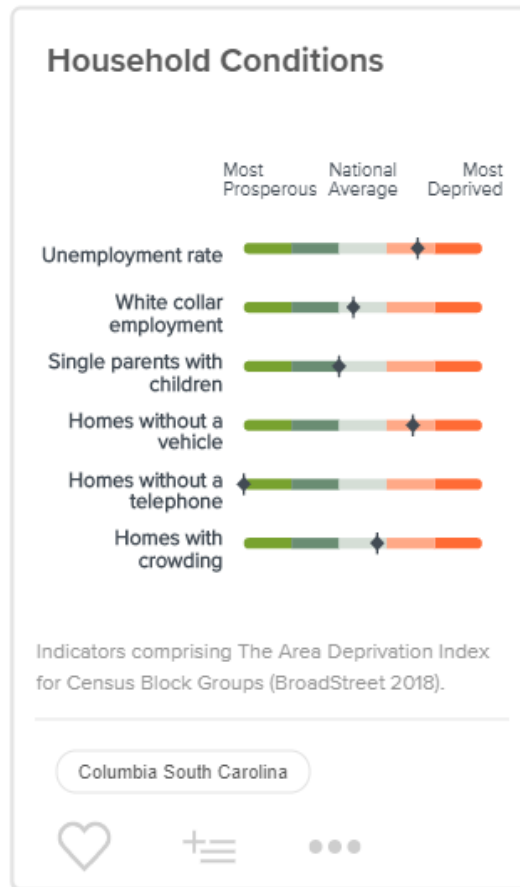
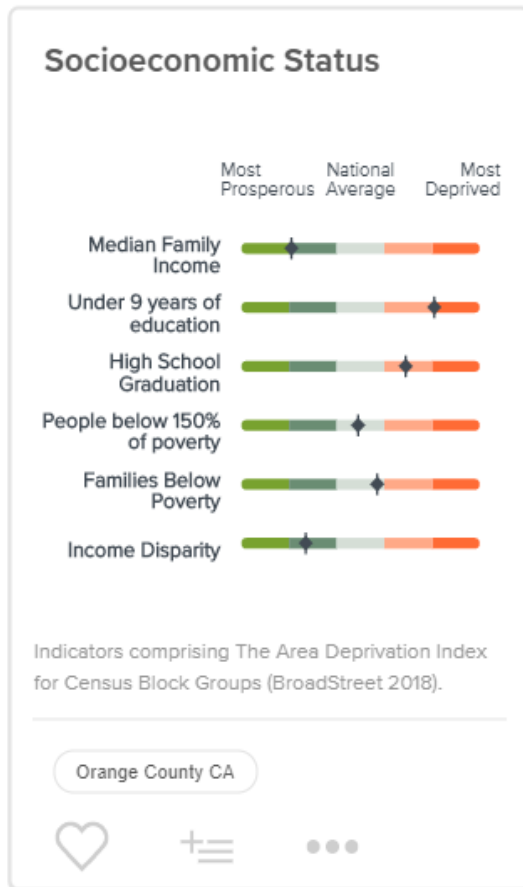
The Center for Health Care Strategies (CHCS) is a nonprofit policy center dedicated to improving the health of low-income Americans. It works with state and federal agencies, health plans, providers, and community-based organizations to develop innovative programs that better serve people with complex and high-cost health care needs. For more information, visit www.chcs.org.

Appendix A: American Community Survey Detail

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| <p>Key ACS Data Products</p> | <ul style="list-style-type: none"> ■ Data Profiles Provide broad social, economic, housing, and demographic profiles ■ Comparison Profiles Similar to data profiles but show data side-by-side from the five most recent years of the ACS. ■ Selected Population Profiles Provide broad social, economic, and housing profiles for a large number of race, ethnic, ancestry, and country/region of birth groups ■ Ranking Tables Provide state rankings of estimates across 86 key variables | <ul style="list-style-type: none"> ■ Subject Tables Similar to data profiles but include more detailed ACS data, classified by subject. ■ Detailed Tables Provide access to the most detailed ACS data and cross tabulations of ACS variables. ■ Summary Files Provide access to the detailed tables through a series of comma-delimited text files on the Census Bureau’s FTP site www2.census.gov. ■ Public Use Microdata Sample Files Provide access to ACS microdata for data users with SAS and SPSS software experience. |
| <p>Population</p> | <ul style="list-style-type: none"> ■ Age ■ Ancestry ■ Citizenship ■ Disability ■ Education ■ Fertility ■ Field of Degree ■ Food Stamps/SNAP ■ Grandparents as caregivers ■ Health Insurance | <ul style="list-style-type: none"> ■ Hispanic Origin ■ Income ■ Industry, Occupation, and Class of Worker Labor Force Status ■ Language ■ Marital History and Status ■ Migration ■ Period of Military Service ■ Place of Birth ■ Place of Work and Journey to Work ■ Race |
| <p>Housing</p> | <ul style="list-style-type: none"> ■ Bedrooms ■ Computer and Internet use ■ Farm Residence ■ House Heating Fuel ■ Value of Housing Units ■ Kitchen Facilities ■ Plumbing Facilities ■ Rent ■ Rooms ■ Selected Monthly Owner Costs ■ Telephone Service Available | <ul style="list-style-type: none"> ■ Tenure (Owner/Renter) ■ Units in Structure ■ Vehicles Available ■ Year Moved into Unit ■ Year Structure Built |

Source: American Community Survey. Capital District Regional Planning Commission. Available at: <https://cdrpc.org/data/census-data/american-community-survey>.

Appendix B: Area Deprivation Index Indicator Examples



Source: 2020 Area Deprivation Index. BroadStreet. Available at: <https://www.broadstreet.io/board/story/adi>.