

Data elements, description of elements, and their sources.

DASHBOARD	DATA ELEMENT	DESCRIPTION	DATA SOURCE
Cancer Incidence	Incidence (New cases)	Number of new cancer cases (overall and site-specific)	United States National Cancer Registries
	Cancer Mortality	Mortality (Cancer Deaths)	
Risk Factors	Colorectal Cancer screening	Percentage of eligible population up to date on screening	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, National Health Interview Survey
	Cervical Cancer Screening	Percentage of eligible population up to date on screening	
	Breast Cancer Screening	Percentage of eligible population up to date on screening	
	Alcohol Consumption	Proportion of adults who binge drink	
	Smoking Prevalence	Proportion of adults who are current smokers	
	Obesity Prevalence	Percentage of population with BMI \geq 30	
	Physical Inactivity	Percentage of the adult population aged \geq 18 years who are not doing any leisure time physical activity.	
	Sleep Deprivation	Percentage of adult population aged \geq 18 years who are getting less than 7 hours of sleep	
	UV Irradiance	The Annual Average Daily Dose of UV Irradiance (J/m^2) quantifies the yearly accumulation of ultraviolet radiation per unit area, indicating the level of sun exposure.	Centers for Disease Control and Prevention, National Environmental Public Health Tracking Network
Social Determinants of Health	Social Vulnerability Index	Index quantifying the extent to which a community is socially vulnerable to disasters or disease outbreaks.	Centers for Disease Control and Prevention, Agency for Toxic Substances and Disease Registry
	Index of Concentration at Extremes	An index that quantifies the extent to which wealth or poverty is concentrated within a given area, highlighting the distribution of economic advantage or disadvantage among the population.	National Cancer Institute
	Local Isolation Index	An index that assesses how much minority individuals primarily interact with others from the same minority group, is calculated as the weighted average of the minority proportion in each area.	

	SES Measurement using YOST	YOST quintile evaluates socioeconomic status by placing individuals into quintiles based on their income, education, and occupation.	
Demographics	Age	Percentage of child, adult, and older adult population	US Census Bureau- Quick Facts, Population Estimates Program, American Community Survey US Census Bureau: Small Area Income and Poverty Estimates Program Data
	Gender	Percentage of female population	
	Race/Ethnicity	Percentage of population by race/ethnicity	
	Income and Poverty	Median Household income and percentage of population living in poverty	
	Chronic Health Conditions	Age-adjusted prevalence of leading chronic health conditions- Arthritis, Asthma, Hypertension	US Census Bureau, American Community Survey
	Any Disability	Percentage population with one or more disability	
	Currently Uninsured	Percentage of uninsured individuals	
	Health Status	The percentage of the population who reported fair or poor health status and experienced poor mental health for 14 days or more.	Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion
	Housing Situation	Distribution of median gross rent and percentage of owner-occupied housing units.	US Census Bureau- Quick Facts*, American Community Survey

Abbreviations: BMI, Body Mass Index; UV, Ultraviolet; SES, Socioeconomic status

*CDC-QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Unemployment Statistics, Economic Census, Survey of Business Owners, Building Permits.

Methodological Details

- 1) **New cancer cases or Cancer incidence:** A cancer incidence rate is the number of new cancers of a specific site/type occurring in a specified population during a year, usually expressed as the number of cancers per 100,000 population at risk. That is,

$$\text{Incidence rate} = (\text{New cancers} / \text{Population}) \times 100,000$$

The numerator of the incidence rate is the number of new cancers; the denominator is the size of the population. The number of new cancers may include multiple primary cancers occurring in one patient. The primary site reported is the site of origin and not the metastatic site. In general, the incidence rate would not include recurrences. The population used depends on the rate to be calculated. For cancer sites that occur in only one sex, the sex-specific population (e.g., females for cervical cancer) is used.

An age-adjusted rate is a weighted average of the age-specific rates, where the weights are the proportions of persons in the corresponding age groups of a standard population. The potential confounding effect of age is reduced when comparing age-adjusted rates computed using the same standard population.

Data used for calculating new cases was derived from the Surveillance, Epidemiology, and End Results (SEER) Program, an authoritative source for cancer statistics in the United States (US). The data represents nearly 97% of the US population. Source: <https://seer.cancer.gov/statistics/types/incidence.html>

- 2) **Cancer deaths or Cancer mortality:** A cancer mortality rate is the number of deaths, with cancer as the underlying cause of death, occurring in a specified population during a year. Cancer mortality is usually expressed as the number of deaths due to cancer per 100,000 population. That is,

$$\text{Mortality Rate} = (\text{Cancer Deaths} / \text{Population}) \times 100,000$$

The numerator of the mortality rate is the number of deaths; the denominator is the size of the population. The population used depends on the rate to be calculated. For cancer sites that occur in only one sex, the sex-specific population (e.g., females for cervical cancer) is used. The mortality rate can be computed for a given cancer site or all cancers combined.

Data used for calculating cancer deaths was derived from the Surveillance, Epidemiology, and End Results (SEER) Program, an authoritative source for cancer statistics in the United States (US). The data represents nearly 97% of the US population. Source: <https://seer.cancer.gov/statistics/types/incidence.html>

- 3) **Social Vulnerability Index (SVI):** The degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, which may affect that community's ability to prevent human suffering and financial loss in the event of a disaster. SVI ranks the counties on 16 social factors, including unemployment, racial and ethnic minority status, and disability, and further groups them into four related themes. Thus, each county receives a ranking for each county variable and for each of the four themes as well as an overall ranking. SVI can be used to
- Assess community needs during emergency preparedness planning
 - Estimate the type and amount of needed supplies such as food, water, medicine, and bedding.
 - Decide how many emergency personnel are required to assist people.
 - Identify areas in need of emergency shelters.
 - Create a plan to evacuate people, accounting for those who have special needs, such as those without vehicles, the elderly, or people who do not speak English well.
 - Identify communities that will need continued support to recover following an emergency or natural disaster.

Data on SVI was derived from the Centers for Disease Control and Prevention. The original peer-reviewed article describes how and why the initial SVI was created:

Flanagan, B.E., Gregory, E.W., Hallisey, E.J., Heitgerd, J.L., & Lewis, B. (2011). A Social Vulnerability Index for Disaster Management. [PDF – 2 MB] Journal of Homeland Security and Emergency Management, 8(1).

- 4) **Index of Concentration of Extremes (ICE):** The Index of Concentration at the Extremes ("index") is a tool to monitor spatial social polarization. Spatial social polarization is defined as "the segregation that emerges when factors such as income inequality, real-estate fluctuations, and economic displacement result in the differentiation of social groups. It is a state and/or tendency denoting the growth of groups at the extremities of the social hierarchy and the parallel shrinking of groups around its middle." The Index measures the extent to which the population in a given area is concentrated by characteristics that are advantageous or disadvantageous. The index is calculated using the below formula where i is a geographic area or unit (e.g., county, census tract), A_i is the number of residents in the advantaged group, P_i is the number of residents in the disadvantaged group, and T_i is the total population in the geographic area.

$$\text{Index of Concentration at the Extremes}_i = \frac{A_i - P_i}{T_i}$$

Index values range from -1 to 1, where -1 indicates that the entire population meets the criteria for disadvantage and a value of 1 indicates the entire population meets the criteria of advantage.

Data on ICE was obtained from the National Cancer Institutes. The original peer-reviewed article describes how the initial ICE was created:

Krieger, N., et al., Using the Index of Concentration at the Extremes at multiple geographical levels to monitor health inequities in an era of growing spatial social polarization: Massachusetts, USA (201014). *Int J Epidemiol*, 2018. 47(3): p. 788-819.

- 5) **Location Isolation Index (LI):** The isolation index is a metric for quantifying segregation (i.e.,)the extent to which two or more groups live separately from one another. It measures "the extent to which minority members are exposed only to one another," and is computed as the minority-weighted average of the minority proportion in each area. Isolation index ranges between 0 and 1 and higher values of isolation suggest higher segregation.

Data on LI was obtained from the National Cancer Institutes. The original peer-reviewed article describing LI is:

Massey DS, Denton NA. The dimensions of residential segregation. *Social forces*. 1988;67(2):281–315.

- 6) **Yost quintile:** The Yost quintile can be used for assessing SES differences in cancer incidence and survival. The metric is created (as an index) from seven indicators: Median household income, Median house value, Median rent, Percent below 150% of the poverty line, Education Index, Percent working class, and Percent unemployed. The first quintile (the group with the lowest SES) is the 20th centile or less, and the fifth quintile (the group with the highest SES) corresponds to the 80th centile or higher.

Data on Yost Quintile was obtained from the National Cancer Institutes. The original peer-reviewed article describing the metric is:

Yost K, Perkins C, Cohen R, Morris C, Wright W. Socioeconomic status and breast cancer incidence in California for different race/ethnic groups. *Cancer Causes Control*. 2001 Oct;12(8):703-11.

- 7) **Colorectal Cancer Screening:** Self-reported status of colorectal cancer screening among resident adults aged 50–75 years in nationally representative surveys (NHIS and BRFFS). The numerator includes respondents aged 50–75 years who report having had a fecal occult blood test (FOBT/FIT) within the previous year; a FIT-DNA test within the previous 3 years; a sigmoidoscopy within the previous 5 years; a sigmoidoscopy within the previous 10 years with an FOBT in the previous year; a colonoscopy within the previous 10 years; or a CT colonography (virtual colonoscopy) within the previous 5 years. The denominator includes respondents aged 50–75 years who report having had or never having a fecal occult blood test (FOBT/FIT); a FIT-DNA test; a sigmoidoscopy; a colonoscopy; or a CT colonography (virtual colonoscopy) (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure"). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 8) **Cervical Cancer Screening:** Self-reported status of cervical cancer screening among females aged 21–65 years without a hysterectomy in nationally representative surveys (NHIS and BRFFS). The numerator includes female respondents aged 21–65 years who do not report having had a hysterectomy and who report having had a recommended cervical cancer screening test. For female respondents aged 21–29 years, the recommended screening test is Pap test alone. For female respondents aged 30–65 years, there are three recommended screening tests with varying frequencies: (1) Pap test alone, (2) human papillomavirus (HPV) test alone, or (3) Pap test in combination with HPV test (otherwise known as co-test). The denominator includes female respondents aged 21–65 years who do not report having had a hysterectomy and who report ever having or never having had a Pap smear (excluding unknowns and refusals). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 9) **Breast Cancer Screening:** Self-reported status of breast cancer screening among females aged 50–74 years in nationally representative surveys (NHIS and BRFFS). The numerator includes female respondents aged 50–74 years who report having had a mammogram within the previous 2 years. The denominator includes Female respondents aged 50–74 years

who report ever having or never having had a mammogram (excluding unknowns and refusals). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 10) Alcohol Consumption:** Self-reported alcohol consumption among adults aged ≥ 18 years. The numerator includes adults aged ≥ 18 years who report having five or more drinks (men) or four or more drinks (women) on an occasion in the past 30 days. The denominator includes adults aged ≥ 18 years who report having a specific number, including zero, of drinks on an occasion in the past 30 days (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 11) Smoking Prevalence:** Self-reported smoking status among adults aged ≥ 18 years. The numerator includes adults aged ≥ 18 years who report having smoked ≥ 100 cigarettes in their lifetime and currently smoke every day or some days. The denominator includes adults aged ≥ 18 years who report respondents aged ≥ 18 years who reported information about cigarette smoking (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 12) Obesity Prevalence:** The percentage of adults aged ≥ 18 years who are obese. The numerator includes respondents aged ≥ 18 years who have a body mass index (BMI) ≥ 30.0 kg/m² calculated from self-reported weight and height. Exclude the following:

- Height: data from respondents measuring < 3 ft or ≥ 8 ft
- Weight: data from respondents weighing < 50 lbs or ≥ 650 lbs
- BMI: data from respondents with BMI < 12 kg/m² ≥ 100 kg/m²
- Pregnant women

The denominator includes respondents aged ≥ 18 years for whom BMI can be calculated from their self-reported weight and height. The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 13) Physical Inactivity:** The percentage of adults aged ≥ 18 years who report no leisure-time physical activity. The numerator includes respondents who answered “no” to the following question: “During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?” The denominator includes the number of adults aged ≥ 18 years who reported any or no physical activity in the past month (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 14) Sleep Deprivation:** The percentage of adults aged ≥ 18 years who report sleeping less than 7 hours. The numerator includes respondents aged ≥ 18 years who report usually getting insufficient sleep (< 7 hours for those aged ≥ 18 years, on average, during 24 hours). The denominator includes respondents aged ≥ 18 years who report 0–24 hours of sleep (excluding those who refused to answer, had a missing answer, or answered “don’t know/not sure”). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 15) UV Irradiation:** The average annual dose of Annual average daily dose of UV irradiance (J/m²). The data are provided by the Environmental Remote Sensing group at the Rollins School of Public Health at Emory University. The original source for the data was the Ozone Monitoring Instrument (OMI) (aboard the NASA Aura spacecraft) Level 2 Surface UV Irradiance Product. Advanced modeling techniques used to generate the data adjust for spatial variation in local weather (including cloud cover, surface reflection, and atmospheric aerosol concentration) as well as elevation to standardize the solar irradiance measures across geographies.

- 16) Age distribution:** The percentage of the population in a specified age group representing a single year of estimate by county received from the Census Bureau.
- 17) Gender distribution:** The percentage of the female population representing a single year of estimate by county received from the Census Bureau.
- 18) Race/Ethnicity distribution:** The percentage of the population in a specified race/ethnic group representing a single year of estimate by county received from the Census Bureau.
- 19) Income and Poverty:** The percentage of the population living below the federal poverty level representing a single year of estimate by county received from the Census Bureau. The median household income represents a single year of estimate by county received from the Census Bureau.
- 20) Chronic Health Conditions:** The percentage of adults aged ≥ 18 years who report having a specific (arthritis, asthma, or high blood pressure) chronic health condition. The numerator includes respondents aged ≥ 18 years who report having been told by a doctor, nurse, or other health professional that they have the specific (arthritis, asthma, or high blood pressure) chronic condition. The denominator includes respondents aged ≥ 18 years who answered: "yes" or "no" to the question: "Have you ever been told by a doctor, nurse, or other health professional that you <<specific health condition>>?" (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure"). The percentage is calculated from the numerator and denominator.

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 21) Disability:** Self-reported disability status among adults aged ≥ 18 years. The numerator includes adults aged ≥ 18 years who answered "yes" to at least one of the six disability questions below:
- "Are you deaf or do you have serious difficulty hearing?"
 - "Are you blind or do you have serious difficulty seeing, even when wearing glasses?"
 - "Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?"
 - "Do you have serious difficulty walking or climbing stairs?"
 - "Do you have difficulty dressing or bathing?"
 - "Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?"

The denominator includes adults aged ≥ 18 years (excluding those who refused to answer, had a missing answer, or answered "don't know/not sure" for six individual types of disability. For "any disability," excluding refused, missing, and "don't know/not sure" for all six questions).

Percentages were obtained from the Centers for Disease Control and Prevention, which derives estimates from the Behavioral Risk Factor Surveillance System and the National Health Interview Survey.

- 22) Uninsured population:** The percentage of the population that is uninsured represents a single year of estimate by county received from the Census Bureau.
- 23) Housing situation:** The percentage of the population living in an owner-occupied housing unit representing a single year of estimate by county received from the Census Bureau. The median gross rent represents a single year of estimate by county received from the Census Bureau.