

**County Health  
Rankings & Roadmaps**

Building a Culture of Health, County by County

# **County Health Rankings & Roadmaps**

## Technical Documentation

Version 2

Last Updated: March 18, 2024

# TABLE OF CONTENTS

- BACKGROUND & CONCEPTUAL FOUNDATIONS..... 1
  - About County Health Rankings & Roadmaps..... 1
  - History..... 1
  - Goals ..... 1
  - The Annual Data Release..... 1
  - Our Model of Health ..... 2
  - Evaluating New and Existing Measures..... 3
- METHODS..... 5
  - Methods Behind the Health Snapshots..... 5
  - Weights Assigned to Select Measures ..... 6
  - Z-score Calculation..... 7
    - Reverse Coding of Some Measures..... 7
  - Composite Scores..... 7
  - Health Groups ..... 8
  - Supplemental Tools..... 8
    - Supplemental Tool: Health Group graphics for Health Outcome and Health Factor summaries ..... 8
    - Supplemental Tool: Compare Counties ..... 8
    - Supplemental Tool: County Descriptions..... 9
    - Supplemental Tool: Areas of Strength and Areas to Explore ..... 10
    - Supplemental Tool: Trend Graphs ..... 11
  - Responsible Data Use ..... 12
  - Limitations of Data Comparability Across States..... 12
  - Addressing Missing Data in Health Group Calculations..... 12
    - Counties Not Assigned to Health Groups..... 12
- DATA USE ..... 14
  - Guide to Files..... 14
  - Data Sharing..... 14
  - Missing Data..... 14
  - Data Operations ..... 14
    - Age-adjustment of Measures..... 14
    - Data Disaggregated by Race Categories..... 15
    - Race Categories in the 2024 Annual Data Release by data Source: ..... 17

APPENDICES..... 18

Appendix 1: FIPS code changes ..... 18

Appendix 2: Changes in Select Measures, 2010-2024 ..... 19

Appendix 3: Limitations of data comparability across states ..... 20

Appendix 4: Measures with data available for further disaggregation..... 22

Appendix 5: 2024 Annual Data Release measures..... 25

# BACKGROUND & CONCEPTUAL FOUNDATIONS

## About County Health Rankings & Roadmaps

County Health Rankings & Roadmaps (CHR&R), a program of the University of Wisconsin Population Health Institute, draws attention to why there are differences in health within and across communities. The program highlights policies and practices that can help everyone be as healthy as possible. CHR&R aims to grow a shared understanding of health, equity and the power of communities to improve health for all. This work is rooted in a long-term vision where all people and places have what they need to thrive.

CHR&R is committed to creating resources and tools that support community-led efforts to accurately diagnose core problems, understand and account for historical context and implement evidence-informed solutions. CHR&R provides a snapshot of the health of nearly every county in the nation.

## History

The University of Wisconsin Population Health Institute (UWPHI) has been supported by the Robert Wood Johnson Foundation (RWJF) since 2008 to develop what is now known as the County Health Rankings & Roadmaps program. Our first national Annual Data Release happened on February 17, 2010.

## Goals

CHR&R seeks to foster social solidarity and help build community power for health and equity. The program advocates for a new understanding of data and evidence, and develops methods that can challenge assumptions, explore possibilities and build community power for health and equity.

We aim to:

- Build awareness of the multiple factors that influence health.
- Provide a reliable, sustainable source of local data and evidence to communities to help them identify opportunities to improve their health.
- Engage and activate local leaders from many sectors in creating sustainable community change.
- Connect community leaders and grow community power to improve health.

## The Annual Data Release

The Annual Data Release includes nearly 90 measures that help communities understand more about health and opportunities in their communities, how healthy their residents are today (Health Outcomes) and what factors are impacting future health (Health Factors). We update these measures each year using the most recently available data for nearly all United States counties. The Annual Data Release is compiled from a variety of national and state data sources. Select measures, based on a conceptual model of population health, are standardized and combined using scientifically-informed weights to provide nearly all counties with local Health Factor and Health Outcome summaries.

The Annual Data Release contains:

- **Select measures:** measures combined using weights according to our model of health to create overall composite measures for Health Outcomes and Health Factors for each county. These summaries are used in the calculation of Health Groups.
- **Additional measures:** measures which provide helpful community context but are not used in the determination of Health Outcome or Health Factor summaries, or the calculation of Health Groups. Additional measures may be Health Outcomes, Health Factors, or demographics. Demographic data are included for every county to provide context for the place and its data.

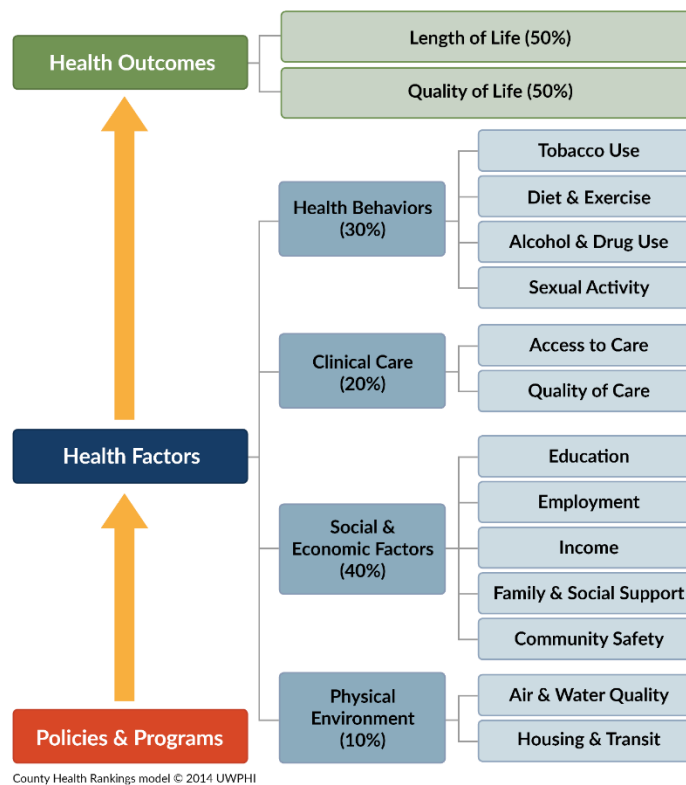
- Health Groups:** Each county with sufficient data for Health Outcomes or Health Factors is assigned to one of ten groups nationally using a data-informed grouping method, which groups counties based on similarity and meaningful gaps in data. Health Outcome or Health Factor data are used to group counties into 10 unequally sized groups. Data-informed Health Groups are calculated separately for Health Outcomes and for Health Factors. Health Groups, range from the least healthy to healthiest for counties on a national scale. States may or may not have counties that fall within each of the ten groups across the range of health nationally.

### Our Model of Health

The analytics that produce Health Outcomes and Health Factors are rooted in a conceptual model of the social determinants of health. Health Outcomes and Health Factors incorporate 34 Select measures that help communities understand how healthy their residents are today (Health Outcomes) and what will impact their health in the future (Health Factors).

Our model of health emphasizes the many factors that influence how long and how well we live and portrays the methodology used to determine the overall Health Outcomes or Health Factors, that are then used to calculate Health Groups.

**Figure 1: County Health Rankings Model of Health**



The Health Outcomes summary comprises five measures (Premature Death, Poor or Fair Health, Poor Physical Health Days, Poor Mental Health Days, and Low Birthweight) within the Health Outcome areas of Length of Life and Quality of Life. The Health Factors summary comprises 29 measures (Table 1) within the Health Factor areas of Health Behaviors, Clinical Care, Social & Economic Factors and Physical Environment. Additional measures populate all Health Outcome and Health Factor Areas.

## Evaluating New and Existing Measures

Measures of Health Factors and Additional measures are reevaluated annually based on the considerations below. These considerations ensure that the dataset for each Annual Release remains consistent, salient, legitimate, credible, and grounded in equity. Measures may not meet all considerations due to geographic, data source, and time limitations. To operationalize these considerations, we regularly evaluate data sources and methods and seek expert input and review from scholars, practitioners, and external advisors.

### Strategic Considerations

#### *Alignment with CHR&R goals*

- The measure speaks to a current or emerging population health issue and increases the value of CHR&R tools.
- The measure reflects aspects of population health that can be influenced through local, state, or national policies, practices, and systems change.
- The measure provides quantitative or qualitative information to explain concepts in our model of health.
- The measure supports data fluency and alignment in the field of data-to-action initiatives (e.g., America's Health Rankings, City Health Dashboard).
- The measure is of interest to community members, leaders, advocates, community health activists, equity champions, and field actors in public health and health care.

### Theoretical Considerations

#### *Connection of the measure to health and equity*

- The measure and its association with population health are scientifically supported through peer reviewed literature or expert opinion and a strong evidence base.
- CHR&R internal analyses (quantitative and qualitative) support the measure's connection to health.
- The measure clarifies the existence of health disparities and the potential for unfair, unjust differences.
- The measure centers learning from the wealth of knowledge, experiences, and priorities of a socially marginalized group.

### Source Considerations

#### *Assessment of data sources and their methodology*

- The measure draws from a data source that has transparent methodology and underlying assumptions.
- Source data are available for free or low cost.
- Source methods are valid. Data quality is maintained and updated regularly (within the past 3-5 years), where applicable.

### Analytical Considerations

#### *Feasibility of quantitative and qualitative analysis for evaluation and production*

- The measure draws from data that are available at, or can be aggregated to, the county level.

- Data can be disaggregated among population groups with an emphasis on groups that have historically or currently experience social disadvantage (e.g., race, ethnicity, gender, sex, education, disability status, family type, neighborhood, income, or wealth).
- The measure and its association with health and health disparities are validated internally and consistent with scholarly literature or expert evidence.
- The measure is numeric, ordinal, or binary to quantify differences that capture advantage or disadvantage between counties.
- The measure uses data that are available for most counties nationwide.
- The measure uses data that are representative locally and comparable across jurisdictions within a state.

### **Communication Considerations**

*Ability to meaningfully communicate and apply the measure to improve health and equity*

- The measure and its association with health and equity can effectively be communicated.
- The measure is recognized and documented by public health, healthcare, adjacent fields, or marginalized communities to have the ability to make change or have influence within systems of oppression.
- CHR&R can communicate limitations of the data and methods to audiences who want to interpret and apply the measure.
- The measure reflects a distinct concept and “call to action.”

# METHODS

## Methods Behind the Health Snapshots

The county and state Health Snapshots are populated and refreshed annually with data from a range of sources following these steps:

1. **Calculate measures:** We clean and compile data to calculate measures based on documented methods. A description of the data source(s) and methods used for calculation of each of our measures can be found by selecting the measure of interest and opening the 'Methods' tab.
2. **Evaluate measure validity:** After measure calculation, we evaluate the measure values against expected and historical ranges. We engage data stewards to discuss any unexpected measure values, and make sense of our findings within the context of the processes used for data collection and processing as well as national events and trends. Guidelines are established and refined to suppress unreliable measure values.
3. **Assign weights to Select measures:** We weight each Select measure based on our model of health in order to calculate Health Outcome or Health Factor summaries (Table 1; Appendix 5).
4. **Calculate Z-scores and create composite scores:** We standardize Select measures based on a national distribution of counties using a Z-score. We calculate Health Outcome and Health Factor summaries, which are weighted sums of the standardized measures, or composite scores.
5. **Assign counties to Health Groups:** After the composite scores are calculated, we apply a cluster analysis approach to partition each set of composite scores into 10 clusters (Health Groups), identifying the optimal grouping of the counties for each possible cluster. Clusters are determined by creating 10 random centroids of the data and then assigning each data point to the nearest centroid. The centroid of each cluster is then moved to the average of the data in the cluster and the process is repeated until no data points change groups. Health Groups are calculated based on county values for Health Outcome composites and separately for Health Factor composites.
6. **Create supplemental tools:** We provide a collection of tools to help users navigate the extensive dataset provided in each Health Snapshot. These supplemental tools include:
  - a. Health Group graphics for Health Outcome and Health Factor summaries
  - b. Compare Counties: a tool that enables side-by-side comparisons of up to four counties or states for all measures.
  - c. County Descriptions: a custom paragraph introducing context for the data in the County Health Snapshot.
  - d. Areas of Strength and Areas to Explore: a tool that highlights Select measures that may be meaningfully different than a state or national benchmark.
  - e. Trend graphs for a subset of measures to enable comparisons over time.

For more detail on our past methods see some CHR&R key publications:

- Catlin BB, Athens JK, Kindig DA, Park H, Remington PL. [Different perspectives for assigning weights to determinants of health](#). County Health Rankings Working Paper.
- Remington PL, Catlin BB, Gennuso KP. [The County Health Ranking: rationale and methods](#). Population Health Metrics. 2025;13(11).
- [2023 CHR&R Technical Document](#)



## Weights Assigned to Select Measures

Each Select measure contributes weight to the Health Outcome or Health Factor composite score. Generally, Select measures and corresponding weights are not changed year-to-year to retain consistency in methods.

**Table 1: Weights Corresponding to Select measures for Health Outcomes and Health Factors**

Health Outcomes	
<b>Length of Life</b>	
Premature Death	50%
<b>Quality of Life</b>	
Poor or Fair Health	10%
Poor Physical Health Days	10%
Poor Mental Health Days	10%
Low Birthweight	20%
Health Factors	
<b>Health Behaviors</b>	
Adult Smoking	10%
Adult Obesity	5%
Food Environment Index	2%
Physical Inactivity	2%
Access to Exercise Opportunities	1%
Excessive Drinking	2.5%
Alcohol-Impaired Driving Deaths	2.5%
Sexually Transmitted Infections	2.5%
Teen Births	2.5%
<b>Clinical Care</b>	
Uninsured	5%
Primary Care Physicians	3%
Dentists	1%
Mental Health Providers	1%
Preventable Hospital Stays	5%
Mammography Screening	2.5%
Flu Vaccinations	2.5%
<b>Social &amp; Economic Factors</b>	
High School Completion	5%
Some College	5%
Unemployment	10%
Children in Poverty	7.5%
Income Inequality	2.5%
Children in Single-Parent Households	2.5%
Social Associations	2.5%
Injury Deaths	5%
<b>Physical Environment</b>	
Air Pollution - Particulate Matter	2.5%
Drinking Water Violations	2.5%
Severe Housing Problems	2%
Driving Alone to Work	2%
Long Commute - Driving Alone	1%

## Z-score Calculation

Our measures use different types of data as input, and when calculated, the measures use different types of metrics as output. Some measures are percentages, while others are rates, averages, or other metrics.

Standardizing each of these measures transforms them to the same metric – a mean (average) value of 0 (zero) and a standard deviation (measure of spread) of 1. We refer to these as Z-scores, where:

$$Z = \frac{(\text{County Value}) - (\text{Average of Counties in Nation})}{(\text{Standard Deviation of Counties in Nation})}$$

Each Z-score is relative to the other counties in the nation and shown in the metric of standard deviations. A positive Z-score indicates a value for that county higher than the average of counties in the U.S.; a negative Z-score indicates a value for that county lower than the average of counties in the U.S. For example, if a county has a Z-score on a measure of 1.2 that means the county is 1.2 standard deviations above the national average of counties for that measure. For counties with a population of 20,000 or less, any Z-score less than -3.0 or greater than 3.0 is truncated to -3.0 or 3.0, respectively.

## Reverse Coding of Some Measures

For most of our measures, a higher Z-score score indicates poorer health (e.g., Children in Poverty). However, for some of our measures (e.g., High School Completion) a higher Z-score indicates better health. For this second set of measures, we apply reverse coding before computing composite scores by computing the measure Z-score as usual and then multiplying by -1, so that a higher Z-score indicates poorer health for all measures. The following Select measures are reverse coded:

- Food Environment Index
- Access to Exercise Opportunities
- Flu Vaccinations
- Mammography Screening
- High School Completion
- Some College
- Social Associations

## Composite Scores

The scores computed for individual counties are weighted composites of the Z-scores where the weights represent relative importance towards total county health as determined by our model of health (Table 1; Appendix 5). A weighted composite is computed by multiplying each Z-score by its assigned weight and then summing all weighted Z-scores. Below is the formula we use for our weighted composite scores:

$$\text{County weighted composite} = \sum w_i Z_i$$

In this formula, the  $Z_i$  values are the Z-scores of the Select Measures. The  $w_i$  values are the measure-specific weights. The  $\sum$  sign indicates summation of the resultant values.

All composite scores use the formula above, standardized Z-scores for each measure (reverse coded when necessary—see above), and the weights described in our model of health.

## Health Groups

To generate Health Groups, a cluster analysis approach is applied to the Health Factor and Health Outcome composite scores. Cluster analysis is a method that groups objects, such as a county, based on similarity, and empirically identifies natural, meaningful gaps in data by using the data itself to inform the number and size of groups. This method is applied to values of the composite Z-score indexes for every county that receives a Z-score for Health Outcomes or Health Factors. Utilizing the national distribution of Z-scores has the benefit of more data power with less statistical noise and only one decision on cluster cut-off, which is especially important for states with very few counties or very small populations in counties.

Specifically, we use k-means clustering to partition  $n$  observations into  $k=10$  clusters, identifying the optimal grouping of the counties for each possible cluster. Clusters are determined by creating 10 random centroids of the data and then assigning each data point to the nearest centroid. The centroid of each cluster is then moved to the average of the data in the cluster and the process is repeated until no data points change groups. We imposed a cap of 10 clusters,  $k$ , based on analyses to assess the potential loss of information in limiting clusters (using the Wasserstein- or earth mover's- Distance, a measure of the distance between two probability distributions) and to support ease of communication. We apply this cluster analysis to all counties nationally to generate an updated data-informed approach to comparing counties. Counties are assigned a value (e.g., group 1-10) based on their Z-score rather than an ordinal rank.

Health Groups do not necessarily represent statistically significant differences from county to county, but rather support more data-informed comparisons and a focus on meaningful differences.

## Supplemental Tools

### Supplemental Tool: Health Group graphics for Health Outcome and Health Factor summaries

Within each County Health Snapshot there are two graphics displaying summaries for a county's Health Outcomes and Health Factors. Each county in a state is represented by a dot, placed on a continuum from least healthy to healthiest in the nation. The color of each dot represents Health Groups, our data-informed groupings of counties nationwide with similar Health Outcomes or Health Factors on the continuum. States may or may not have counties that fall within each of the Health Groups across the range of health nationally.

These graphics indicate how a county fares relative to other counties in the state and the nation. They also allow you to see how counties in a state fare on a national continuum of health. These graphics illustrate the relative similarities in county health among Health Groups on a national scale. Health Groups support data-informed comparisons and a focus on meaningful similarities that can support action but do not necessarily represent statistically significant differences in county health.

Sensemaking statements then accompany a county based on where the county is positioned compared to their state average and the rest of the nation. These sensemaking statements indicate if the county Health Outcome or Health Factor composite score is in a higher, lower or the same cluster as a Z-score of 0 (for the national average comparison) and as their state-specific Z-score (for the state average comparison).

### Supplemental Tool: Compare Counties

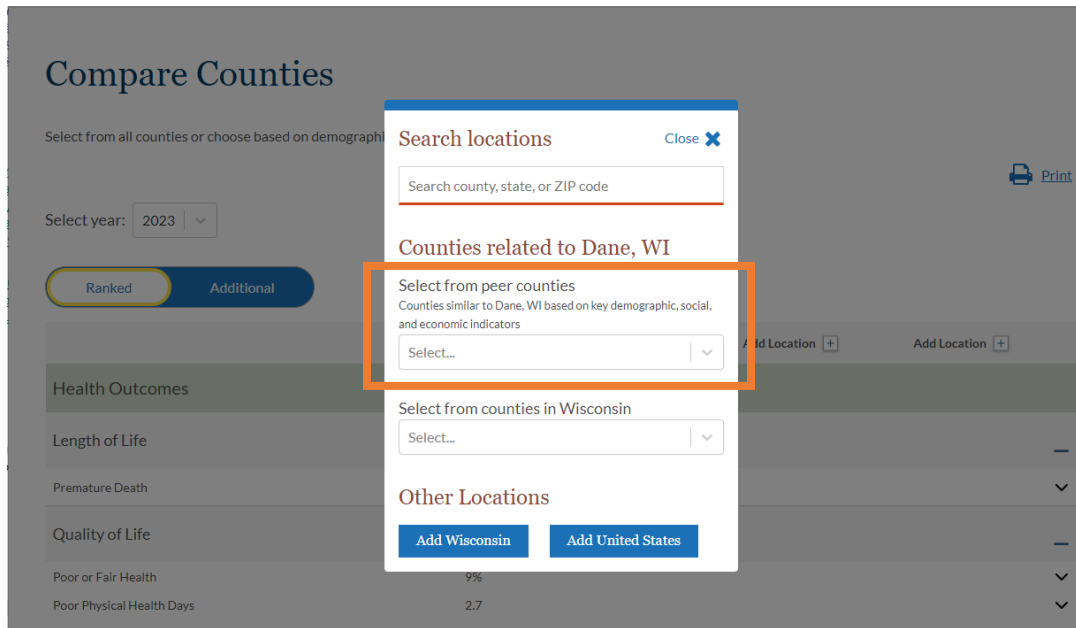
In the Compare Counties tool, you may select from all counties or choose a peer county based on demographic, social and economic indicators. Each U.S. county is grouped with a set of peer counties. Public health officials can use these peer county groups to identify expected ranges for health indicators and cases of disease. Within a group, peer counties are similar in rurality, population size, poverty, age distribution, and population density. Counties within a group are

comparable and comparing similar counties in the Compare Counties tool may allow for easier community health assessment.

The peer-county groups we use were created by the Community Health Status Indicators Project in 2000. All U.S. counties are divided into 88 peer groupings, with an average size of 35 counties per group. Every peer grouping includes counties from multiple states. Peer groups are not static and may be updated in the future based on population changes within counties.

Review the full peer counties methodology and rationale here:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2483569/>



*A pop-up box in the Compare Counties tool on countyhealthrankings.org*

### Supplemental Tool: County Descriptions

The County Descriptions are a custom introduction for each county that appears at the top of the County Health Snapshot. The County Descriptions provide important context for the Health Snapshot data and include a link to Native Lands Digital which [identifies Indigenous nations native to the place](#), an indication of neighborhoods that have experienced intentional disinvestment through redlining, and characterization of the population density and connection to larger cities and state capitals. The data sources for each element are listed below.

Metropolitan/Micropolitan classification: Data come from the July 2023 Office of Management and Budget [core based statistical areas \(CBSAs\) delineation file](#) downloaded from census.gov. If a county is [not delineated as Metropolitan or Micropolitan, it is classified as Rural](#) in the county description. The CBSAs delineations are not an urban rural classification, though they are commonly used in that way. A Metropolitan or Micropolitan county may contain both urban and rural areas.

Large cities: Data are provided by City Health Dashboard. A list of cities with greater than 50,000 population was requested from City Health Dashboard and reflects population counts from American Community Survey 2020 5-year estimates Table DP05. [City Health Dashboard data is available for download](#) on their website after filling out a short [survey](#). All cities included are either county subdivisions or incorporated places and data on city boundaries are from the census bureau's Master Address File (MAF)/Topologically Integrated Geographic Encoding and Referencing (TIGER)

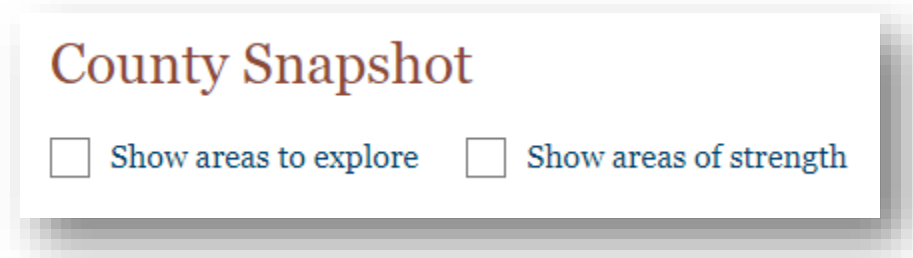
System. The names of the four largest cities, or the names of the state capital and the three largest cities, that intersect with a county are listed in the county description. The total number of large cities that intersect with a county intersects are also included in the description.

State capitals: Data on [state capital boundaries](#) come from the ArcGIS Living Atlas of the World USA Major Cities dataset. The name of the state capital is included in the county description for any county that intersects with the boundary of the capital.

Percent population in low population density areas: Data come from the [2020 decennial census](#) table [P2: Urban and Rural 2020: Demographic and Housing Characteristics](#) and match the % Rural measure that is available in the demographic measures section of each county snapshot (select 'Show demographic data' below the county description).

Neighborhoods that experienced intentional disinvestment: Data come from the [American Panorama Mapping Inequality: Redlining in New Deal America interactive map](#). Counties that contain neighborhoods which experienced intentional disinvestment are those that intersect with a [neighborhood that was redlined, or graded C "Definitely Declining" or D "Hazardous,"](#) as labeled by the federal government's Home Owner's Loan Corporation between 1935 and 1940.

Supplemental Tool: Areas of Strength and Areas to Explore



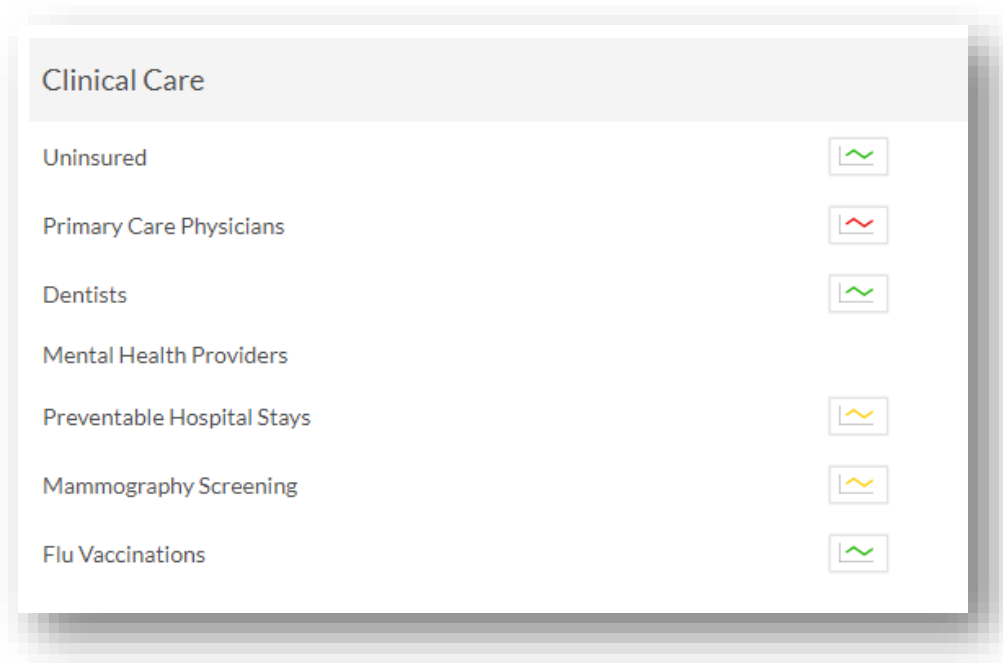
*County Snapshot from countyhealthrankings.org showing the location of the Areas of Strength and Areas to Explore tool*

The Areas of Strength and Areas to Explore tool can be found just above the measure table on a County Health Snapshot. Measures where your county is doing meaningfully better than the state and national values are highlighted as Areas of Strength. Measures where your county is doing meaningfully worse than the state and national values are highlighted as Areas to Explore.

Areas of Strength and Areas to Explore are calculated for Select Health Factor measures to compare a county's measure values to achievable benchmarks. Areas of Strength and Areas to Explore are intended to serve as a ***starting point*** for identifying areas of strength or improvement in your county.

We define Areas of Strength and Areas to Explore by comparing your county to your state and the nation (median of counties) for each Select Health Factor measure using Z-scores. A Z-score is a unitless measure with a mean of zero and a standard deviation of one. Each Select Health Factor measure is weighted according to our Model of population health, so that areas weighted more heavily in calculating Health Factors are also more likely to appear as an Area of Strength or Area to Explore. Each county is assigned at least three Areas of Strength and three Areas to Explore.

## Supplemental Tool: Trend Graphs



*Clinical Care measures from a County Snapshot with trend icons displayed*

Within each Health Snapshot, measures have trend graphs available where possible and meaningful. Examining changes in Health Outcomes over time can show community progress toward better health. Trends in Health Factors can inform specific health programs and may reflect the impact of local efforts.

We conduct linear regressions using all years of data shown in the trend graph to calculate whether a trend is decreasing, increasing, or stable. For each measure with trend data available, a detailed trend graph can be viewed by clicking on the graph icons in the county snapshot.

Each graph icon is color-coded to communicate the direction of the trend:

- Red - The county value is trending worse for this measure
- Yellow - The county value shows no significant trend
- Green - The county value is trending better for this measure
- Grey - Additional information is needed to interpret the trend for this measure
- Black - Trend graph is available, but no interpretation has been provided

Trend data are available for:

- Twelve Select measures: Premature Death, Alcohol-Impaired Driving Deaths, Sexually Transmitted Infections, Uninsured, Primary Care Physicians, Dentists, Preventable Hospital Stays, Mammography Screening, Flu Vaccinations, Unemployment, Children in Poverty, Air Pollution; and
- Three Additional measures: Uninsured Adults, Uninsured Children, and School Funding Adequacy.

Our linear regression includes at least eight years of data and is conducted using a significance test with 80% confidence. The regression analyses are used to determine whether there is a decreasing, increasing, or stable trend over the entire time period.

A similar regression is performed on the most recent four years of data to determine short-term trends. The color of the graph icons does not reflect the short-term trend designations, but a note appears in the trend statements on the graphs when the short-term trend is different than the long-term trend for that county and measure.

Trend datasets and accompanying documentation are available for download in .csv and .sas format on [our Data and Documentation webpage](#).

## Responsible Data Use

CHR&R tries to generate Health Groups for all counties or county equivalents that have a Federal Information Processing Standard (FIPS) code. Data limitations such as missing data can lead to special considerations for analytic methods.

## Limitations of Data Comparability Across States

CHR&R uses data from many sources, each with different methods for collection and processing data. For most of our measures, county data is comparable between counties within states and also comparable across state lines. For a few of our measures, caution must be exercised when making comparisons between counties in different states. See Appendix 3 for a list of measures which should be compared with caution across states.

## Addressing Missing Data in Health Group Calculations

If a county has sufficient data to be assigned a Health Group, but is missing data for a given select measure, we assign the state mean for that measure value to calculate the county's Health Group.

## Counties Not Assigned to Health Groups

Some counties in the nation are too small to have reliable measurements for Health Outcome measures. These counties are not ranked.

Counties are not assigned to Health Groups if any of the following is true:

1. County had a missing value for Premature Death (i.e., there are less than 20 deaths during the time period and data are suppressed for privacy reasons).
2. County had an unreliable value for Premature Death and no other measures of morbidity were available.
3. County had an unreliable Premature Death value, an unreliable Low Birthweight value, and no other morbidity measures.

*NOTE: Values for Premature Death are considered unreliable when the standard error of the estimate is more than 20% of the estimate value and the measure value is outside the previous year's confidence interval. Both missing and unreliable values for Premature Death show up as blank in a county snapshot. However, advanced users may want to visit our analytic files to understand if specific data is missing or unreliable. Values for Low Birthweight are considered unreliable when the standard error of the estimate is greater than 20% of the estimate value.*

CHR&R methods increase the number of counties assigned to Health Groups by:

**Careful data selection:** Select measures are based on data which are available for the greatest number of counties.

**Imputation:** In some cases, data are combined over multiple years of data. For several measures, CHR&R averages multiple years of data, giving equal weight to each observation year. This approach increases the number of small, sparsely populated counties with reliable data estimates.

**Use of modeled data:** Some measures, including Adult Smoking, Adult Obesity, and Children in Poverty, are based not only on survey response, but depend on statistical modeling techniques that improve the precision of the estimates.



## DATA USE

### Guide to Files

The Annual Data Release may be downloaded in .csv and .sas format for analytic use. You can find the files in two places on our website:

- National files are available from download on our [Rankings Data & Documentation webpage](#).
- State-specific files are available for download from the respective State Health Snapshot.

### Data Sharing

CHR&R data sharing is dependent on the data use regulations of the source data. If you are interested in making a data request, please use the [Contact Us form](#) available on the website. Please include details of your request including any specifications. A member of our team will follow up and notify you if we are able to fulfill the data request and if so, establish a timeline. Institutional Review Board (IRB) approval may be requested if applicable. Your use of the data may be subject to Data Use Agreements. Cite CHR&R when you publish your work. CHR&R has provided a suggested citation on our [FAQ page](#). For more information, review CHR&R's [Terms of Use](#).

### Missing Data

If a value is displayed as missing (.) or blank that means data is unavailable for that county or race/ethnicity group. This could mean data are unavailable, unreliable, or has been suppressed due to small numbers and resulting privacy concerns. Data suppression guidelines are generally established by the data sources.

### Data Operations

#### Age-adjustment of Measures

Age-adjustment is a strategy used to increase the comparability of measure values between counties that have different age structures, or within-county comparisons over time if the age structure of the county has changed. Age-adjustment is especially important for measures related to age. We adjust county values for measures known to differ by age so all counties reflect a standard age distribution and comparisons will be meaningful.

Age-adjustment can mask the absolute burden of a health need in a county – especially in counties with many residents of the ages at highest risk. Measure data tables are available on the county snapshots to communicate the absolute number of events occurring for many measures where the county value has been age-adjusted. CHR&R follows best practice to determine which measures are age-adjusted.

**Table 2: Age-Adjusted County Health Rankings Measures**

Measure	Select/ Additional	Health Outcome/ Health Factor
Premature Death (YPLL)	Select	Health Outcome
Poor or Fair Health	Select	Health Outcome
Poor Physical Health Days	Select	Health Outcome
Poor Mental Health Days	Select	Health Outcome
Adult Smoking	Select	Health Factor
Excessive Drinking	Select	Health Factor
Preventable Hospital Stays	Select	Health Factor
Flu Vaccinations	Select	Health Factor
Adult Obesity	Select	Health Factor
Physical Inactivity	Select	Health Factor
Premature Age-Adjusted Mortality	Additional	Health Outcome

Life Expectancy	Additional	Health Outcome
Diabetes Prevalence	Additional	Health Outcome
Frequent Physical Distress	Additional	Health Outcome
Frequent Mental Distress	Additional	Health Outcome
Insufficient Sleep	Additional	Health Factor
Suicides	Additional	Health Factor

### Data Disaggregated by Race Categories

Health Outcomes and Health Factors can differ by age, gender, race, ethnicity, ability, and sexual orientation, among many other characteristics within counties. Variation may also exist between neighborhoods or ZIP codes.

Disaggregation means breaking data down into smaller, meaningful subgroups. Disaggregated data are often broken down by characteristics of people or where they live. Disaggregated data can reveal inequalities that are otherwise hidden.

**Table 3: Measures Disaggregated by Race in the Annual Data Release**

Measure	Select/ Additional	Health Outcome/ Health Factor	Data Source
Premature Death	Select	Health Outcome	NCHS
Low Birthweight	Select	Health Outcome	NCHS
Teen Births	Select	Health Factor	NCHS
Preventable Hospital Stays	Select	Health Factor	Center for Medicare and Medicaid Services
Mammography Screening	Select	Health Factor	Center for Medicare and Medicaid Services
Flu Vaccinations	Select	Health Factor	Center for Medicare and Medicaid Services
Children in Poverty	Select	Health Factor	ACS 5-year estimates; Small Area Income and Poverty Estimates
Injury Deaths	Select	Health Factor	NCHS
Driving Alone to Work	Select	Health Factor	ACS 5-year estimates
Infant Mortality	Additional	Health Outcome	NCHS
Child Mortality	Additional	Health Outcome	NCHS
Premature Age-Adjusted Mortality	Additional	Health Outcome	NCHS
Life Expectancy	Additional	Health Outcome	NCHS
Median Household Income	Additional	Health Factor	ACS 5-year estimates; Small Area Income and Poverty Estimates
Suicides	Additional	Health Factor	NCHS
Homicides	Additional	Health Factor	NCHS
Firearm Fatalities	Additional	Health Factor	NCHS
Drug Overdose Deaths	Additional	Health Factor	NCHS
Motor Vehicle Crash Deaths	Additional	Health Factor	NCHS

Reading Scores	Additional	Health Factor	Stanford Education Data Archive
Math Scores	Additional	Health Factor	Stanford Education Data Archive

[How are race and ethnicity categories defined?](#)

Race and ethnicity are different forms of identity but are sometimes categorized in non-exclusive ways. Race is a form of identity constructed by our society to give meaning to different groupings of observable physical traits. An individual may identify with more than one race group. Ethnicity is used to group individuals according to shared cultural elements. In racialized societies, individuals are socially assigned to a racialized group to define a hierarchy of human value and determine resource allocation. Categories of racialized people change over time, and have been based on varying criteria, including nationality, ethnicity, and observable physical traits. As such, racial and ethnic groupings are constructed by society. Because race and ethnicity are social constructs, they reflect the fluidity of societal beliefs, perceptions, and norms. There is no genetic basis for the racial categories currently in use.

[Determination of race categories happens before data reach CHR&R.](#)

Methods for defining and grouping race and ethnicity categories can differ between data sources and within data sources over time. To retain as much specificity as possible in our summaries, CHR&R race and ethnicity categories vary by data source. With a few exceptions, CHR&R adheres to the following nomenclature defined by The Office of Management and Budget (OMB):

**American Indian or Alaskan Native (AI/AN):** includes people who identify as having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment and do not identify as Hispanic.

**Asian:** includes people who identify as having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam, and do not identify as Hispanic.

**Black or African American:** includes people who identify as having origins in any of the Black racial groups of Africa and do not identify as Hispanic.

**Hispanic or Latino:** includes people of Cuban, Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race.

**Native Hawaiian or Other Pacific Islander:** includes people who identify as having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands and do not identify as Hispanic

**Two or more races:** includes people who identify with more than one of the race categories and do not identify as Hispanic.

**White:** includes people who identify as having origins in any of the original peoples of Europe, the Middle East, or North Africa and do not identify as Hispanic.

**Limitations:**

- As with all racial categorization systems, OMB categories have limitations and have changed over time, reflecting the importance of attending to contemporary racialization as a principle for examining approaches to measurement.
- Racial and ethnic categorization masks variation within groups. For example, the Hispanic ethnicity category combines individuals of all race categories; the Black race category combines individuals who are descendants of enslaved persons, immigrants and descendants of immigrants; the white race category includes individuals with origins in Middle Eastern and North African populations who experience racial discrimination in the U.S. in ways that individuals with origins in European populations do not.
- Individuals may identify with multiple races, indicating that none of the offered categories reflect their identity; where possible, these individuals are included in our summaries as Two or more races.

Race Categories in the 2024 Annual Data Release by data Source:

Data source: [National Center for Health Statistics \(NCHS\)](#)

CHR&R measures: Premature Death; Low Birthweight; Teen Births; Injury Deaths; Infant Mortality; Child Mortality; Premature Age-Adjusted Mortality; Life Expectancy; Suicides; Homicides; Firearm Fatalities; Motor; Vehicle Crash Deaths; Drug Overdose Deaths

This data source provides exclusive race/ethnicity categories; this means that each individual is counted in only one category.

Data source: [American Community Survey \(ACS\)](#)

CHR&R measures: Children in Poverty; Driving Alone to Work; Median Household Income

This data source only provides an exclusive race and ethnicity category for people who identify as non-Hispanic white. Race categories other than white also include people who identify as Hispanic and people who identify as non-Hispanic. This means, for example, an individual who identifies as Hispanic and as Black would be included in both the Hispanic and Black race/ethnicity categories.

In contrast with OMB categories, ACS data may combine race categories for people who identify as Asian and people who identify as Hawaiian & Other Pacific Islander. For measures of Children in Poverty and Driving Alone to Work, CHR&R reports a combined estimate for the Asian and Other Pacific Islander categories; for the measure of Median Household Income, only the Asian category is reported.

Data source: [Center for Medicare and Medicaid Services](#)

CHR&S measures: Mammography, Preventable Hospital Stays, Flu Vaccinations

This data source follows ACS categories and combines the Asian and Other Pacific Islander categories. For this data source, race and ethnicity are not self-reported.

Data source: [Stanford Education Data Archive](#)

CHR&R measures: Reading Scores; Math Scores

This data source follows the [National Center for Education Statistics \(NCES\)](#) categories which align with OMB definitions. This data source excludes U.S. nonresidents from inclusion in any race or ethnicity category; people who are in the U.S. on a visa or temporary legal status are reported as "unknown race" in this data source.

## APPENDICES

### Appendix 1: FIPS code changes

During the last decade, several county definitions have changed due to mergers with another county, being dissolved and distributed into other counties, or undergoing a name change. In the descriptions of the county changes (below) former counties are italicized, while current counties that are now included in the Rankings are bolded.

In Alaska:

- *Prince of Wales – Outer Ketchikan Census Area* was dissolved and distributed into other counties including **Ketchikan Gateway Borough**, **Prince of Wales-Hyder Census Area**, and **Wrangell City and Borough**
- *Skagway-Hoonah-Angoon Census Area* was split into **Hoonah-Angoon Census Area** and **Skagway Municipality**
- *Wrangell-Petersburg Census Area* was split into **Hoonah-Angoon Census Area**, **Petersburg Borough**, and **Skagway Municipality**
- *Wade Hampton Census Area* was renamed **Kusilvak Census Area**
- *Valdez-Cordova Census Area* was split into **Chugach Census Area** and **Copper River Census Area**

In South Dakota:

- *Shannon County* was renamed **Oglala Lakota County**

In Virginia:

- *Bedford City* was absorbed into **Bedford County**. The new Bedford County has the same name as when these counties were separate; however, measures over time may not be consistent since the county composition has changed.

These changes mean that data for these former counties are no longer displayed on our website; therefore, if a county was ranked prior to 2017, there may appear to be a gap in ranks for that year on our website. However, data for these former counties will continue to be available in the files available for download for the years these counties existed. For more detailed information on the county changes (and/or FIPS code changes) listed above, please see <https://www.census.gov/programs-surveys/geography/technical-documentation/county-changes.html>.

## Appendix 2: Changes in Select Measures, 2010-2024

Years of available data are represented by arrows. Broken arrows represent substantial changes in the data source or calculation methods that would affect year-to-year comparisons. Greyed boxes indicate measure retirement from the Select Measure category or from the Annual Data Release.

Construct	Focus Area	Weight	Measure	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024			
Health Outcomes	Mortality	50%	Premature Death	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Morbidity	50%	Poor or Fair Health	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			Poor Physical Health Days	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			Poor Mental Health Days	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Low Birthweight	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
Health Behaviors	Tobacco Use	10%	Adult Smoking	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Diet and Exercise	10%	Adult Obesity	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			Food Environment Index	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			Physical Inactivity	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Access to Exercise Opportunities	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Alcohol Use	5%	Motor Vehicle Crash Deaths	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Alcohol-Impaired Driving Deaths	→	→		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
	Excessive Drinking	→	→		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
	Sexual Activity	5%	Sexually Transmitted Infections	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			Teen Births	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
	Clinical Care	Access to Care	10%	Uninsured	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
				Uninsured Adults	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
				Primary Care Physicians	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
				Dentists	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
				Mental Health Providers	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
		Quality of Care	10%	Preventable Hospital Stays	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
				Diabetic Monitoring	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
Hospice Use				→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
Flu Vaccinations				→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
Mammography Screening				→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
Social and Economic Factors	Education	10%	High School Graduation	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			High School Completion	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			College Degrees	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Some College	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
	Employment	10%	Unemployment	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
	Income	10%	Children in Poverty	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Income Inequality	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
	Family and Social Support	5%	Inadequate Social Support	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Social Associations	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Children in Single-Parent Households	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
	Community Safety	5%	Violent Crime	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Injury Deaths	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
Physical Environment	Air and Water Quality	5%	Air Pollution - Ozone Days	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
			Air Pollution - Particulate Matter Days	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Air Pollution - Particulate Matter	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Drinking Water Violations	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
	Built Environment	5%	Access to Healthy Foods	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Limited Access to Healthy Foods	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Fast Food Restaurants	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Liquor Store Density	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
			Access to Recreational Facilities	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
	Housing and Transit	5%	Severe Housing Problems	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	
Driving Alone to Work			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		
Long Commute - Driving Alone			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→		

### Appendix 3: Limitations of data comparability across states

The data used in our Annual Data Release come from many sources, each with different methods for data collection and processing. For most of our measures, county data are comparable between counties within states and also comparable across state lines. For a few of our measures, caution must be exercised when making comparisons between counties in different states.

<p><b>Behavioral Risk Factor Surveillance System (BRFSS) measures</b></p>	<p>Measures: Poor or Fair Health, Adult Smoking, Adult Obesity, Poor Physical Health Days, Poor Mental Health Days, Excessive Drinking, Physical Inactivity, Diabetes Prevalence, Frequent Physical Distress, Frequent Mental Distress, Insufficient Sleep</p> <p>Measures using BRFSS data are modeled and include state-level effects that may introduce error when compared across states, such as overestimating differences in border counties in different states.</p>
<p><b>Small Area Health Insurance Estimates measures</b></p>	<p>Measures: Uninsured, Uninsured Adults, Uninsured Children</p> <p>The data source uses modeling. While it is possible to compare across states, using the upper bound approximation to the margin of error (MOE), not the exact MOE, is suggested.</p>
<p><b>Small Area Income and Poverty Estimates measures</b></p>	<p>Measures: Children in Poverty, Median Household Income</p> <p>The Small Area Income and Poverty Estimates uses model-based estimates for different states and counties in the same year. The source advises against comparing estimates across states.</p>
<p><b>Census Participation</b></p>	<p>Census data collection strategies vary by geographic area. Data collection strategies may target specific populations who live in an area or specific geographic characteristics of a region. The census advises against comparison across state lines.</p>
<p><b>Child Care Centers</b></p>	<p>Child care centers are regulated by state licensing. Definitions of child care facilities vary by state. Data were acquired from respective states; therefore, they may be subject to reporting differences.</p>
<p><b>Child Care Cost Burden</b></p>	<p>Childcare cost data are based on data reported by each state to the Department of Labor’s Women’s Bureau, published in different years. Some states only report state- or region-level estimates; thus, they require county-level imputation. Due to this, states may differ in how estimates are modeled vs. observed.</p>
<p><b>Children Eligible for Free or Reduced Price Lunch</b></p>	<p>States differ in the definition of children who are eligible for free or reduced price lunch. States may report the number of students eligible for free lunch by direct certification, the number of students eligible for free and reduced price lunch, or both.</p>
<p><b>Drinking Water Violations</b></p>	<p>Data may vary in quality across states and be impacted by differing state-level enforcement.</p>
<p><b>Food Environment Index</b></p>	<p>Statistical models used to create the Food Environment Index include state-level effects that may overestimate differences in border counties in different states.</p>

	Comparison of counties within a state will be more reliable than comparison of counties across states.
<b>High School Graduation</b>	States use different methods to determine who is in a high school cohort. This means that each state considers students who transfer, disenroll, are incarcerated, or have special needs differently. States also differ in how they include online schools.
<b>HIV Prevalence</b>	Some states offer anonymous HIV testing and these test results are not included in the national registry system.
<b>Juvenile Arrests</b>	Juvenile Arrests may vary across states due to different reporting practices, arrest rules and laws, as well as different juvenile age limits. Additionally, some states report calendar year estimates while other states use fiscal year estimates.
<b>Living Wage</b>	Cost of living estimates are influenced by state policies and practices that limit comparison of county values across state borders.
<b>Residential Segregation – Black/White</b>	Data source is only available for this measure for counties with a Black population of at least 100 persons; thus, comparisons between more racially homogenous states and more racially heterogeneous states are not recommended.
<b>School Segregation</b>	There are inconsistencies between states in how students in schools run by Bureau of Indian Education (BIE) are counted. In states that provide support to federal BIE schools, students at these schools may be double counted in National Center for Education Statistics (NCES) data.
<b>Sexually Transmitted Infections</b>	Chlamydia screening patterns may vary between states and health care systems. Differences in rates may reflect differences in these screening patterns, rather than differences in the underlying rates of disease.
<b>Traffic Volume</b>	States collect and report these data differently. Traffic counts are performed by state Departments of Transportation.
<b>Voter Turnout</b>	Voter turnout at the county level is heavily influenced by state laws which may restrict or support voting access. Voter Turnout does not reflect civic participation of people who have lost their voting rights due to certain interactions with the judicial system or because of a mental disability.



#### Appendix 4: Measures with data available for further disaggregation

Measure	Age	Gender	Race	Education	Income	Subcounty Area
Premature Death	Yes	Yes	Yes	Yes	No	No
Poor or Fair Health	Yes	Yes	Yes	Yes	Yes	Yes
Poor Physical Health Days	Yes	Yes	Yes	Yes	Yes	Yes
Poor Mental Health Days	Yes	Yes	Yes	Yes	Yes	Yes
Low Birthweight	Yes	Yes	Yes	Yes	No	No
Adult Smoking	Yes	Yes	Yes	Yes	Yes	Yes
Adult Obesity	Yes	Yes	Yes	Yes	Yes	Yes
Food Environment Index	Yes	No	No	No	No	Yes
Physical Inactivity	Yes	Yes	Yes	Yes	Yes	Yes
Access to Exercise Opportunities	No	No	No	No	No	Yes
Excessive Drinking	Yes	Yes	Yes	Yes	Yes	Yes
Alcohol-Impaired Driving Deaths	Yes	Yes	Yes	No	No	Yes
Sexually Transmitted Infections	Yes	Yes	Yes	No	No	No
Teen Births	Yes	No	Yes	No	No	No
Uninsured	Yes	Yes	Yes	No	Yes	Yes

Measure	Age	Gender	Race	Education	Income	Subcounty Area
Primary Care Physicians	Yes	Yes	N/A	N/A	N/A	N/A
Dentists	Yes	Yes	No	No	No	No
Mental Health Providers	No	Yes	No	No	No	Yes
Preventable Hospital Stays	Yes	Yes	Yes	No	No	No
Mammography Screening	Yes	Yes	Yes	No	No	No
Flu Vaccinations	Yes	Yes	Yes	No	No	No
High School Completion	Yes	No	Yes	No	No	Yes
Some College	Yes	Yes	Yes	N/A	No	Yes
Unemployment	No	Yes	Yes	Yes	No	Yes
Children in Poverty	Yes	No	Yes	No	No	Yes
Income Inequality	No	No	No	No	N/A	Yes
Children in Single-Parent Households	No	No	No	No	No	Yes
Social Associations	No	No	No	No	No	Yes
Injury Deaths	Yes	Yes	Yes	No	No	No
Air Pollution - Particulate Matter	N/A	N/A	N/A	N/A	N/A	No
Drinking Water Violations	No	No	No	No	No	Yes

Measure	Age	Gender	Race	Education	Income	Subcounty Area
Severe Housing Problems	No	No	Yes	No	Yes	Yes
Driving Alone to Work	Yes	No	Yes	No	No	Yes
Long Commute - Driving Alone	No	No	No	No	No	Yes

## Appendix 5: 2024 Annual Data Release measures

### 2024 Select measures and data sources

Measure	Weight	Source	Years of Data	
<b>HEALTH OUTCOMES</b>				
<b>Length of Life</b>	Premature Death*	50%	National Center for Health Statistics - Natality and Mortality Files; Census Population Estimates Program	2019-2021
<b>Quality of Life</b>	Poor or Fair Health*	10%	Behavioral Risk Factor Surveillance System	2021
	Poor Physical Health Days*	10%	Behavioral Risk Factor Surveillance System	2021
	Poor Mental Health Days*	10%	Behavioral Risk Factor Surveillance System	2021
	Low Birthweight*	20%	National Center for Health Statistics - Natality Files	2016-2022
<b>HEALTH FACTORS</b>				
<b>HEALTH BEHAVIORS</b>				
<b>Tobacco Use</b>	Adult Smoking*	10%	Behavioral Risk Factor Surveillance System	2021
<b>Diet and Exercise</b>	Adult Obesity*	5%	Behavioral Risk Factor Surveillance System	2021
	Food Environment Index	2%	USDA Food Environment Atlas; Map the Meal Gap from Feeding America	2019 & 2021
	Physical Inactivity*	2%	Behavioral Risk Factor Surveillance System	2021
	Access to Exercise Opportunities	1%	ArcGIS Business Analyst and ArcGIS Online; YMCA; US Census TIGER/Line Shapefiles	2023, 2022 & 2020
<b>Alcohol and Drug Use</b>	Excessive Drinking*	2.5%	Behavioral Risk Factor Surveillance System	2021
	Alcohol-Impaired Driving Deaths	2.5%	Fatality Analysis Reporting System	2017-2021
<b>Sexual Activity</b>	Sexually Transmitted Infections	2.5%	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2021
	Teen Births*	2.5%	National Center for Health Statistics - Natality Files; Census Population Estimates Program	2016-2022
<b>CLINICAL CARE</b>				
<b>Access to Care</b>	Uninsured	5%	Small Area Health Insurance Estimates	2021
	Primary Care Physicians	3%	Area Health Resource File/American Medical Association	2021
	Dentists	1%	Area Health Resource File/National Provider Identifier Downloadable File	2022
	Mental Health Providers	1%	CMS, National Provider Identification	2023
<b>Quality of Care</b>	Preventable Hospital Stays*	5%	Mapping Medicare Disparities Tool	2021
	Mammography Screening*	2.5%	Mapping Medicare Disparities Tool	2021
	Flu Vaccinations*	2.5%	Mapping Medicare Disparities Tool	2021
<b>SOCIAL &amp; ECONOMIC FACTORS</b>				
<b>Education</b>	High School Completion	5%	American Community Survey, 5-year estimates	2018-2022
	Some College	5%	American Community Survey, 5-year estimates	2018-2022
<b>Employment</b>	Unemployment	10%	Bureau of Labor Statistics	2022
<b>Income</b>	Children in Poverty*	7.5%	Small Area Income and Poverty Estimates; American Community Survey, 5-year estimates	2022 & 2018-2022
	Income Inequality	2.5%	American Community Survey, 5-year estimates	2018-2022

	Measure	Weight	Source	Years of Data
<b>Family and Social Support</b>	Children in Single-Parent Households	2.5%	American Community Survey, 5-year estimates	2018-2022
	Social Associations	2.5%	County Business Patterns	2021
<b>Community Safety</b>	Injury Deaths*	5%	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2017-2021
<b>PHYSICAL ENVIRONMENT</b>				
<b>Air and Water Quality</b>	Air Pollution - Particulate Matter	2.5%	Environmental Public Health Tracking Network	2019
	Drinking Water Violations*	2.5%	Safe Drinking Water Information System	2022
<b>Housing and Transit</b>	Severe Housing Problems	2%	Comprehensive Housing Affordability Strategy (CHAS) data	2016-2020
	Driving Alone to Work*	2%	American Community Survey, 5-year estimates	2018-2022
	Long Commute - Driving Alone	1%	American Community Survey, 5-year estimates	2018-2022

\*Subgroup data available by race and ethnicity; \*Data availability or recency varies by state

## 2024 Additional measures and data sources

Measure	Data Source	Years of Data	
<b>HEALTH OUTCOMES</b>			
<b>Length of Life</b>	Life Expectancy*	National Center for Health Statistics - Natality and Mortality Files; Census Population Estimates Program	2019-2021
	Premature Age-Adjusted Mortality*	National Center for Health Statistics - Natality and Mortality Files; Census Population Estimates Program	2019-2021
	Child Mortality*	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2018-2021
	Infant Mortality*	National Center for Health Statistics – Natality and Mortality Files	2015-2021
<b>Quality of Life</b>	Frequent Physical Distress*	Behavioral Risk Factor Surveillance System	2021
	Frequent Mental Distress*	Behavioral Risk Factor Surveillance System	2021
	Diabetes Prevalence*	Behavioral Risk Factor Surveillance System	2021
	HIV Prevalence	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2021
<b>HEALTH FACTORS</b>			
<b>HEALTH BEHAVIORS</b>			
<b>Diet and Exercise</b>	Food Insecurity	Map the Meal Gap	2021
	Limited Access to Healthy Foods	USDA Food Environment Atlas	2019
<b>Alcohol and Drug Use</b>	Drug Overdose Deaths*	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2019-2021
<b>Other Health Behaviors</b>	Insufficient Sleep*	Behavioral Risk Factor Surveillance System	2020
<b>CLINICAL CARE</b>			
<b>Access to Care</b>	Uninsured Adults	Small Area Health Insurance Estimates	2021
	Uninsured Children	Small Area Health Insurance Estimates	2021
	Other Primary Care Providers	CMS, National Provider Identification	2023
<b>SOCIAL &amp; ECONOMIC FACTORS</b>			
<b>Education</b>	High School Graduation*	State-specific sources & ED Facts	2020-2021
	Disconnected Youth	American Community Survey, 5-year estimates	2018-2022
	Reading Scores*+	Stanford Education Data Archive	2018
	Math Scores*+	Stanford Education Data Archive	2018
	School Segregation	National Center for Education Statistics	2022-2023
	School Funding Adequacy*	School Finance Indicators Database	2021
<b>Income</b>	Gender Pay Gap	American Community Survey, 5-year estimates	2018-2022
	Median Household Income*	Small Area Income and Poverty Estimates; American Community Survey, 5-year estimates	2022 & 2018-2022
	Living Wage	The Living Wage Institute	2023
	Children Eligible for Free or Reduced Price Lunch*	National Center for Education Statistics	2021-2022
<b>Family and Social Support</b>	Residential Segregation - Black/White	American Community Survey, 5-year estimates	2018-2022
	Child Care Cost Burden	The Living Wage Institute; Small Area Income and Poverty Estimates	2023 & 2022
	Child Care Centers	Homeland Infrastructure Foundation-Level Data (HIFLD)	2021

Measure	Data Source	Years of Data	
<b>Community Safety</b>	Homicides*	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2015-2021
	Suicides*	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2017-2021
	Firearm Fatalities*	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2017-2021
	Motor Vehicle Crash Deaths*	National Center for Health Statistics - Mortality Files; Census Population Estimates Program	2015-2021
	Juvenile Arrests*	Easy Access to State and County Juvenile Court Case Counts	2021
<b>Other Social &amp; Economic Factors</b>	Voter Turnout*	MIT Election Data and Science Lab; American Community Survey, 5-year estimates	2020 & 2016-2020
	Census Participation	Census Operational Quality Metrics	2020
<b>PHYSICAL ENVIRONMENT</b>			
<b>Housing and Transit</b>	Traffic Volume	EJSCREEN: Environmental Justice Screening and Mapping Tool	2023
	Homeownership	American Community Survey, 5-year estimates	2018-2022
	Severe Housing Cost Burden	American Community Survey, 5-year estimates	2018-2022
	Broadband Access	American Community Survey, 5-year estimates	2018-2022

\*Subgroup data available by race and ethnicity; \*Data availability or recency varies by state

## 2024 Demographic measures and data sources

Measure	Source	Years of Data
<b>DEMOGRAPHICS</b>		
Population	Census Population Estimates	2022
% Below 18 Years of Age	Census Population Estimates	2022
% 65 and Older	Census Population Estimates	2022
% Non-Hispanic Black	Census Population Estimates	2022
% American Indian or Alaska Native	Census Population Estimates	2022
% Asian	Census Population Estimates	2022
% Native Hawaiian or Other Pacific Islander	Census Population Estimates	2022
% Hispanic	Census Population Estimates	2022
% Non-Hispanic White	Census Population Estimates	2022
% Not Proficient in English	American Community Survey, 5-year estimates	2018-2022
% Female	Census Population Estimates	2022
% Rural	Census Population Estimates	2020