

Local Data for Action

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“Exploring Access to Small-area Population Health Data and Data Resources”

National Committee on Vital and Health Statistics

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Washington, DC

CDC's Division of Population Health

- ❑ Located in the National Center for Chronic Disease Prevention and Health Promotion
- ❑ Provides cross-cutting and cutting edge public health programs
- ❑ Behavioral Risk Factor Surveillance System
- ❑ Geospatial analyses and small area estimation
- ❑ Other CDC Programs with small area estimation
 - Diabetes
 - Heart Disease and Stroke
 - Cancer Prevention and Control
 - Oral Health

Questions

- What are current activities underway to improve access to county and sub county level data? Please also describe whether/how these activities will produce public use files or access via some other means.
 - **BRFSS substate data**
 - SMART visualizations with data download
 - Approved access through Research Data Center
 - **500 Cities data visualizations and data download**

- What additional strategies are being developed/proposed in the near and long term?
 - **Expanding beyond 500 Cities**
 - Still examining quality/ validity/ trends/ impact

- Are federal health agencies pursuing new data technologies, such as synthetic data, to provide health information without threatening privacy?
 - **Already doing with 500 Cities project**

Behavioral Risk Factor Surveillance System

- ❑ **Largest phone based health survey in the world**
 - Continuous, statebased surveillance system
 - information about modifiable risk factors for chronic diseases and other leading causes of death.
 - Both landline and cell phone
 - More than 400,000 respondents per year
 - All states, DC, and several territories each year

- ❑ **Designed for State -based estimates**

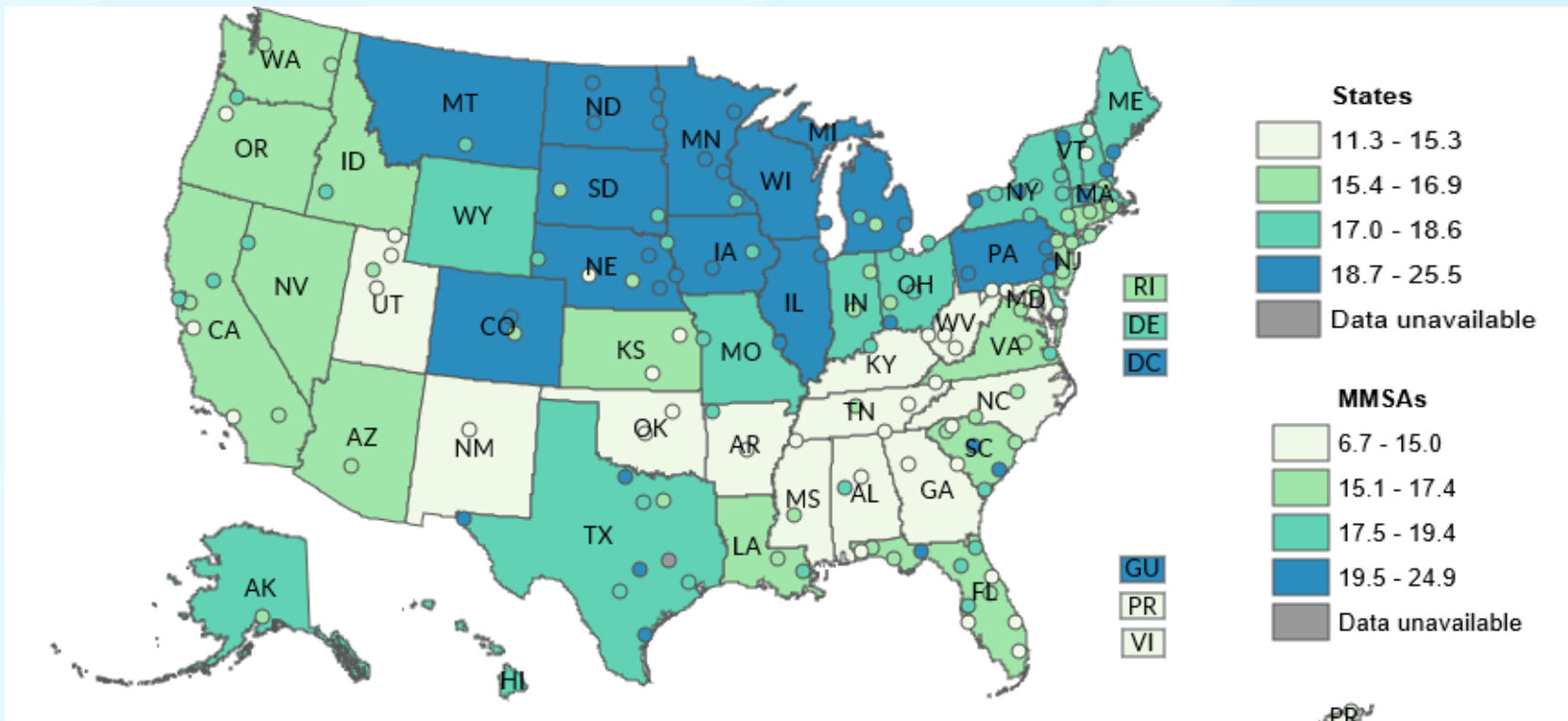
- ❑ **Some states have targeted counties or other sub -state geographic areas**

- ❑ **Previously provided estimates for select counties and metropolitan areas with sufficient sample sizes (500 or more respondents)**
 - Only a small percentage of areas available per year

Behavioral Risk Factor Surveillance System: Issues affecting availability of sub -state data

- ❑ **Cooperative Agreement with state health departments**
 - States determine their health surveillance needs
 - States determine sampling plans
 - Agree to a common core survey
 - Elect to include optional standardized modules
 - State added questions
 - Sponsorship of questions/modules
- ❑ **Growth of survey, topics, program interest, privacy issues**
 - Privacy and confidentiality concerns
 - 2015 OMB approval
 - 2012 HHS Guidance Regarding Methods for Deidentification of Protected Health Information in Accordance with the Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule
- ❑ **Changing technology and assuring quality data**
 - Increasing ability to stratify cell phones samples by geographic areas
 - Multimode surveys

Behavioral Risk Factor Surveillance System Select Metropolitan Area Risk Trends (SMART)



Options for accessing BRFSS substate data

- ❑ **Continue to provide aggregated estimates**
 - Visualization: <https://www.cdc.gov/brfss/brfssprevalence/index.html>
 - Documentation: https://www.cdc.gov/brfss/data_documentation/index.htm
 - Data download: [https:// chronicdata.cdc.gov](https://chronicdata.cdc.gov)

- ❑ **BRFSS restricted individual data (county identifiers)**
 - ResearchData Center: <https://www.cdc.gov/RDC/>

- ❑ **Work directly with state health departments**

- ❑ **Examining other options for providing county and sub-state data**
 - E.g., Aggregated county estimates
 - E.g., Small area estimation for all counties

Geospatial Analyses

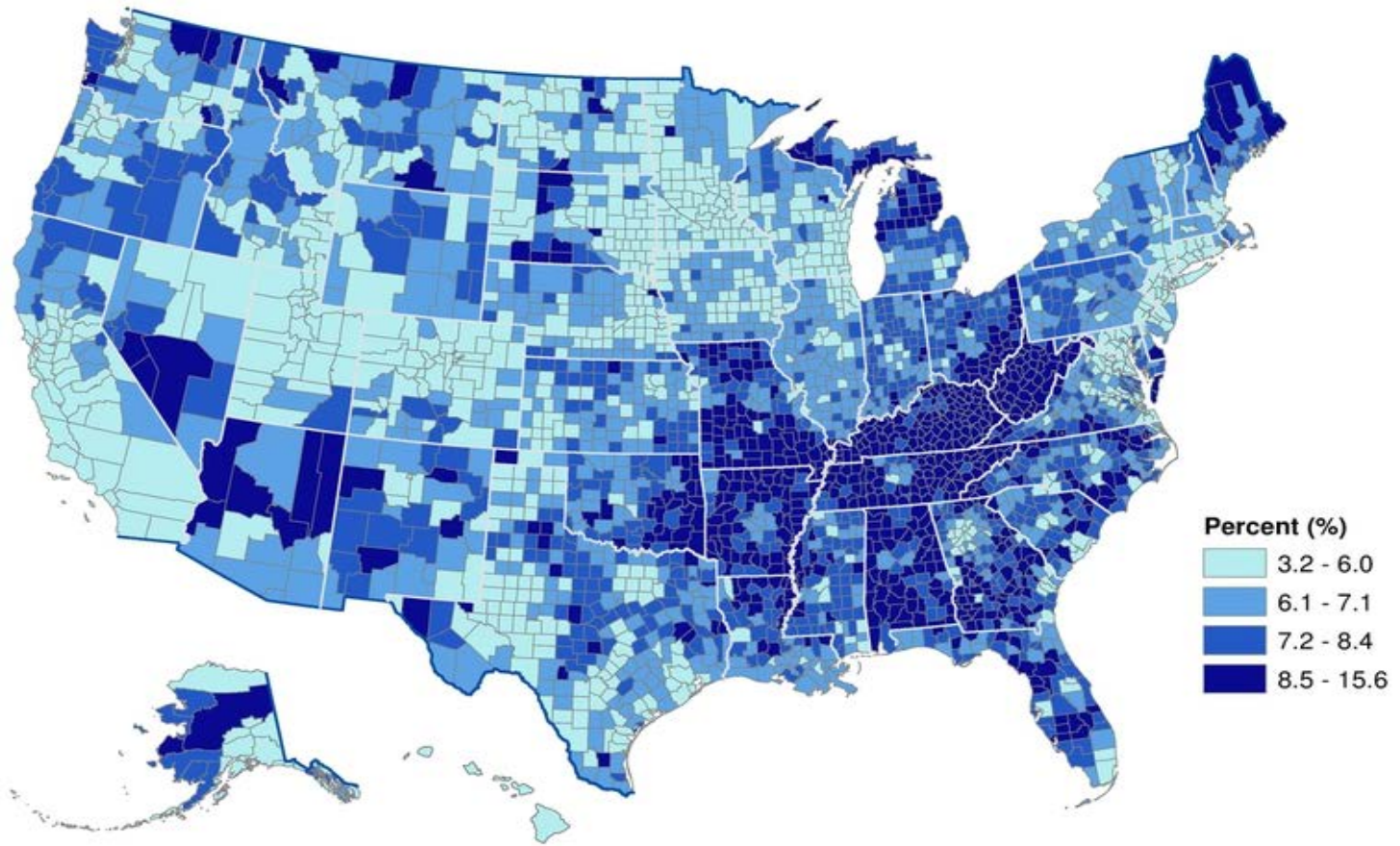
- ❑ **Applied Statistical methods**
 - Area Based estimates combining years of BRFSS
 - Bayesian estimates
 - Multilevel Regression and Poststratification (MRP)
 - Other

- ❑ **Division of Population Health estimates**
 - Use MRP method
 - Have conducted a number of external validation studies
 - Flexible
 - Used for several projects

- ❑ **Data visualization for local estimates**
 - 500 Cities

- ❑ **Other collaborations**
 - County Health Rankings and Reports

Prevalence of doctor -diagnosed COPD, U.S. Counties, 2016

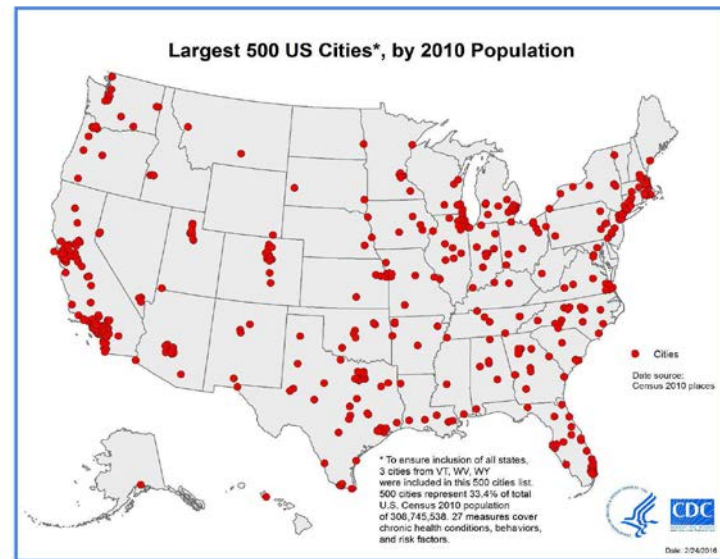


Source: CDC *MMWR* 2018;67(7):205-211.

500 Cities Local Data for Better Health

<https://www.cdc.gov/500cities>

- ❑ CDC, Robert Wood Johnson Foundation, and CDC Foundation 2015-2019
- ❑ Small area estimates for 27 chronic disease measures related to
 - Unhealthy behaviors (5)
 - Health outcomes (13)
 - Prevention (9)
- ❑ 500 largest US cities and their census tracts



500 Cities Homepage

<https://www.cdc.gov/500cities>

- ❑ Dataset - Open Data
- ❑ Mapbooks (PDFs)
- ❑ Comparison Reports
- ❑ GIS-enabled Interactive Maps
- ❑ Open data compliant
- ❑ Data available at <https://chronicdata.cdc.gov>

500 Cities: Local Data for Better Health
This is the complete dataset for the 500 Cities project. This dataset includes 2013, 2014 model-

Measure	Data_Value_Unit	DataValueTypeID	Data_Value_Type	Data_Value	Low_Confidence_Limit	High_Confidence_Limit
1	Current lack of health %	AgeAdjPrv	Age-adjusted prevai	14.9		14.6
2	Current lack of health %	CrdPrv	Crude prevalence	14.1		13.8
3	Arthritis among adults %	AgeAdjPrv	Age-adjusted prevai	23.5		23.3
4	Arthritis among adults %	CrdPrv	Crude prevalence	25.6		25.4
5	Binge drinking among %	AgeAdjPrv	Age-adjusted prevai	16.8		16.6
6	Binge drinking among %	CrdPrv	Crude prevalence	16.0		15.8
7	High blood pressure a %	AgeAdjPrv	Age-adjusted prevai	30.2		30.0
8	High blood pressure a %	CrdPrv	Crude prevalence	32.4		32.1
9	Taking medicine for h %	AgeAdjPrv	Age-adjusted prevai	58.2		57.5
10	Taking medicine for h %	CrdPrv	Crude prevalence	77.1		76.6
11	Cancer (excluding ski %	AgeAdjPrv	Age-adjusted prevai	5.9		5.8

Compare Cities

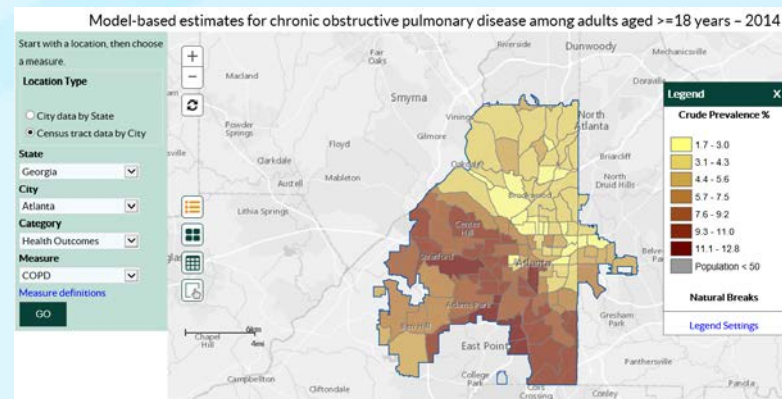
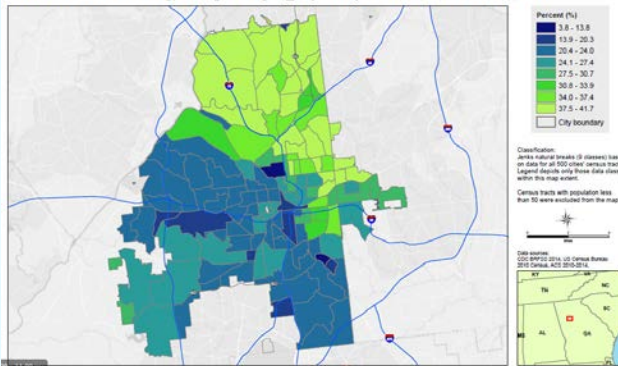
Search Report: Search Clear

Category:

Health Outcomes

Measure	Data Type	United States 2010 Census Population: 309,745,538	Atlanta, GA 2010 Census Population: 420,003 edit remove	Detroit, MI 2010 Census Population: 713,777 edit remove
Arthritis among adults aged >=18 years - 2014 view definition view map	Crude prevalence % (95% CI)	25.6 (25.4 - 25.9)	20.3 (20.2 - 20.4)	34.3 (34.7 - 34.4)
	Age-adjusted prevalence % (95% CI)	23.5 (23.3 - 23.7)	23.5 (23.4 - 23.7)	33.9 (33.8 - 34.0)
Current asthma among adults aged >=18 years - 2014 view definition view map	Crude prevalence % (95% CI)	8.9 (8.7 - 9.1)	9.4 (9.4 - 9.5)	13.9 (13.9 - 14.0)
	Age-adjusted prevalence % (95% CI)	8.0 (8.7 - 9.0)	9.4 (9.3 - 9.4)	13.9 (13.8 - 13.9)

Up to date on a core set of clinical preventive services (flu shot past year, pneumococcal shot ever, colorectal cancer screening) among men aged >=65 years by census tract, Atlanta, GA, 2014



Uses and Limitations of Synthetic estimates

- ❑ Assurance of quality estimates
- ❑ Validated models can be used for reliable estimates for health program planning
 - Several validation studies of MR methods
- ❑ Small area estimates do not replace direct estimates; small area estimates supplement direct estimates.
- ❑ Not currently recommended (still assessing) for
 - Assessing changes over time
 - Evaluation of program impacts

Future Considerations - Geospatial Analyses

- ❑ Continue to assess and validate use of SAEs from state data
- ❑ Expand beyond 500 Cities
- ❑ Other geographies (e.g., counties, census tracts, incorporated places, zip code areas)
- ❑ Integrating population health data from BRFSS with other data (e.g., health care specialists, built environment, premature mortality)



Thank You!