



# Iowa Health Snapshot Series: Executive Report

*A health resource for Iowa's communities and counties*

*Prepared for Iowa State University's  
Extension and Outreach Community  
and Economic Development Unit*

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We are pleased to share the Iowa Community and County Health Snapshot series, a set of reports designed in partnership with Iowa State University’s Community Economic Development to expand understanding of local health conditions and well-being across Iowa’s cities and counties. The snapshot series includes 99 county reports, 275 community reports, and a prototype interactive dashboard that enables users to drill down into health statistics for each of Iowa’s counties and communities. The Iowa Community Health Snapshot series reveals local areas of strength and also growth opportunities across five health domains, including general health, high-risk behavior, long-term health outcomes, prevention, and disability.

The reports are designed for use by community and county groups such as local prevention coalitions, county departments of public health, hospitals and clinics, community leaders, grant writers, and other local decision-makers. Because officials often need to produce county health products (etc. charts, grants, reports, presentations) that can be time and resource-intensive to create, we used an automated data pipeline that ingests the Centers for Disease Control and Prevention’s (CDC) PLACES dataset, blends it with other place-based attribute data, and generates a suite of automated reports that we have titled Iowa’s Community Health Snapshot series. With annual updates, the Community Health Snapshots represent an accessible, local, and usable resource for diverse local stakeholders to understand where their communities stand relative to the state average and to similarly sized communities in Iowa. Each of the products we designed and prototyped for this project are summarized in Table 1:

	<b>Automated Data Pipeline:</b> R scripts streamline the ingestion and blending of data, feature engineering, analytics, and turnkey annual updates to customized county and city health reports.
	<b>County and Community Reports:</b> County and Community Health Snapshots highlight local strengths and opportunities for growth and enable comparisons that matter most, such as a county or community’s health status relative to the state average and to similarly sized counties/communities.
	<b>Exploratory dashboard:</b> The dashboard enables low-data literacy users to easily explore data, drill down to a local context, or see how a health condition varies across zip codes, census tracts, or cities, for example. Users can select from nearly 40 health measures and indicators, and view them spatially. <b>Dashboard Link:</b> <a href="https://publicsciencecollaborative.shinyapps.io/healthy_communities_ced/">https://publicsciencecollaborative.shinyapps.io/healthy_communities_ced/</a>

## About the Data

The Community and County Health Snapshot series leverages the Centers for Disease Control and Prevention (CDC) dataset, **PLACES: Local Data for Better Health**. What is unique about the PLACES dataset is that it uses small area estimation methods to produce numerous health statistics for counties, places, zip codes, and census tracts. The estimates are created with a multilevel statistical modeling framework that harnesses the CDC's nationwide Behavioral Risk Factor Surveillance System (BRFSS) dataset, Census population counts, and American Community Survey demographic and socioeconomic data.



All too often, local communities and rural places are flying blind because federal data privacy laws result in data suppression in low-population areas such as those found throughout Iowa. That means that small-town mayors, rural county health officials, and hospital and clinic administrators in the rural ecology are often unable to use data to inform their decisions, relying instead on guesswork and other unscientific methods. For this reason, resources such as the PLACES dataset are a health equity game-changer because they offer an extensive number of health indicator estimates at the kinds of granular levels where many interventions, community programs, and policy decisions are most important. A limitation of model-based estimates such as the PLACES dataset is that when populations get very small, confidence intervals, or certainty about the true value of a health indicator in the local population, can get very large, and the effects of location-specific interventions might not be detectable with these data. Despite the limitations of model-based estimates, we firmly believe that communities are better positioned to make critical decisions when they have data, even when it's imperfect.

## Health Measures

The Community and County Health Snapshot series is organized around five health domains:

1. **Health Status:** measures of general health, physical health, and mental health.
2. **Health Risk Behaviors:** measures such as binge drinking, physical inactivity, low sleep, and smoking.
3. **Health Outcomes:** a wide range of chronic illnesses, mental health conditions, and risk factors.
4. **Prevention:** measures of health insurance, medication adherence, and various health checkups and screenings.
5. **Disability:** includes measures of disability related to hearing, vision, cognition, mobility, self-care, and independent living.

The data include crude and age-adjusted rates for each health measure. Crude rates estimate the raw, unadjusted value in the population. Age-adjusted rates account for differences in the age distribution across spatial units (e.g., counties, cities) and thus reflect an age-standardized rate. Both crude and age-adjusted rates have their uses, and at the most granular geographies (e.g., tracts, zips) only crude rates are available. Throughout the Snapshot Series, we include both crude and age-adjusted rates and measures.

# Report Structure

Each county and community report includes an overview section, a summary table identifying local strengths (Figure 1) and growth opportunities (Figure 2), a “how-to” section, descriptions of the population comparison categories, and examples of the graphs and tables used in the rest of the report. The goal is to help report readers who may be less fluent with numbers, data, and statistics to understand how to gain insights from the data presented in the report.

Figure 1: Example Strengths Table

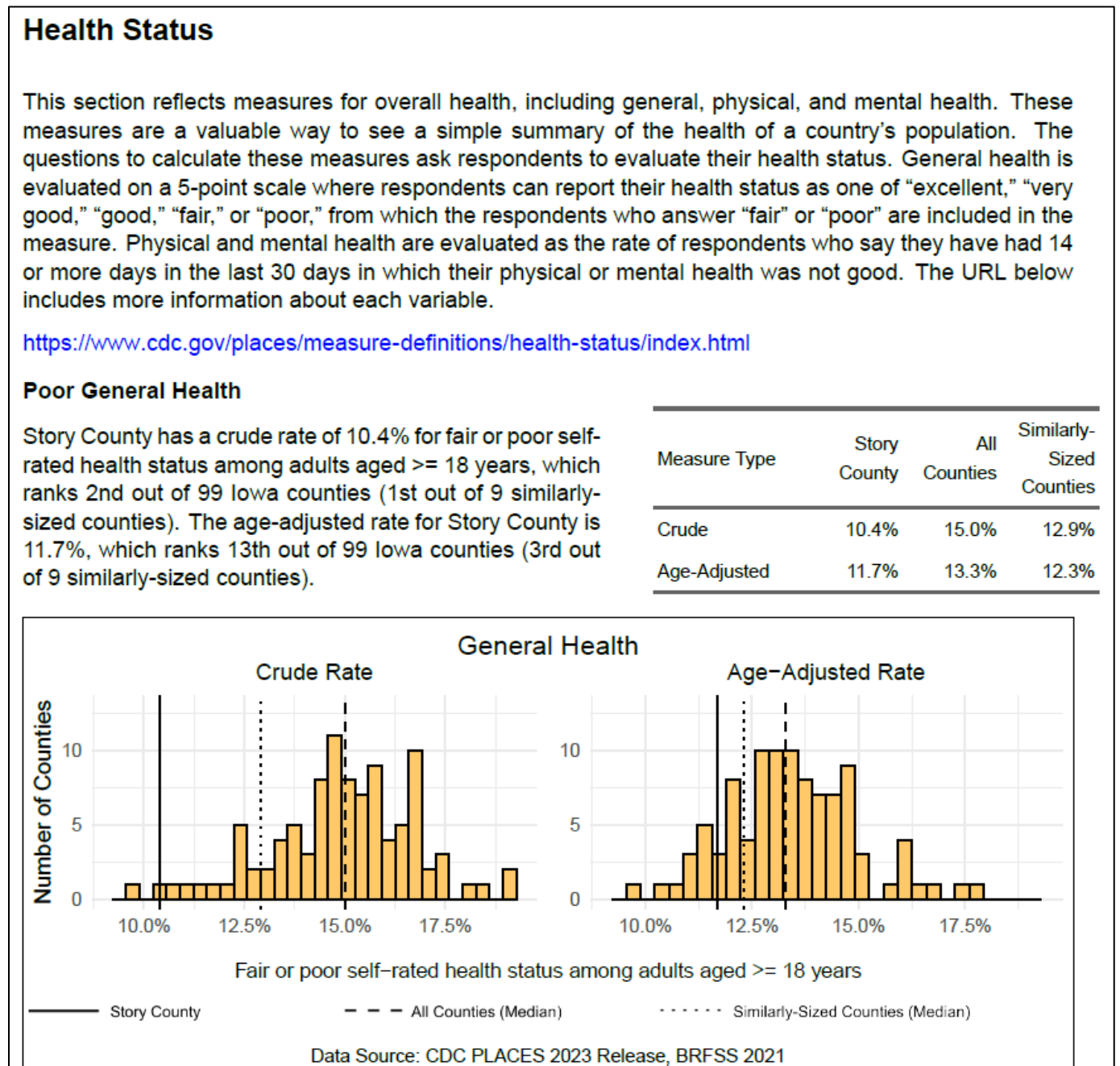
Crude			Age-Adjusted		
Health Domain	Statewide County Rank	Metropolitan Non-Core County Rank	Health Domain	Statewide County Rank	Metropolitan Non-Core County Rank
Core preventive services for older women	10th	3rd	Annual Checkup	5th	1st
Health Insurance	13th	7th	Core preventive services for older women	10th	3rd
Annual Checkup	14th	1st	Stroke	11th	7th
Vision Disability	15th	7th	Vision Disability	11th	7th
Cervical Cancer Screening	16th	7th	Depression	13th	4th

Figure 2: Example Opportunities Table

Crude			Age-Adjusted		
Health Domain	Statewide County Rank	Metropolitan Non-Core County Rank	Health Domain	Statewide County Rank	Metropolitan Non-Core County Rank
Taking BP Medication	74th	7th	Taking BP Medication	92nd	9th
Sleep <7 hours	73rd	9th	Cancer (except skin)	88th	10th
Binge Drinking	73rd	5th	Binge Drinking	70th	4th
Obesity	64th	9th	Sleep <7 hours	66th	9th
Colorectal Cancer Screening	53rd	9th	Obesity	57th	10th

The remainder of the report is divided into five sections: Health Status, Health Risk Behaviors, Health Outcomes, Prevention, and Disabilities. As illustrated in Figure 3, each section briefly previews the category and the measures included. A small section for each health measure shows a histogram and table with the county or community's estimate, compared to the median value for all lowa counties or communities and the similarly-sized group.

Figure 3: Example Health Snapshot Section



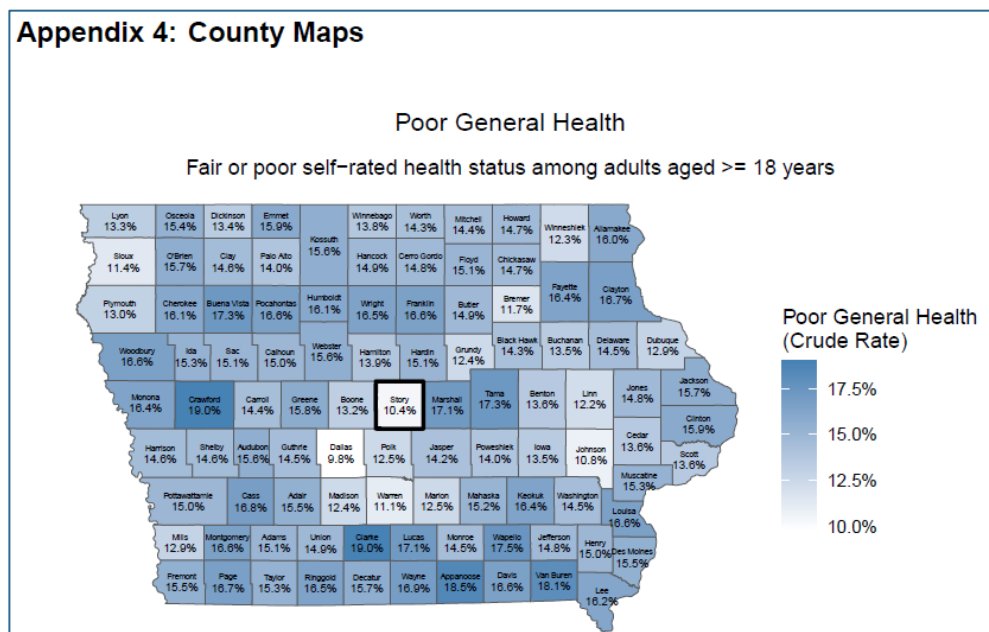
Each report also includes appendices. Appendix 1 includes a brief description of the CDC PLACES dataset. Appendix 2 (see Figure 4 below) includes the specific measures, their ranks, and the 95% confidence intervals for the respective county or community. This data is provided as a tool for users interested in the confidence intervals or wanting to see all the measures in one place. Appendix 3 lists the other counties or communities in the population comparison group. The county reports have an additional appendix, Appendix 4 (Figure 5), that includes county maps for every measure included in the report. These visuals can be valuable to include in a county-level report and provide an easy way for users to see how their county compares to counties across the state and region.

Figure 4: Example County Data Table

## Appendix 2: Story County PLACES Data

Category	Health Domain	Crude Rate Rank	Crude Rate (95% CI)	Age-Adj. Rate Rank	Age-Adj. Rate (95% CI)
Health Status	Mental Health	99	15.9% (13.3% - 18.5%)	5	14.4% (12.4% - 16.6%)
Health Status	General Health	2	10.4% (8.7% - 12.3%)	13	11.7% (9.8% - 13.7%)
Health Status	Physical Health	2	7.9% (6.6% - 9.2%)	12	9.0% (7.6% - 10.5%)
Health Risk Behaviors	Binge Drinking	98	22.7% (19.1% - 26.6%)	37	21.2% (17.9% - 24.9%)
Health Risk Behaviors	Physical Inactivity	1	18.5% (15.1% - 22.4%)	2	20.3% (16.7% - 24.1%)
Health Risk Behaviors	Sleep <7 hours	2	26.0% (24.3% - 27.8%)	2	27.6% (26.1% - 29.2%)
Health Risk Behaviors	Current Smoking	1	11.6% (9.0% - 14.3%)	4	14.2% (11.2% - 17.6%)

Figure 5: Example County Map




# What's next?

Given the suite of automated data products we created this year, there are several exciting next steps for the Health Snapshots Series:

- Annual Releases of the Iowa Community and County Health Snapshot Series:** The current Health Snapshot series uses the PLACES 2023 data release, based primarily on BRFSS 2020 and 2021 data. The PLACES 2023 data release was the 4<sup>th</sup> iteration of the data. By ingesting prior and future data releases, it will be possible to begin to include time trends for many of the health measures already included in the report.
- Expanding Geographic Comparisons:** A unique aspect of the PLACES data is the availability at four different geographic levels—county, community, ZIP code, and Census tract. The current reports and dashboard only offer comparisons within geographies. Future versions of the reports and dashboards might consider extending the analysis. For instance, county reports could feature a table for each health measure that also includes estimates for each community in the county, thus enabling a within-county suite of city comparisons and monitoring capacities. This would give county public health departments an easy way to identify which communities have the greatest need for a particular program or intervention. Similarly, both county and community reports might also be enhanced with maps showing ZIP code or Census tract data in the area, which would be helpful to county health officials, for example in determining where to target programs and limited resources.
- Integration with Other Data Reports:** Community and Economic Development's Indicators program has a wealth of data and other county and city reports, including the frequently downloaded Data for Decision-Makers reports (DDMs). PLACES data might also be integrated with DDMs or other relevant health data to further the Health Snapshot reports, such as the social determinants of health, which would add sociodemographic contextual data to the health data that comprise the Health Snapshots.
- User-test all Products:** We strongly encourage CED to get real users to evaluate these products to understand what works, what doesn't, what is confusing, and where the reports can be improved to serve their intended users. Iterating from this version to future versions should include concrete feedback from relevant stakeholders and community health data users.

## Data for Decision Makers



### Story County County Profile

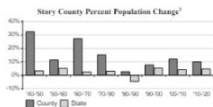
report created: 05/03/2024

### Population profile

Story County is a metropolitan county in central Iowa. It is composed of fifteen incorporated communities and their surrounding rural areas. From 2010 to 2020, Story County's population increased by 10.05% while the state's population increased by 4.73%.

Total Population <sup>1</sup>			Neighboring Counties - Percent Population Change <sup>2</sup>		
	2010	2020	County	'00-'10	'10-'20
Story County	79,981	88,842	Boone, IA	-4.32%	0.31%
Male Total	40,897	46,412	Hamilton, IA	-1.48%	-4.65%
Female Total	39,084	43,130	Jasper, IA	6.85%	-1.09%
City			Marshall, IA	2.70%	3.40%
Ames	58,711	58,965	Polk, IA	14.51%	14.90%
Carroll	819	827	Story, IA	7.72%	11.98%
Collins	499	495	State of Iowa	5.29%	4.77%
Coto	888	876			
Gilbert	987	1,082			
Hockey	2,116	3,317			
Kirkley	300	309			
Maxwell	807	920			
McCullough	318	333			
Neosho	4,618	4,798			
Reinold	1,324	1,284			
Sheldahl <sup>3</sup>	336	319			
Slater	1,306	1,489			
Story City	3,228	3,431			
Zearing	617	554			
State Total	2,926,324	3,046,555			

<sup>1</sup>City is located in multiple counties; total population is provided.



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