



Sanford Bismarck  
Community Health Needs Assessment  
2012-2013

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## Sanford Health Bismarck Community Health Needs Assessment 2012-2013

### Purpose

Sanford Health Bismarck is part of Sanford Health, an integrated health system with headquarters in North Dakota and South Dakota. Sanford Health is the largest, rural, not-for-profit health care system in the nation with locations in 126 communities in eight states.

Sanford Health Bismarck has undertaken a community health needs assessment as required by the Patient Protection and Affordable Care Act (PPACA), and as part of the IRS 990 requirement for a not-for-profit health system to address issues that have been assessed as unmet needs in the community.

PPACA requires that each hospital must have: (1) conducted a community health needs assessment in the applicable taxable year; (2) adopted an implementation strategy for meeting the community health needs identified in the assessment; and (3) created transparency by making the information widely available. For tax-exempt hospital organizations that own and operate more than one hospital facility, as within Sanford Health, the new tax exemption requirements apply to each individual hospital. The first required needs assessment falls within the fiscal year July 1, 2012 - June 30, 2013.

The purpose of a community health needs assessment is to develop a global view of the population's health and the prevalence of disease and health issues within the communities served. Findings from the assessment serve as a catalyst to align expertise and develop a community investment/community benefit plan of action. There is great intrinsic value in a community health needs assessment when it serves to validate, justify and defend not-for-profit status and create opportunity to identify and address public health issues from a broad perspective.

A community health needs assessment is critical to a vital community investment/community benefit program that builds on community assets, promotes collaboration, improves community health, and promotes innovation and research. A community health needs assessment also serves to validate progress made toward organizational strategies and provides further evidence for retaining not-for-profit status.

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## Sanford Health Bismarck Community Health Needs Assessment 2012-2013

### Sanford Health Overview

Sanford Health, with a long history of dedication to excellence in patient care, is on a journey of growth and momentum with vast geography, cutting edge medicine, sophisticated research, advanced education and a health plan. Through relationships built on trust, successful performance and a vision to improve the human condition, Sanford seeks to make a significant impact on health and healing. The name Sanford Health honors the legacy of Denny Sanford's transformational gifts and vision.

**Mission:** Dedicated to the work of health and healing

Sanford Health provides the best care possible for patients at every stage of life, and supports healing and wholeness in body, mind and spirit.

**Vision:** To improve the human condition through exceptional care, innovation and discovery

Sanford Health strives to provide exceptional care that exceeds our patients' expectations. Sanford Health encourages diversity in thought and ideas that lead to better care, service and advanced expertise.

**Values:**

- Courage: Strength to persevere, to be vocal and to take action
- Passion: Enthusiasm for patients and work, commitment to the organization
- Resolve: Adherence to systems that align actions to achieve excellence, efficiency and purpose
- Advancement: Pursuit of individual and organizational growth and development
- Family: Connection and commitment to each other

**The Sanford health promise:** Deliver a flawless experience that inspires

Sanford Health promises that every individual's experience at Sanford—whether a patient, visitor or referring physician—will result in a positive impact, and for every person to benefit from a flawless experience that inspires.

**Guiding principles:**

- All health care is a community asset
- Care should be delivered as close to home as possible
- Access to health care must be provided regionally
- Integrated care delivers the best quality and efficiency
- Community involvement and support is essential to success
- Sanford Health is invited into the communities it serves

## Sanford Health Bismarck Overview

Sanford Health Bismarck is a non-profit, multi-specialty health organization that integrates clinic, hospital and long-term care. Based in Bismarck, Sanford Health Bismarck consists of a hospital, a Level II trauma center, seven primary care clinics, four multi-specialty clinics, three walk-in clinics, three occupational health clinics, a home health agency, three kidney dialysis centers, three long-term care facilities, one independent living center, and a college of nursing.

Its 217-bed hospital cares for more than 10,000 patients each year. In 2012, Sanford Health Bismarck cared for 4,429 inpatient surgical patients and 10,288 outpatient surgical patients and delivered 843 babies. The hospital's Level II trauma center had 28,912 emergency room visits. As a tertiary care center, Sanford Health Bismarck supports 12 regional community access hospitals in central and western North Dakota by providing critical specialized care.

One of the pillars of a nonprofit health organization is to provide medical care regardless of a patient's ability to pay. In 2012, the charity care of the western region of Sanford Health, headquartered in Bismarck, totaled \$7.4 million.

Sanford Health Bismarck began operation in 1902 when two renowned physicians, Drs. Eric P. Quain and Niles O. Ramstad, opened Q&R Clinic with a vision of providing outstanding, comprehensive patient care in one convenient location. Q&R Clinic was the second multi-specialty clinic in the nation, second only to Mayo Clinic in Rochester, Minn. In 1908, Bismarck Evangelical Hospital, now Sanford Health Bismarck, opened at the urging of Dr. Ramstad.

Sanford Health Bismarck is committed to providing professional, high-quality, personalized health care. The organization focuses on the relationship between the physician and the patient—a one-to-one relationship that is central to the organization's philosophy of health care delivery and the basis for the organization's award-winning care.

Key accreditations include The Joint Commission, verified by American College of Surgeons as a Level II trauma center (highest level in North Dakota), Center for Medicare and Medicaid Services (CMS) long-term care accreditation, Commission on Collegiate Nursing Education (CCNE), The Magnet Recognition Program® and Commission on Accreditation of Rehabilitation Facilities (CARF).

Sanford Health Bismarck uses a group practice model, where doctors are associates of Sanford Health and are not in private practice. Culture, values, governance, expectations, efficiency, teamwork and continuity of care are maximized through this model. Sanford Health associates practice evidence-based medicine integrating clinical expertise, application of predictable outcomes and patient communication.

Community involvement and education have played an important role in Sanford Health's mission for more than 100 years. Beyond providing medical care, Sanford Health supports and partners with local and national organizations that know and support the communities Sanford Health serves. These partnerships provide the foundation for health care awareness, education, prevention and research for the health care issues that matter most to the communities Sanford Health serves.

## Description of the Community Served

Sanford Health Bismarck is based in Bismarck, N.D., a diverse, dynamic, family-oriented community in central North Dakota. The community is experiencing fast-paced growth as a direct result of oil development throughout western North Dakota. The U.S. Census named it as one of the 50 fastest growing metro areas in the country.

Bismarck is the second-largest city in the state with 62,665 residents (source: U.S. Census Bureau) living within city limits; the Bismarck MSA population is growing rapidly, reaching 110,879 in 2011. (The population is centered in the cities of Bismarck and Mandan, with 2011 Census populations of 62,665 and 18,507, respectively. The remainder of the population resides in the surrounding areas of Burleigh and Morton Counties.)

Bismarck is the state capital and also serves as home to Bismarck State College, the University of Mary, and several of the state's top businesses.

### Quality of Life

People thrive best where they feel safe, supported and connected. Bismarck and Burleigh County support the community with quality schools, excellent medical care, plentiful recreation possibilities, community involvement opportunities, and neighborhood support.

Bismarck consistently ranks at or near the top of quality of life measurements such as safety, health care, education, recreation and environment. Bismarck was designated an All-American City in 1997, and the Bismarck MSA has been named a "Five Star Community" by *Expansion Management* magazine multiple times.

**Safety:** Bismarck MSA violent crime rate per 100,000 inhabitants was 221.5 in 2012. This compares to a national rate of 386.3. (*Federal Bureau of Investigation Uniform Crime Reports, 2012.*) The state of North Dakota regularly ranks as one of "America's Safest States" (source: United States Peace Index).

**Health care:** In addition to Sanford Health, Bismarck and surrounding areas feature several other high-quality health care providers including St. Alexius Medical Center, a 306-bed, full-service, acute care medical center offering inpatient and outpatient medical services; Bismarck Cancer Center, a state-of-the-art radiation therapy center; UND Center for Family Medicine, a University of North Dakota family physician residency program; more than 20 independently-owned clinics; and Bismarck-Burleigh Public Health Unit. Collectively the community features more than 350 physicians and more than 7,000 total health care professionals.

**Schools:** The Bismarck Public School System consistently produces test scores above the national average and above-average high school attendance and graduation rates (source: ND Dept. of Public Instruction and Bismarck Public School District).

**Elementary and secondary education:** The Bismarck Public School System features three high schools, three middle schools, and 16 elementary schools. Community members in 2012 voted overwhelmingly in support of a tax measure to add four new schools to the community. The community is also home to two private school systems that feature classes for children in grades K through 12.

Bismarck public schools in 2011 achieved a 97 percent graduation rate in comparison to the national graduation rate of 92 percent. The state of North Dakota consistently ranks in the top three states for high school graduation (source: National Dropout Prevention Center/Network). According to the N.D. Dept. of Public Instruction, 92 percent of Bismarck Public School District's graduating seniors plan to attend a 4-year, 2-year, or vocational college.

Other school districts in Burleigh County include Apple Creek, Hazelton-Moffit-Braddock, Kidder County, Manning, McClusky, Menoken, Naughton, Sterling, Wilton and Wing.

**Higher education:** Bismarck is home to five higher learning institutions. Sanford Health’s College of Nursing is an accredited (Commission on Collegiate Nursing Education) upper-division program leading to a bachelor of science in nursing degree. The College of Nursing offers an evidence/theory-based curriculum which correlates with current nursing knowledge and technology and prepares the practitioner for professional nursing practice in the 21st century. Other schools include: University of Mary, a four-year private college; Bismarck State College, a two-year state college; Rasmussen College, a two-year degree college; and; United Tribes Technical College, a technical institution operated by the five Native American tribes in North Dakota.

Sanford Health Bismarck partners with Bismarck State College for its nursing programs and its radiology program.

### **Recreation, History and Performing Arts**

Bismarck Parks and Recreation District facilities and programming, recognized as a “Sports Illustrated Sportstown,” features more than 50 miles of paved bike trails and recreation facilities throughout the community including parks, tennis courts, skate parks, soccer fields, golf courses, baseball fields and campgrounds. Bismarck’s park system accounts for 17.5 percent of the total city area. The community includes three public swimming pools and two indoor pools (Bismarck Aquatic Center and Missouri Valley YMCA).

Bismarck is situated on the Missouri River so community members have access to various water-based activities including fishing, boating and waterfront recreation.

Bismarck’s riverfront location is also an important part of its rich history of exploration and adventure—the community and nearby areas are part of the Lewis and Clark Trail and home to several Native American historical sites and Fort Abraham State Park.

Burleigh County recreation sites include Steckel Burnt Boat/Kniefel Landing (Wilton), Kimball Bottoms and McLean Bottom/Rifle Range Boat Ramp Areas (south of Bismarck); and Swenson Park, Driscoll Sibley and Mitchell Lake (Wing).

Performing arts organizations include the Bismarck-Mandan Symphony, Northern Plains Ballet, Shade Tree Players, Dakota State Unlimited and Sleepy Hollow Theater. Combined with performances provided by University of Mary and BSC theater departments, the performing arts community offers several options for residents to view each year.

### **Business Environment**

Spurred by strong agriculture industry and a booming oil industry—North Dakota recently became the second-strongest oil producing state in the U.S.—North Dakota is enjoying an economy that is as good as or better than any other in the country. The community of Bismarck is home to an innovative medical community, a vibrant energy industry, and a host of technical service companies.

**Employment:** North Dakota has the lowest unemployment rate in the country—3.2 percent (versus 7.9 percent, U.S. Bureau of Labor and Statistics Jan. 2013). Bismarck’s unemployment rate is 3 percent (Job Service North Dakota). Major employers in Bismarck include state government (4,400 employees), Sanford Health (3,500 employees), St. Alexius Medical Center (2,215 employees), Bismarck Public School District (1,804) and the City of Bismarck (845 employees). Top private company employers include MDU Resources (816), Aetna (600 employees), and Basin Electric Power Cooperative (455 employees).

**Workforce and labor:** Bismarck-Mandan workers are among the most productive and dependable in the nation. According to the Bismarck-Mandan 2009 Labor Availability and Business Needs Survey, 78 percent of employers reported low turnover (less than 10%), and 89.9% reported low absenteeism (less than 6 percent).

## Study Design and Methodology

The Sanford Health Bismarck community health needs assessment includes primary and secondary data illustrating and defining the community's health status indicators for assets, deficits, problems and opportunities.

This community health needs assessment was conducted during fiscal year 2013 (July 1, 2012-June 30, 2013). The main model for the collective work is the Association for Community Health Improvement's (ACHI) Community Health Needs Assessment toolkit.

The Internal Revenue Code 501 (r) statute requires that a broad base of key community stakeholders have input into the needs of the community. Those community members specified in the statute include: persons who represent the broad interests of the community served by the hospital facility including those with special expertise in public health; Federal, tribal, regional, state and or local health or other departments or agencies with information relevant to the health needs of the community served; leaders, representatives, or members of medically underserved, low-income, and minority populations.

Sanford extended a good faith effort to engage all of the aforementioned community representatives in the survey process. The list of individuals who agreed to take the survey and also submit their names are included in the acknowledgement section of this report. In some cases there were surveys that were submitted without names or without a specified area of expertise or affiliation. We worked closely with public health experts throughout the assessment process.

Public comments and response to the community health needs assessment and the implementations strategies are welcome on the Sanford website under "About Sanford" in the Community Health Needs Assessment section.

### **PRIMARY DATA**

#### **Bismarck Burleigh Community Health Improvement Coalition Community Survey**

In January 2012 the Bismarck Burleigh Community Health Improvement Coalition was activated to create a comprehensive stakeholder group that would lead the process of establishing a Bismarck/Burleigh County health needs assessment. Initiated by Bismarck Burleigh Public Health, the coalition included leaders from health care organizations, schools, law enforcement, community government and development, youth organizations, churches and private industry.

A primary goal of the group was to develop collaborative relationships that promote individual and community wellness through effective services, prevention and outreach. Additionally, the coalition worked to create a standardized survey tool for use in assessing the community's health-related concerns and needs.

A community health needs assessment survey was developed using the University of North Dakota's Center for Rural Health community health needs assessment tool. North Dakota State University and the University of North Dakota Center for Rural Health worked together to develop additional questions and to assure that scientific methodology was incorporated into the design. Results of the survey were tabulated and analyzed by NDSU's research department.

The survey consisted of questions that focused on community assets, general concerns about communities, a variety of community health and wellness concerns, and some personal health care information and demographic information. The purpose of this generalizable survey of Bismarck and Burleigh County residents was to learn about the perceptions of area residents regarding the prevalence of disease and health issues in their community.

Asset mapping was conducted by reviewing the data and identifying the unmet needs from the various surveys and data sets. Each unmet need was researched to determine what resources were available in the community to address the needs.

Bismarck Burleigh Community Health Improvement Coalition met several times to determine the community's greatest health care-related needs. The top five areas of concern included obesity, higher health care costs, cancer, diabetes and heart disease.

### **Patient Experience Data**

Sanford Health Bismarck patient experience data is reported quarterly to national databases for comparison purposes. Of the data reported, 10 questions are reported back to the public online at [medicare.gov/hospitalcompare](http://medicare.gov/hospitalcompare). Those publicly-reported questions, complete with state and national comparison data, are summarized in this report.

## **SECONDARY DATA**

### **North Dakota County Health Profiles**

In May 2011 Sanford Health Fargo convened key health care leaders and other not-for-profit leaders to establish a Community Health Needs Assessment Collaborative. A primary goal of the collaborative was to create standardized tools, indicators and methodology that could be used by all group members when conducting assessments and also be used by all of the Sanford medical centers across the enterprise. One end result of that collaborative is comprehensive community health profiles for each North Dakota county.

The County Health Profiles are based largely on the County Health Rankings from the Mobilizing Action Toward Community Health (MATCH), a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. State and national benchmarking required additional data sources including the U.S. Census Bureau, Small Area Health Insurance Estimates, and the Centers for Disease Control and Prevention's National Center for Health Statistics—the Health Indicators Warehouse.

Framework for county profiles would be the secondary data model. The county profile created for Burleigh County is included in the appendix.

### **Center for Disease Control National Center for Health Statistics: Leading Causes of Death**

The Center for Disease Control National Center for Health Statistics determines the leading causes of death by state. Based on this data, the leading causes of death in North Dakota include heart disease, cancer, chronic lower respiratory disease, stroke, accidents, Alzheimer's disease and diabetes.

### **Second Biennial Report Health Issues for the State of North Dakota 2013**

The First Biennial Report on Health Issues for the State of North Dakota was prepared in the fall of 2010 by the University of North Dakota School of Medicine and Health Sciences (SMHS) Advisory Council, a legislatively mandated group of 15 stakeholders in the North Dakota health care enterprise. It was published in 2011 to coincide with the 62nd Legislative Assembly of North Dakota, and was produced with the cooperation of SMHS senior leaders.

The duties of the SMHS Advisory Council include studying and recommending strategic initiatives for the school of medicine to help ensure success in meeting the health care needs for North Dakota residents. The recommendations target major factors that influence the state's health care delivery system including workforce

needs and applicable medical training, access to health care throughout the state, patient safety and financial challenges.

The First Biennial Report on Health Issues for the State of North Dakota provided the first comprehensive analysis of the extant state of health in North Dakota and its health care delivery enterprise. The Report found that rural depopulation, out-migration of the young from the state, an increasingly older adult population, low population density, and localized population growth in the major cities and in western North Dakota's oil-producing counties would result in an increasing imbalance between the demand for health care and the supply of providers that would necessitate the need for more physician and health science providers in North Dakota and better health care delivery systems.

In the Second Biennial Report on Health Issues for the State of North Dakota, researchers found North Dakota is slightly behind the United States as a whole in terms of physician workforce and somewhat further behind the Midwest. The Report recommends full implementation of the Health Care Workforce Initiative (HWI) to meet current and future health care needs in North Dakota.

The report noted nearly 40 percent of physicians working in North Dakota received some or all of their medical training at the University of North Dakota ([www.med.und.edu/community/files/docs/second-biennial-report.pdf](http://www.med.und.edu/community/files/docs/second-biennial-report.pdf)).

## Primary Research

### **Bismarck and Burleigh County Community Health Needs Survey**

A community's overall health is dependent upon many things, quality health care being just one part of the equation. Other factors that determine the quality of a population's health include environment, personal behavior, mental wellness and access to health care. To measure the health and wellbeing of Burleigh County residents, the Bismarck and Burleigh County Community Health Needs Survey was developed with guidance from the Bismarck Burleigh Public Health Quality Improvement Team. The survey's focus was to learn about Burleigh County community assets and services provided, as well as identify any health-related gaps and community member concerns.

The survey asked for individual perceptions of community health issues and is subjective to individual experiences which may or may not be the current status of the community.

### **Methodology**

The Bismarck/Burleigh County Community Health Survey was developed with guidance from the University of North Dakota School of Medicine and Health Sciences, Center for Rural Health. The survey was also reviewed by Bismarck Burleigh Community Health Coalition.

The survey was made available only to Burleigh County residents. The survey consisted of 30 questions with the option to provide input. Participant's responses were anonymous and participants were given the opportunity to decline any question.

The opinion survey opened February 1, 2012 and closed March 1, 2012. Surveys were administered both electronically and in paper copy. Distribution channels included media (media releases and news stories as well as electronic links on media websites); electronic access via BBCHC members' websites and Facebook; and paper copies distributed to high-need populations, e.g. Bismarck Early Childhood Education Program (BECEP), Pride, HIT, Burleigh County Extension and Community Action.

## **Results and Analysis**

SurveyMonkey.com was used to tabulate survey results. Survey data was analyzed and formatted by the North Dakota State Data Center.

The survey exceeded the sample size goal by collecting 485 completed opinion surveys. Rural residents represented 26.2 percent while the city of Bismarck represented 73.8 percent of the survey respondents. That ratio closely resembles the county's population distribution—approximately 75 percent of the county's residents live in Bismarck.

A total of 93 stakeholder surveys were also completed with 72.7 percent from the city of Bismarck and 27.3 percent from Burleigh County residents. The resident and stakeholder survey data is combined for purposes of this report.

The following is a summary of respondents' community concerns and health concerns.

### **Community Assets: Best Things about the Community**

Respondents were asked about the best things about their community regarding people, services and resources, quality of life, geographic setting and activities. Respondents indicated that Bismarck and Burleigh County's greatest assets include friendly, helpful supportive people; health care; and a family-friendly environment.

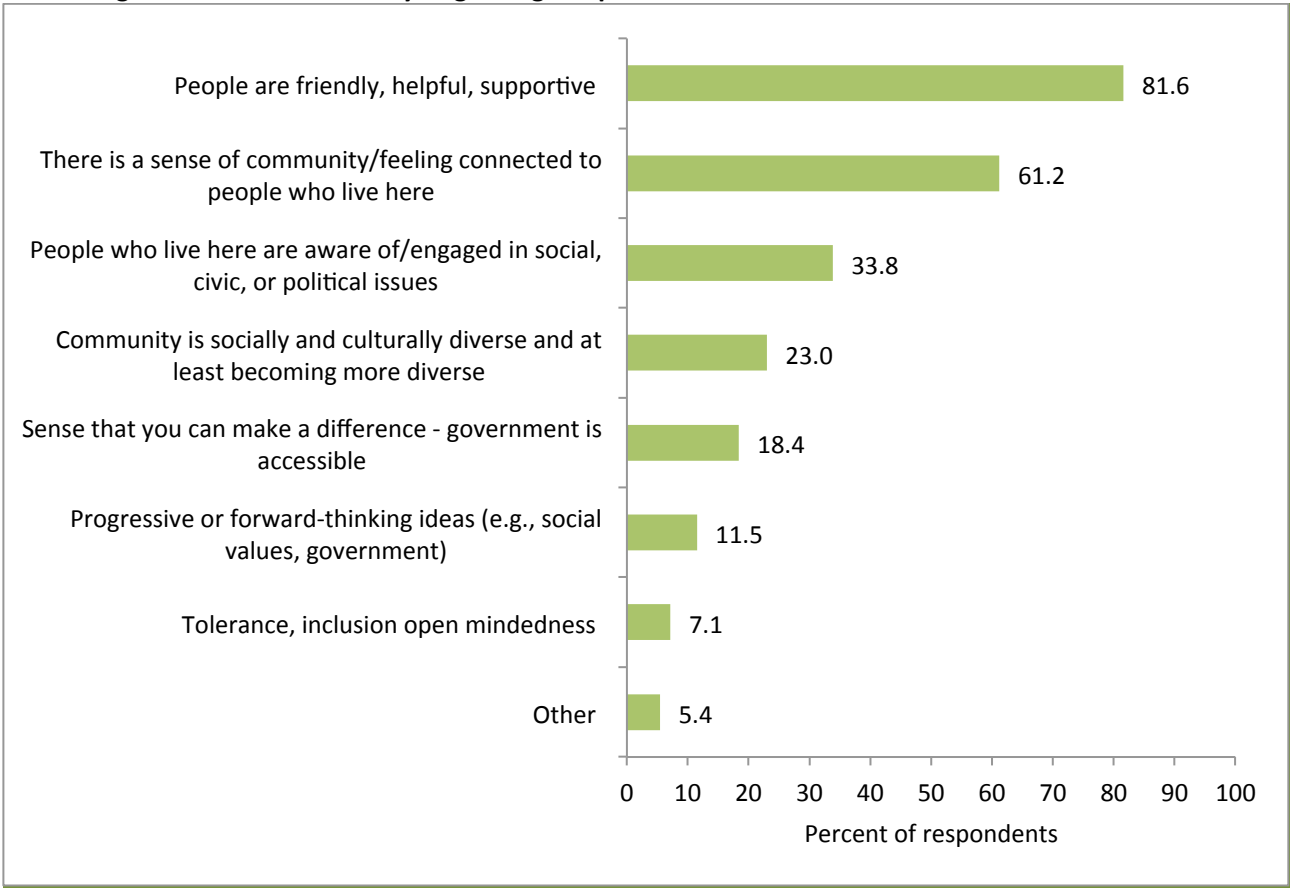
#### **People**

Most respondents (81.6 percent) chose "People are friendly, helpful, supportive" as the best thing about their community. "There is a sense of community/feeling connected to people who live here" also ranked high with 61.2 percent of respondents choosing this option as the best thing about the community. The lowest rated community qualities were "Progressive or forward-thinking ideas" and "Tolerance, inclusion, open mindedness" which were chosen by 11.5 percent and 7.1 percent of the respondents, respectively.

Write-in comments included positive statements about the character of community members and sense of neighborly consciousness. Others commented on the community's strong support in crisis situations, e.g. floods.



### Best Things about the Community Regarding People

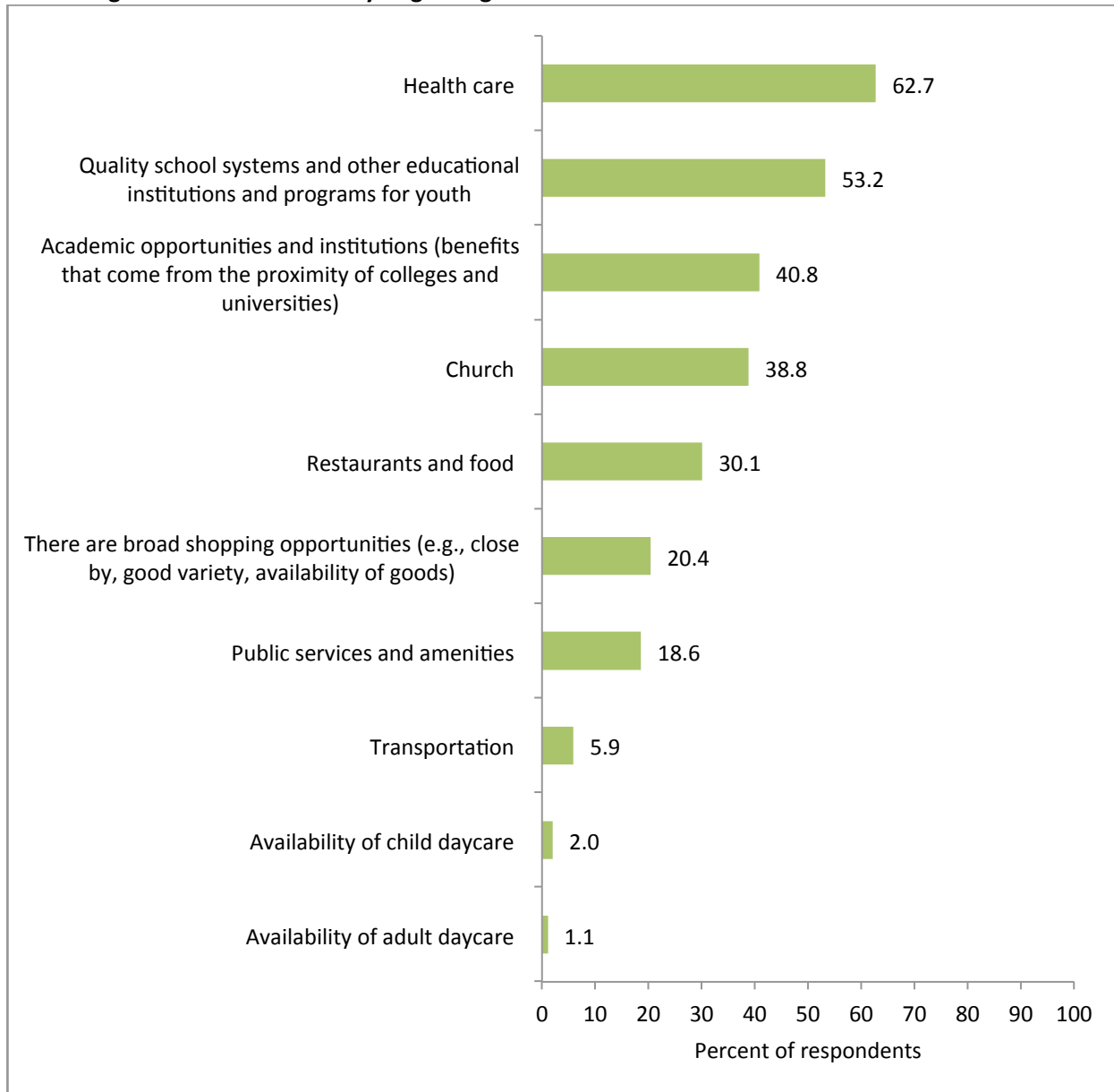


### Services and Resources

Most respondents chose “Health care,” “Quality school systems” and “Academic opportunities” as the best services and resources in their community. Availability of adult and child daycare was chosen least often.

Write-in responses included favorable comments about the community’s recreation opportunities and requests for expanded recycling and public transportation programs.

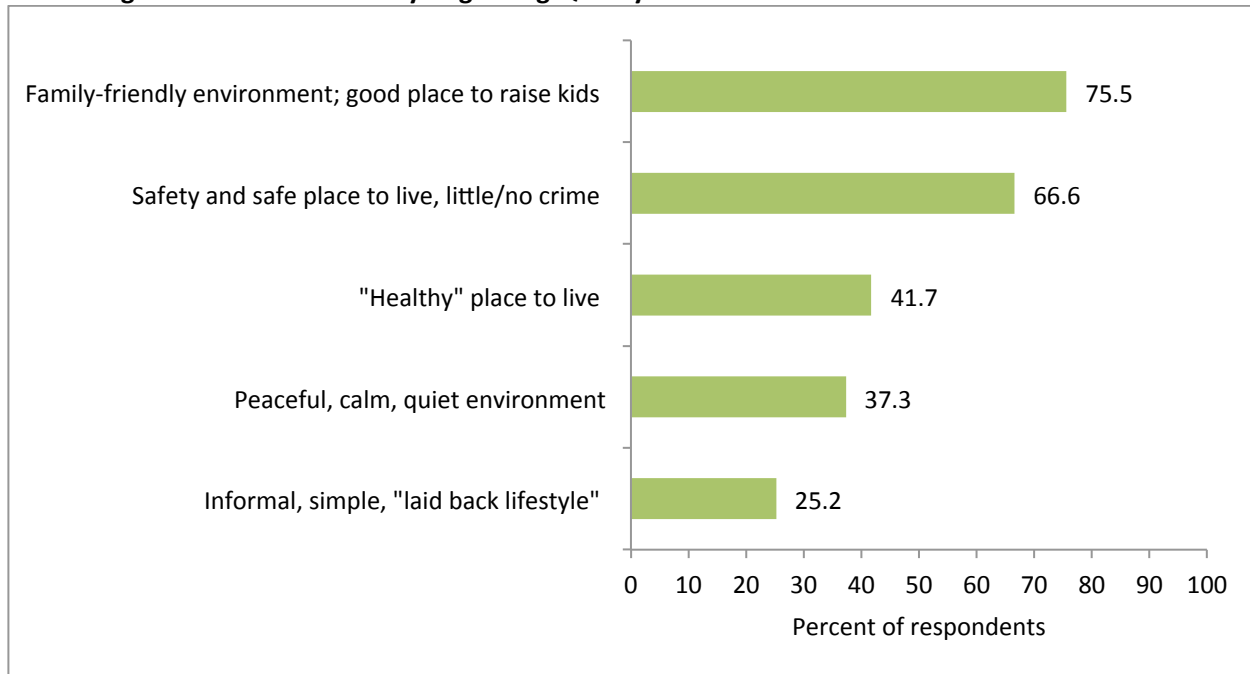
### Best Things about the Community Regarding Services and Resources



### Quality of Life

Most respondents said the community is family-friendly and a safe place to live. Write-in responses included requests for parks closer to residential areas and positive comments about the community’s collective work ethic and employment opportunities.

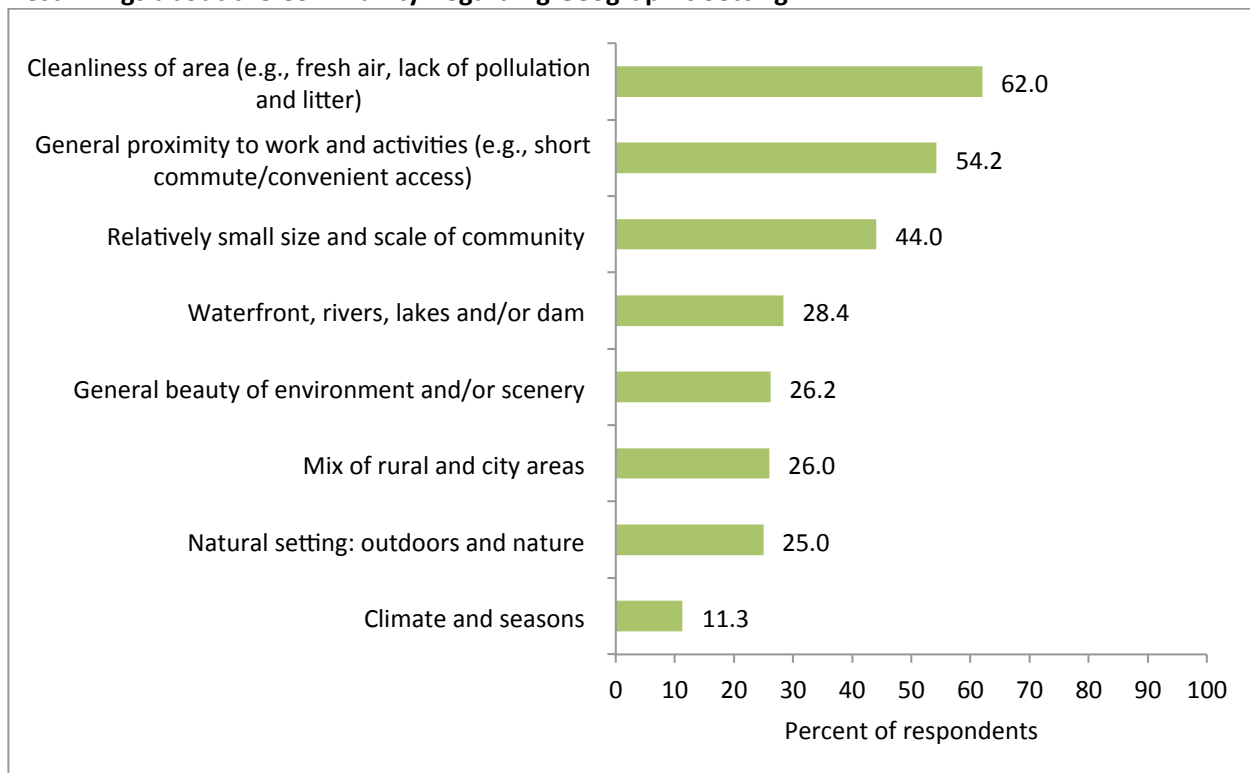
### Best Things about the Community Regarding Quality of Life



### Geographic Setting

Most respondents said the community is clean and provides general proximity to work and other activities. Write-in responses included positive comments regarding access to public green areas and parks throughout the community. Several respondents noted that the community has maintained a small-town feel despite its rapid growth in recent years. Others commented they are concerned how the oil boom in western North Dakota will impact the community as that population settles into Burleigh County.

### Best Things about the Community Regarding Geographic Setting

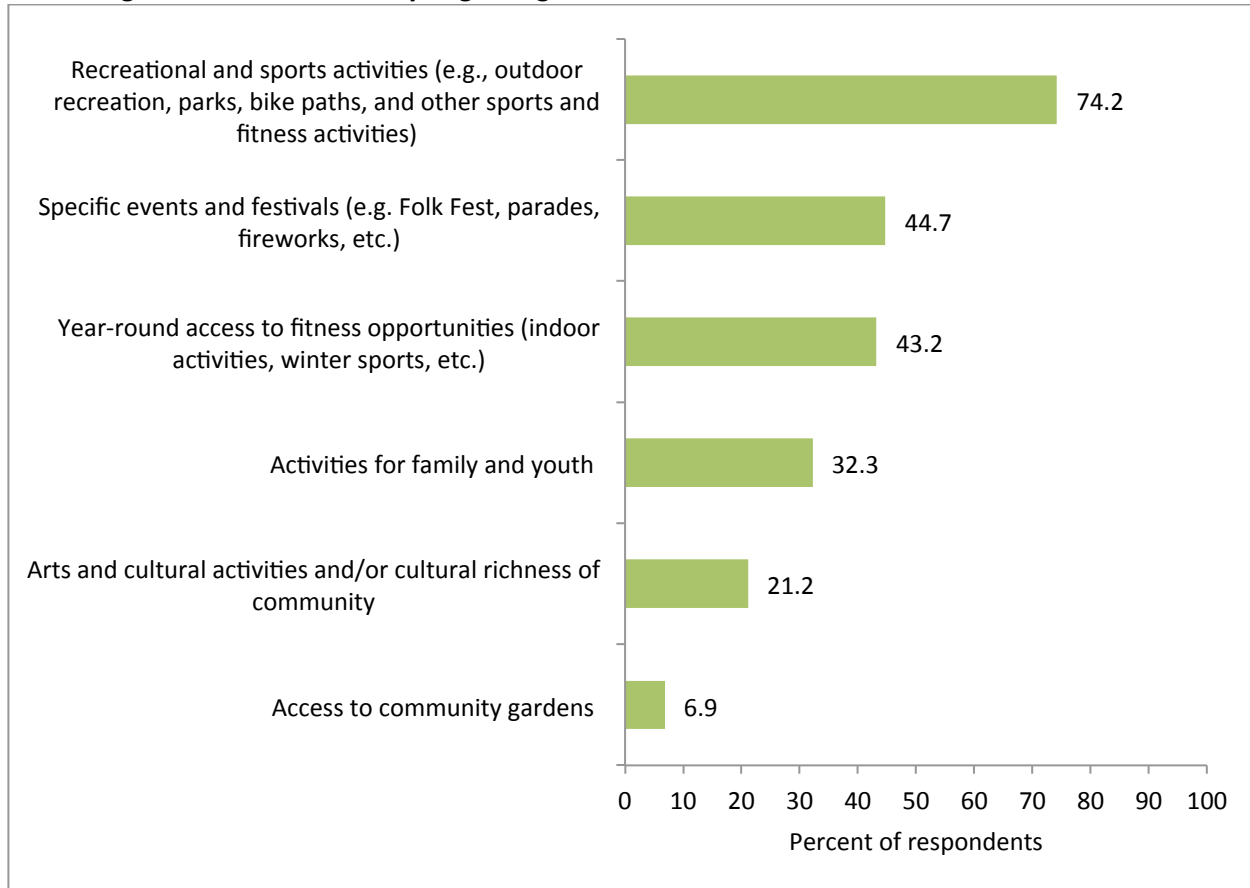


### Activities

Nearly 75 percent of respondents said the community’s recreation and sports activities are among the best activities offered in Burleigh County. Only 6.9 percent said access to community gardens is a strength of the community.

Write-in responses included requests for increased community activities for teenagers and families as well as increased access to libraries, e.g. by establishing satellite library locations. Respondents also shared positive comments about the area’s hunting and fishing opportunities and the N.D. Heritage Center.

### Best Things about the Community Regarding Activities

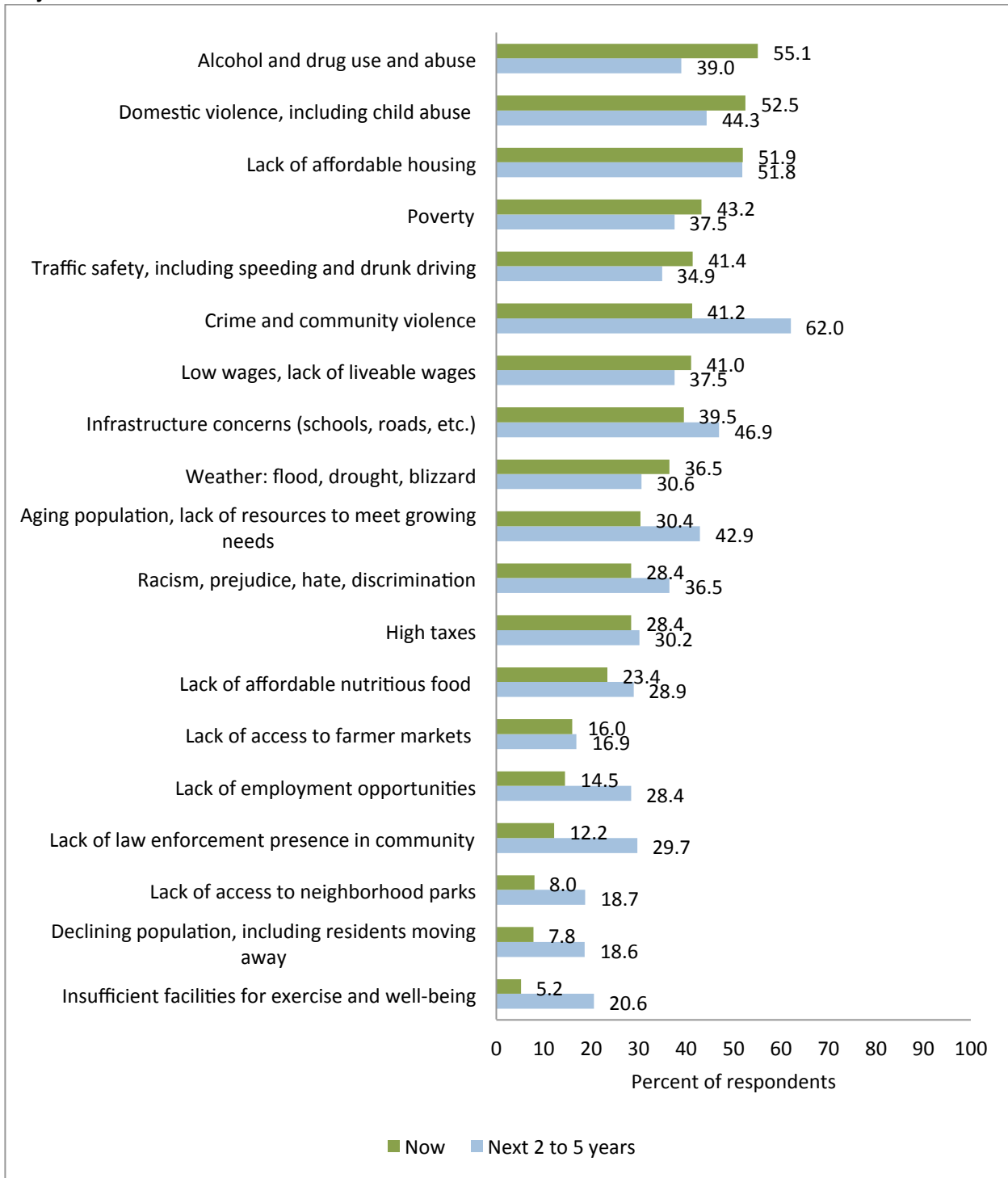


### General Concerns about the Community

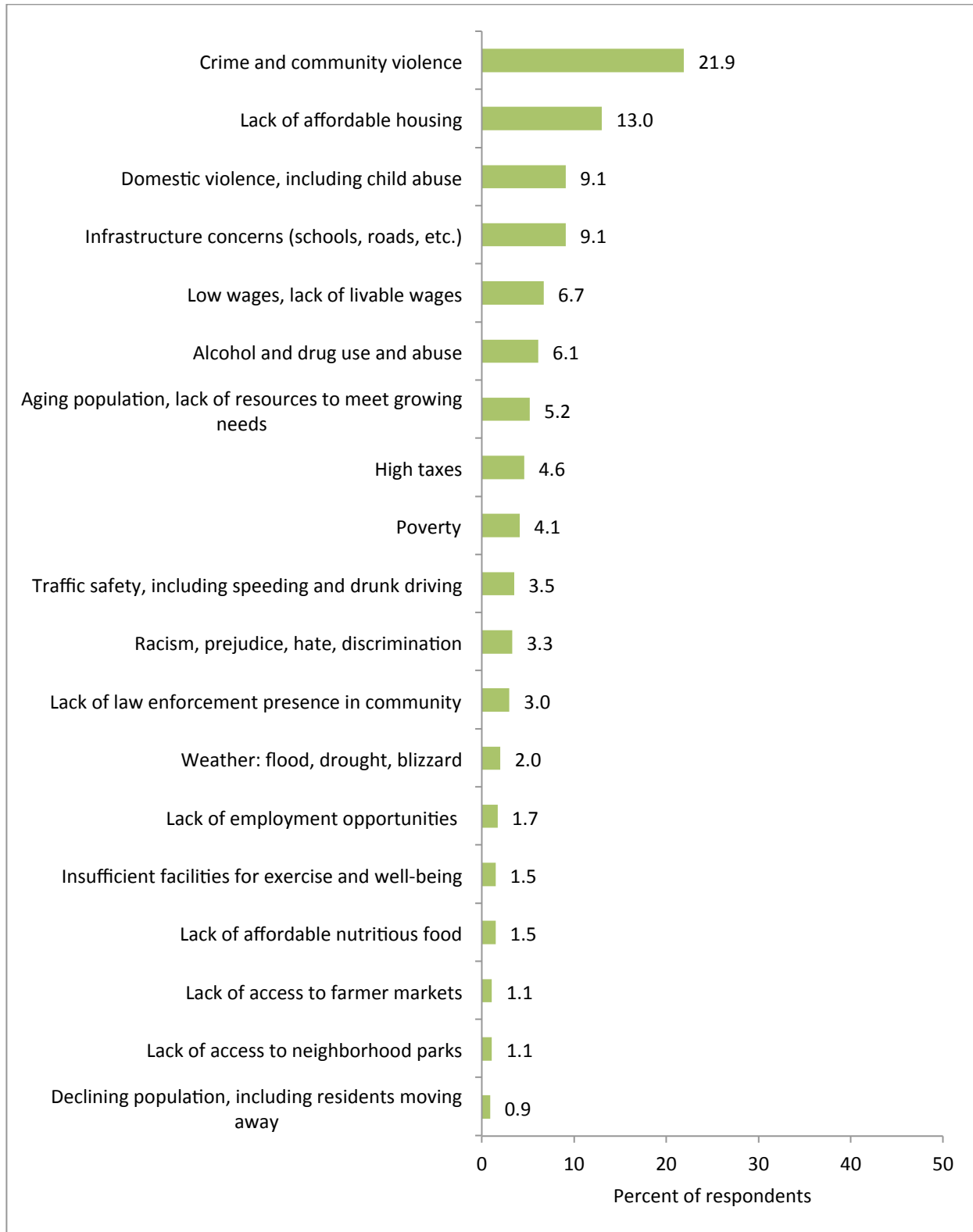
Regarding conditions in the community, respondents were asked to indicate their major concerns, now and in the next two to five years. Respondents were also asked to indicate which concern was most important. Top current concerns include alcohol and drug abuse, domestic violence and lack of affordable housing. Top future concerns include crime, affordable housing and infrastructure.

The biggest shift between current level of concern and future concern is regarding crime. Despite historically low crime rates, residents cite rapid growth and the oil boom in western North Dakota as perceived sources of increased crime.

### Major Concerns: Now and in the Next 2 to 5 Years



### Most Important Concern among Major Concerns in the Community

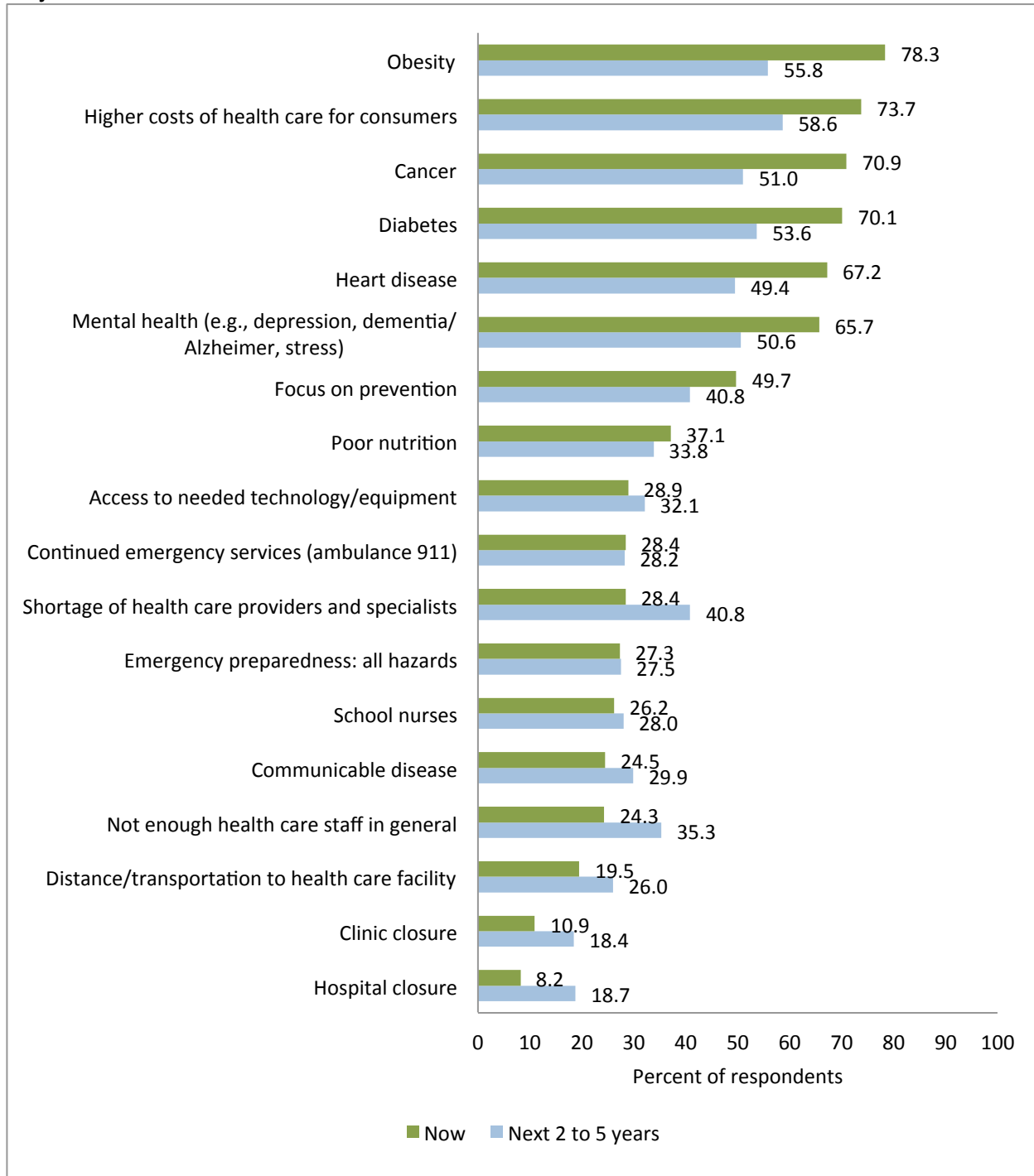


### Delivery of Health Care

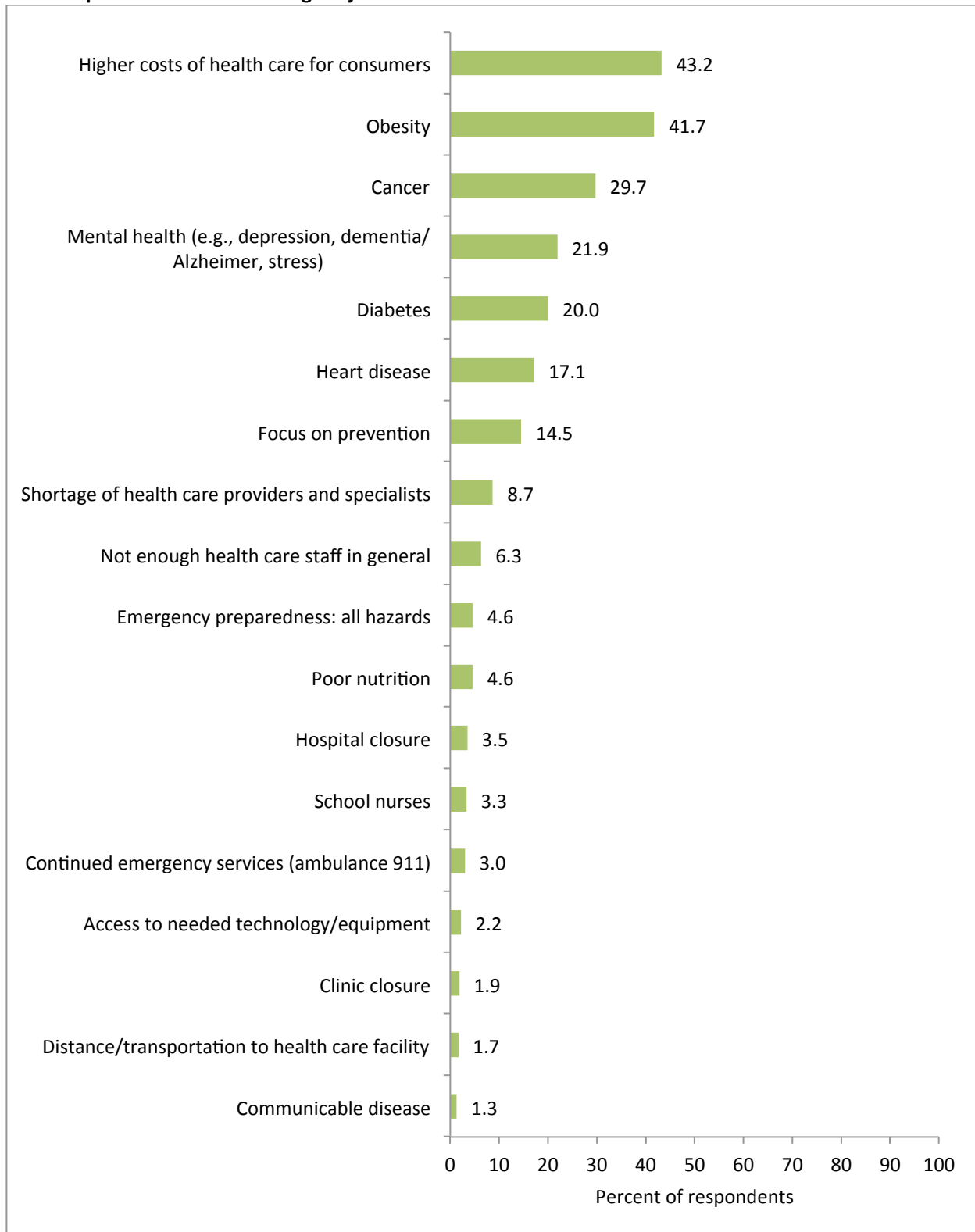
Regarding the delivery of health care in their community, respondents were asked about the major health concerns they see now and in the next two to five years. Respondents were also asked to choose the most important concerns.

The community’s top concerns regarding chronic diseases—obesity, cancer, diabetes and heart disease—coincide with the area’s leading causes of death. Health care costs are also a top concern. Write-in responses included lack of access to health insurance and dental insurance; others said prescription medication costs are a burden.

### Major Health Concerns: Now and in the Next 2 to 5 Years

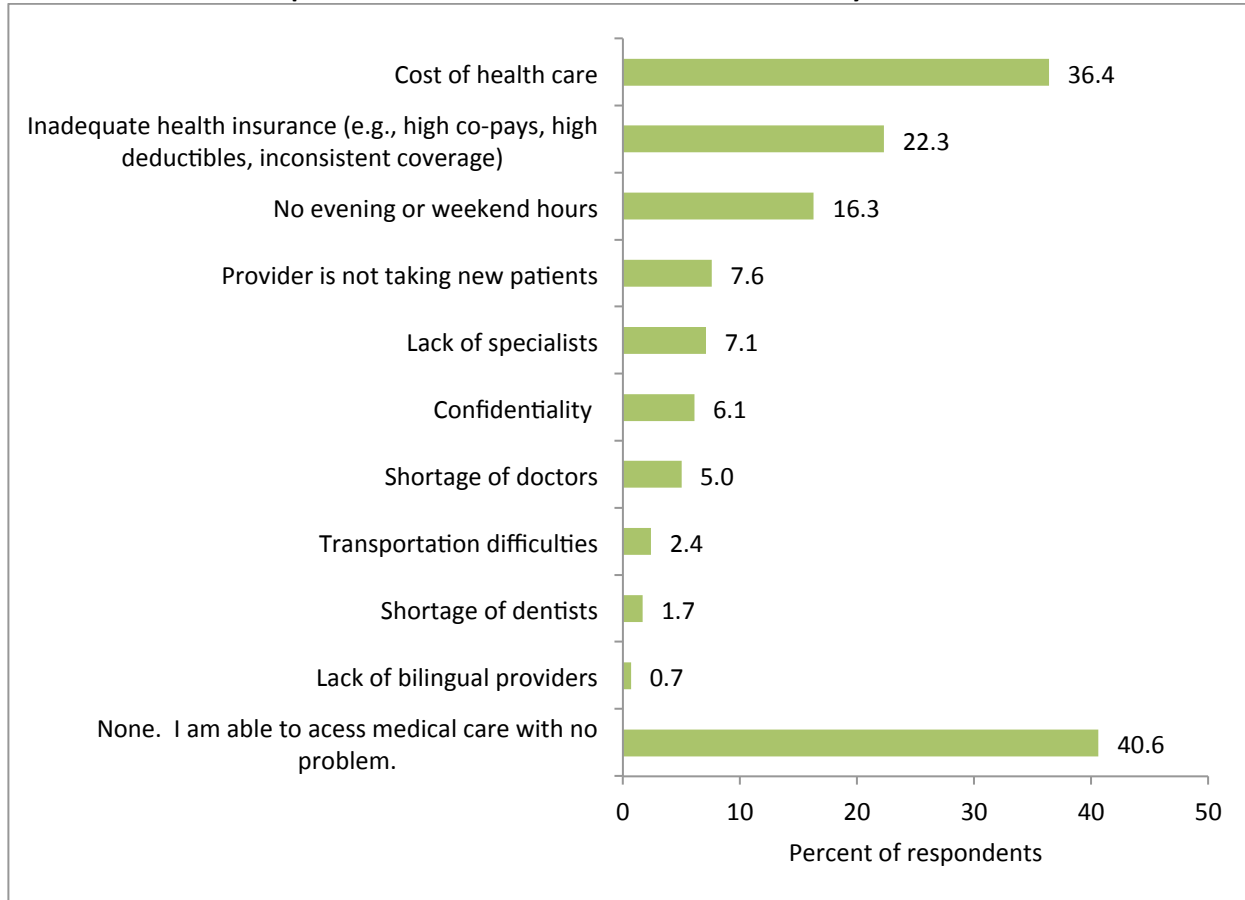


### Most Important Concern among Major Health Concerns

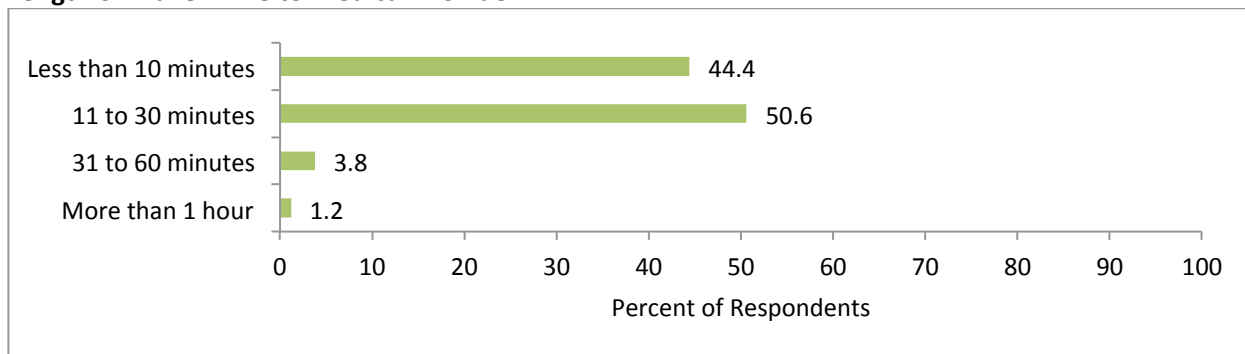




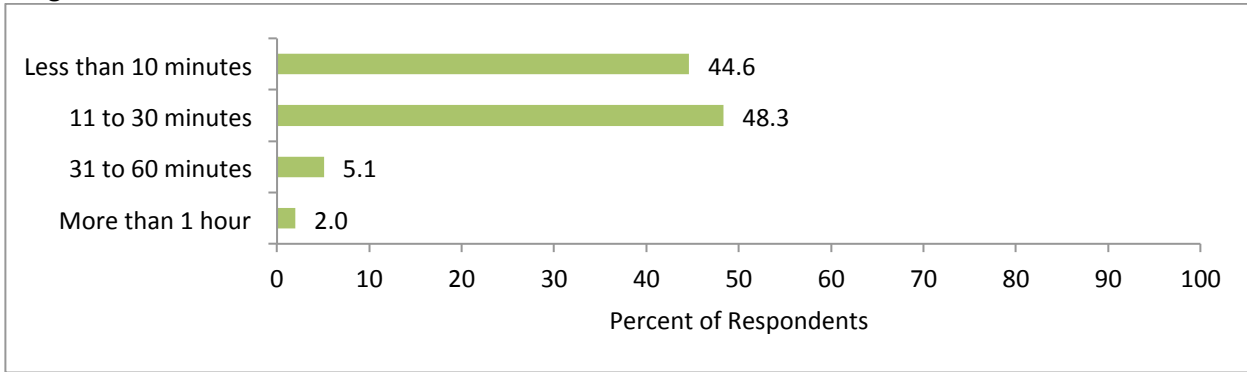
### Barriers that Affect Respondents' Access to Services in the Community



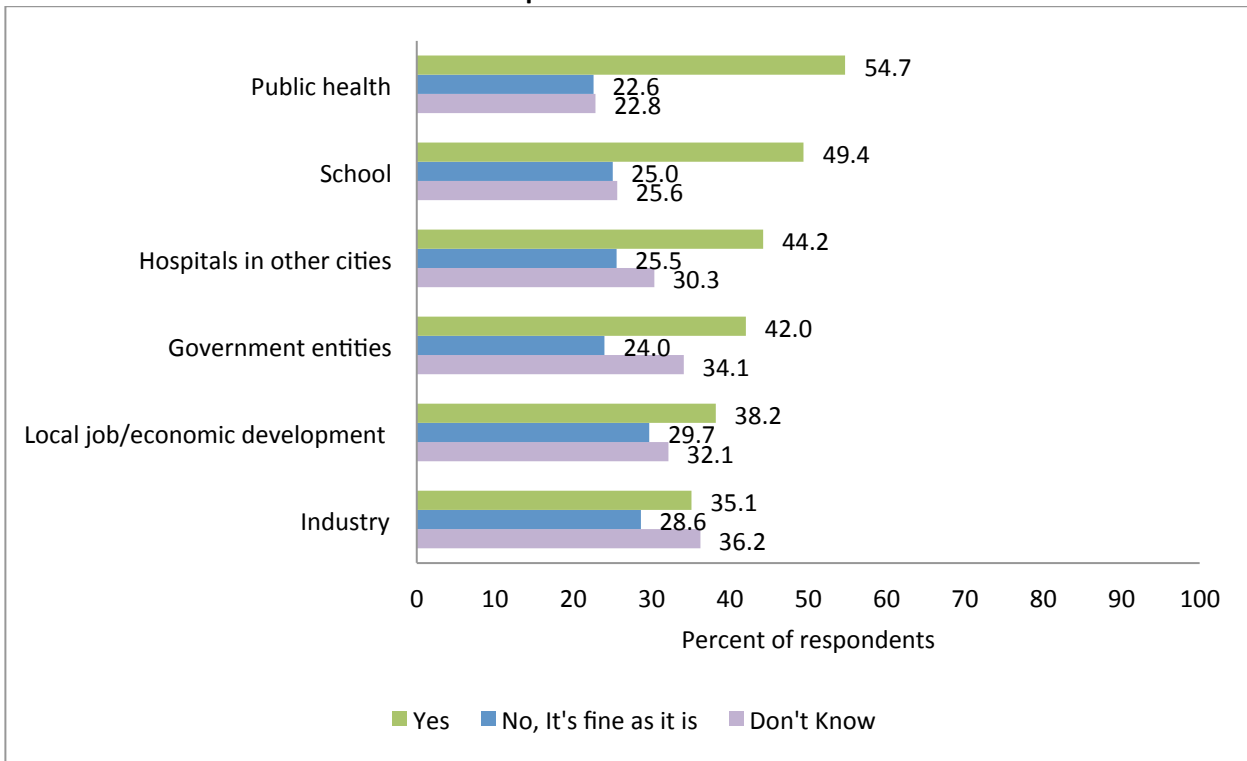
### Length of Travel Time to Medical Provider



### Length of Travel Time to Dental Provider



### Belief that Local Health Providers Could Improve Collaboration with Various Entities



## Health Care Services

Respondents were asked if they were aware of various health care services in the community. Respondents were also asked to indicate whether they used the services in Bismarck/Burleigh County or outside of the county.

### Awareness and Use of General Services

| Service                                       | Percent of respondents |  |   |
|---|------------------------|--|---|
|   | Aware of service       | Used service IN Bismarck/Burleigh County | Used service OUTSIDE Bismarck/Burleigh County |
| Clinic (N=458)                                | 85.0                   | 81.2                                     | 8.5   |
| Walk in clinic (N=461)                        | 85.5                   | 73.3                                     | 5.4   |
| Assisted living (N=461)                       | 85.5                   | 2.6                                      | 0.9   |
| Hospice care (N=458)                          | 85.0                   | 5.2                                      | 2.4   |
| Basic care services (N=407)                   | 75.5                   | 5.7                                      | 1.5   |
| Nursing home (N=476)                          | 88.3                   | 3.6                                      | 1.5   |
| Home medical services store (N=391)           | 72.5                   | 15.1                                     | 1.8   |
| Home oxygen service (N=332)                   | 61.6                   | 3.0                                      | 0.3   |
| Assistance paying for medication (N=321)      | 59.6                   | 5.6                                      | 0.3   |
| Chemotherapy/radiation services (N=439)       | 81.4                   | 5.5                                      | 0.7   |
| Swing bed/transitional care unit (N=414)      | 76.8                   | 1.7                                      | 1.2   |
| Home health care (N=451)                      | 83.7                   | 5.5                                      | 1.3   |
| Visiting physician/specialist (N=274)         | 50.8                   | 12.8                                     | 1.8   |
| Social services (N=467)                       | 86.6                   | 7.1                                      | 1.5   |
| Substance abuse services (N=453)              | 84.0                   | 3.1                                      | 1.1   |
| Dialysis (N=447)                              | 82.9                   | 0.2                                      | 0.2   |
| Mental health and behavioral services (N=456) | 84.6                   | 12.5                                     | 2.4   |
| Pharmacy (N=454)                              | 84.2                   | 65.0                                     | 7.9   |

### Awareness and Use of Women's and Children's Services

| Service  | Percent of respondents |  |   |
|--|------------------------|--|---|
|  | Aware of service       | Used service IN Bismarck/Burleigh County | Used service OUTSIDE Bismarck/Burleigh County |
| Pediatric/child care (N=442)                     | 82.0                   | 30.1                                     | 1.8   |
| WIC program (N=435)                              | 80.7                   | 8.5                                      | 1.6   |
| Newborn home visits (N=306)                      | 56.8                   | 17.3                                     | 1.3   |
| Health Tracks (N=311)                            | 57.7                   | 13.5                                     | 0.0   |
| Well baby/well child checks (N=386)              | 71.6                   | 22.5                                     | 1.3   |
| Family planning and reproductive health (N=401)  | 74.4                   | 7.7                                      | 0.7   |
| Women's Way (N=422)                              | 78.3                   | 3.8                                      | 0.0   |
| School nurses (N=418)                            | 77.6                   | 12.4                                     | 1.0   |
| Childhood immunizations (N=431)                  | 80.0                   | 30.6                                     | 1.6   |
| Optimal Pregnancy Outcome Program (OPOP) (N=231) | 42.9                   | 4.3                                      | 0.0   |
| Infant/child car seat program (N=413)            | 76.6                   | 16.9                                     | 0.7   |

### Awareness and Use of Acute Services

| Service                        | Percent of respondents |  |   |
|--------------------------------|------------------------|--|---|
|                                | Aware of service       | Used service IN Bismarck/Burleigh County | Used service OUTSIDE Bismarck/Burleigh County |
| Ambulance (N=485)              | 90.0                   | 17.1                                     | 2.5   |
| Emergency department (N=471)   | 87.4                   | 57.1                                     | 4.7   |
| Acute care hospital (405)      | 75.1                   | 18.3                                     | 1.2   |
| Surgical services (N=459)      | 85.2                   | 45.1                                     | 2.6   |
| Cardiac services/rehab (N=464) | 86.1                   | 8.0                                      | 0.4   |
| Obstetric services (N=431)     | 80.0                   | 24.6                                     | 1.2   |

### Awareness and use of Screening/Therapy Services

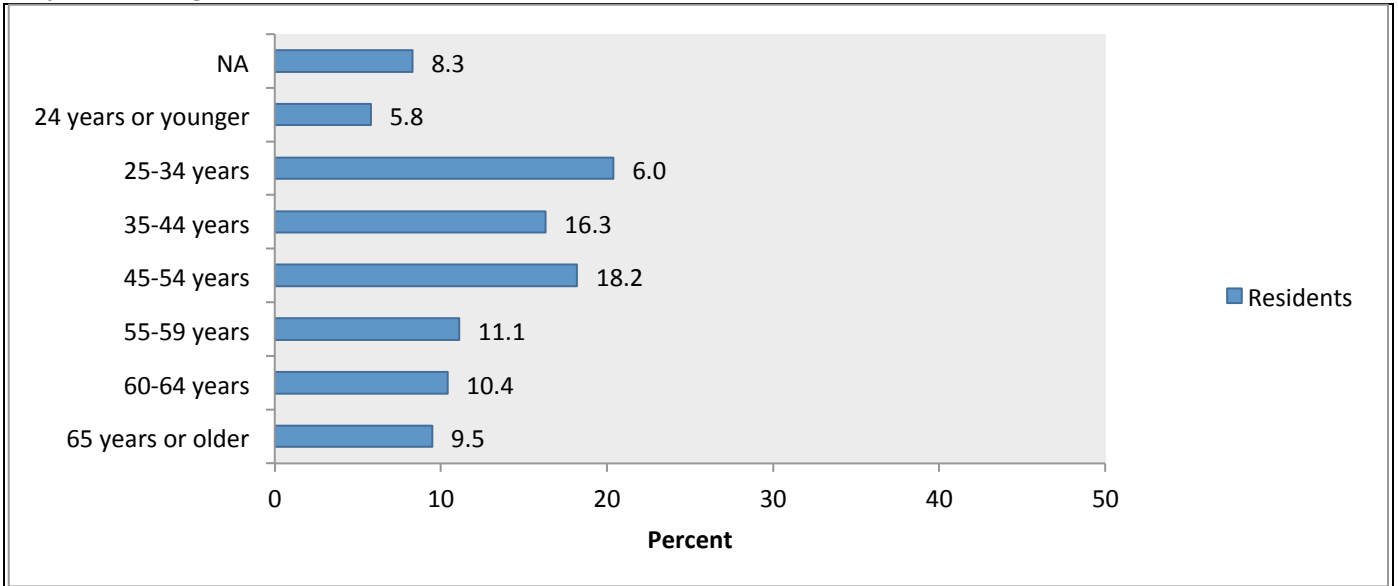
| Service  | Percent of respondents |  |   |
|--|------------------------|--|---|
|  | Aware of service       | Used service IN Bismarck/Burleigh County | Used service OUTSIDE Bismarck/Burleigh County |
| Health screenings (N=434)  | 80.5                   | 35.0                                     | 2.8   |
| Medical nutrition therapy (N=315)                                | 58.4                   | 6.3                                      | 0.0   |
| Diabetes education (N=422)                                       | 78.3                   | 10.0                                     | 0.5   |
| Sleep studies (N=413)  | 76.6                   | 11.1                                     | 0.2   |
| Eye exams/optometric services (N=451)                            | 83.7                   | 65.6                                     | 6.2   |
| Foot care/podiatric services (N=440)                             | 81.6                   | 22.5                                     | 0.9   |
| Hearing tests/audiologist (N=442)                                | 82.0                   | 26.0                                     | 1.8   |
| Physical therapy (N=451)   | 83.7                   | 35.3                                     | 1.3   |
| Occupational therapy (N=449)                                     | 83.3                   | 7.3                                      | 0.7   |
| Speech therapy (N=442)   | 82.0                   | 5.9                                      | 0.9   |
| Counseling services (N=442)                                      | 82.0                   | 19.2                                     | 1.8   |
| Aesthetic treatments (for improving looks/appearance) (N=390)    | 72.4                   | 5.4                                      | 1.0   |
| Laboratory services (N=439)                                      | 81.4                   | 46.9                                     | 3.4   |
| Respiratory care services (N=437)                                | 81.1                   | 6.4                                      | 0.2   |
| Allergy care (N=430)   | 79.8                   | 17.9                                     | 0.9   |
| Radiology (N=445)  | 82.6                   | 27.2                                     | 2.0   |
| Tobacco cessation services (N=423)                               | 78.5                   | 2.4                                      | 0.0   |
| Chiropractic services (N=446)                                    | 82.7                   | 47.1                                     | 3.1   |
| Dental services (N=449)  | 83.3                   | 69.5                                     | 6.2   |
| Communicable disease: sexually transmitted disease, AIDS (N=406) | 75.3                   | 2.0                                      | 0.7   |

**Awareness and Use of Other Community Services**

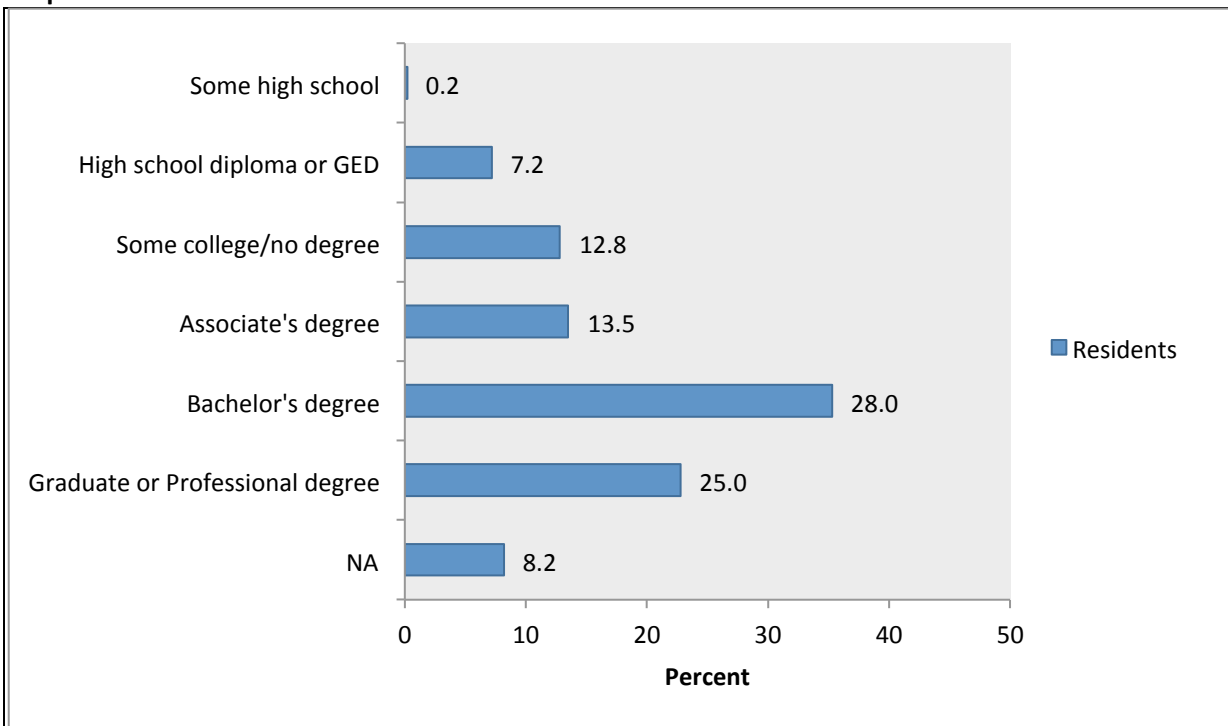
| Service                            | Percent of respondents |  |   |
|------------------------------------|------------------------|--|---|
|                                    | Aware of service       | Used service IN Bismarck/Burleigh County | Used service OUTSIDE Bismarck/Burleigh County |
| Food pantry (N=460)                | 85.3                   | 4.8                                      | 0.7   |
| Parenting classes (N=400)          | 74.2                   | 5.3                                      | 0.0   |
| Cooking classes (N=356)            | 66.0                   | 4.6                                      | 0.0   |
| Weight management programs (N=423) | 78.5                   | 11.6                                     | 0.2   |
| Recycling (N=424)                  | 78.7                   | 38.9                                     | 2.6   |
| CPR and/or First Aid (N=442)       | 82.0                   | 30.5                                     | 2.9   |
| Babysitting classes (N=380)        | 70.5                   | 8.4                                      | 0.0   |

## Survey Respondents' Demographic Information

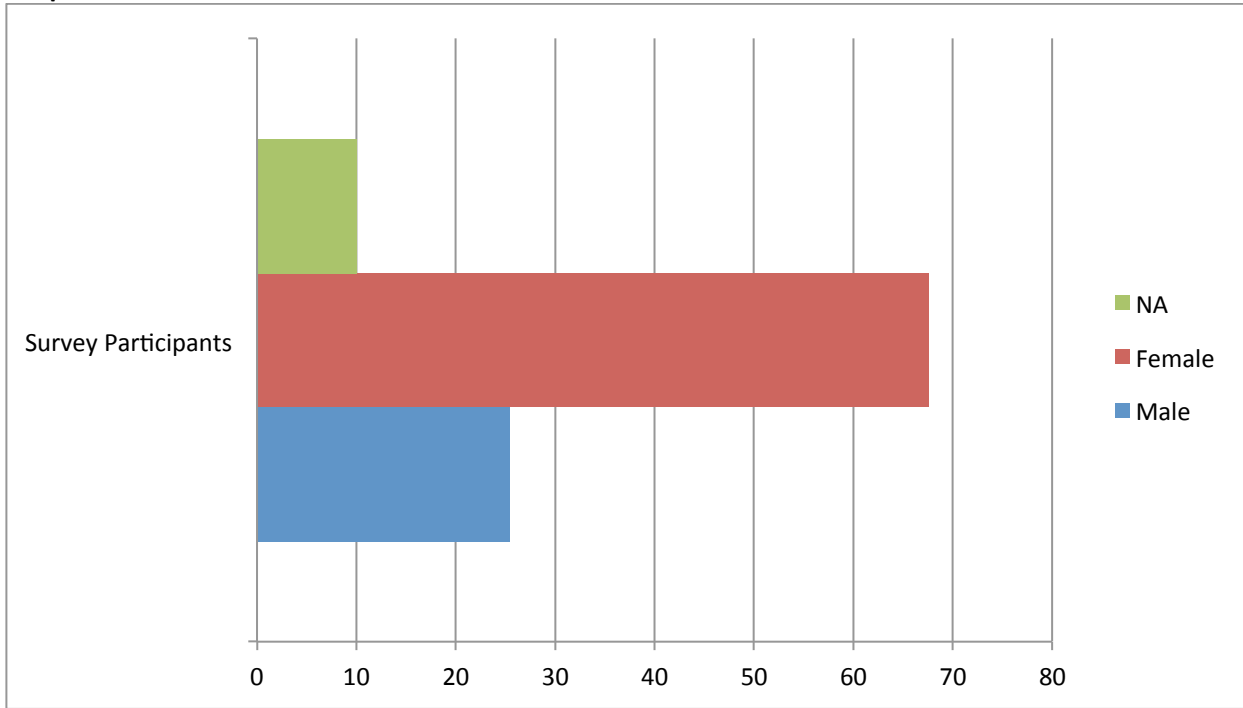
### Respondents' age distribution



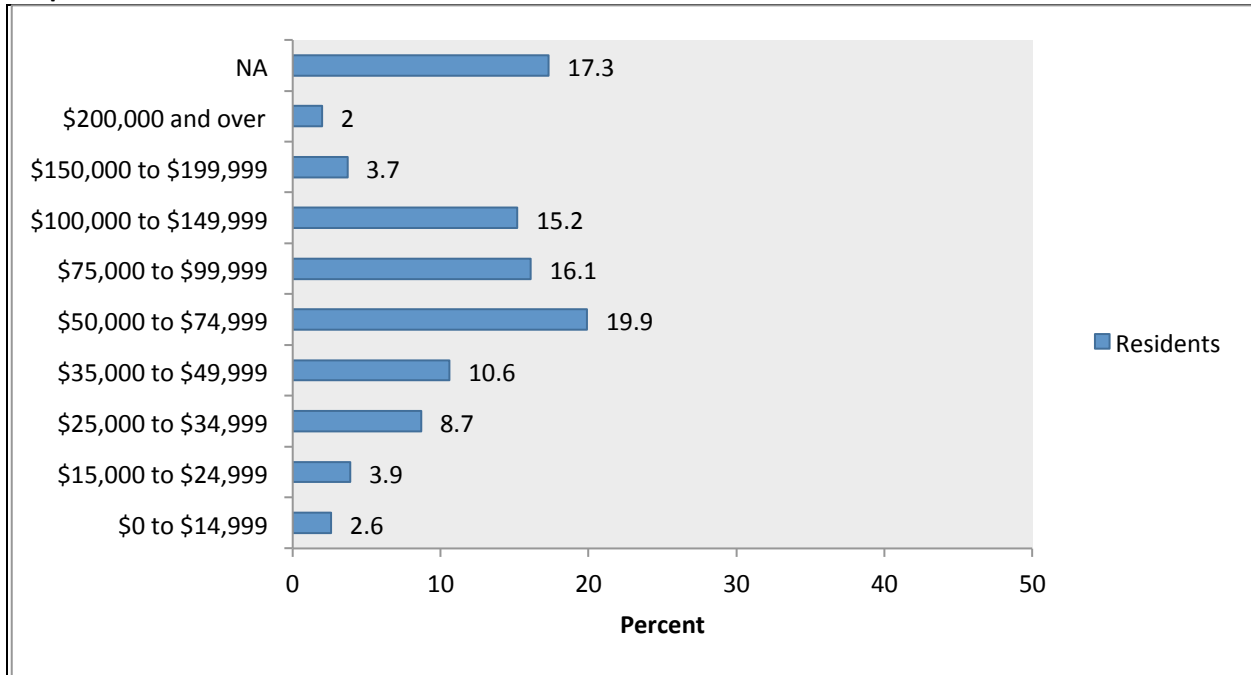
### Respondents' Education



### Respondents' Gender Distribution



### Respondents' Annual Household Income before Taxes



## Patient Experience Survey Information

In addition to high-quality clinical care, Sanford Health places great importance on providing outstanding, compassionate care and service to every patient and their family members. Recognizing an opportunity for improvement, Sanford Health in 2010 launched a comprehensive patient experience initiative. The program aims to ensure excellent customer service by creating and fostering a culture that encourages excellent care throughout the organization—employee-to-employee as well as employee-to-patient.

According to Grant, Gulsvig and Call (2006), patient satisfaction is “highly correlated with clinical measures outcomes and workforce stability. Facilities with higher customer satisfaction tend to have better clinical outcomes, lower staff turnover, and higher staff retention.”

Patient experience was identified as a top priority by the Sanford Health Bismarck Strategic Planning and Marketing Committee in 2010 and a full-time patient experience director was appointed shortly thereafter. The patient experience director identified education needs regarding Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and Value Based Purchasing (VBP) and worked to create a comprehensive program addressing both. The Sanford Health Bismarck patient experience program, called One Above, strives to ensure safe, effective, patient-centered, timely, efficient and equitable care.

In addition to ongoing staff training, the program includes HCAHPS survey reporting and analysis. HCAHPS data is used to monitor improvement throughout the organization and provides a call to action to continually strive for patient-centered excellence.

## HCAHPS

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Survey is the first national, standardized, publicly reported survey of patients' perspectives of hospital care. HCAHPS is a 27-item survey instrument and data collection methodology for measuring patients' perceptions of their hospital experience. HCAHPS is administered to a random sample of adult inpatients between 48 hours and six weeks after discharge. Patients admitted in the medical, surgical and maternity care service lines are eligible for the survey.

Sanford Health Bismarck data is reported quarterly to national databases for comparison purposes. Of the data reported, 10 questions are reported back to the public online at [medicare.gov/hospitalcompare](http://medicare.gov/hospitalcompare). Those publicly-reported questions, complete with state and national comparison data, are summarized in the table below.

### Sanford Health Bismarck HCAHPS Survey Results (April 2011 thru March 2012)

| <i>How often did nurses communicate well with patients?</i>             |               |                |                           |
|---|---------------|----------------|---------------------------|
|   | <b>Always</b> | <b>Usually</b> | <b>Sometimes or never</b> |
| <b>Sanford Medical Center Bismarck</b>                                  | 77%           | 19%            | 4%                        |
| <b>North Dakota Average</b>   | 77%           | 19%            | 4%                        |
| <b>National Average</b>   | 78%           | 17%            | 5%                        |
| <i>How often did doctors communicate well with patients?</i>            |               |                |                           |
|   | <b>Always</b> | <b>Usually</b> | <b>Sometimes or never</b> |
| <b>Sanford Medical Center Bismarck</b>                                  | 76%           | 19%            | 5%                        |
| <b>North Dakota Average</b>   | 78%           | 18%            | 4%                        |
| <b>National Average</b>   | 81%           | 15%            | 4%                        |
| <i>How often did patients receive help quickly from hospital staff?</i> |               |                |                           |
|   | <b>Always</b> | <b>Usually</b> | <b>Sometimes or never</b> |
| <b>Sanford Medical Center Bismarck</b>                                  | 65%           | 27%            | 8%                        |



|  |                                |                 |                           |
|--|--------------------------------|-----------------|---------------------------|
| North Dakota Average   | 65%                            | 27%             | 8%                        |
| National Average   | 66%                            | 24%             | 10%                       |
| <b>How often was patients' pain well controlled?</b>                                   |                                |                 |                           |
|  | <b>Always</b>                  | <b>Usually</b>  | <b>Sometimes or never</b> |
| Sanford Medical Center Bismarck  | 68%                            | 25%             | 7%                        |
| North Dakota Average   | 69%                            | 25%             | 6%                        |
| National Average   | 70%                            | 23%             | 7%                        |
| <b>How often did staff explain medicines before giving them to patients?</b>           |                                |                 |                           |
|  | <b>Always</b>                  | <b>Usually</b>  | <b>Sometimes or never</b> |
| Sanford Medical Center Bismarck  | 63%                            | 21%             | 16%                       |
| North Dakota Average   | 60%                            | 21%             | 19%                       |
| National Average   | 63%                            | 18%             | 19%                       |
| <b>How often were the patients' rooms and bathrooms kept clean?</b>                    |                                |                 |                           |
|  | <b>Always</b>                  | <b>Usually</b>  | <b>Sometimes or never</b> |
| Sanford Medical Center Bismarck  | 72%                            | 21%             | 7%                        |
| North Dakota Average   | 72%                            | 20%             | 8%                        |
| National Average   | 73%                            | 18%             | 9%                        |
| <b>How often was the area around patients' rooms kept quiet at night?</b>              |                                |                 |                           |
|  | <b>Always</b>                  | <b>Usually</b>  | <b>Sometimes or never</b> |
| Sanford Medical Center Bismarck  | 51%                            | 37%             | 12%                       |
| North Dakota Average   | 55%                            | 35%             | 10%                       |
| National Average   | 60%                            | 29%             | 11%                       |
| <b>Were patients given information about what to do during their recovery at home?</b> |                                |                 |                           |
|  | <b>Yes</b>                     | <b>No</b>       |                           |
| Sanford Medical Center Bismarck  | 86%                            | 14%             |                           |
| North Dakota Average   | 85%                            | 15%             |                           |
| National Average   | 84%                            | 16%             |                           |
| <b>How do patients rate the hospital overall?</b>                                      |                                |                 |                           |
|  | <b>9 or 10 (10 is highest)</b> | <b>7 or 8</b>   | <b>6 or lower</b>         |
| Sanford Medical Center Bismarck  | 69%                            | 24%             | 7%                        |
| North Dakota Average   | 66%                            | 25%             | 9%                        |
| National Average   | 69%                            | 23%             | 8%                        |
| <b>Would patients recommend the hospital to friends and family?</b>                    |                                |                 |                           |
|  | <b>Definitely</b>              | <b>Probably</b> | <b>No</b>                 |
| Sanford Medical Center Bismarck  | 76%                            | 21%             | 3%                        |
| North Dakota Average   | 69%                            | 27%             | 4%                        |
| National Average   | 70%                            | 25%             | 5%                        |

Grant LA, Gulsvig J, Call J. Measuring excellence: the new quality agenda. Provider. 2006 Oct; 32(10):suppl 1-7. PubMed PMID: 18214244.

## Secondary Research

### Burleigh County Health Profile

The health of a community depends on many different factors, including the environment, education and jobs, access to and quality of health care, and individual behaviors. By implementing effective policies and programs, communities can reduce exposure to negative factors like second-hand smoke as well as improve access to positive opportunities like park and recreation spaces. Collectively, these changes improve a community's overall health and quality of life.

To accurately and consistently measure the health of North Dakota communities, researchers at North Dakota State University in Fargo, N.D., working collaboratively with the Fargo-Moorhead Community Health Needs Assessment Collaborative, created County Health Profiles for each North Dakota county. The County Profiles are based largely on the County Health Rankings from the Mobilizing Action Toward Community Health (MATCH), a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute. State and national benchmarking required additional data sources including the U.S. Census Bureau, Small Area Health Insurance Estimates, and the Centers for Disease Control and Prevention's National Center for Health Statistics—the Health Indicators Warehouse. Benchmarks indicate the 90<sup>th</sup> percentile, i.e. only 10 percent of counties nationwide are better.

The information that follows is data gleaned from the Burleigh County's County Health Profile report. The report is divided into two main categories: health outcomes and health factors.

### HEALTH OUTCOMES

Two types of outcomes are measured in the health outcomes category: mortality—how long people live; and morbidity—how healthy people feel. While measuring length of life is an important indicator of a community's health, it is also valuable to include measures of how healthy people are while alive. To that end, self-reported health status has been shown to be a very reliable measure of current health.

#### Mortality

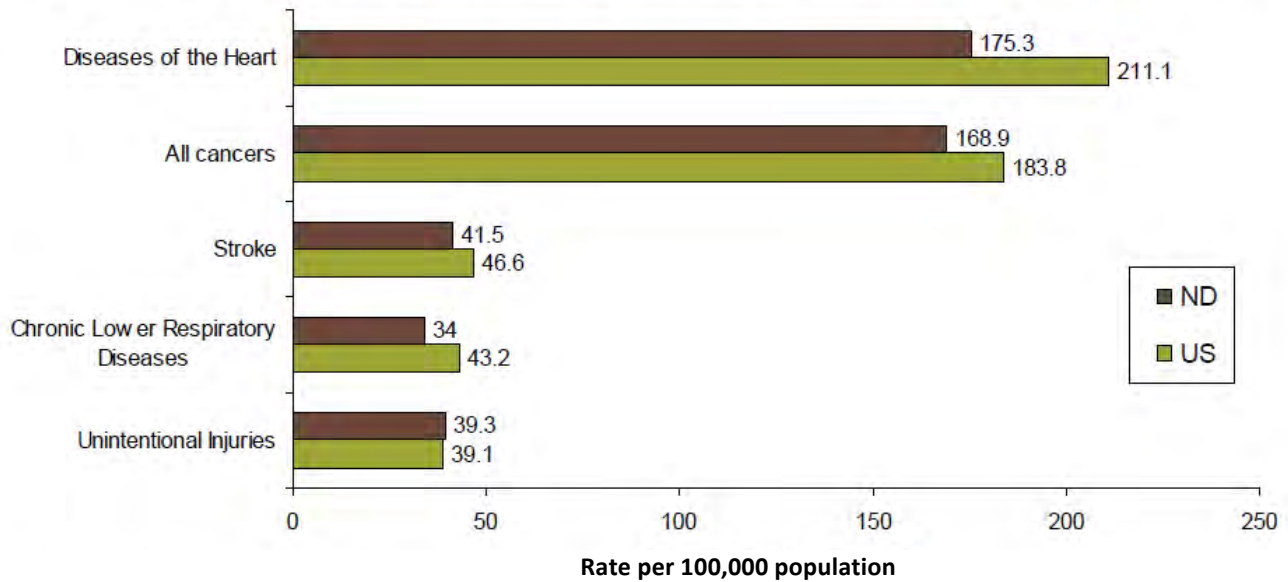
The Mortality health outcomes indicate that North Dakota as a state has more premature deaths than the national benchmark. Burleigh County, however, had slightly fewer premature deaths than the national benchmark.

Appendix provides a county view of the premature deaths within the five-state region.

| Mortality       |  | Burleigh County | U.S. Benchmark | North Dakota |
|-----------------|--|-----------------|----------------|--------------|
| Premature death | Years of potential life lost before age 75 (per 100,000, age-adjusted) | 5,447           | 5,466          | 6,305        |

**Data source:** Data on deaths, including age at death, are based on death certificates reported to the National Vital Statistics System (NVSS) at the National Center for Health Statistics, part of the Centers for Disease Control and Prevention (CDC). NVSS calculates age-adjusted years of potential life lost (YPLL) rates based on three-year averages to create more robust estimates of mortality, particularly for counties with smaller populations.

**Top five Causes of Death: North Dakota compared with United States**



**Data source:** CDC National Center for Health Statistics.

**Morbidity**

Self-reported health status is a general measure of health-related quality of life in a population. This measure is based on survey responses to the question: “In general, would you say that your health is excellent, very good, good, fair, or poor?” The value reported in the County Health Rankings is the percent of adult respondents who rate their health “fair” or “poor.”

Burleigh County residents and North Dakotans in general self-report slightly more days of poor health than the national benchmark. Additionally, Burleigh County and North Dakota have slightly higher rates of low birth weight newborns. Appendix provides county views of the Morbidity indicators within the five-state region.

| Morbidity                 |   | Burleigh County | U.S. Benchmark | North Dakota |
|---------------------------|---|-----------------|----------------|--------------|
| Poor or fair health       | Percent of adults reporting fair or poor health (age-adjusted)                    | 10%             | 10%            | 12%          |
| Poor physical health days | Average number of physical unhealthy days reported in past 30 days (age-adjusted) | 2.9             | 2.6            | 2.7          |
| Poor mental health days   | Average number of mentally unhealthy days reported in past 30 days (age-adjusted) | 2.6             | 2.3            | 2.5          |
| Low birth weight          | Percent of live births with low birth weight (<2,500 grams)                       | 7.2%            | 6%             | 6.5%         |

**Data source:** This measure was calculated by the National Center for Health Statistics using data from the Centers for Disease Control and Prevention’s (CDC) Behavioral Risk Factor Surveillance System (BRFSS).

## **HEALTH FACTORS**

Health factors includes two main categories—health behaviors and clinical care. Both have the potential to profoundly affect a community’s health and wellbeing.

### **Health Behaviors**

The health behaviors included here—smoking, obesity, physical inactivity and excessive drinking—are behavioral risk factors because they increase one’s risk for chronic diseases including heart disease, stroke, cancer and diabetes. Heart disease/stroke and cancer account for 26 percent and 23 percent, respectively, of all deaths in North Dakota.

### **Smoking**

Adult smoking prevalence is the estimated percent of the adult population that currently smokes every day or “most days” and has smoked at least 100 cigarettes in their lifetime.

Each year approximately 443,000 premature deaths occur primarily due to smoking. Cigarette smoking is identified as a cause in multiple diseases including various cancers, cardiovascular disease, respiratory conditions, low birth weight and other adverse health outcomes. Measuring the prevalence of tobacco use in the population can alert communities to potential adverse health outcomes and can be valuable for assessing the need for cessation programs or the effectiveness of existing programs.

In North Dakota, tobacco use is the leading preventable cause of death, disease and disability (*Saving Lives – Saving Money: North Dakota’s Comprehensive State Plan to Prevent and Reduce Tobacco Use 2009 – 2014*). Each year 877 North Dakota adults die prematurely from illnesses caused by smoking and approximately 11,000 North Dakota youth younger than 18 are projected to die prematurely due to smoking.

### **Obesity**

The adult obesity measure represents the percent of the adult population (age 20 and older) that has a body mass index (BMI) greater than or equal to 30 kg/m<sup>2</sup>.

Obesity is often the end result of an overall energy imbalance due to poor diet and limited physical activity. Obesity increases the risk for health conditions such as heart disease, type 2 diabetes, cancer, hypertension, dyslipidemia, stroke, liver and gallbladder disease, osteoarthritis, sleep apnea and respiratory problems.

Burleigh County’s adult obesity rate is on par with the national benchmark—25 percent. The state’s overall rate of obesity is higher—28 percent.

North Dakota’s rate of obesity in children, as in the rest of the nation, is increasing at alarming rates. N.D. Dept. of Health (NDDH) reports that 23.7 percent of North Dakota’s high school students are overweight or obese and 31.4 percent of children ages 2 through 5 enrolled in the WIC program are overweight or obese.

One strategy to combat the state’s obesity program is Healthy North Dakota, a statewide partnership of more than 400 stakeholders committed to working together to find solutions to healthier living in North Dakota. Initiated by the NDDH, Healthy North Dakota targets four main areas—healthy eating, physical activity, healthy living and worksite wellness.

### **Physical Inactivity**

Physical inactivity is the estimated percent of adults aged 20 and over reporting no leisure time physical activity.

Decreased physical activity is related to several disease conditions including type 2 diabetes, cancer, stroke, hypertension, cardiovascular disease and premature mortality, independent of obesity. In addition, physical inactivity at the county level is related to health care expenditures of circulatory system diseases.

The N.D. Dept. of Health's Healthy North Dakota initiative aims to increase physical activity levels throughout the state with the ultimate goal of creating healthy residents and healthy communities.

### **Excessive Drinking**

The excessive drinking measure reflects the percent of the adult population that reports either binge drinking—defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days—or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average.

Excessive drinking is a risk factor for adverse health outcomes including alcohol poisoning, hypertension, heart attacks, sexually transmitted infections, unintended pregnancy, fetal alcohol syndrome, sudden infant death syndrome, suicide, interpersonal violence and motor vehicle crashes.

North Dakota has a substantial problem with alcohol misuse. Among all the states, North Dakota is consistently ranked high in binge use of alcohol among both adults and high school students. More than 58 percent of North Dakotans between the ages of 18 and 25 — the highest rate in the U.S. — reported binge drinking. Nearly 29 percent in the 26-and-older category said they had five or more drinks in one sitting, also leading the nation, the report said. (N.D. Dept. of Health).

State agencies including the Attorney General's Office and Department of Human Services have targeted anti-binge drinking campaigns at underage drinkers and their families.

### **Motor Vehicle Accidents**

Motor vehicle crash deaths are measured as the crude mortality rate per 100,000 population due to on- or off-road accidents involving a motor vehicle. Motor vehicle deaths include traffic and non-traffic accidents involving cars, vans, trucks, buses, motorcycles, three-wheel motor vehicles, and ATVs. Also included are industrial, agricultural and construction vehicles as well as bikes and pedestrians when colliding with any of the vehicles mentioned.

A strong association has also been demonstrated between excessive drinking and alcohol-impaired driving, with approximately 17,000 Americans killed annually in alcohol-related motor vehicle crashes.

While the rate of deaths statewide is 18.5—more than 50 percent higher than the national benchmark of 12—Burleigh County's rate is 8.4. After dipping to a near record low of 105 mortalities in 2010, North Dakota's statewide mortalities jumped to 148 in 2011 and then 170 in 2012.

The N.D. Strategic Highway Safety Plan (SHSP), developed by the N.D. Department of Transportation through coordination with a broad spectrum of stakeholders, launched an initiative called Towards Zero Deaths aimed at reducing the number of annual deaths to zero. The plan's interim goals call for reducing deaths to 110 by the year 2020.

### **Sexually Transmitted Infections**

The Sexually Transmitted Infection (STI) rate is measured as chlamydia incidence (the number of new cases reported) per 100,000 population. Chlamydia is the most common bacterial STI in North America and is one of the major causes of tubal infertility, ectopic pregnancy, pelvic inflammatory disease and chronic pelvic pain. STIs in general are associated with a significantly increased risk of morbidity and mortality, including increased risk of cervical cancer, involuntary infertility and premature death. However, increases in reported chlamydia infections may reflect the expansion of chlamydia screening, use of increasingly sensitive diagnostic tests, an increased emphasis on case reporting from providers and laboratories, improvements in the information systems for reporting, as well as true increases in disease.

## Teen Birth Rates

Teen pregnancy is associated with poor prenatal care and preterm delivery. Pregnant teens are more likely than older women to receive late or no prenatal care, more likely to have gestational hypertension and more likely to develop anemia and achieve poor maternal weight gain. They are also more likely to have a preterm delivery and low birth weight, increasing the risk of child developmental delay, illness, and mortality.

North Dakota's rate of teen pregnancy—measured as the number of births per 10,000 females ages 15-19—is 28, which more than 27 percent higher than the national benchmark of 22. Burleigh County's teen birth rate is 24, 10 percent higher than the national benchmark.

Appendix provides county views of the Health Behavior indicators within the five-state region.

| Health Behaviors                |   | Burleigh County | U.S. Benchmark | North Dakota |
|---------------------------------|---|-----------------|----------------|--------------|
| Adult smoking                   | Percent of adults who currently smoke                         | 16%             | 14%            | 19%          |
| Adult obesity                   | Adults with a BMI greater than 30 kg/m <sup>2</sup>           | 25%             | 25%            | 30%          |
| Physical inactivity             | Percent of adults reporting no activity                       | 21%             | 21%            | 26%          |
| Excessive drinking              | Percent of adults reporting binge drinking and heavy drinking | 18%             | 8%             | 22%          |
| Vehicle crash deaths            | Motor vehicle crash deaths per 100,000 population             | 10              | 12             | 19           |
| Sexually transmitted infections | Number of new chlamydia cases per 100,000 population          | 341             | 84             | 305          |
| Teen birth rate                 | Number of teen births per 100,000 females ages 15-19          | 24              | 22             | 28           |

**Data sources:** National Center for Health Statistics using data from the CDC/BRFSS; CDC National Center for Health Statistics (NCHS); National Vital Statistics System (NVSS) and CDC National Center for Hepatitis, HIV, STD, and TB Prevention.

## Clinical Care

### Uninsured Adults and Children

Lack of health insurance coverage is a significant barrier to accessing needed health care. About one-quarter of uninsured adults go without needed care due to cost each year. The uninsured are less likely than those with insurance to receive preventive care and services for major health conditions—which leads to more serious health problems for many.

The Kaiser Family Foundation estimates 61,900 adults ages 18-64 and 12,500 children ages 0-17 in North Dakota do not have health insurance ([www.statehealthfacts.org](http://www.statehealthfacts.org), 2012).

### Primary Care Physicians

Primary care physicians include practicing physicians specializing in general practice medicine, family medicine, internal medicine, pediatrics, and obstetrics/gynecology. The measure represents the population per one provider.

Having access to care requires not only having financial coverage but also access to providers. While high rates of specialist physicians have been shown to be associated with higher, and perhaps unnecessary, utilization, having sufficient availability of primary care physicians is essential so that people can get preventive and primary care, and when needed, referrals to appropriate specialty care.

With only one primary care physician per 853 people in Burleigh County and only one physician per 1,009 people in the state—in comparison to the national benchmark of 631:1—access to primary care physicians in North Dakota is strained. The National Health Service Corps' most recent data indicates North Dakota has 81 health professional shortage areas (HPSAs)—geographic areas that have been designated federally as having a shortage of health care providers. Of North Dakota's 53 counties, 28 are designated HPSA counties, meaning the entire county's population has access that is below national standards ([www.hrsa.gov](http://www.hrsa.gov), 2012).

North Dakota, like the rest of the country, is facing a major health care delivery challenge—how to meet the current and rising future demand for health care services with a limited panel of physicians and other providers. The problem is particularly acute in rural regions of North Dakota, where there has been a chronic shortage, especially of primary care providers, dating back four decades or more. Part of the problem in North Dakota is an inadequate number of providers, but a larger portion of the problem is due to maldistribution of providers who are disproportionately located in the larger urbanized areas of the state. The challenge of providing adequate health care in North Dakota will worsen over the next decades through a combination of aging of the population and localized population growth in western North Dakota's oil-producing communities, both of which will increase the demand for health care services (*Second Biennial Report Health Issues for the State of North Dakota*, 2013).

### **Preventable Hospital Stays**

Preventable hospital stays are measured as the hospital discharge rate for ambulatory care-sensitive conditions (ACSC) per 1,000 Medicare enrollees. An ACSC is a medical problem that was probably preventable and could have been treated outside a hospital. For example, hypertension is a condition that can be treated outside of a hospital. With proper medication and management of care, most people should not need to be hospitalized for hypertension.

Hospitalization for diagnoses amenable to outpatient services suggests that the quality of care provided in the outpatient setting was less than ideal. The measure may also represent the population's tendency to overuse the hospital as a main source of care.

### **Diabetes Screening**

Diabetes screening is calculated as the percent of Medicare patients with diabetes whose blood sugar control was screened in the past year using a test of their glycosylated hemoglobin (HbA1c) levels.

Regular HbA1c screening among diabetes patients is considered the standard of care. It helps assess the management of diabetes over the long term by providing an estimate of how well a patient has managed his or her diabetes over the past two to three months. When hyperglycemia is addressed and controlled, complications from diabetes can be delayed or prevented.

The prevalence of diabetes in North Dakota is slightly below the national average of 7.1%. However, numbers are increasing quickly. Between 1994 and 2007, the percentage of adult North Dakotans who reported ever being told they had diabetes increased 75 percent, from 3.6 percent to 6.3 percent (N.D. Dept. of Health, 2009). This represents an increase in the number of people with diabetes from about 23,000 to about 43,000.

Burleigh County's diabetes prevalence is 6.7 percent ([www.CDC.gov](http://www.CDC.gov), 2012).

Diabetes increases with advancing age. Among North Dakotans ages 18 to 24, 1.0 percent have diabetes, compared to 16 percent among those 65 and older (NDDH, 2006). People with low income or low education are at increased risk of diabetes. Diabetes was reported by 13.5 percent of those without a high school education, compared to 5.0 percent among those with a college education; and it was reported by 8.8 percent of those with a household income of less than \$25,000 compared to 3.9 percent of those with household incomes of \$75,000 or more (NDDH, 2006). Diabetes is more common among American Indians (13.9 percent) than among whites (6.1 percent) (NDDH, 2006).

Based on national estimates of the cost of diabetes, direct and indirect costs due to diabetes in North Dakota are estimated at \$278 million per year, of which two-thirds (\$184 million) are direct medical costs. A person with diabetes uses about 2.4 times as much in health care resources as a person without diabetes (American Diabetes Association: Economic Costs of Diabetes in the U.S., 2003).

### Mammography Screening

This measure of mammography screening represents the percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period.

Evidence suggests that mammography screening reduces breast cancer mortality, especially among older women. A physician’s recommendation or referral—and satisfaction with physicians—are major facilitating factors among women who obtain breast cancer screening. The percent of women ages 40-69 receiving a mammogram is a widely endorsed quality of care measure.

### Dentist Rate

The oral health of Americans has improved in recent years, yet considerable gaps in the provision of dental care remain, perhaps most notably for low-income families.

More than half of North Dakota children have had tooth decay and more than one in five children have untreated tooth decay (Ronald McDonald House, 2012). Untreated dental problems can result in pain and infection, create difficulty chewing and eating and interfere with concentration and learning.

| Clinical Care              |  | Burleigh County | U.S. Benchmark | North Dakota |
|----------------------------|--|-----------------|----------------|--------------|
| Uninsured                  | Percent of adult population ages 18-64 without health insurance                                  | 12%             | 13%            | 15%          |
| Uninsured youth            | Percent of youth ages 0-18 without health insurance  | 6%              | 7%             | 8%           |
| Primary care physicians    | Ratio of population to primary care physicians   | 853:01          | 631:01         | 1,009:1      |
| Mental health providers    | Ratio of population to mental health providers   | 2307:1          | 2,242:1        | 2555:1       |
| Preventable hospital stays | Hospitalization discharges for ambulatory care-sensitive conditions per 1,000 Medicare enrollees | 42              | 49             | 64           |
| Diabetes screening         | Percent of Medicare enrollees with diabetes that receive HbA1c screening                         | 87%             | 89%            | 85%          |
| Mammography screening      | Percent of female Medicare enrollees that receive mammography screening                          | 76%             | 74%            | 72%          |
| Dentist rate               | Number of professionally active dentists per 100,000 population                                  | 66.1            | 69.0           | 51.0         |

**Data sources:** U.S. Census Bureau Small Area Health Insurance Estimates; Dartmouth Atlas of Health Care using Medicare claims data; Health Resources and Services Administration’s Area Resource File.



## **Social and Economic Factors**

### **Education**

High school graduation is reported as the percent of a county's ninth grade cohort in public schools that graduates from high school in four years. The college measure represents the percent of the population age 25-44 with some post-secondary education, such as enrollment at vocational/technical schools, junior colleges or four-year colleges. It includes individuals who pursued education following high school but did not receive a degree.

The relationship between more education and improved health outcomes is well known, with years of formal education correlating strongly with improved work and economic opportunities, reduced psychosocial stress, and healthier lifestyles.

Bismarck public schools in 2011 achieved a 97 percent graduation rate, surpassing the national benchmark of 92 percent. The state of North Dakota consistently ranks in the top three states for high school graduation (source: National Dropout Prevention Center/Network). According to the N.D. Dept. of Public Instruction, 92 percent of Bismarck Public School District's graduating seniors plan to attend a 4-year, 2-year, or vocational college.

### **Unemployment**

Unemployment is measured as the percent of the civilian labor force, age 16 and older, that is unemployed but seeking work.

Unemployment may lead to physical health responses ranging from self-reported physical illness to mortality, especially suicide. It has also been shown to lead to an increase in unhealthy behaviors related to alcohol and tobacco consumption, diet, exercise, and other health-related behaviors, which in turn can lead to increased risk for disease or mortality. Because employee-sponsored health insurance is the most common source of health insurance coverage, unemployment can also limit access to health care.

### **Children in Poverty**

Children in poverty is the percent of children under age 18 living below the Federal Poverty Level (FPL). Poverty can result in negative health consequences, such as increased risk of mortality, increased prevalence of medical conditions and disease incidence, depression, intimate partner violence and poor health behaviors. While negative health effects resulting from poverty are present at all ages, children in poverty suffer greater morbidity and mortality due to an increased risk of accidental injury and lack of health care access. Children's risk of poor health and premature mortality may also be increased due to the poor educational achievement associated with poverty. The children in poverty measure is strongly correlated with overall poverty rates.

### **Inadequate Social Support**

The social and emotional support measure is based on responses to the question: "How often do you get the social and emotional support you need?" The County Health Rankings reports the percent of the adult population that responds that they "never," "rarely," or "sometimes" get the support they need.

Poor family support, minimal contact with others, and limited involvement in community life are associated with increased morbidity and early mortality. Furthermore, social support networks have been identified as powerful predictors of health behaviors, suggesting that individuals without a strong social network are less likely to participate in healthy lifestyle choices.

### **Children in Single-Parent Households**

The single-parent household measure is the percent of all children in family households who live in a household headed by a single parent (male or female householder with no spouse present).

Adults and children in single-parent households are both at increased risk for adverse health outcomes such as mental health problems (including substance abuse, depression, and suicide) and unhealthy behaviors such as smoking and excessive alcohol use.

### Violent Crime Rate

Violent crime is represented as an annual rate per 100,000 people. Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, forcible rape, robbery and aggravated assault.

High levels of violent crime compromise physical safety and psychological wellbeing. Crime rates can also deter residents from pursuing healthy behaviors such as exercising out-of-doors. Additionally, some evidence indicates that increased stress levels may contribute to obesity prevalence, even after controlling for diet and physical activity levels.

The state of North Dakota regularly ranks as one of “America’s Safest States” (Source: United States Peace Index). Bismarck MSA, which has enjoyed historically low levels of crime, has seen an uptick in crime in recent years, jumping from 256.7 violent crimes per 100,000 people in 2008 to 319.9 violent crimes/100,000 people in 2010. This compares to a national rate of 403.6. (Source: Federal Bureau of Investigation Uniform Crime Reporting Statistics, report year 2010)

Appendix provides county views of the Social and Economic indicators within the five-state region.

| Social and Economic Factors          |  | Burleigh County | U.S. Benchmark | North Dakota |
|--------------------------------------|--|-----------------|----------------|--------------|
| High school graduation               | Percent of public schools students that graduate high school in four years                         | 97%             | 92%            | 88%          |
| College                              | Percent of adults ages 25-44 with some post-secondary education                                    | 79%             | 68%            | 73%          |
| Children in poverty                  | Percent of children ages 0-17 living below the Federal Poverty Level (FPL)                         | 11%             | 13%            | 16%          |
| Inadequate social support            | Percent of adults that never, rarely or sometimes get the social and emotional support they need   | 15%             | 14%            | 16%          |
| Children in single-parent households | Percent of children in families that live in a household headed by a parent with no spouse present | 23%             | 20%            | 25%          |
| Social and Economic Factors          |  | Burleigh County | U.S. Average   | North Dakota |
| Unemployment                         | Percent of population ages 16 and older unemployed but seeking work                                | 3.0%            | 7.70%          | 3.20%        |
| Violent crime rate                   | Offenses that involve face-to-face confrontation between the victim and the perpetrator            | 221.5           | 386.3          | 247.0        |

**Data sources:** National Center for Education Statistics, U.S. Census Bureau American Community Survey and Small Area Income and Poverty Estimates, Bureau of Labor Statistics, Job Service North Dakota, Local Area Unemployment Statistics, National Center for Health Statistics, CDC/BRFSS and Uniform Crime Reporting/Interuniversity Consortium for Political and Social Research National Archives of Criminal Justice Data.

## Physical Environment

### Air Pollution

The air pollution-particulate matter measure represents the annual number of days that air quality was unhealthy for sensitive populations due to fine particulate matter (FPM, < 2.5 µm in diameter). The air pollution-ozone measure represents the annual number of days that air quality was unhealthy for sensitive populations due to ozone levels.

The relationship between elevated air pollution—particularly fine particulate matter and ozone—and compromised health has been well documented. The negative consequences of ambient air pollution include decreased lung function, chronic bronchitis, asthma and other adverse pulmonary effects.

### Access to Recreation Facilities

This measure represents the number of recreational facilities per 100,000 population in a given county. Recreational facilities are defined as establishments primarily engaged in operating fitness and recreational sports facilities, featuring exercise and other active physical fitness conditioning or recreational sports activities such as swimming, skating or racquet sports.

The availability of recreational facilities can influence individuals' and communities' choices to engage in physical activity. Proximity to places with recreational opportunities is associated with higher physical activity levels, which in turn is associated with lower rates of adverse health outcomes related to poor diet, lack of physical activity and obesity.

### Access to Healthy Foods

Limited access to healthy foods measures the proportion of the population who are both living in poverty and do not live close to a grocery store. Studies have linked the food environment to consumption of healthy food and overall health outcomes.

Appendix provides county views of the Physical Environment indicators within the five-state region.

| Physical Environment                  |  | Burleigh County | U.S. Benchmark | North Dakota |
|---------------------------------------|--|-----------------|----------------|--------------|
| Air pollution-particulate matter days | Number of days air quality was unhealthy for sensitive populations due to fine particulate matter      | 0               | 0              | 0            |
| Air pollution-ozone days              | Number of days air quality was unhealthy for sensitive populations due to ozone levels                 | 0               | 0              | 0            |
| Access to recreational facilities     | Number of recreational facilities per 100,000 population   | 15              | 16             | 13           |
| Limited access to healthy foods       | Percent of ZIP codes with a healthy food outlet (e.g., grocery store or produce stand/farmers' market) | 7%              | 92%            | 11%          |

**Data sources:** Public Health Air Surveillance Evaluation (PHASE) project, a collaborative effort between the CDC and the EPA, U.S. Department of Agriculture (USDA) Food Environment Atlas and USDA/County Business Patterns data (recreational facilities are identified by North American Industrial Classification System code 713940).

## DEMOGRAPHICS

| <b>Population by Age</b> |   | <b>Burleigh County</b> | <b>U.S.</b> | <b>North Dakota</b> |
|--------------------------|---|------------------------|-------------|---------------------|
| Total Population         | All ages                                | 81,308                 | 313,914,040 | 672,591             |
| Youth                    | Percent of population ages 0-17         | 22.40%                 | 23.70%      | 22.10%              |
| Elderly                  | Percent of population ages 65 and older | 13.70%                 | 13.30%      | 14.40%              |

| <b>Diversity</b>                                   | <b>Burleigh County</b> | <b>U.S.</b> | <b>North Dakota</b> |
|--|------------------------|-------------|---------------------|
| White persons                                      | 93.20%                 | 78.10%      | 90.40%              |
| Black persons                                      | 0.70%                  | 13.10%      | 1.30%               |
| American Indian and Alaska Native persons          | 4.10%                  | 1.20%       | 5.50%               |
| Asian persons                                      | 0.50%                  | 5.00%       | 1.10%               |
| Native Hawaiian and Other Pacific Islander persons | NA                     | 0.02%       | 0.10%               |
| Persons reporting two or more races                | 1.40%                  | 2.30%       | 1.70%               |
| Persons of Hispanic or Latino Origin               | 1.40%                  | 16.70%      | 2.20%               |

| <b>Housing and Economic Security</b>         | <b>Burleigh County</b> | <b>U.S.</b> | <b>North Dakota</b> |
|--|------------------------|-------------|---------------------|
| Housing units                                | 36,409                 | 132,312,404 | 320,909             |
| Homeownership rate                           | 70.90%                 | 66.10%      | 66.50%              |
| Housing units in multi-unit structures       | 29.80%                 | 25.90%      | 25.80%              |
| Median value of owner-occupied housing units | \$159,000              | \$186,200   | \$118,200           |
| Households                                   | 33,437                 | 114,761,359 | 278,669             |
| Persons per household                        | 2.32                   | 2.6         | 2.3                 |
| Per capita income in the past 12 months      | \$30,070               | \$27,915    | \$27,305            |
| Median household income, 2007-2011           | \$56,231               | \$52,762    | \$49,415            |
| Persons below poverty level                  | 9.30%                  | 14.30%      | 12.30%              |

**Data source:** U.S. Census Bureau

# **IMPLEMENTATION STRATEGY**

## Sanford Health Bismarck 2013 Community Health Needs Assessment Implementation Strategy

### Implementation Strategy: Pediatric Obesity

- Actively participate with community wellness, fitness and healthy living entities to promote and support fitness and active living by sponsoring walking, screening and educational programs.
  - Increase physician awareness of these programs and encourage increased referrals.
- Initiate youth-specific running program.
  - Pursue establishing a Girls on the Run chapter targeting community members at increased risk for pediatric obesity.
- Partner with community efforts to address pediatric obesity including, but not limited to, YMCA Fit Kids, Go! Bismarck/Mandan and Bismarck-Burleigh Public Health's Body Works and Healthy Kids/Healthy Weight programs.
- Offer healthy eating and active living classes via Sanford Bismarck's Doc Talk education series.
- Launch *fit*, a partnership that unites Sanford's medical expertise and WebMD's prominence as an online medical resource. Together the groups will work to prevent type 2 diabetes and address the childhood obesity epidemic. The initial stage of *fit* will provide a series of online resources that combine education with motivation to take action. *fit* is designed to reach, educate and support three audiences through the following platforms:
  - ***fit Kids***: Translating online learning to offline healthy living, this fun and interactive site is designed to engage and motivate children and teens.
  - **Raising *fit Kids***: This platform for parents and families offers tools and resources to become healthy role models while promoting a child's use of *fit Kids*. The site also includes a portal where parents can discuss questions and topics with others like them as well as receive expert insights from Sanford Health professionals.
  - **Medscape**: Sanford Health is steering the content of digital CME programming on WebMD's Medscape site, ensuring health care professionals across the globe are positioned to promote *fit's* healthy living outcomes with children and parents.
- Work with Sanford WebMD *fit* program to leverage this program to parents and children through the local school system.

### Implementation Strategy: Diabetes

- Increase pre-diabetes education and outreach activities.
  - Partner with the N.D. Diabetes Control Project to initiate a comprehensive pre-diabetes behavior modification class.
  - Offer weekly "Diabetes 101" classes to improve JIT diabetes education for newly diagnosed patients.
  - Increase pre-diabetes awareness via health fairs, Doc Talk education series, and newspaper articles.

- Actively participate with community wellness, fitness and healthy living entities to promote and support fitness and active living by sponsoring walking, screening and educational programs.
- Partner with mental health services to offer depression screenings and support services to patients with diabetes.
- Offer monthly diabetes education classes to community members diagnosed with diabetes.
- Launch *fit*, a partnership that unites Sanford's medical expertise and WebMD's prominence as an online medical resource. Together, the groups will work to prevent type 2 diabetes and confront the growing obesity epidemic. The initial stage of *fit* will provide a series of online resources that combine information and education with motivation to take action.

## 2013 Community Health Needs Assessment Enterprise Implementation Strategy

The following unmet needs were identified through a formal community health needs assessment, resource mapping and prioritization process:

- Mental Health Services
- Obesity

### Implementation Strategy: Mental Health Services - Sanford One Mind

- Completion (to the extent resources allow) of full integration of Behavioral Health services in all primary care clinics in Fargo and Sioux Falls
- Completion (to the extent resources allow) of full integration of Behavioral Health services or access to Behavioral Health outreach in all regional clinic sites in the North, South and Bemidji regions
- Complete presentation of outcomes of first three years of integrated Behavioral Health services
- Implementation of integrated Behavioral Health into clinics in new regions
- Design Team for Inpatient Psychiatric Unit, Partial Hospitalization and Clinic Space for Fargo presents recommendations for design of new spaces
- Design Team for Sioux Falls Inpatient Psychiatric Units and Partial Hospitalization

### Implementation Strategy: Obesity

- Medical Management for Obesity
  - Develop CME curriculum for providers and interdisciplinary teams across the enterprise inclusive of medical, nutrition, nursing, and Behavioral Health professionals
- Develop community education programming
  - Include the following program options in the curriculum to create awareness of existing resources:
    - Family Wellness Center
    - Honor Your Health Program
    - WebMD Fit Program
    - Bariatric Services
    - Eating Disorder Institute
    - Mental Health/Behavioral Health
    - Profile
- Actively participate in community initiatives to address wellness, fitness and healthy living



# APPENDIX

# 2011 County Health Profile

An adaptation of the County Health Rankings Project for the Fargo-Moorhead Community Health Needs Assessment Collaborative

**Burleigh County**

**North Dakota**

| <b>HEALTH OUTCOMES</b>                 |   | <b>Burleigh</b> | <b>*National Benchmark</b> | <b>North Dakota</b> |
|--|---|-----------------|----------------------------|---------------------|
| <i>Mortality</i>                       |   |                 |                            |                     |
| <b>Premature death</b>                 | Years of potential life lost before age 75 per 100,000 population (age-adjusted), 2005-2007                 | 5,241           | 5,564                      | 6,330               |
| <i>Morbidity</i>                       |   |                 |                            |                     |
| <b>Poor or fair health</b>             | Percent of adults reporting fair or poor health (age-adjusted), 2003-2009                                   | 10%             | 10%                        | 12%                 |
| <b>Poor physical health days</b>       | Average number of physically unhealthy days reported in past 30 days (age-adjusted), 2003-2009              | 2.8             | 2.6                        | 2.7                 |
| <b>Poor mental health days</b>         | Average number of mentally unhealthy days reported in past 30 days (age-adjusted), 2003-2009                | 2.7             | 2.3                        | 2.5                 |
| <b>Low birthweight</b>                 | Percent of live births with low birthweight (<2,500 grams), 2001-2007                                       | 7.0%            | 6.0%                       | 6.4%                |
| <b>HEALTH FACTORS</b>                  |   |                 |                            |                     |
| <i>Health Behaviors</i>                |   |                 |                            |                     |
| <b>Adult smoking</b>                   | Percent of adults that currently smoke and have smoked at least 100 cigarettes in their lifetime, 2003-2009 | 17%             | 15%                        | 20%                 |
| <b>Adult obesity</b>                   | Percent of adults that report a body mass index (BMI) of at least 30 kg/m <sup>2</sup> , 2008               | 25%             | 25%                        | 28%                 |
| <b>Physical inactivity</b>             | Percent of adults reporting no leisure time physical activity, 2008   | 22%             | 20%                        | 25%                 |
| <b>Excessive drinking</b>              | Percent of adults reporting binge drinking and heavy drinking**, 2003-2009                                  | 19%             | 8%                         | 22%                 |
| <b>Motor vehicle crash death rate</b>  | Motor vehicle crash deaths per 100,000 population, 2001-2007  | 8.4             | 12.0                       | 18.5                |
| <b>Sexually transmitted infections</b> | Number of chlamydia cases (new cases reported) per 100,000 population, 2008                                 | 287.2           | 83.0                       | 300.3               |
| <b>Teen birth rate</b>                 | Number of teen births per 1,000 females ages 15-19, 2001-2007   | 22.2            | 22.0                       | 26.6                |
| <i>Clinical Care</i>                   |   |                 |                            |                     |
| <b>Uninsured adults</b>                | Percent of adult population ages 18-64 without health insurance, 2007                                       | 12%             | 13%                        | 15%                 |
| <b>Uninsured youth</b>                 | Percent of youth ages 0-18 without health insurance, 2007   | 6%              | 7%                         | 8%                  |
| <b>Primary care physicians</b>         | Ratio of total population to primary care physicians, 2008  | 560:1           | 631:1                      | 665:1               |
| <b>Mental health providers</b>         | Ratio of total population to mental health providers, 2008  | 2,307:1         | 2,242:1                    | 2,555:1             |
| <b>Dentist rate</b>                    | Number of professionally active dentists per 100,000 population, 2007                                       | 66.1            | 69.0                       | 51.0                |
| <b>Preventable hospital stays</b>      | Hospitalization discharges for ambulatory care-sensitive conditions per 1,000 Medicare enrollees, 2006-2007 | 56.6            | 52.0                       | 71.3                |
| <b>Diabetic screening</b>              | Percent of diabetic Medicare enrollees that receive HbA1c screening, 2006-2007                              | 84%             | 89%                        | 85%                 |
| <b>Mammography screening</b>           | Percent of female Medicare enrollees that receive mammography screening, 2006-2007                          | 72%             | 74%                        | 72%                 |

| <b>HEALTH FACTORS (continued)</b>           |   | <b>Burleigh</b> | <b>*National Benchmark</b> | <b>North Dakota</b> |
|---|---|-----------------|----------------------------|---------------------|
| <i>Social and Economic Factors</i>          |   |                 |                            |                     |
| <b>High school graduation</b>               | Percent of ninth-grade cohort in public schools that graduates from high school in four years, 2006-2007      | 90%             | 92%                        | 83%                 |
| <b>Some college</b>                         | Percent of adults ages 25-44 with some post-secondary education, 2005-2009                                    | 77%             | 68%                        | 72%                 |
| <b>Unemployment</b>                         | Percent of population ages 16 and older that is unemployed but seeking work, 2009                             | 3.8%            | 5.3%                       | 4.3%                |
| <b>Child poverty</b>                        | Percent of children ages 0-17 living below the Federal Poverty Line, 2008                                     | 11%             | 11%                        | 14%                 |
| <b>Inadequate social support</b>            | Percent of adults that never, rarely, or sometimes get the social and emotional support they need, 2003-2009  | 15%             | 14%                        | 17%                 |
| <b>Children in single-parent households</b> | Percent of children in families that live in a household headed by a parent with no spouse present, 2005-2009 | 25%             | 20%                        | 24%                 |
| <b>Homicide rate</b>                        | Number of deaths due to murder or non-negligent manslaughter per 100,000 population, 2001-2007                | -               | 1.0                        | 1.7                 |
| <i>Physical Environment</i>                 |   |                 |                            |                     |
| <b>Air pollution-particulate matter</b>     | Number of days air quality was unhealthy for sensitive populations due to fine particulate matter, 2006       | 0               | 0                          | 0                   |
| <b>Air pollution-ozone</b>                  | Number of days air quality was unhealthy for sensitive populations due to ozone levels, 2006                  | 0               | 0                          | 0                   |
| <b>Access to healthy foods</b>              | Percent of zip codes with a healthy food outlet (i.e., grocery store or produce stand/farmers' market), 2008  | 27%             | 92%                        | 35%                 |
| <b>Access to recreational facilities</b>    | Number of recreational facilities per 100,000 population, 2008  | 14.0            | 17.0                       | 12.0                |
| <i>Demographics</i>                         |   | <b>Burleigh</b> | <b>United States</b>       | <b>North Dakota</b> |
| <b>Youth</b>                                | Percent of total population ages 0-17, 2009   | 22%             | 24%                        | 22%                 |
| <b>Elderly</b>                              | Percent of total population ages 65 and older, 2009   | 13%             | 13%                        | 15%                 |
| <b>Rural</b>                                | Percent of total population living in a rural area, 2000  | 16%             | 21%                        | 44%                 |
| <b>Not English proficient</b>               | Percent of total population that speaks English less than "very well," 2005-2009                              | 1%              | 9%                         | 2%                  |
| <b>Illiteracy</b>                           | Percent of population ages 16 and older that lacks basic prose literacy skills, 2003                          | 5%              | 15%                        | 6%                  |

\*The national benchmark is the 90th percentile (i.e., 10% of counties nationwide ranked better). \*\*Binge drinking is defined as consuming more than 4 (for women) or 5 (for men) alcoholic beverages on a single occasion in the past 30 days. Heavy drinking is defined as drinking more than 1 (for women) or 2 (for men) alcoholic beverages per day on average. - Blank values reflect unreliable or missing data.

Source: The overall format and content of the County Health Profiles is based largely on County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>. Additional data sources include the U.S. Census Bureau, Small Area Health Insurance Estimates, <http://www.census.gov/sahie/> and the Centers for Disease Control and Prevention's National Center for Health Statistics - the Health Indicators Warehouse, <http://healthindicators.gov> and "Health, United States, 2010," Table 109, <http://www.cdc.gov/nchs/hus.htm>.

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# Aging Profile

2010 Demographic and Socio-Economic Profile  
for the Aging Population Ages 65 and Older

**Burleigh County**

**North Dakota**

| CHARACTERISTICS  | Total    | AGE                   |                      |
|--|----------|-----------------------|----------------------|
|  |          | Less than 65<br>Years | Ages 65 and<br>Older |
| <i>Population</i> <sup>1</sup>   |          |                       |                      |
| Total population   | 81,308   | 70,395                | 10,913               |
| Percent ages 65 and older  | 13%      | -                     | 100%                 |
| Percent ages 85 and older  | 2%       | -                     | 15%                  |
| Percent male   | 49%      | 50%                   | 42%                  |
| Percent female   | 51%      | 50%                   | 58%                  |
| <i>Living Arrangements</i>   |          |                       |                      |
| Total households (by age of householder) <sup>1</sup>                      | 33,976   | 26,699                | 7,277                |
| Percent with family households (i.e., at least two people who are related) | 62%      | 65%                   | 51%                  |
| Percent with householder living alone                                      | 30%      | 26%                   | 47%                  |
| Grandparents living with their grandchildren* <sup>2</sup>                 | 645      | 426                   | 219                  |
| Percent who are responsible for their grandchildren                        | 60%      | 71%                   | 39%                  |
| <i>Housing</i> <sup>1</sup>  |          |                       |                      |
| Percent of occupied housing that is owner-occupied                         | 69%      | 68%                   | 72%                  |
| Percent of occupied housing that is renter-occupied                        | 31%      | 32%                   | 28%                  |
| <i>Economic Security</i> <sup>2</sup>                                      |          |                       |                      |
| Percent of working-age population in labor force                           | 72%      | 83%                   | 20%                  |
| Percent of total population with income less than 100% of poverty          | 9%       | 9%                    | 10%                  |
| Percent of total population with income less than 200% of poverty          | 24%      | 23%                   | 33%                  |
| Median household income (by age of householder)                            | \$53,465 | \$54,798              | \$32,878             |
| Owner-occupied housing units (by age of householder)                       | 23,194   | 18,496                | 4,698                |
| Percent spending 30% or more of income toward housing costs                | 18%      | 18%                   | 20%                  |
| Renter-occupied housing units (by age of householder)                      | 9,807    | 7,792                 | 2,015                |
| Percent spending 30% or more of income toward housing costs                | 38%      | 35%                   | 52%                  |

Note: \*The age categories for this indicator are grandparents ages 35 to 59 and grandparents ages 60 and older.

Source: U.S. Census Bureau, <sup>1</sup>2010 Census Summary File 1 and <sup>2</sup>2006-2010 American Community Survey 5-Year Estimates (sample data). The estimates presented are meant to give perspective on characteristics across age categories; however, because they are based on sample data, one should use caution when interpreting small numbers. - Blank values reflect data that are missing or not applicable.

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# Diversity Profile

2010 Demographic and Socio-Economic Profile  
for Racial and Ethnic Populations

Burleigh County

North Dakota

| CHARACTERISTICS  | Total    | RACE        |             |                       |             | ETHNICITY                     |
|--|----------|-------------|-------------|-----------------------|-------------|-------------------------------|
|  |          | White alone | Black alone | American Indian alone | Asian alone | Hispanic Origin - of any race |
| <i>Population</i> <sup>1</sup>   |          |             |             |                       |             |                               |
| <b>Total population</b>  | 81,308   | 75,634      | 483         | 3,393                 | 392         | 986                           |
| <b>Percent ages 0 to 17</b>  | 23%      | 21%         | 30%         | 37%                   | 26%         | 38%                           |
| <b>Percent ages 18 to 44</b>   | 37%      | 36%         | 57%         | 47%                   | 45%         | 42%                           |
| <b>Percent ages 45 to 64</b>   | 27%      | 28%         | 12%         | 13%                   | 24%         | 16%                           |
| <b>Percent ages 65 and older</b>   | 13%      | 14%         | 1%          | 3%                    | 5%          | 5%                            |
| <b>Median age (in years)</b>   | 37.3     | 38.9        | 25.2        | 23.2                  | 34.2        | 23.3                          |
| <i>Living Arrangements</i>   |          |             |             |                       |             |                               |
| <b>Total households</b> <sup>1</sup>   | 33,976   | 32,444      | 134         | 928                   | 126         | 274                           |
| <b>Percent with householder living alone</b>                                     | 30%      | 31%         | 37%         | 20%                   | 23%         | 30%                           |
| <b>Percent with families with children ages 0 to 17</b>                          | 28%      | 27%         | 35%         | 51%                   | 41%         | 36%                           |
| <b>Grandparents living with their grandchildren</b> <sup>2</sup>                 | 645      | 621         | 0           | 24                    | 0           | 33                            |
| <b>Percent who are responsible for grandchildren</b>                             | 60%      | 59%         | -           | 100%                  | -           | 39%                           |
| <i>Housing</i> <sup>1</sup>  |          |             |             |                       |             |                               |
| <b>Percent occupied housing that is owner-occupied</b>                           | 69%      | 71%         | 28%         | 18%                   | 55%         | 37%                           |
| <b>Percent occupied housing that is renter-occupied</b>                          | 31%      | 29%         | 72%         | 82%                   | 45%         | 63%                           |
| <i>Educational Attainment</i> <sup>2</sup>                                       |          |             |             |                       |             |                               |
| <b>Percent of persons ages 25 and older with high school degree or higher</b>    | 92%      | 92%         | 91%         | 85%                   | 94%         | 79%                           |
| <b>Percent of persons ages 25 and older with Bachelor's degree or higher</b>     | 32%      | 32%         | 8%          | 21%                   | 66%         | 14%                           |
| <i>Economic Security</i> <sup>2</sup>  |          |             |             |                       |             |                               |
| <b>Unemployment rate</b>   | 3%       | 3%          | 2%          | 9%                    | 9%          | 1%                            |
| <b>Median household income</b>   | \$53,465 | \$54,789    | \$21,741    | \$19,719              | \$41,125    | \$29,688                      |
| <b>Percent of households with income &lt;\$25,000</b>                            | 22%      | 21%         | 55%         | 57%                   | 7%          | 43%                           |
| <b>Percent of persons with income &lt;100% poverty</b>                           | 9%       | 8%          | 26%         | 54%                   | 3%          | 15%                           |
| <b>Percent of children ages 0 to 17 in families with income &lt;100% poverty</b> | 12%      | 7%          | 0%          | 68%                   | 15%         | 16%                           |
| <b>Percent of elderly ages 65 and older with income &lt;100% poverty</b>         | 11%      | 11%         | -           | 0%                    | 0%          | 0%                            |

Source: U.S. Census Bureau, <sup>1</sup>2010 Census Summary File 1 and <sup>2</sup>2006-2010 American Community Survey (ACS) 5-Year Estimates (sample data). The estimates presented are meant to give perspective on characteristics across race and ethnic categories; however, because they are based on sample data, one should use caution when interpreting small numbers. - Blank values reflect data that are missing or not applicable. Racial categories not represented include Native Hawaiian and Other Pacific Islander alone, Some Other Race alone, and Two or More races.

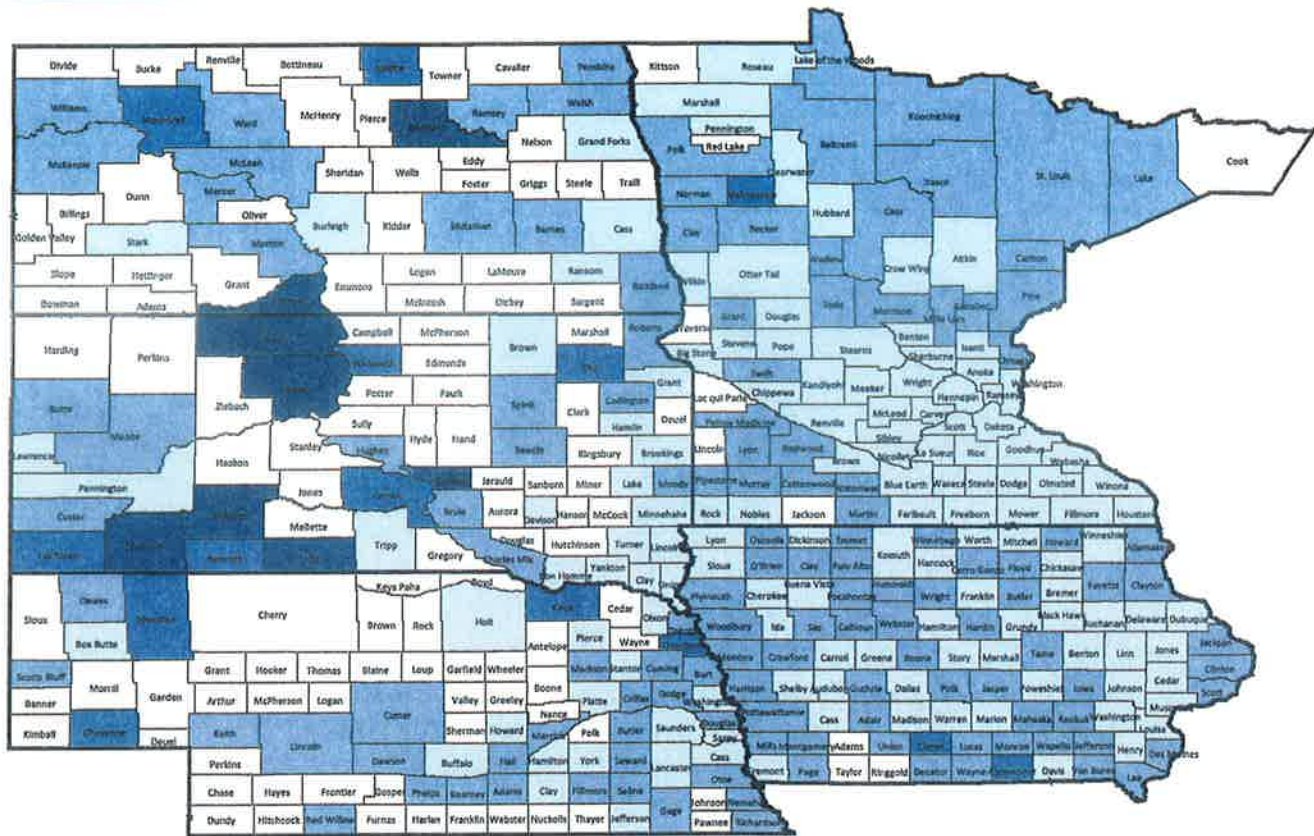
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## Definitions of Health Variables

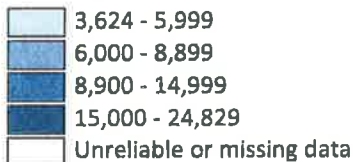
| <b>Definitions of Health Variables from the<br/>County Health Rankings<br/>2011 Report Variable</b> | <b>Definition</b>   |
|---|---|
| <b>Poor or Fair Health</b>  | Self-reported health status based on survey responses to the question: "In general, would you say that your health is excellent, very good, good, fair, or poor?"   |
| <b>Poor Physical Health Days (in past 30 days)</b>  | Estimate based on responses to the question: "Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?"                        |
| <b>Poor Mental Health Days (in past 30 days)</b>  | Estimate based on responses to the question: "Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"         |
| <b>Adult Smoking</b>  | Percent of adults that report smoking equal to, or greater than, 100 cigarettes and are currently a smoker  |
| <b>Adult Obesity</b>  | Percent of adults that report a BMI greater than, or equal to, 30   |
| <b>Excessive Drinking</b>   | Percent of as individuals that report binge drinking in the past 30 days (more than 4 drinks on one occasion for women, more than 5 for men) or heavy drinking (defined as more than 1 (women) or 2 (men) drinks per day on average |
| <b>Sexually Transmitted Infections</b>  | Chlamydia rate per 100,000 population   |
| <b>Teen Birth Rate</b>  | Birth rate per 1,000 female population, ages 15-19  |
| <b>Uninsured Adults</b>   | Percent of population under age 65 without health insurance   |
| <b>Preventable Hospital Stays</b>   | Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees  |
| <b>Mammography Screening</b>  | Percent of female Medicare enrollees that receive mammography screening   |
| <b>Access to Healthy Foods</b>  | Healthy food outlets include grocery stores and produce stands/farmers' markets   |
| <b>Access to Recreational Facilities</b>  | Rate of recreational facilities per 100,000 population  |
| <b>Physical Inactivity</b>  | Percent of adults aged 20 and over that report no leisure time physical activity  |
| <b>Primary Care Provider Ratio</b>  | Ratio of population to primary care providers   |
| <b>Mental Health Care Provider Ratio</b>  | Ratio of population to mental health care providers   |
| <b>Diabetes Screening</b>   | Percent of Medicare enrollees with diabetes that receive HbA1c screening  |
| <b>Binge Drinking</b>   | Percent of adults that report binge drinking in the last 30 days. Binge drinking is consuming more than 4 (women) or 5 (men) alcoholic drinks on one occasion.  |

# Premature Death - A health outcome measure focusing on mortality

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Years of potential life lost before age 75 per 100,000 population (age-adjusted), 2005-2007



## CONTEXT

**What It Is:** Premature death is represented by the years of potential life lost before age 75 (YPLL-75). Every death occurring before the age of 75 contributes to the total number of years of potential life lost. For example, a person who dies at age 25 contributes 50 years of life lost, whereas a person who dies at age 65 contributes 10 years of life lost to a county's YPLL. The YPLL measure is presented as a rate per 100,000 population and is age-adjusted to the 2000 U.S. population.

**Where It Comes From:** Data on deaths, including age at death, are based on death certificates and are routinely reported to the National Vital Statistics System (NVSS) at the National Center for Health Statistics, part of the Centers for Disease Control and Prevention (CDC). NVSS calculates age-adjusted YPLL rates based on three-year averages to create more robust estimates of mortality, particularly for counties with smaller populations.

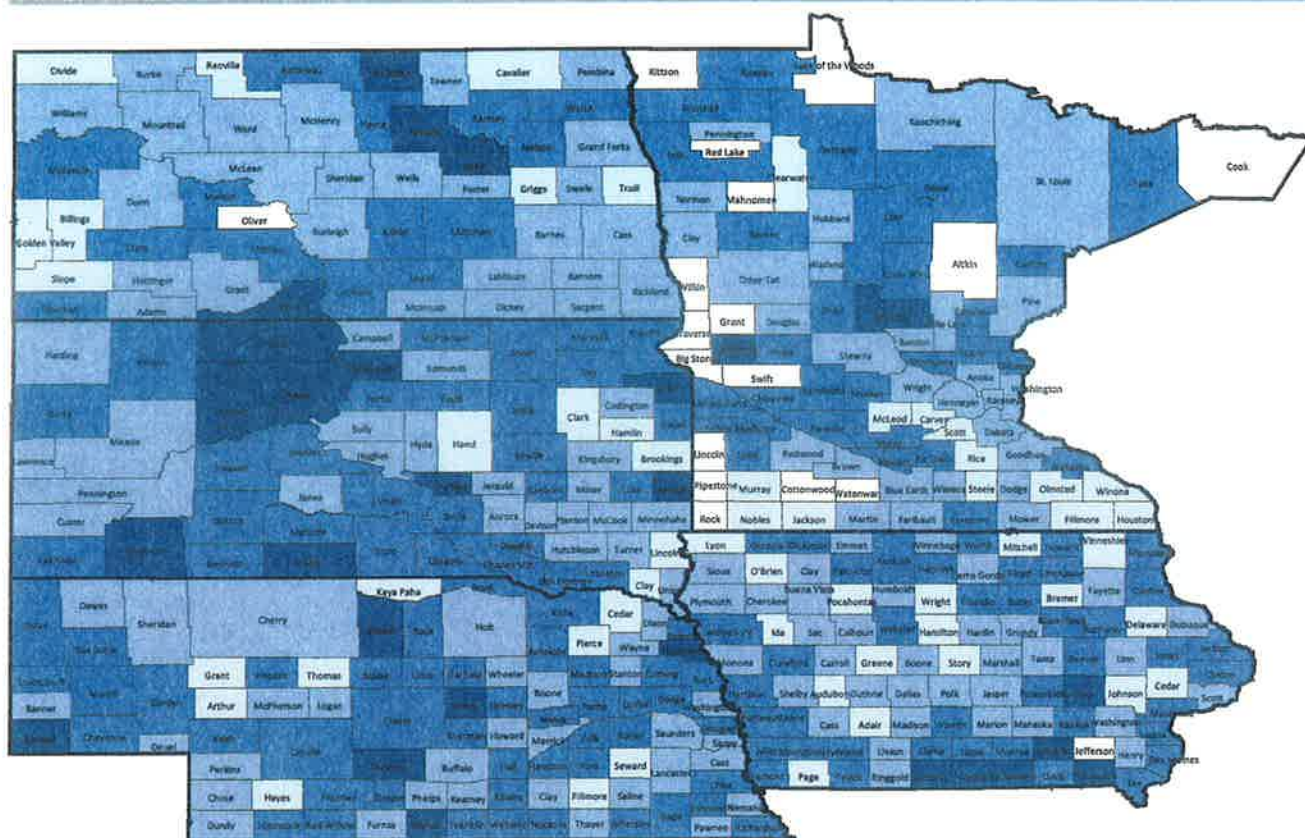
**Importance:** Age-adjusted YPLL-75 rates are commonly used to represent the frequency and distribution of premature deaths. Measuring YPLL allows communities to target resources to high-risk areas and further investigate the causes of death.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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# Poor or Fair Health - A health outcome measure focusing on morbidity

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults reporting fair or poor health (age-adjusted), 2003-2009



## CONTEXT

**What It Is:** Self-reported health status is a general measure of health-related quality of life in a population. This measure is based on survey responses to the question: “In general, would you say that your health is excellent, very good, good, fair, or poor?” The value reported is the percent of adult respondents who rate their health “fair” or “poor.” The measure is age-adjusted to the 2000 U.S. population.

**Where It Comes From:** This measure was calculated by the National Center for Health Statistics using data from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone. Seven years of data are used to generate more stable estimates of self-reported health status.

**Importance:** Self-reported health status is a widely used measure of people’s health-related quality of life. In addition to measuring how long people live, it is important to also include measures of how healthy people are while alive – self-reported health status has been shown to be a very reliable measure of current health.

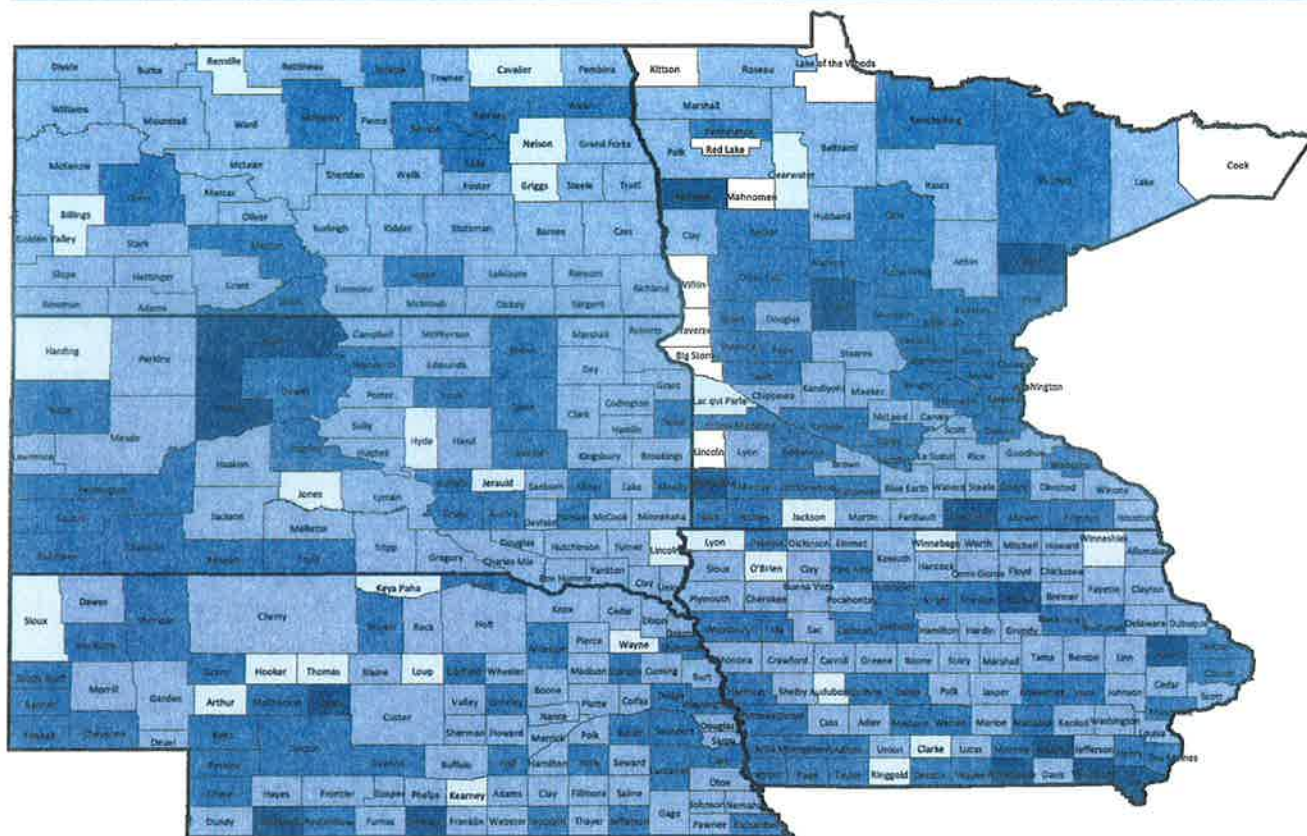
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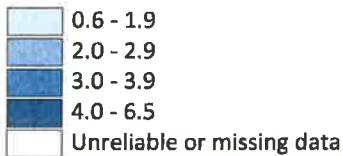


# Poor Physical Health Days - A health outcome measure focusing on morbidity

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Average number of physically unhealthy days reported in past 30 days (age-adjusted), 2003-2009



## CONTEXT

**What It Is:** The poor physical health days measure is based on responses to the question: “Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?” Presented is the average number of days a county’s adult respondents report that their physical health was not good. The measure is age-adjusted to the 2000 U.S. population.

**Where It Comes From:** This measure was calculated by the National Center for Health Statistics using data from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone. Seven years of data are used to generate more stable estimates of poor physical health days.

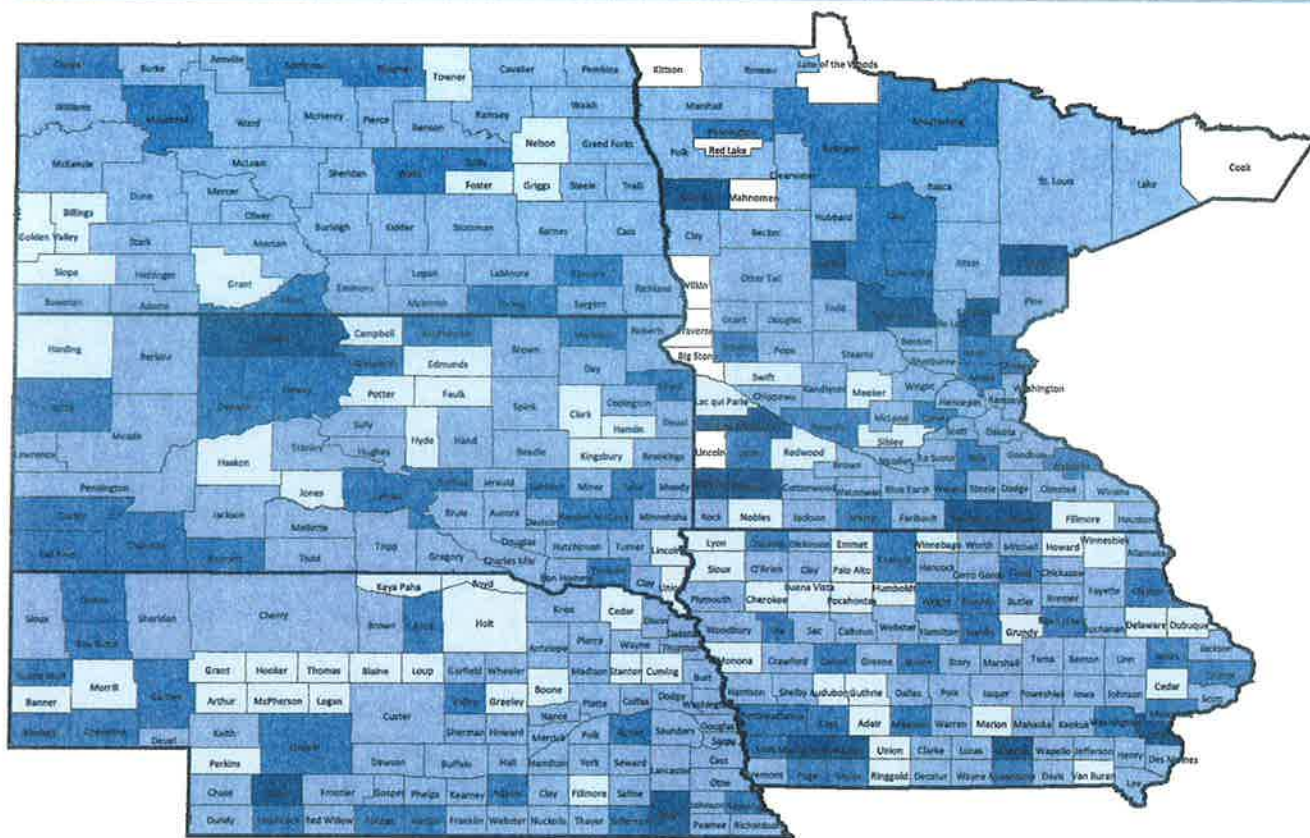
**Importance:** In addition to measuring how long people live, it is also important to include measures of how healthy people are while alive – people’s reports of days when their physical health was not good are a reliable estimate of their recent health.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

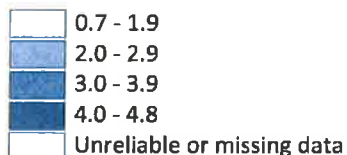
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# Poor Mental Health Days - A health outcome measure focusing on morbidity

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Average number of mentally unhealthy days reported in past 30 days (age-adjusted), 2003-2009



## CONTEXT

**What It Is:** The poor mental health days measure is based on responses to the question: “Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” Presented is the average number of days a county’s adult respondents report that their mental health was not good. The measure is age-adjusted to the 2000 U.S. population.

**Where It Comes From:** This measure was calculated by the National Center for Health Statistics using data from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone. NCHS used seven years of data to generate more stable estimates of poor mental health days.

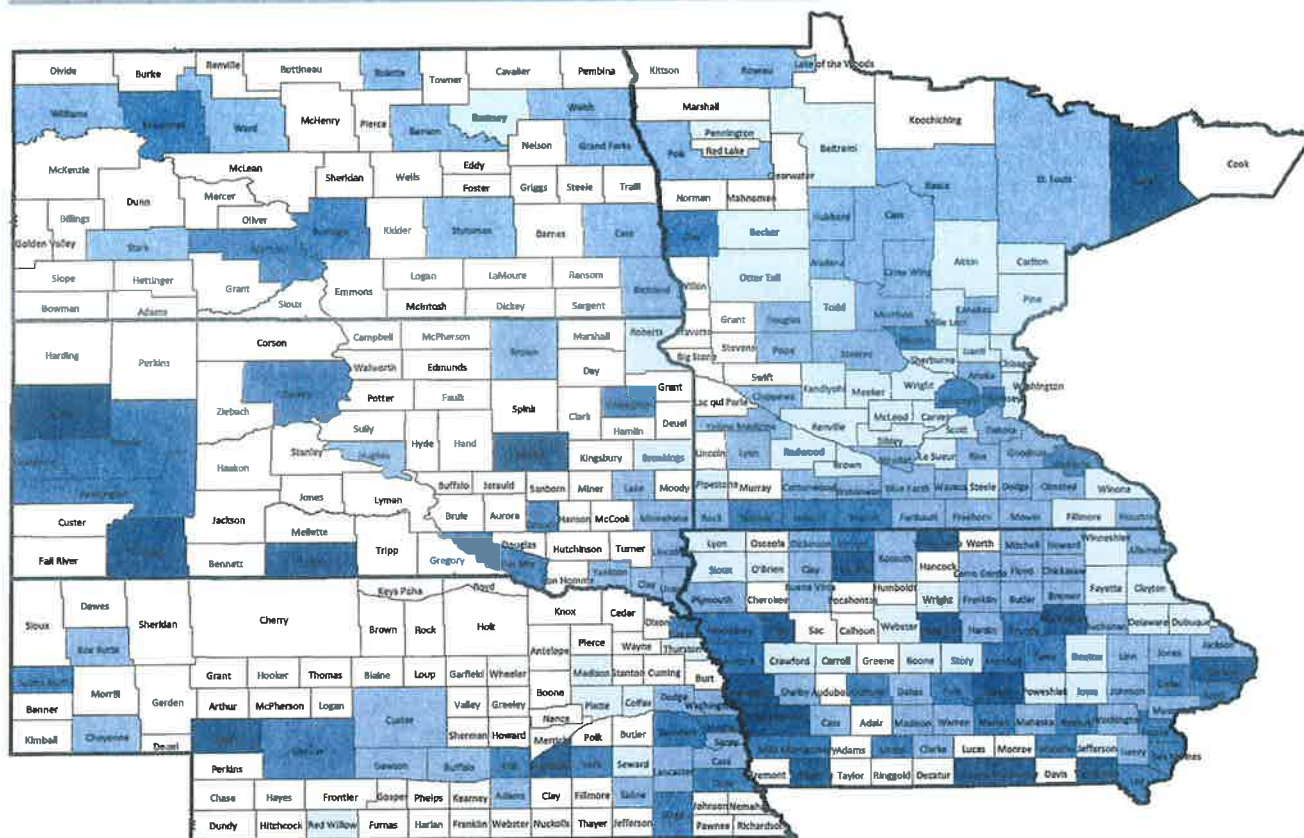
**Importance:** Overall health depends on both physical and mental well-being. Measuring the number of days when people report that their mental health was not good, i.e., poor mental health days, represent an important facet of health-related quality of life. The County Health Rankings considers health-related quality of life to be an important health outcome.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

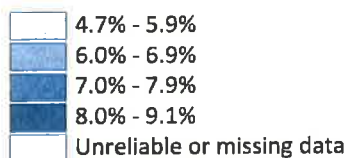
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# Low Birthweight - A health outcome measure focusing on morbidity

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of live births with low birthweight (<2,500 grams), 2001-2007



## CONTEXT

**What It Is:** Low birthweight is the percent of live births for which the infant weighed less than 2,500 grams (approximately 5 lbs., 8 oz.).

**Where It Comes From:** Data on births, including weight at birth, are based on birth certificates and are routinely reported to the National Vital Statistics System (NVSS) at the National Center for Health Statistics (NCHS), part at the Centers for Disease Control and Prevention (CDC). NCHS provides this measure based on the percent of live births with low birthweight for a seven-year period. They use seven-year averages to create more robust estimates, particularly for counties with smaller populations.

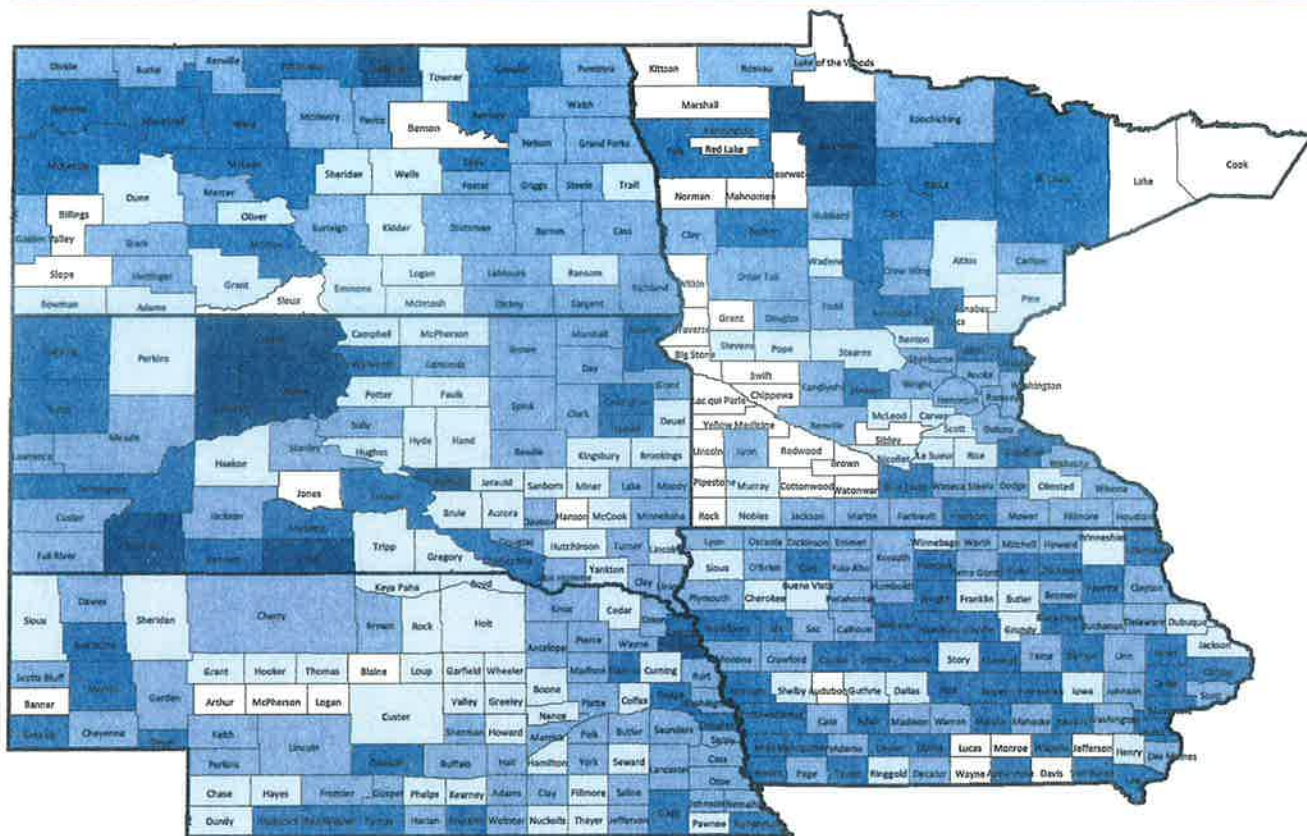
**Importance:** Low birthweight represents two factors: maternal exposure to health risks and an infant’s current and future morbidity, as well as premature mortality risk. The health consequences of low birthweight are numerous.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

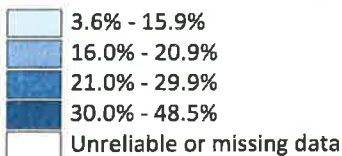
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# Adult Smoking - A health factor measure focusing on health behaviors

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults that currently smoke and have smoked at least 100 cigarettes in lifetime, 2003-2009



## CONTEXT

**What It Is:** Adult smoking prevalence is the estimated percent of the adult population that currently smokes every day or “most days” and has smoked at least 100 cigarettes in their lifetime.

**Where It Comes From:** This measure was calculated by the National Center for Health Statistics using data from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone. The estimates are based on seven years of data.

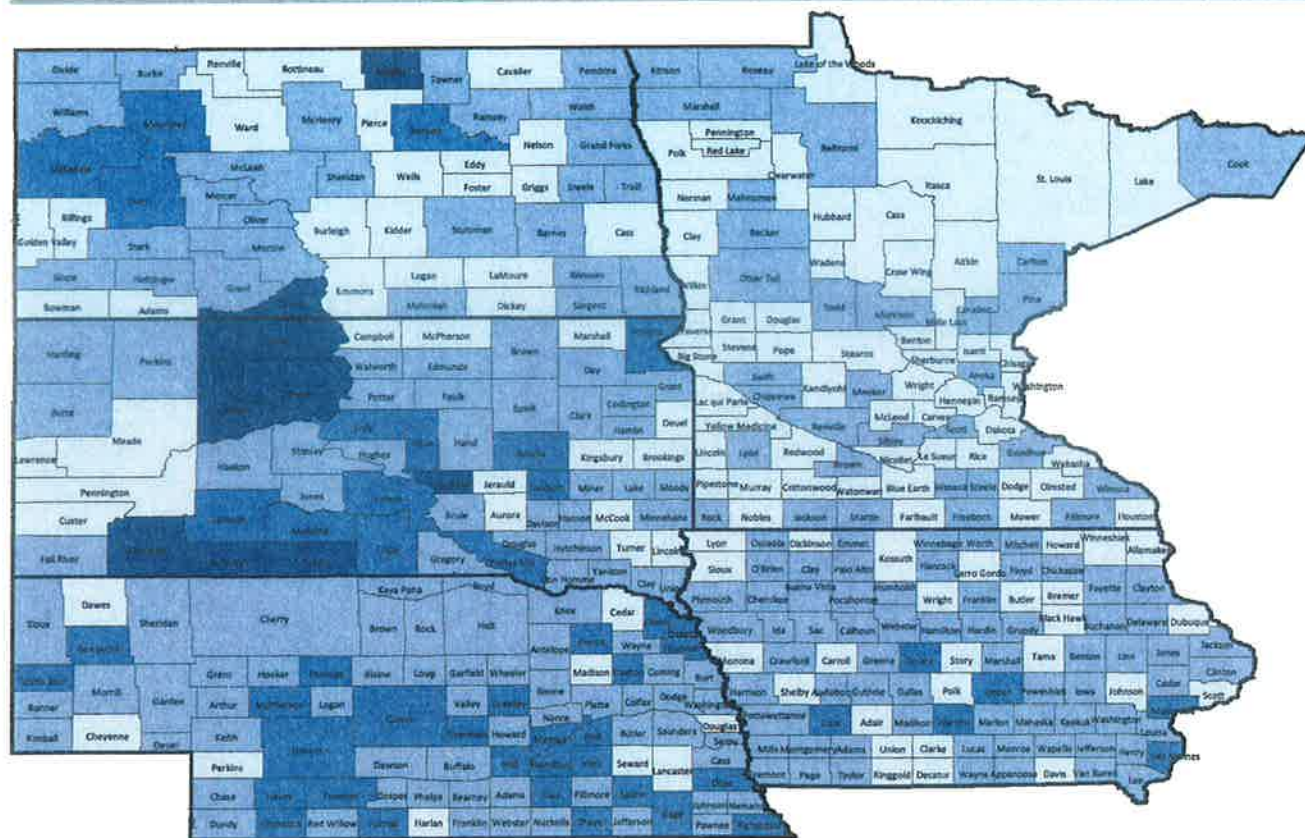
**Importance:** Each year approximately 443,000 premature deaths occur in the U.S. primarily due to smoking. Cigarette smoking is identified as a cause in multiple diseases including various cancers, cardiovascular disease, respiratory conditions, low birthweight, and other adverse health outcomes. Measuring the prevalence of tobacco use in the population can alert communities to potential adverse health outcomes and can be valuable for assessing the need for cessation programs or the effectiveness of existing programs.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

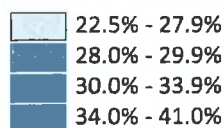
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# Adult Obesity - A health factor measure focusing on health behaviors

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults that report a body mass index (BMI) of at least 30 kg/m2, 2008



## CONTEXT

**What It Is:** The adult obesity measure represents the percent of the adult population (age 20 and older) that has a body mass index (BMI) greater than or equal to 30 kg/m2.

**Where It Comes From:** Estimates of obesity prevalence by county were calculated by the CDC's National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, using multiple years of Behavioral Risk Factor Surveillance System (BRFSS) data. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone.

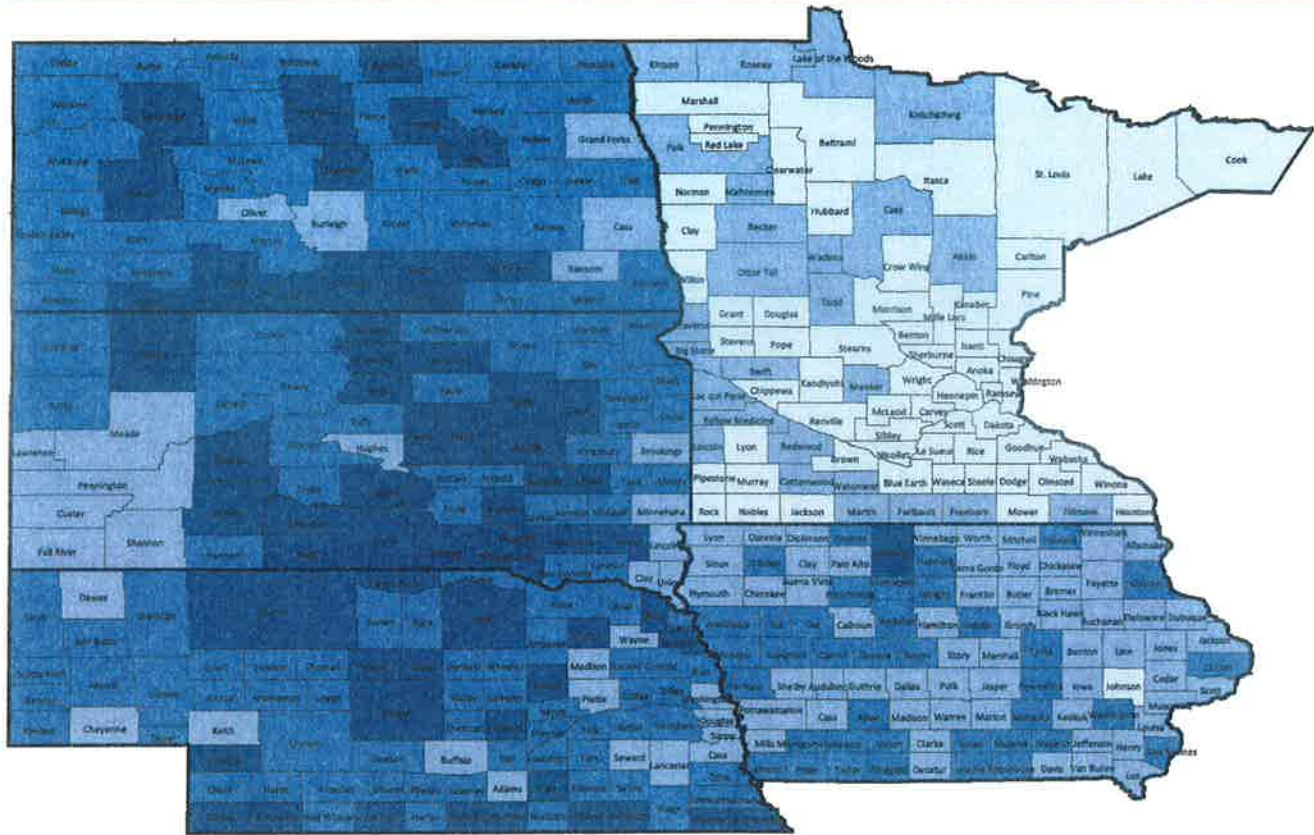
**Importance:** Obesity is often the end result of an overall energy imbalance due to poor diet and limited physical activity. Obesity increases the risk for health conditions such as coronary heart disease, type 2 diabetes, cancer, hypertension, dyslipidemia, stroke, liver and gallbladder disease, sleep apnea and respiratory problems, and osteoarthritis.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

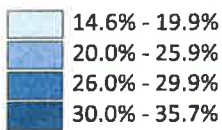
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**Physical Inactivity** - A health factor measure focusing on health behaviors

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults reporting no leisure time physical activity, 2008



CONTEXT

**What It Is:** Physical inactivity is the estimated percent of adults ages 20 and older reporting no leisure time physical activity.

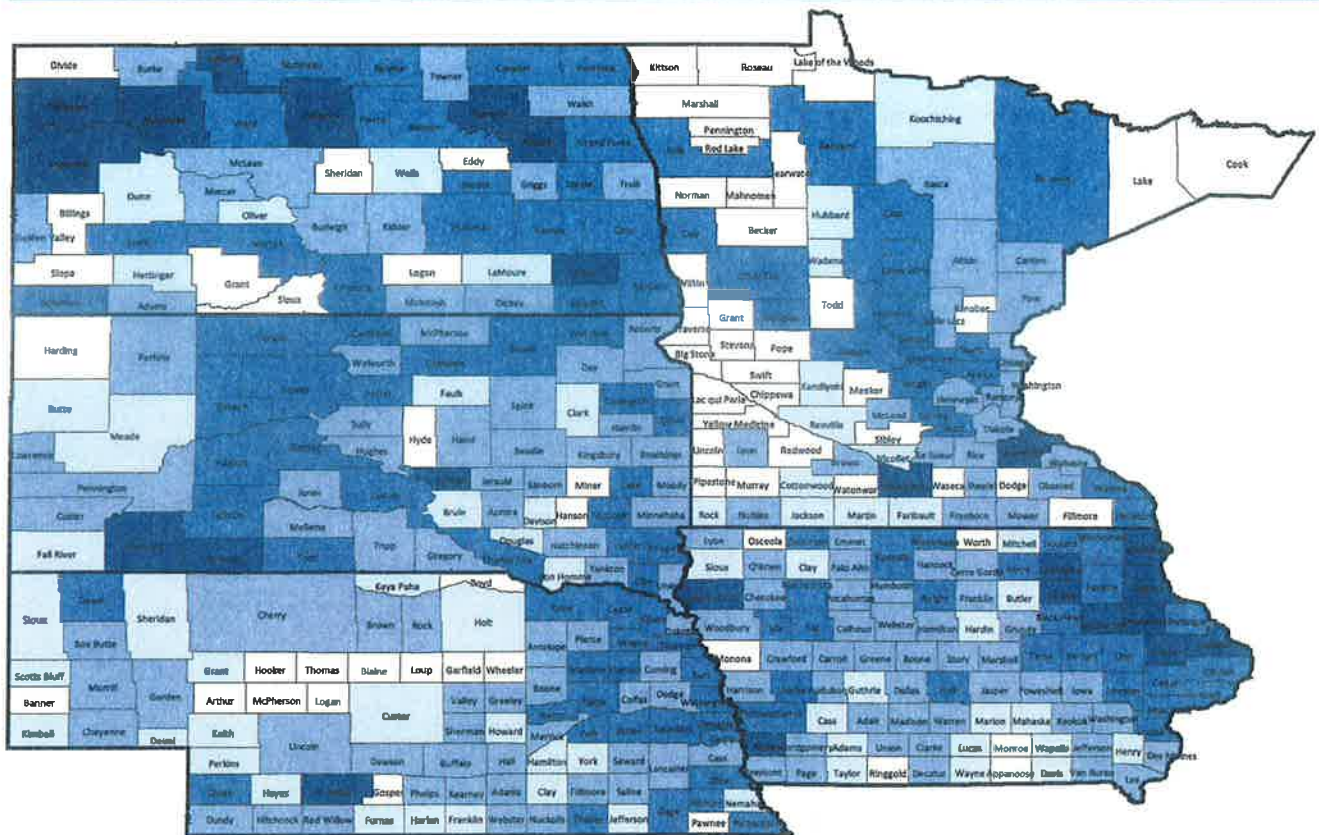
**Where It Comes From:** Estimates of physical inactivity by county were calculated by the CDC’s National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, using multiple years of Behavioral Risk Factor Surveillance System (BRFSS) data. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone.

**Importance:** Regular physical activity is one of the most important things one can do for their health. It can help control weight, reduce risk of cardiovascular disease, reduce risk for type 2 diabetes and metabolic syndrome, reduce risk of some cancers, strengthen bones and muscles, improve mental health and mood, improve ability to do daily activities and prevent falls in older adults, and increase chances of living longer (Centers for Disease Control and Prevention, <http://www.cdc.gov/physicalactivity/everyone/health/index.html>).

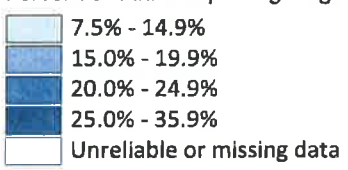
- Data were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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**Excessive Drinking - A health factor measure focusing on health behaviors**  
 County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults reporting binge drinking and heavy drinking, 2003-2009



**CONTEXT**

**What It Is:** The excessive drinking measure reflects the percent of the adult population that reports either binge drinking, defined as consuming more than 4 (women) or 5 (men) alcoholic beverages on a single occasion in the past 30 days, or heavy drinking, defined as drinking more than 1 (women) or 2 (men) drinks per day on average.

**Where It Comes From:** This measure was calculated by the National Center for Health Statistics using data obtained from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population ages 18 and older living in households with a land-line telephone. The estimates are based on seven years of data.

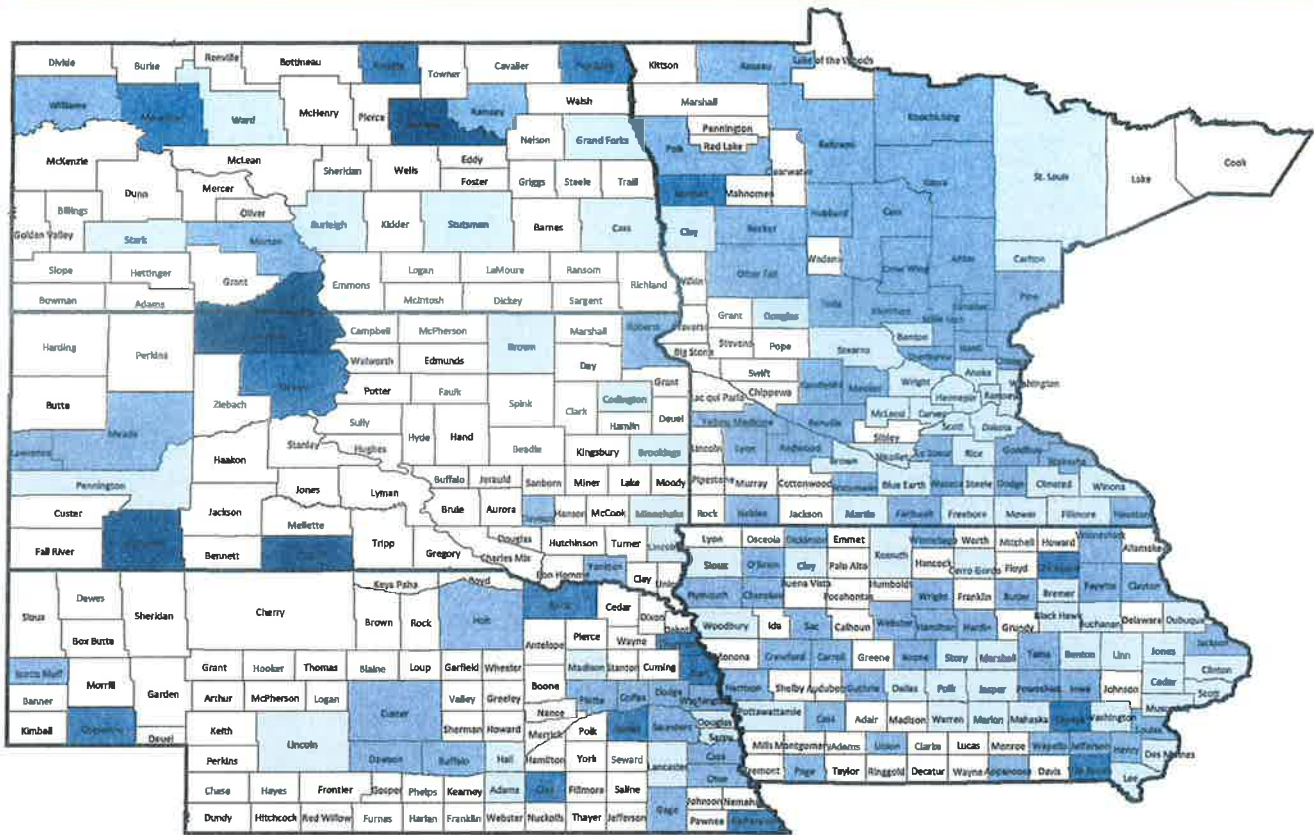
**Importance:** Excessive drinking is a risk factor for a number of adverse health outcomes such as alcohol poisoning, hypertension, acute myocardial infarction, sexually transmitted infections, unintended pregnancy, fetal alcohol syndrome, sudden infant death syndrome, suicide, interpersonal violence, and motor vehicle crashes.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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# Motor Vehicle Crash Death Rate - A health factor measure focusing on health behaviors

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Motor vehicle crash deaths per 100,000 population, 2001-2007

- 7.1 - 17.9
- 18.0 - 31.9
- 32.0 - 59.9
- 60.0 - 135.7
- Unreliable or missing data

## CONTEXT

**What It Is:** Motor vehicle crash deaths are measured as the crude mortality rate per 100,000 population due to on- or off-road accidents involving a motor vehicle. Motor vehicle deaths includes traffic and non-traffic accidents involving motorcycles and 3-wheel motor vehicles; cars; vans; trucks; buses; street cars; ATVs; industrial, agricultural, and construction vehicles; and bikes and pedestrians when colliding with any of the vehicles mentioned. Deaths due to boating accidents and airline crashes are not included in this measure.

**Where It Comes From:** These data were calculated by National Center for Health Statistics (NCHS), part of the Centers for Disease Control and Prevention (CDC), based on data reported to the National Vital Statistics System (NVSS). NCHS used data for a seven-year period to create more robust estimates of cause-specific mortality, particularly for counties with smaller populations.

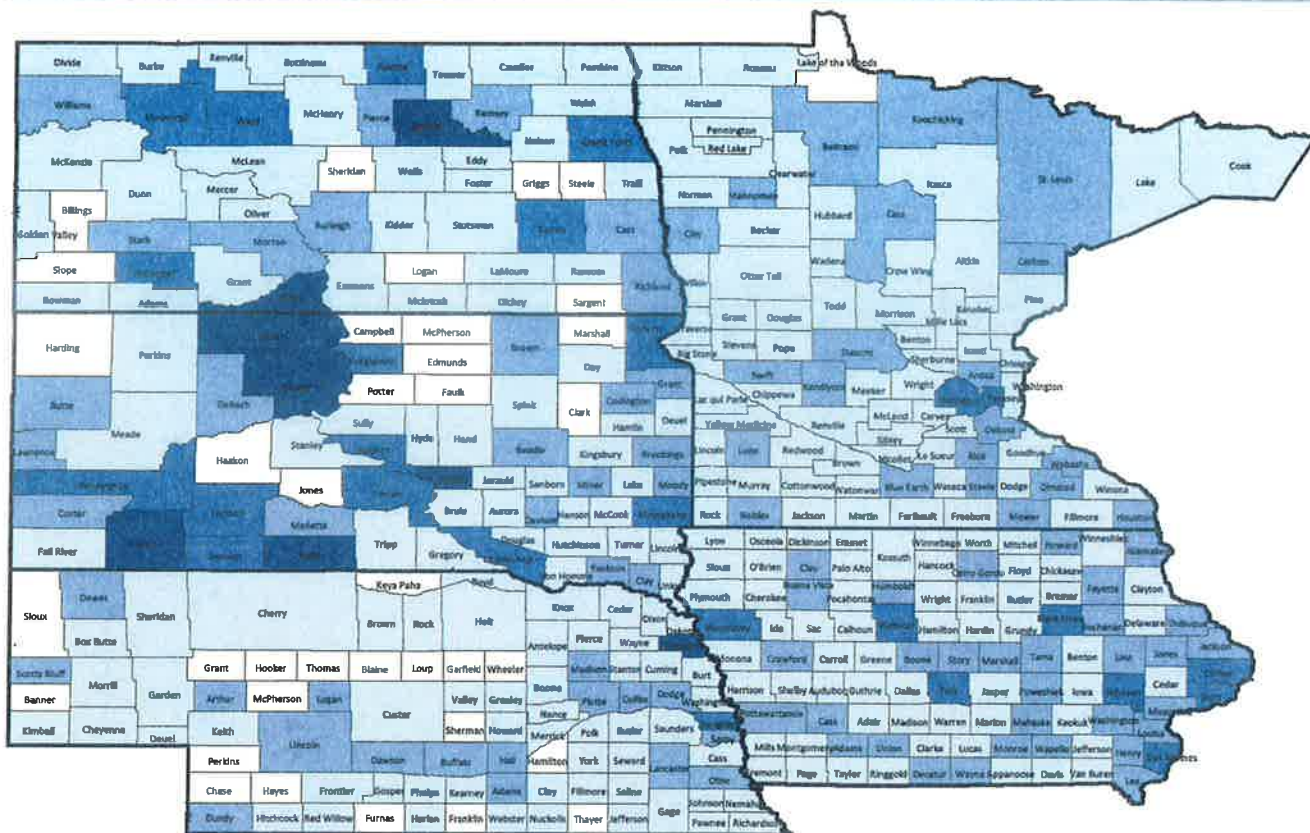
**Importance:** A strong association has been demonstrated between excessive drinking and alcohol-impaired driving, with approximately 17,000 Americans killed annually in alcohol-related motor vehicle crashes.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

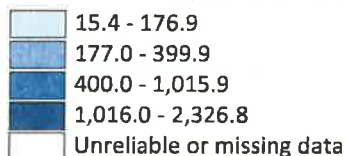
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**Sexually Transmitted Infections - A health factor measure focusing on health behaviors**  
 County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of chlamydia cases (new cases reported) per 100,000 population, 2008



CONTEXT

**What It Is:** The Sexually Transmitted Infection (STI) rate is measured as chlamydia incidence (the number of new cases reported) per 100,000 population.

**Where It Comes From:** The county-level measures were obtained from the CDC's National Center for Hepatitis, HIV, STD, and TB Prevention.

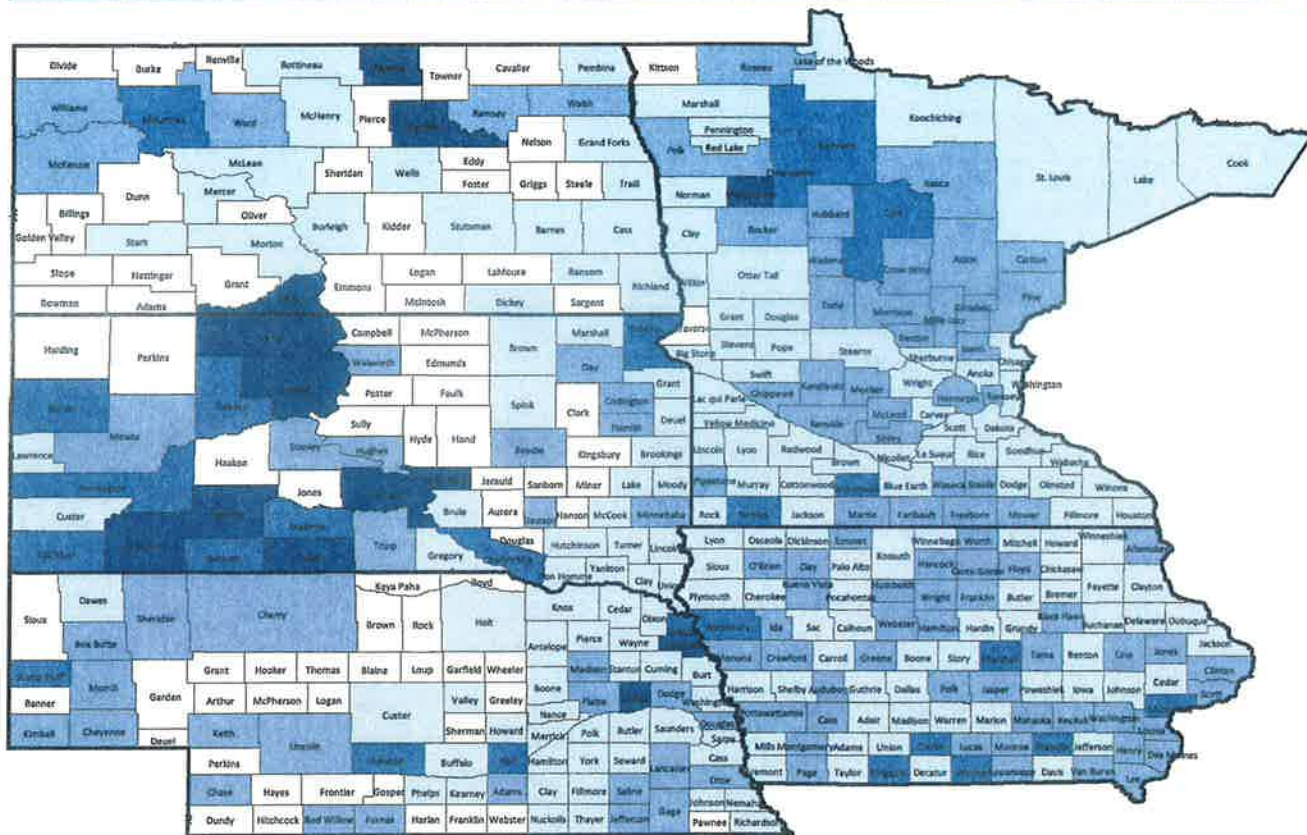
**Importance:** Chlamydia is the most common bacterial STI in North America and is one of the major causes of tubal infertility, ectopic pregnancy, pelvic inflammatory disease, and chronic pelvic pain. STIs in general are associated with a significantly increased risk of morbidity and mortality, including increased risk of cervical cancer, involuntary infertility, and premature death. However, increases in reported chlamydia infections may reflect the expansion of chlamydia screening, use of increasingly sensitive diagnostic tests, an increased emphasis on case reporting from providers and laboratories, improvements in the information systems for reporting, as well as true increases in disease.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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# Teen Birth Rate - A health factor measure focusing on health behaviors

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of teen births per 1,000 females ages 15 through 19, 2001-1007

- 8.1 - 28.9
- 29.0 - 45.9
- 46.0 - 79.9
- 80.0 - 137.8
- Unreliable or missing data

**CONTEXT**

**What It Is:** Teen births are reported as the number of births per 1,000 female population ages 15 through 19.

**Where It Comes From:** Teen birth rates were obtained from the National Vital Statistics System (NVSS) at the National Center for Health Statistics, part of the Centers for Disease Control and Prevention (CDC).

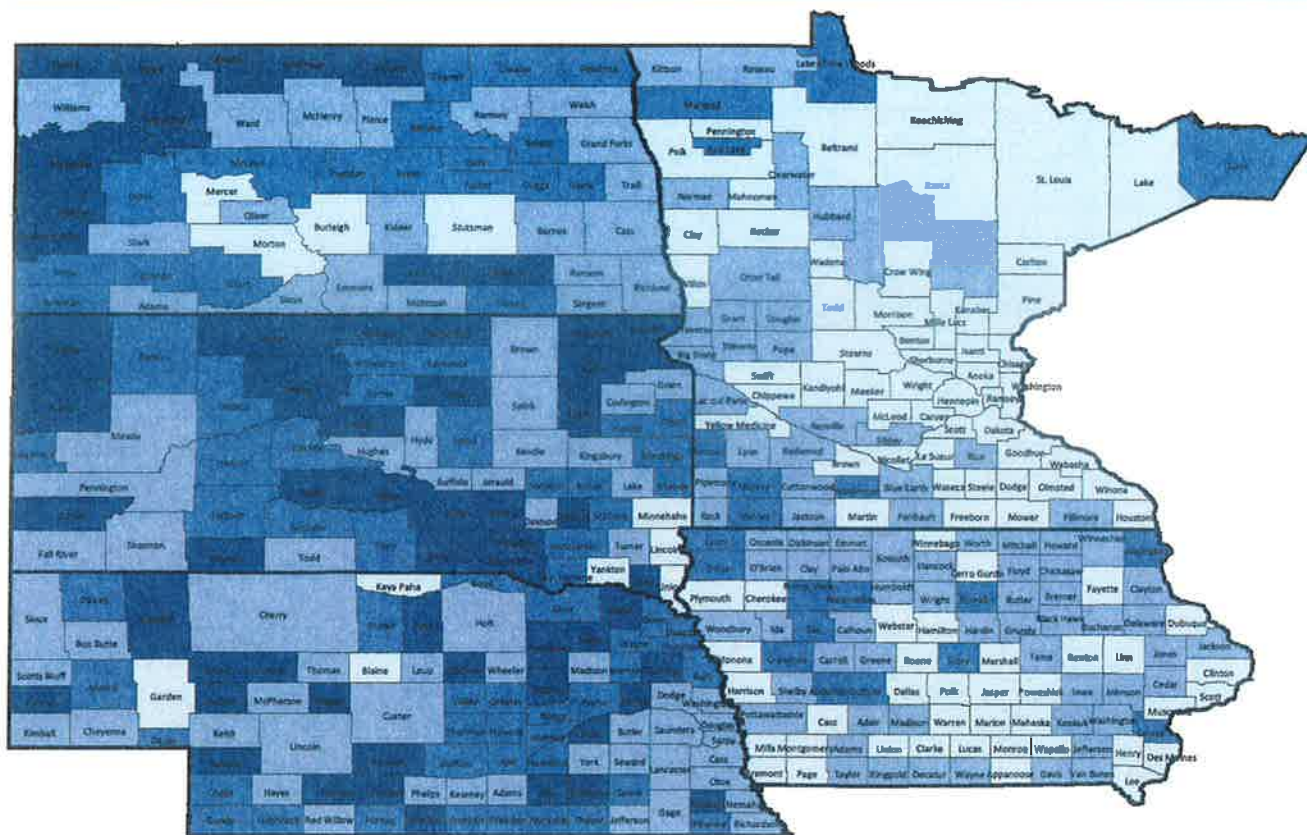
**Importance:** Teen pregnancy is associated with poor prenatal care and pre-term delivery. Pregnant teens are more likely than older women to receive late or no prenatal care, have gestational hypertension and anemia, and achieve poor maternal weight gain. They are also more likely to have a pre-term delivery and low birth weight, increasing the risk of child developmental delay, illness, and mortality.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

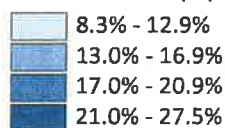
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# Uninsured Adults - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adult population ages 18 through 64 without health insurance, 2007



## CONTEXT

**What It Is:** The uninsured adults measure represents the estimated percent of the adult population under age 65 that has no health insurance coverage.

**Where It Comes From:** The Small Area Health Insurance Estimates from the U.S. Census Bureau provide annual estimates of the population without health insurance coverage for all U.S. states and their counties. The estimates used are for the most recent year for which reliable county-level estimates are available.

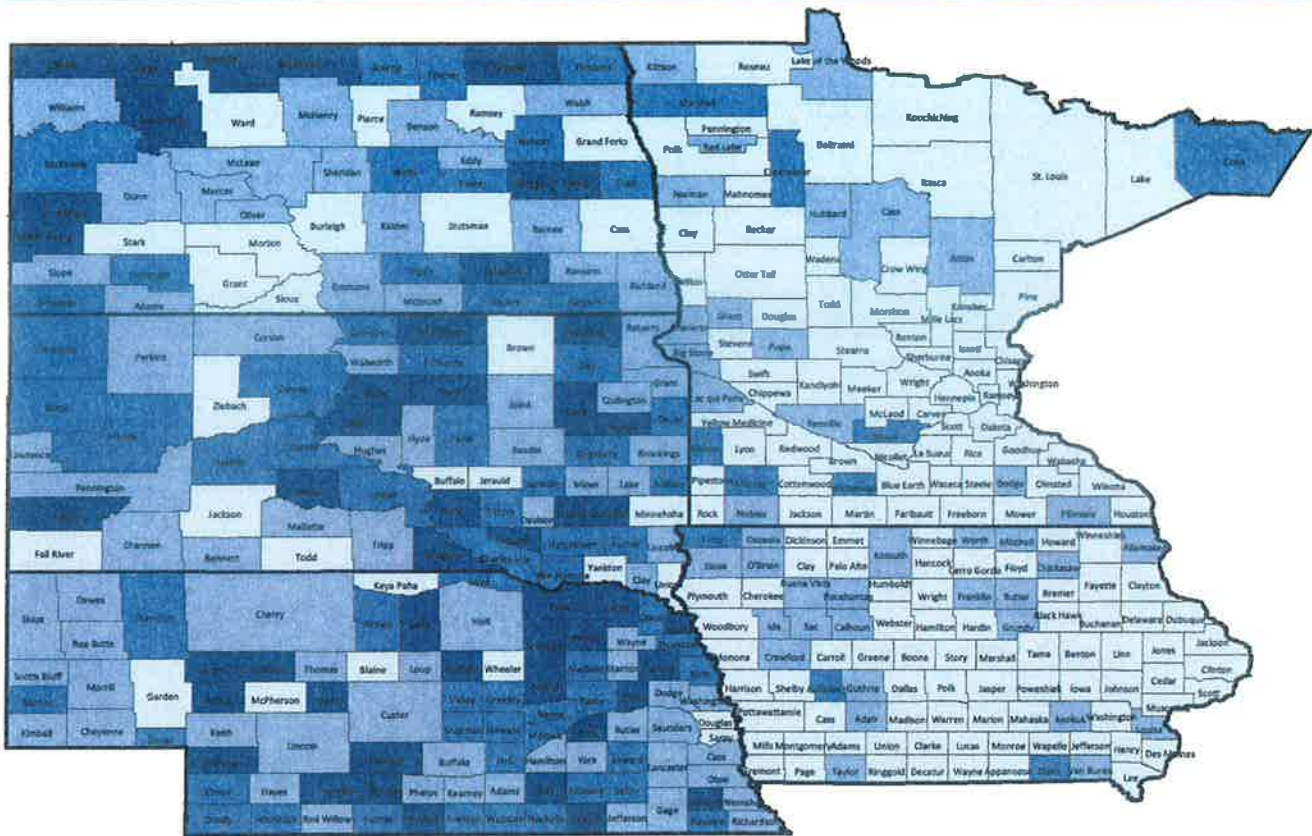
**Importance:** Lack of health insurance coverage is a significant barrier to accessing needed health care.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

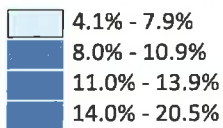
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# Uninsured Youth - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of youth ages 0 through 18 without health insurance, 2007



### CONTEXT

**What It Is:** The uninsured youth measure represents the estimated percent of the children ages birth through 18 that has no health insurance coverage.

**Where It Comes From:** The Small Area Health Insurance Estimates from the U.S. Census Bureau provide annual estimates of the population without health insurance coverage for all U.S. states and their counties. The estimates used are for the most recent year for which reliable county-level estimates are available.

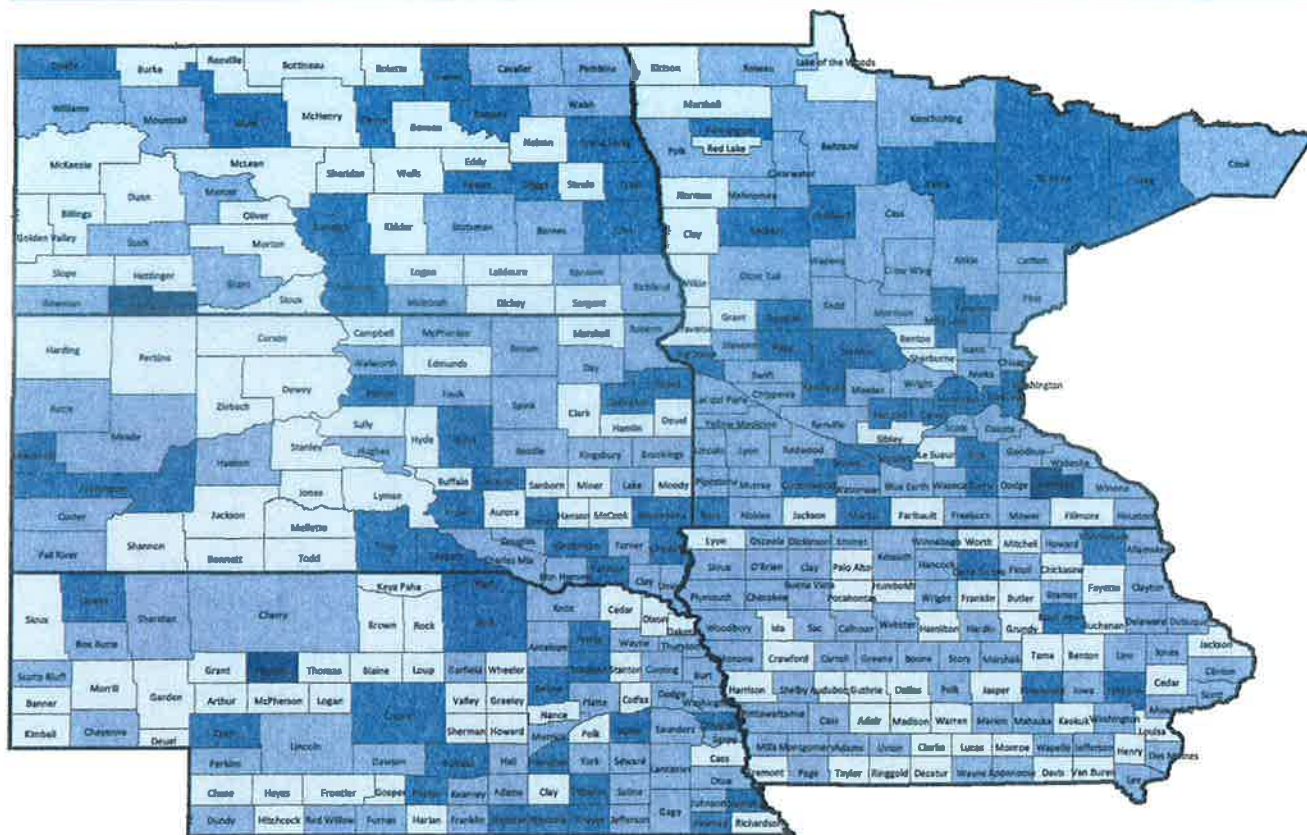
**Importance:** Children without health insurance are more likely than others to receive late or no care for health problems, putting them at greater risk for hospitalization. In addition to resulting in reduced access to health care, a lack of health insurance can also negatively influence children's school attendance and participation in extracurricular activities, and increase parental financial and emotional stress. (Child Trends DataBank, <http://www.childtrendsdatabank.org/?q=node/297>)

- Data were obtained from the Small Area Health Insurance Estimates (SAHIE), a program of the U.S. Census Bureau, <http://www.census.gov/did/www/sahie/>.

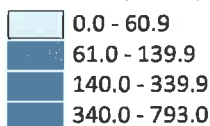
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# Primary Care Physicians - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of primary care physicians per 100,000 population, 2008



### CONTEXT

**What It Is:** Primary care physicians include practicing physicians specializing in general practice medicine, family medicine, internal medicine, pediatrics, and obstetrics/gynecology. The measure represents the number of providers per 100,000 population.

**Where It Comes From:** The data on primary care physicians were obtained from the Health Resources and Services Administration's Area Resource File (ARF). The ARF data on practicing physicians come from the AMA Master File (2008), and the population estimates are from the U.S. Census Bureau's 2008 population estimates.

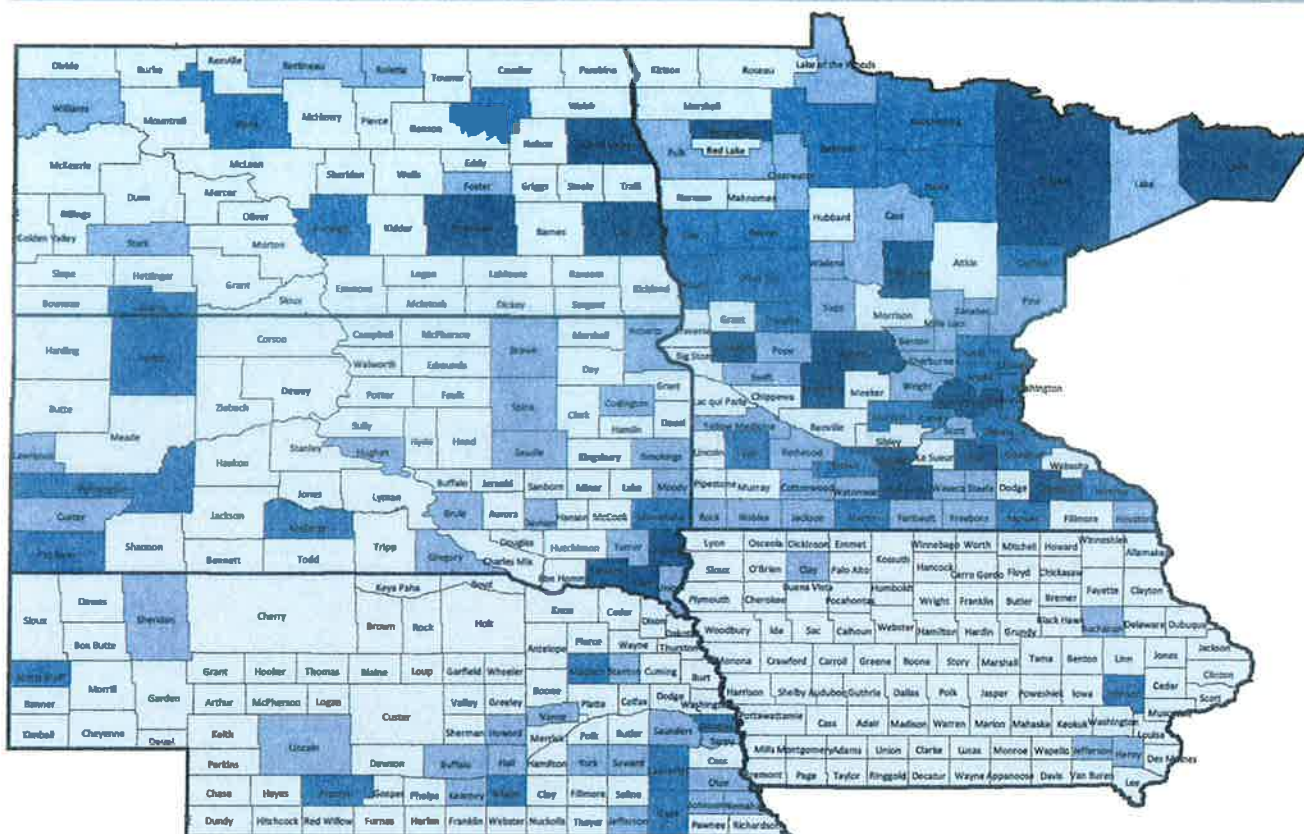
**Importance:** Having access to care requires not only having financial coverage but also access to providers. While high rates of specialist physicians has been shown to be associated with higher, and perhaps unnecessary, utilization, having sufficient availability of primary care physicians is essential so that people can get preventive and primary care, and when needed, referrals to appropriate specialty care.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

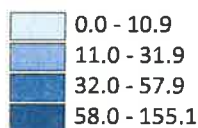
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# Mental Health Providers - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of mental health providers per 100,000 population, 2008



## CONTEXT

**What It Is:** Mental health providers include psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists who meet certain qualifications and certifications. This measure represents the number of mental health providers per 100,000 population.

**Where It Comes From:** Data on mental health providers were obtained from the Health Resources and Services Administration's (HRSA) Area Resource File (ARF).

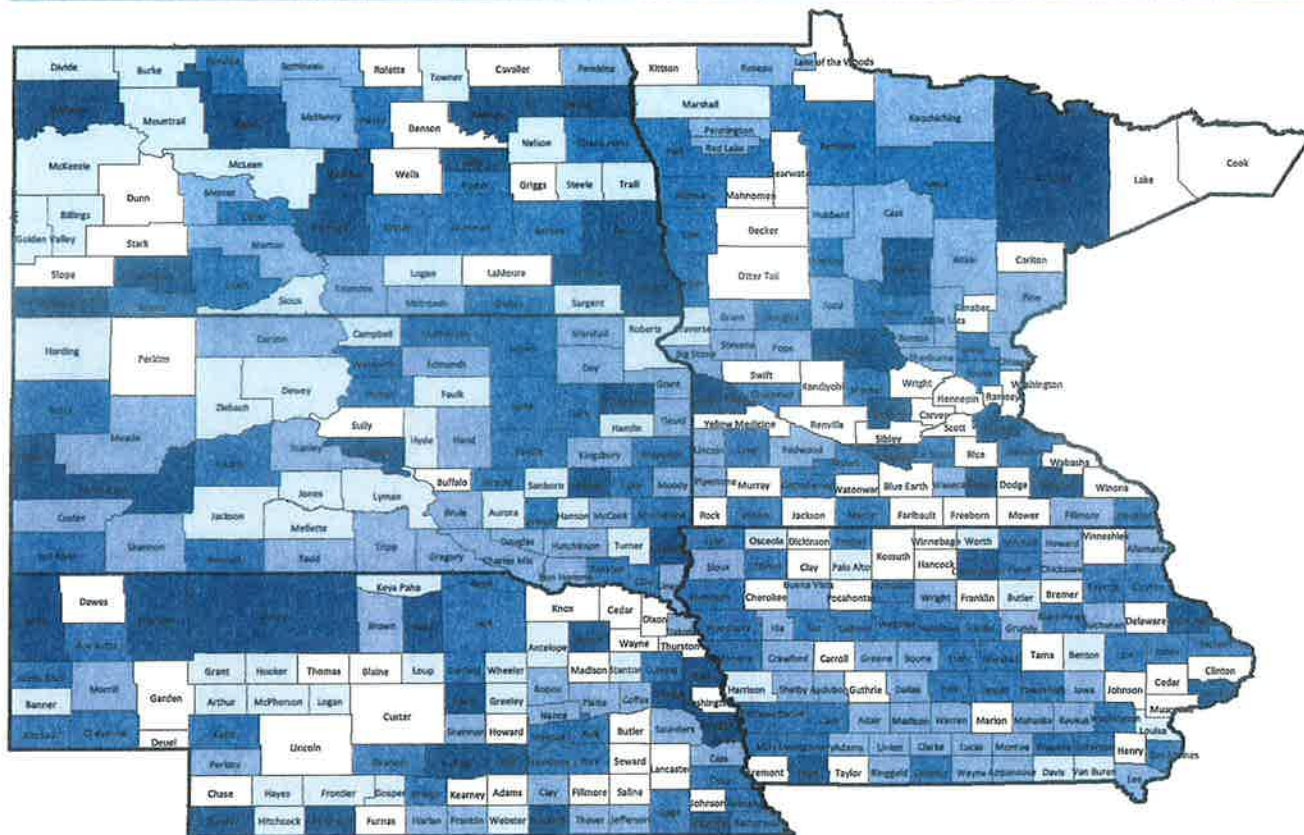
**Importance:** Even more than other areas of health and medicine, the mental health field is plagued by disparities in the availability of and access to its services. These disparities are viewed readily through the lenses of racial and cultural diversity, age, and gender. A key disparity often hinges on a person's financial status; formidable financial barriers block off needed mental health care from too many people regardless of whether one has health insurance with inadequate mental health benefits, or is one of the 44 million Americans who lack any insurance. (David Satcher, M.D., Ph.D., Surgeon General, <http://www.surgeongeneral.gov/library/mentalhealth/home.html>)

- Data were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

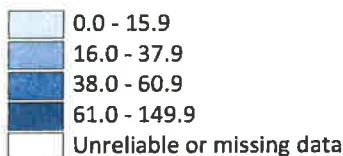
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# Dentist Rate - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of professionally active dentists per 100,000 population, 2007



## CONTEXT

**What It Is:** The dentist rate is defined as the number of professionally active dentists per 100,000 population. Professionally active dentist occupation categories include active practitioners; dental school faculty or staff; armed forces dentists; government-employed dentists at the federal, state, or local levels; interns and residents; and other health or dental organization staff members.

**Where It Comes From:** Data on the number of dentists are tracked by the American Dental Association (ADA) and the American Medical Association (AMA). County-level data are housed in the Health Resources and Services Administration’s Area Resource File (ARF) and made available through the Health Indicators Warehouse developed by the National Center for Health Statistics.

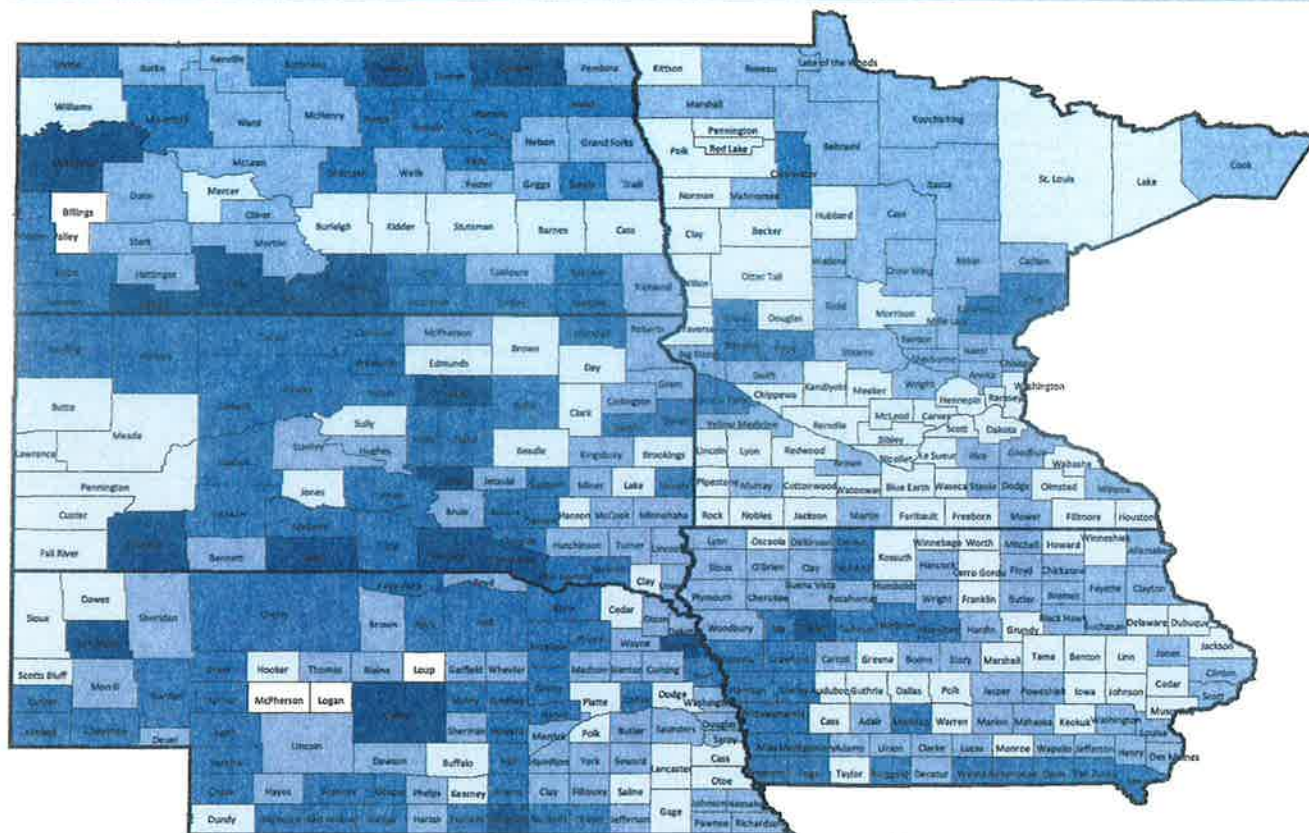
**Importance:** Today, thanks to fluoride, healthier lifestyles and quality dental care, more people than ever before are keeping their natural teeth throughout their lifetime. Yet for those who live in areas where a dentist is not available or those who cannot afford treatment, getting dental care can be difficult (American Dental Association, <http://www.ada.org>).

- Data were obtained from the Health Indicators Warehouse at <http://healthindicators.gov/> which is maintained by the Centers for Disease Control and Prevention’s National Center for Health Statistics.

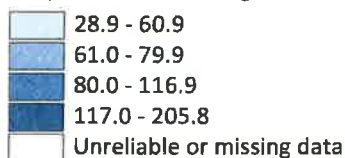
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# Preventable Hospital Stays - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Hospitalization discharges for ambulatory care-sensitive conditions per 1,000 Medicare enrollees, 2006-2007



## CONTEXT

**What It Is:** Preventable hospital stays are measured as the hospital discharge rate for ambulatory care-sensitive conditions per 1,000 Medicare enrollees.

**Where It Comes From:** Estimates of preventable hospital stays were calculated by the authors of the Dartmouth Atlas of Health Care using Medicare claims data.

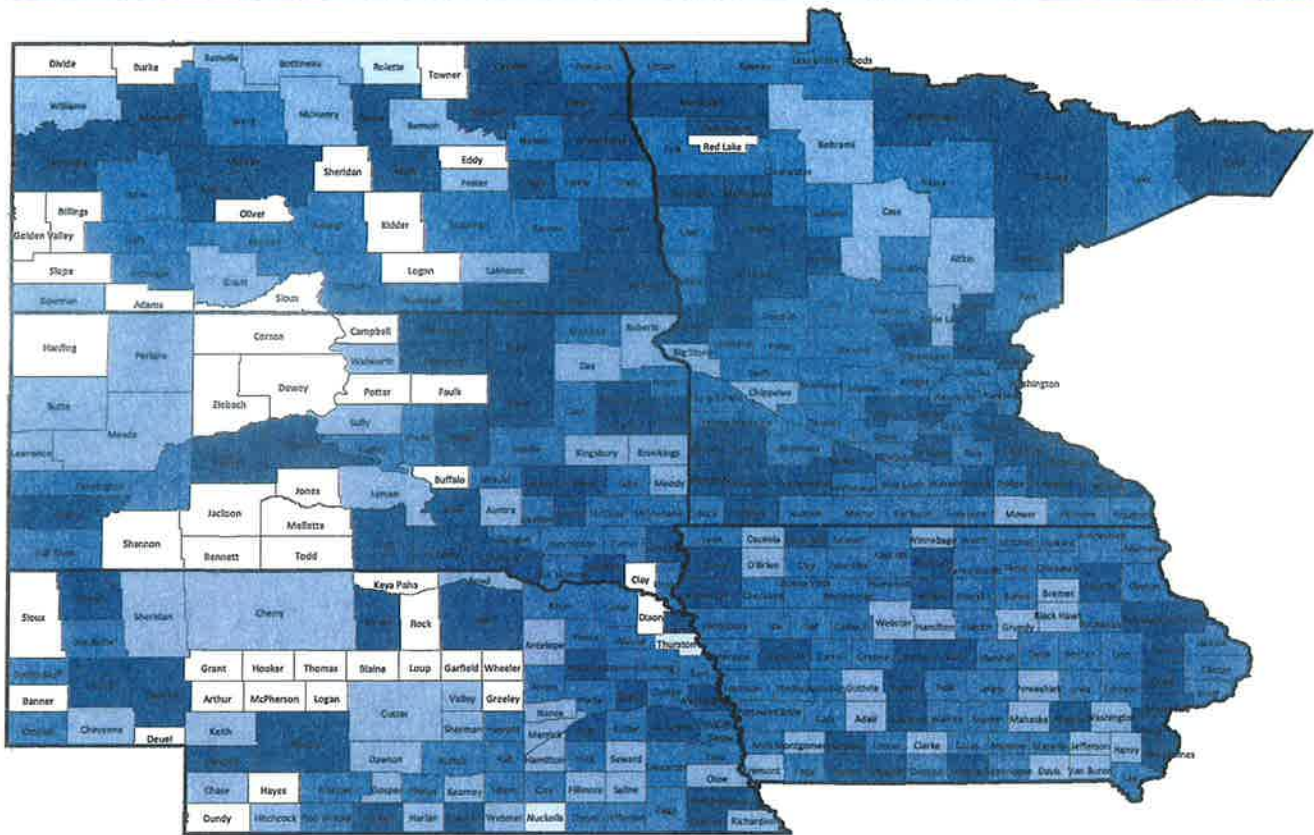
**Importance:** Hospitalization for diagnoses amenable to outpatient services suggests that the quality of care provided in the outpatient setting was less than ideal. The measure may also represent the population’s tendency to overuse the hospital as a main source of care.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

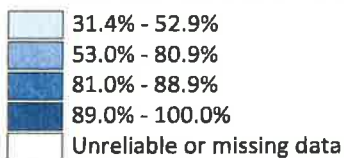
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**Diabetic Screening - A health factor measure focusing on clinical care**  
 County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of diabetic Medicare enrollees that receive HbA1c screening, 2006-2007



CONTEXT

**What It Is:** Diabetic screening is calculated as the percent of diabetic Medicare patients whose blood sugar control was screened in the past year using a test of their glycated hemoglobin (HbA1c) levels.

**Where It Comes From:** Estimates of diabetic screening were calculated by the authors of the Dartmouth Atlas of Health Care using Medicare claims data.

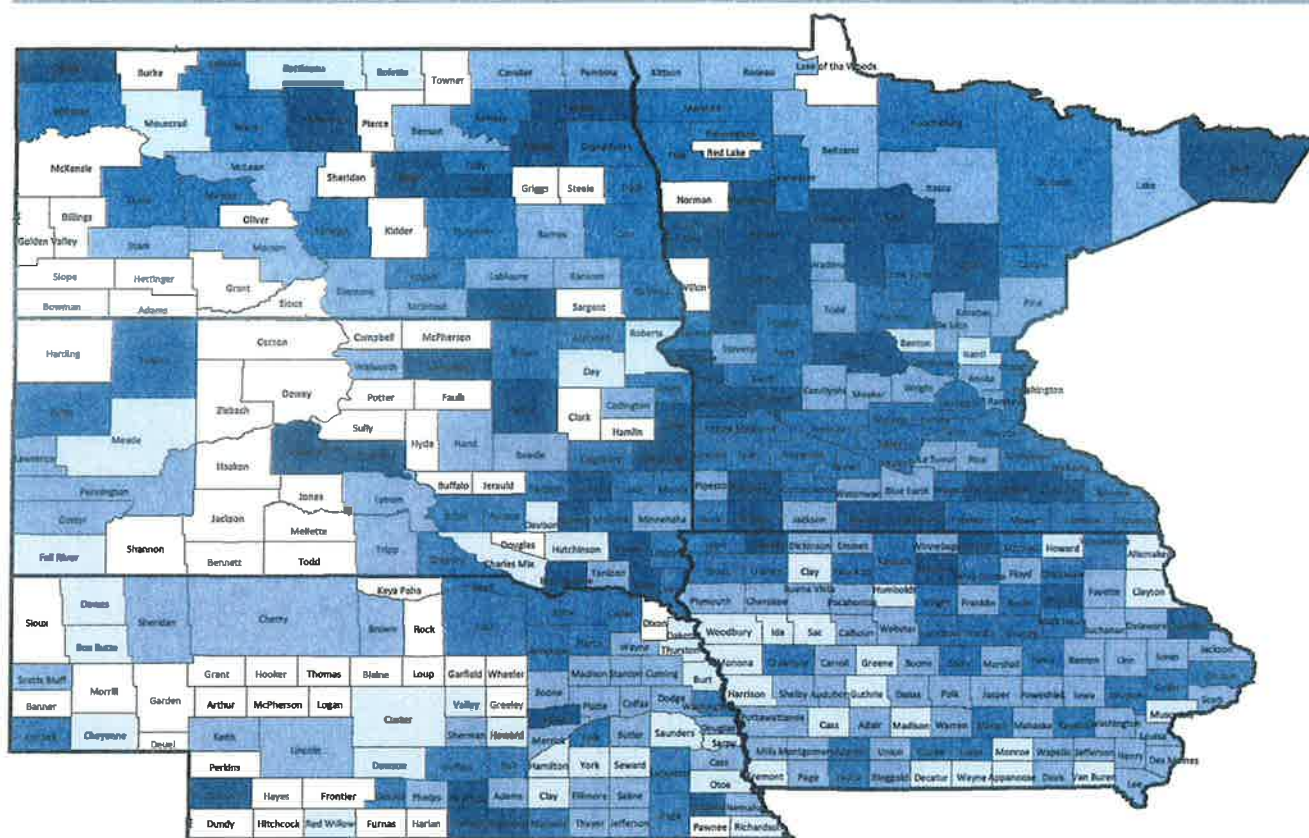
**Importance:** Regular HbA1c screening among diabetic patients is considered the standard of care. It helps assess the management of diabetes over the long term by providing an estimate of how well a patient has managed his or her diabetes over the past two to three months. When hyperglycemia is addressed and controlled, complications from diabetes can be delayed or prevented.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

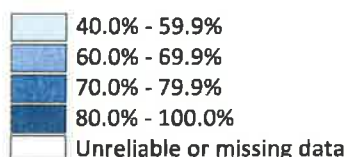
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# Mammography Screening - A health factor measure focusing on clinical care

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of female Medicare enrollees that receive mammography screening, 2006-2007



## CONTEXT

**What It Is:** This measure represents the percent of female Medicare enrollees ages 40 through 69 that had at least one mammogram over a two-year period.

**Where It Comes From:** Estimates were calculated by the authors of the Dartmouth Atlas of Health Care using Medicare claims data.

**Importance:** Evidence suggests that mammography screening reduces breast cancer mortality, especially among older women. A physician’s recommendation or referral—and satisfaction with physicians—are major facilitating factors among women who obtain breast cancer screening. The percent of women ages 40 through 69 receiving a mammogram is a widely endorsed quality of care measure.

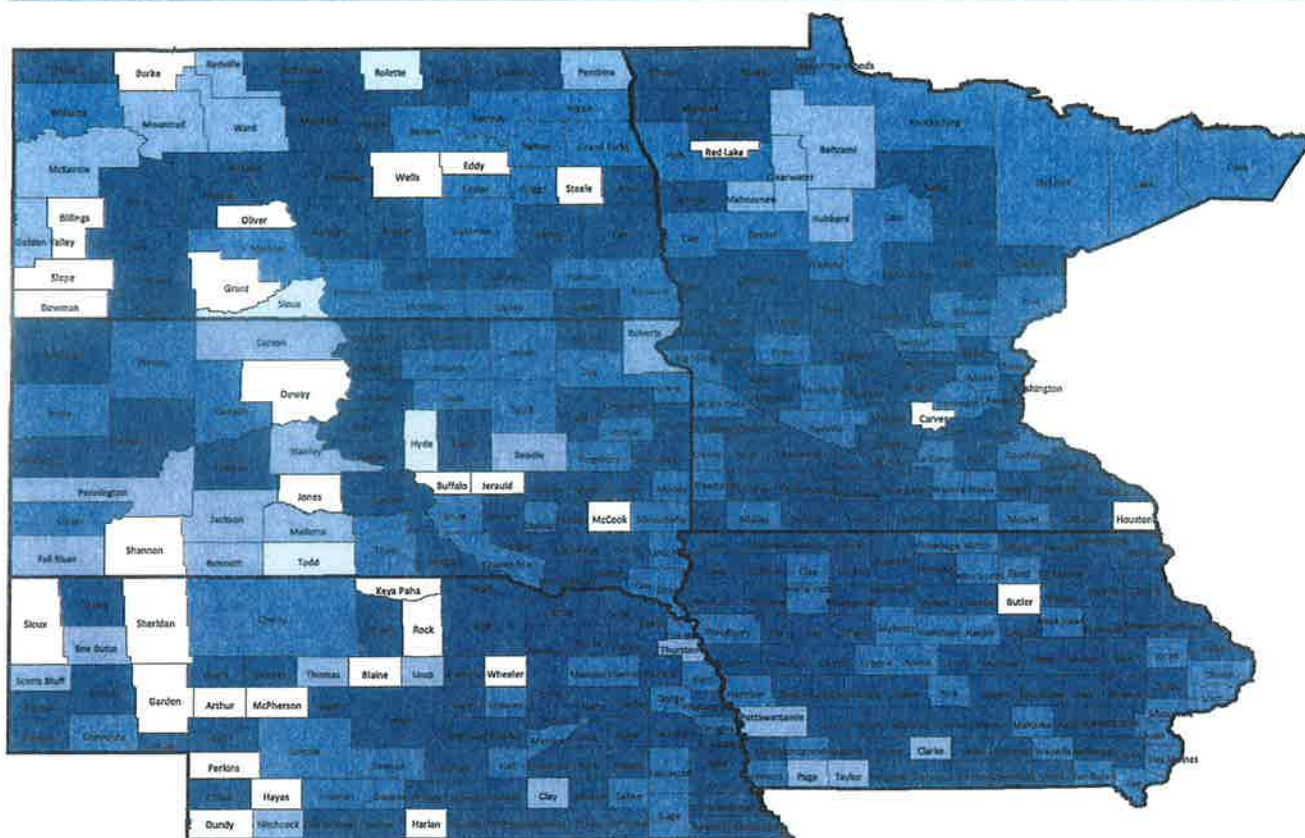
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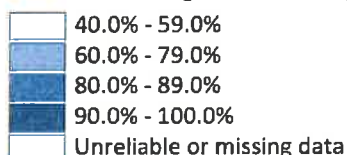
# High School Graduation - A health factor measure focusing on education

Map 21

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of ninth-grade cohort in public schools that graduates from high school in four years, 2006-2007



## CONTEXT

**What It Is:** High school graduation, commonly referred to as the averaged freshman graduation rate, is reported as the percent of a county's ninth-grade cohort in public schools that graduates from high school in four years.

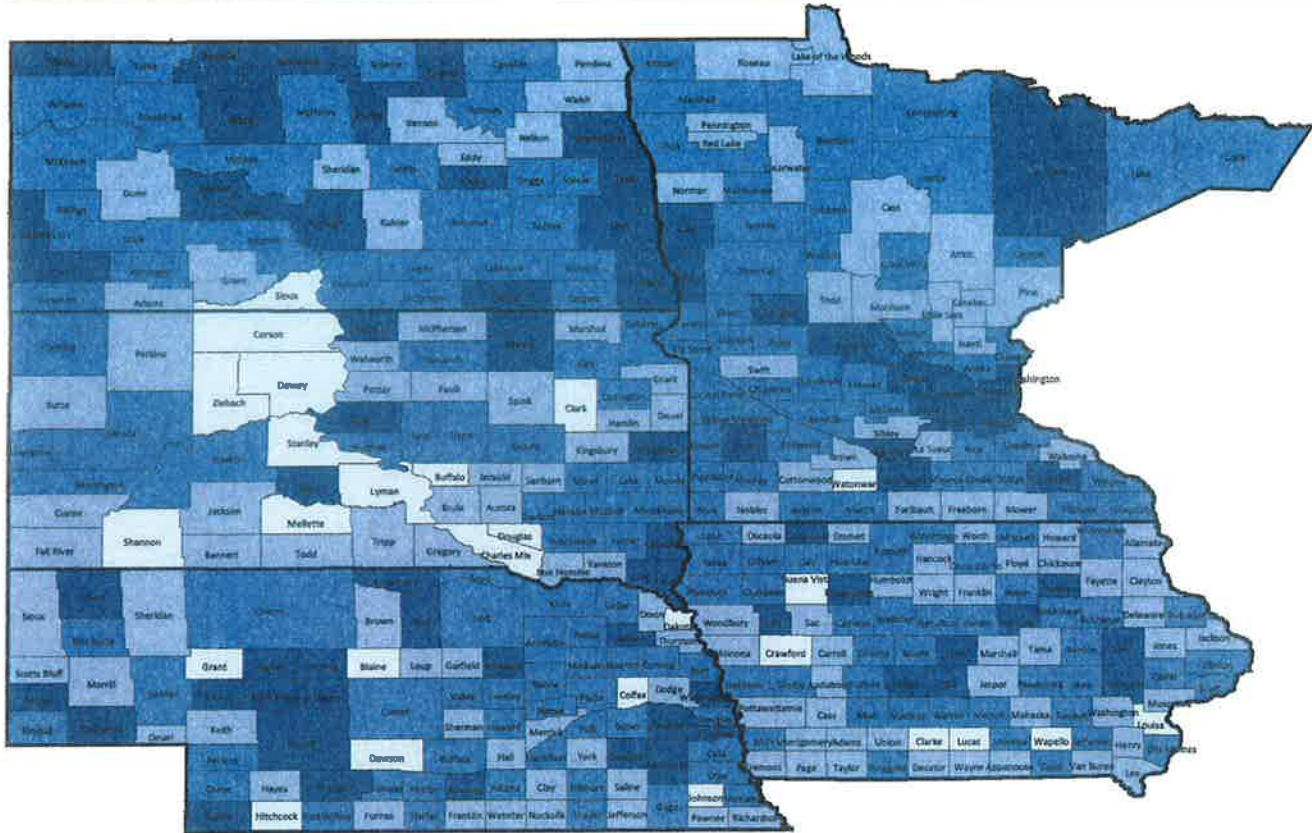
**Where It Comes From:** Estimates of high school graduation are based on the restricted-use versions of the LEA Universe Survey Dropout and Completion data and the Public Elementary/Secondary School Universe Survey data. These data were requested from NCES for the school year 2006-07.

**Importance:** The relationship between more education and improved health outcomes is well known, with years of formal education correlating strongly with improved work and economic opportunities, reduced psychosocial stress, and healthier lifestyles.

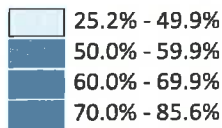
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**Some College** - A health factor measure focusing on education  
 County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults ages 25 through 44 with some post-secondary education, 2005-2009



CONTEXT

**What It Is:** This measure represents the percent of the population ages 25 through 44 with some post-secondary education, such as enrollment at vocational/technical schools, junior colleges, or four-year colleges. It includes individuals who pursued education following high school but did not receive a degree.

**Where It Comes From:** Estimates of the population ages 25 through 44 with some post-secondary education were calculated using the 5-year estimates from the U.S. Census Bureau’s American Community Survey (ACS).

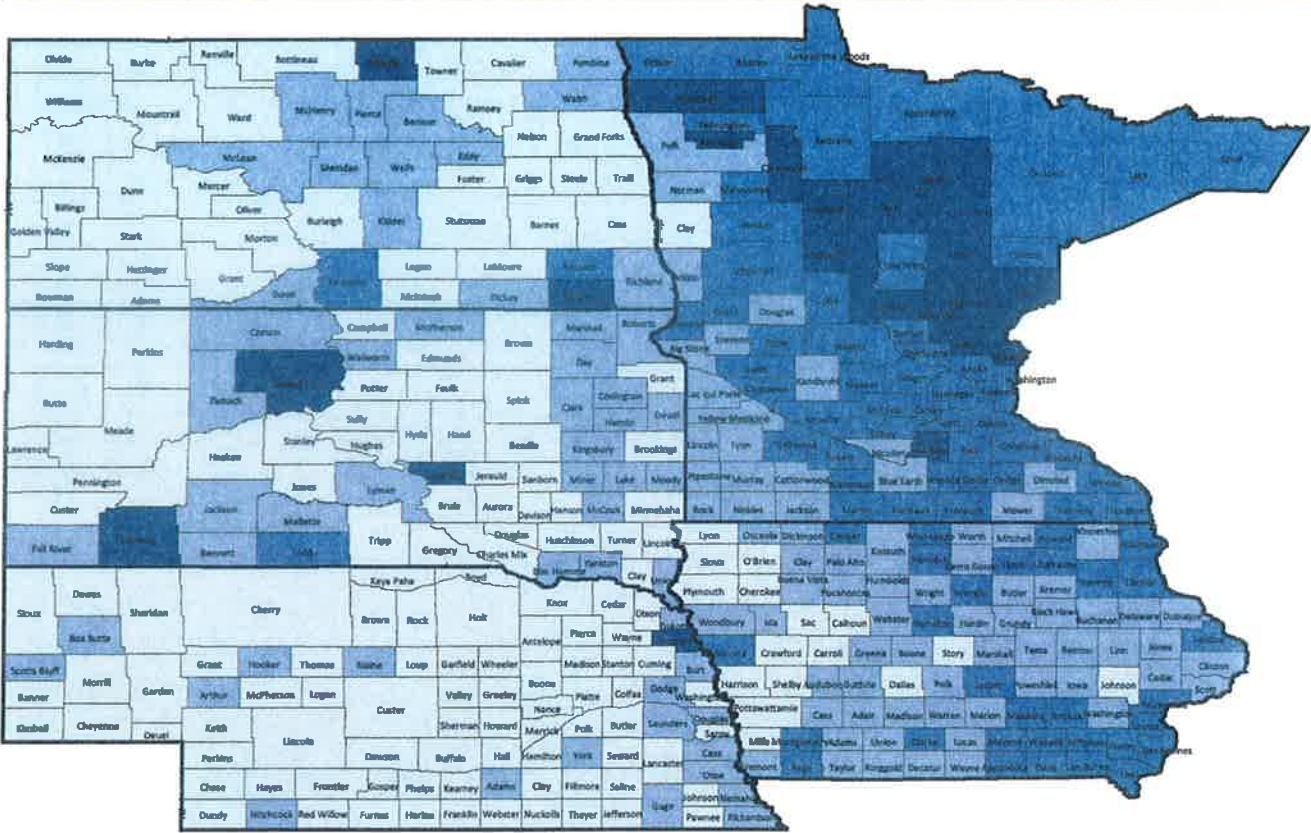
**Importance:** The relationship between higher education and improved health outcomes is well known, with years of formal education correlating strongly with improved work and economic opportunities, reduced psychosocial stress, and healthier lifestyles.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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# Unemployment - A health factor measure focusing on labor

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of population ages 16 and older that is unemployed but seeking work, 2009



### CONTEXT

**What It Is:** Unemployment is measured as the percent of the civilian labor force ages 16 and older that is unemployed but seeking work.

**Where It Comes From:** Data on unemployment is obtained from the Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics (LAUS).

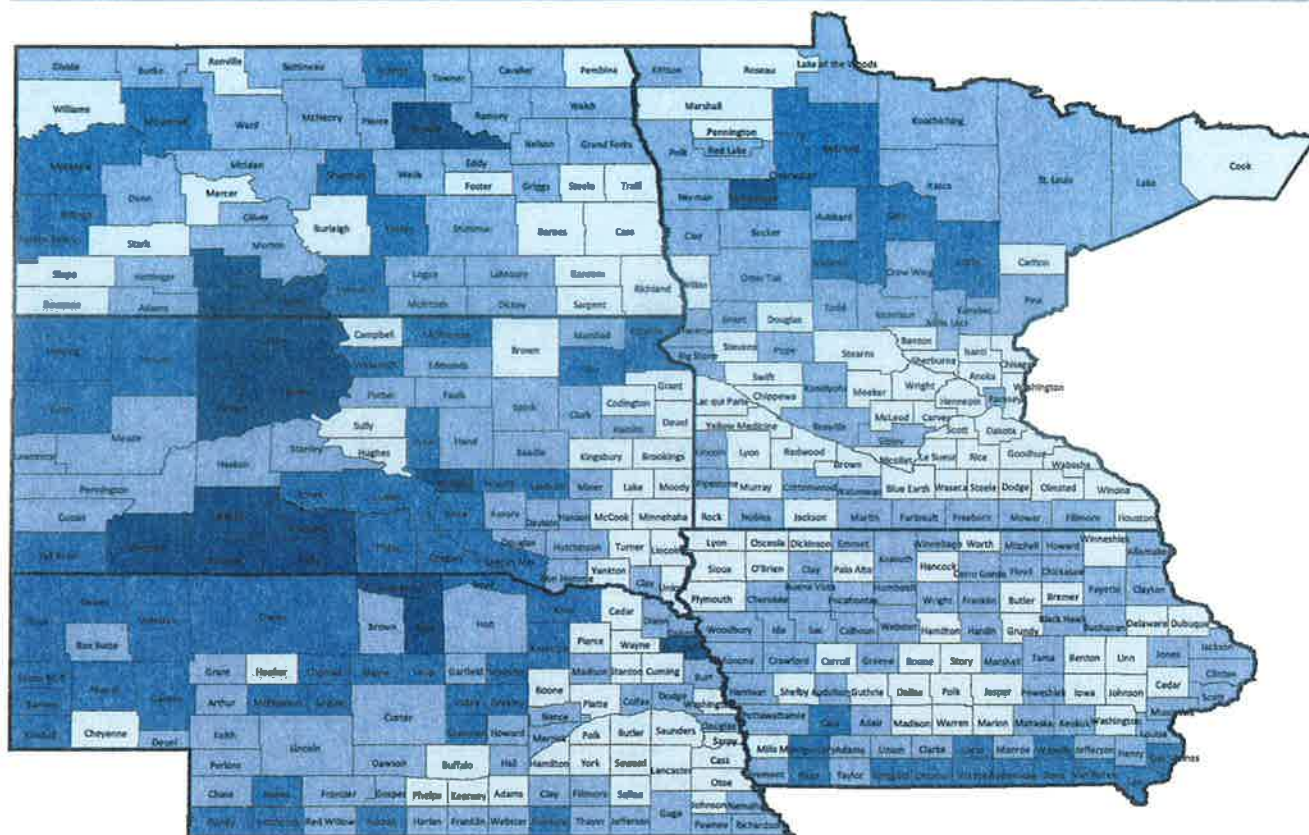
**Importance:** Unemployment may lead to physical health responses ranging from self-reported physical illness to mortality, especially suicide. It has also been shown to lead to an increase in unhealthy behaviors related to alcohol and tobacco consumption, diet, exercise, and other health-related behaviors, which in turn can lead to increased risk for disease or mortality. Because employee-sponsored health insurance is the most common source of health insurance coverage, unemployment can also limit access to health care.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

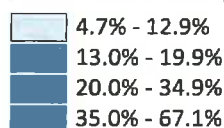
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# Children in Poverty - A health factor measure focusing on income and poverty

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of children ages 0 through 17 living below the Federal Poverty Line, 2008



## CONTEXT

**What It Is:** Children in poverty is the percent of children under age 18 living below the Federal Poverty Line (FPL).

**Where It Comes From:** Children in poverty estimates are provided by the Small Area Income and Poverty Estimates (SAIPE) program through the U.S. Census Bureau.

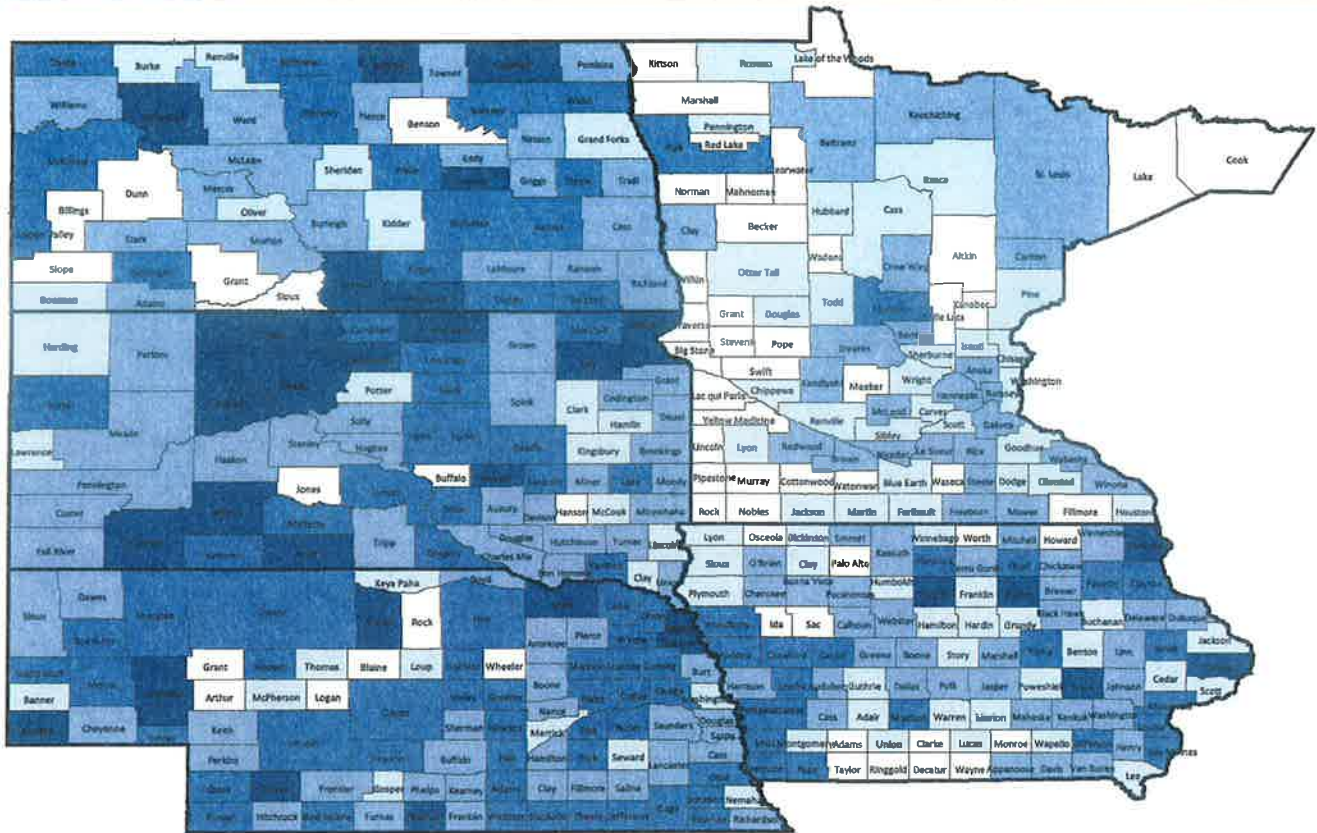
**Importance:** Poverty can result in negative health consequences, such as increased risk of mortality, increased prevalence of medical conditions and disease incidence, depression, intimate partner violence, and poor health behaviors. While negative health effects resulting from poverty are present at all ages, children in poverty experience greater morbidity and mortality due to an increased risk of accidental injury and lack of health care access. Children’s risk of poor health and premature mortality may also be increased due to the poor educational achievement associated with poverty. The children in poverty measure is highly correlated with overall poverty rates.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

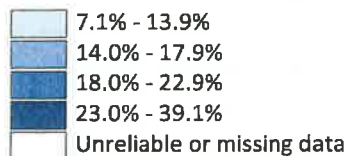
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# Inadequate Social Support - A health factor measure focusing on social networks

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of adults that never, rarely, or sometimes get the social and emotional support they need, 2003-2009



## CONTEXT

**What It Is:** The social and emotional support measure is based on responses to the question: “How often do you get the social and emotional support you need?” The value presented is the percent of the adult population that responds that they “never,” “rarely,” or “sometimes” get the support they need.

**Where It Comes From:** This measure was calculated by the National Center for Health Statistics using data obtained from the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population over 18 years of age living in households with a land-line telephone. The estimates are based on seven years of data.

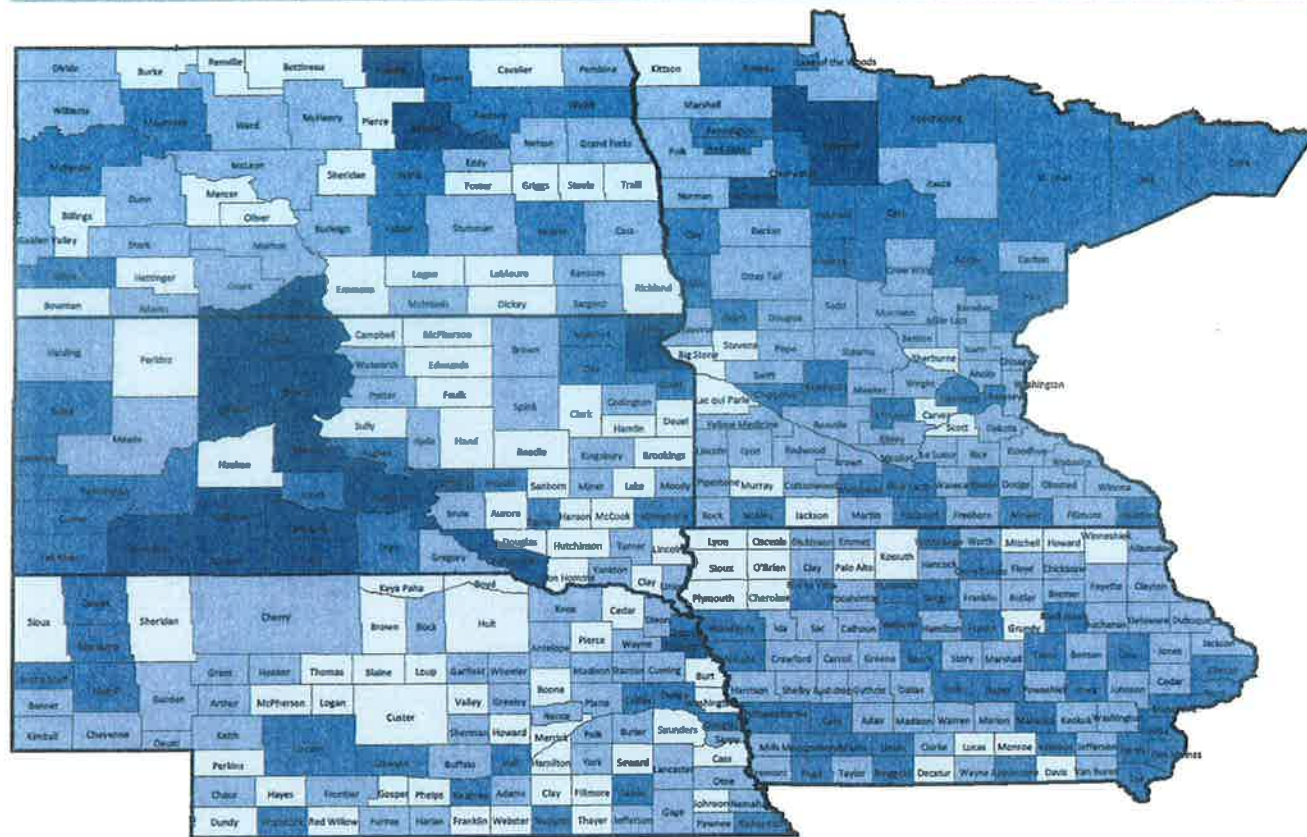
**Importance:** Poor family support, minimal contact with others, and limited involvement in community life are associated with increased morbidity and early mortality. Furthermore, social support networks have been identified as powerful predictors of health behaviors, suggesting that individuals without a strong social network are less likely to participate in healthy lifestyle choices.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

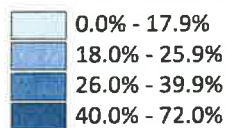
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# Children in Single-Parent Households - A health factor measure focusing on families

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of children in families that live in a household headed by a parent with no spouse present, 2005-2009



## CONTEXT

**What It Is:** The single-parent household measure is the percent of all children in family households that live in a household headed by a single parent (male or female householder with no spouse present).

**Where It Comes From:** Estimates of the percent of children in single-parent households were calculated using data from the U.S. Census Bureau’s American Community Survey (ACS) 5-year estimates.

**Importance:** Adults and children in single-parent households are both at risk for adverse health outcomes such as mental health problems (including substance abuse, depression, and suicide) and unhealthy behaviors such as smoking and excessive alcohol use.

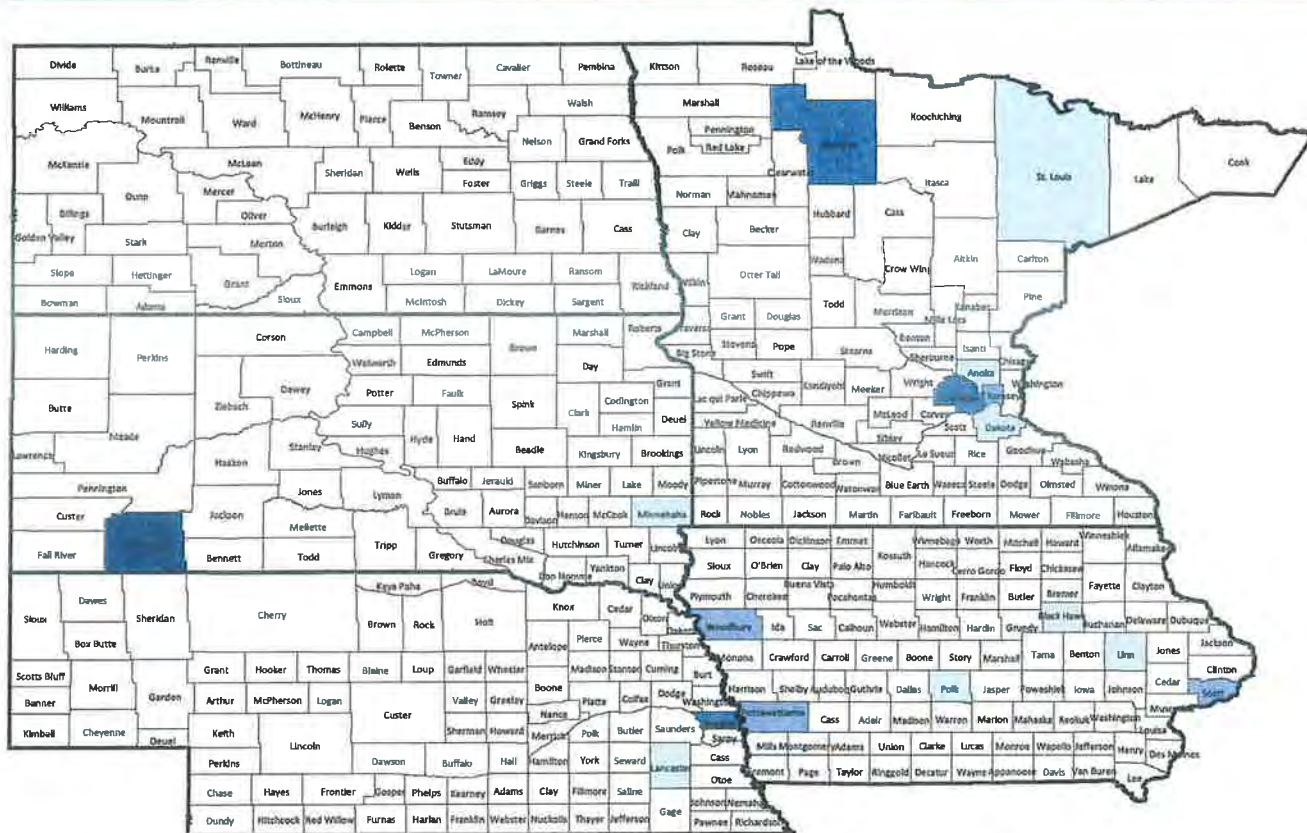
- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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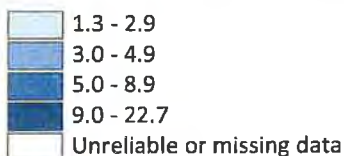


# Homicide Rate - A health factor measure focusing on violent crime

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of deaths due to murder or non-negligent manslaughter per 100,000 population, 2001-2007



## CONTEXT

**What It Is:** Homicide is represented as a crude death rate due to murder or non-negligent manslaughter per 100,000 population.

**Where It Comes From:** These data were calculated by National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC) using data from the National Vital Statistics System (NVSS). NCHS used data for a seven-year period to create more robust estimates of cause-specific mortality, particularly for counties with smaller populations.

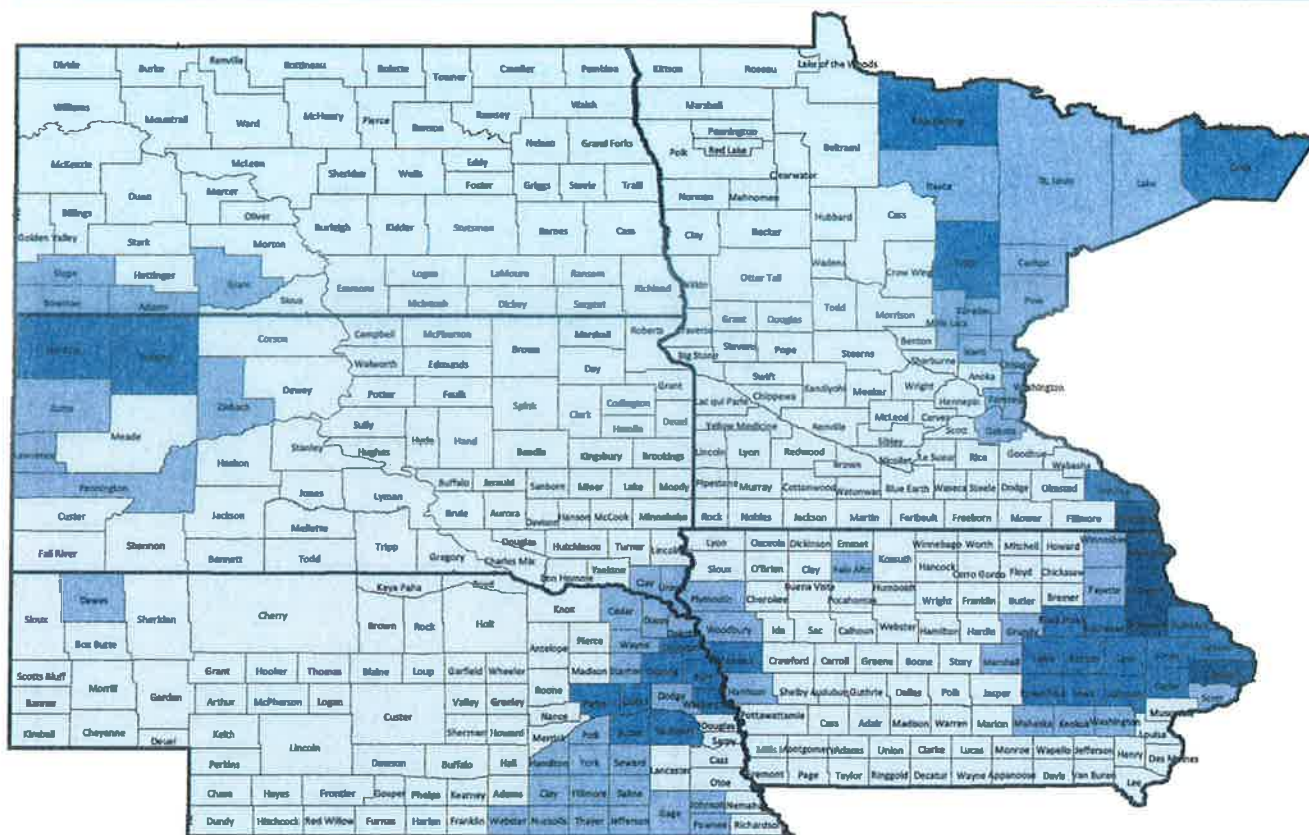
**Importance:** Because homicide is one of the five offenses that comprise violent crime, a homicide rate is used as a proxy when violent crime data are not available.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

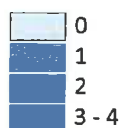
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# Air Pollution-Particulate Matter Days - A health factor measure focusing on physical environment

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of days air quality was unhealthy for sensitive populations due to fine particulate matter, 2006



## CONTEXT

**What It Is:** The air pollution—particulate matter measure represents the annual number of days that air quality was unhealthy for sensitive populations due to fine particulate matter (FPM, < 2.5 µm in diameter).

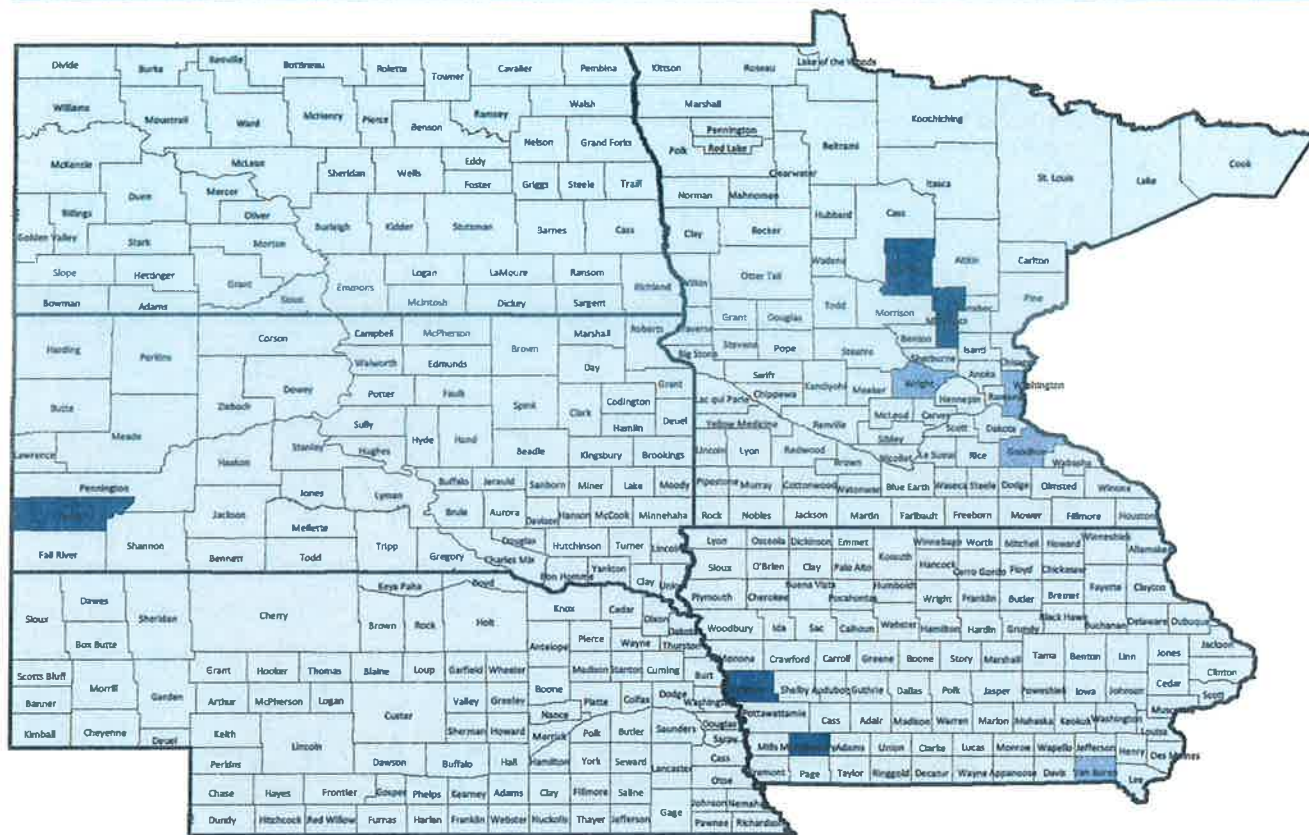
**Where It Comes From:** The Public Health Air Surveillance Evaluation (PHASE) project, a collaborative effort between the Centers for Disease Control and Prevention (CDC) and the EPA, used Community Multi-Scale Air Quality Model (CMAQ) output and air quality monitor data to create a spatial-temporal model that estimated fine particulate matter concentrations throughout the year. The PHASE estimates were used to calculate the number of days per year that air quality in a county was unhealthy for sensitive populations due to FPM.

**Importance:** The relationship between elevated air pollution—particularly fine particulate matter and ozone—and compromised health has been well documented. The negative consequences of ambient air pollution include decreased lung function, chronic bronchitis, asthma, and other adverse pulmonary effects.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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Air Pollution-Ozone Days - A health factor measure focusing on physical environment  
 County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of days air quality was unhealthy for sensitive populations due to ozone levels, 2006



CONTEXT

**What It Is:** The air pollution—ozone measure represents the annual number of days that air quality was unhealthy for sensitive populations due to ozone levels.

**Where It Comes From:** The Public Health Air Surveillance Evaluation (PHASE) project, a collaborative effort between the Centers for Disease Control and Prevention (CDC) and the EPA, used Community Multi-Scale Air Quality Model (CMAQ) output and air quality monitor data to create a spatial-temporal model that estimated daily ozone concentrations throughout the year. The PHASE estimates were used to calculate the number of days per year that air quality in a county was unhealthy for sensitive populations due to ozone.

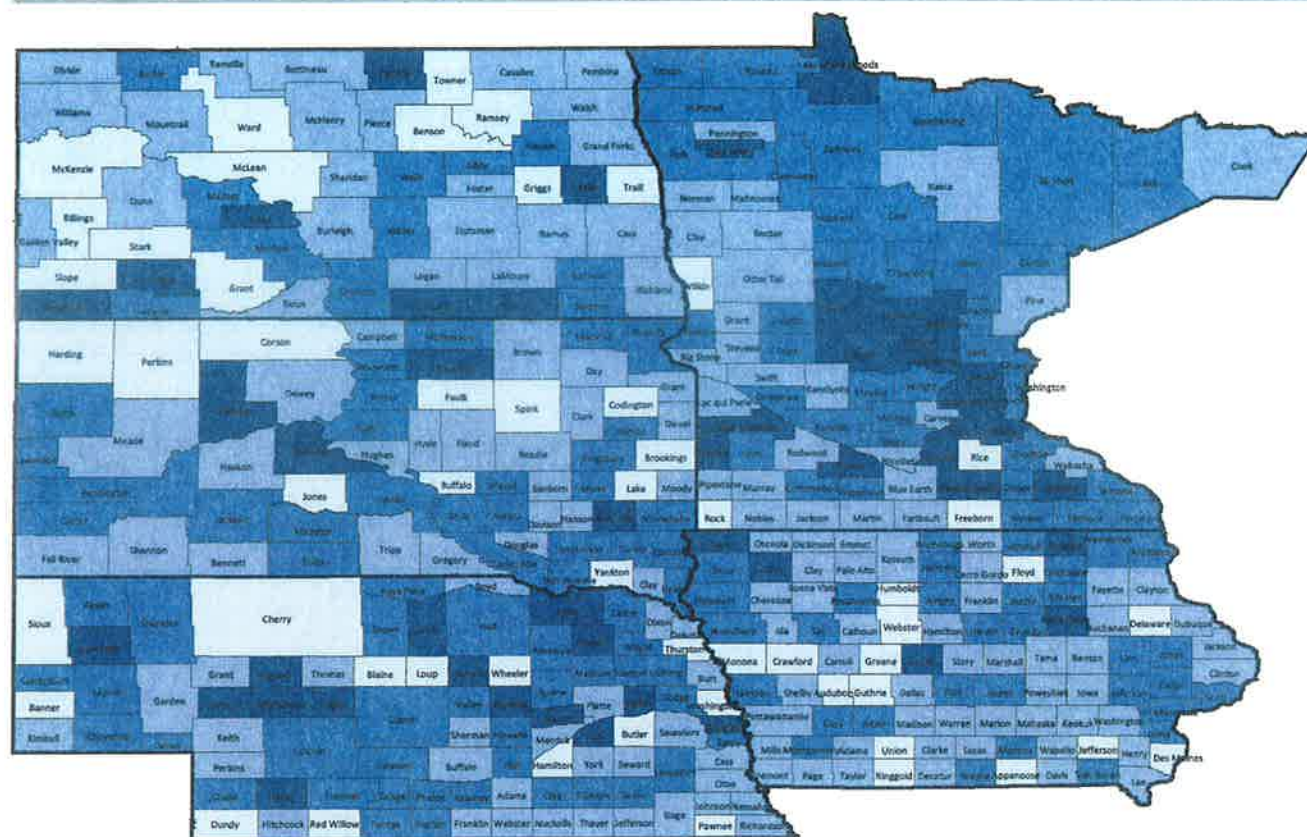
**Importance:** The relationship between elevated air pollution—particularly fine particulate matter and ozone—and compromised health has been well documented. The negative consequences of ambient air pollution include decreased lung function, chronic bronchitis, asthma, and other adverse pulmonary effects.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

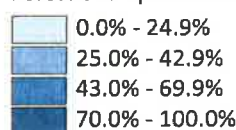
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# Access to Healthy Foods - A health factor measure focusing on physical environment

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of zip codes with healthy food outlets (i.e., grocery store or produce stand/farmers' market), 2008



## CONTEXT

**What It Is:** Access to healthy foods is measured as the percent of zip codes in a county with a healthy food outlet, defined as a grocery store or produce stand/farmers' market.

**Where It Comes From:** The measure is based on data from the U.S. Census Bureau's Zip Code Business Patterns. Healthy food outlets include grocery stores and produce/farmers' markets, as defined by their North American Industrial Classification System (NAICS) codes.

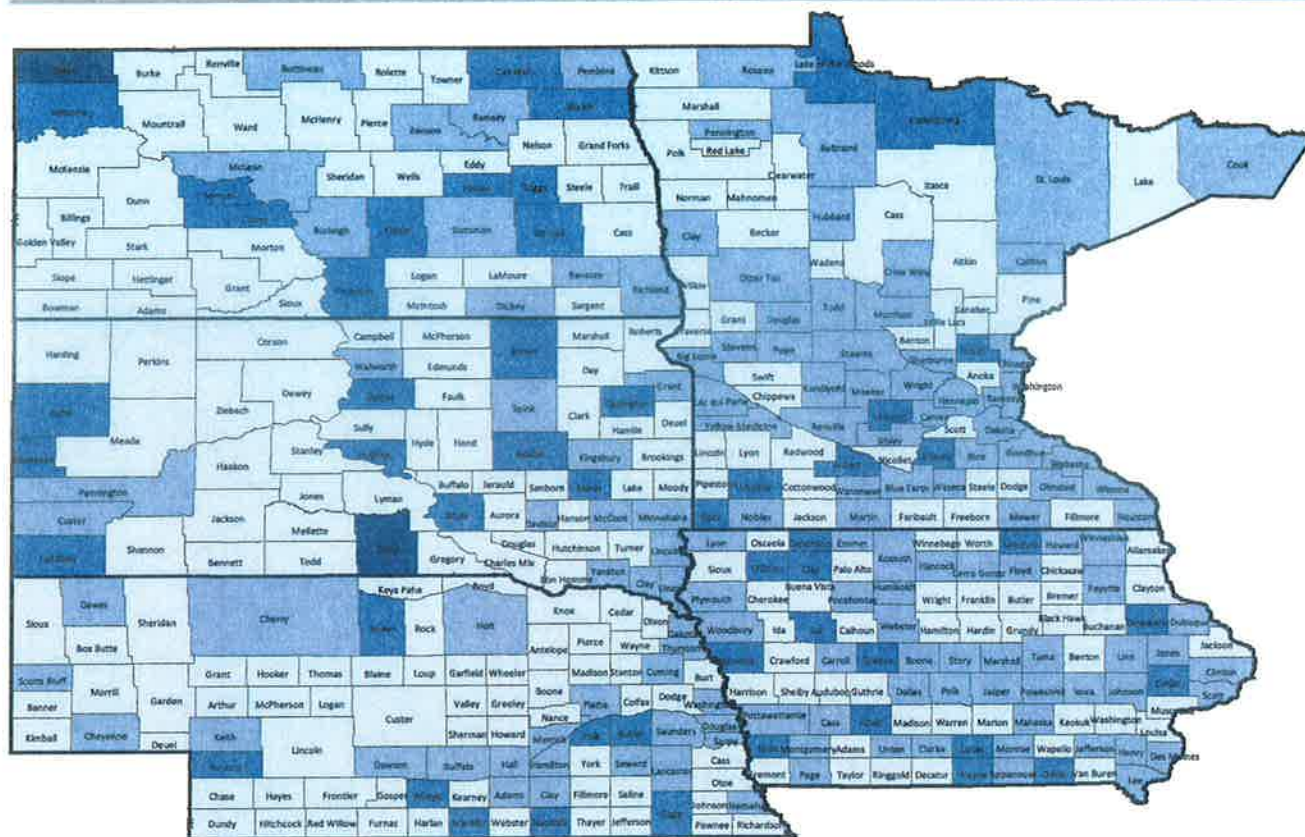
**Importance:** Studies have linked the food environment to consumption of healthy food and overall health outcomes.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

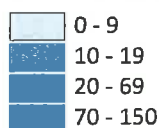
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# Access to Recreational Facilities - A health factor measure focusing on physical environment

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Number of recreational facilities per 100,000 population, 2008



## CONTEXT

**What It Is:** This measure represents the number of recreational facilities per 100,000 population in a given county. Recreational facilities are defined as establishments primarily engaged in operating fitness and recreational sports facilities, featuring exercise and other active physical fitness conditioning or recreational sports activities such as swimming, skating, or racquet sports.

**Where It Comes From:** This measure is based on a measure from United States Department of Agriculture (USDA) Food Environment Atlas, and is calculated using the most current County Business Patterns data set. Recreational facilities are identified by North American Industrial Classification System (NAICS) code 713940.

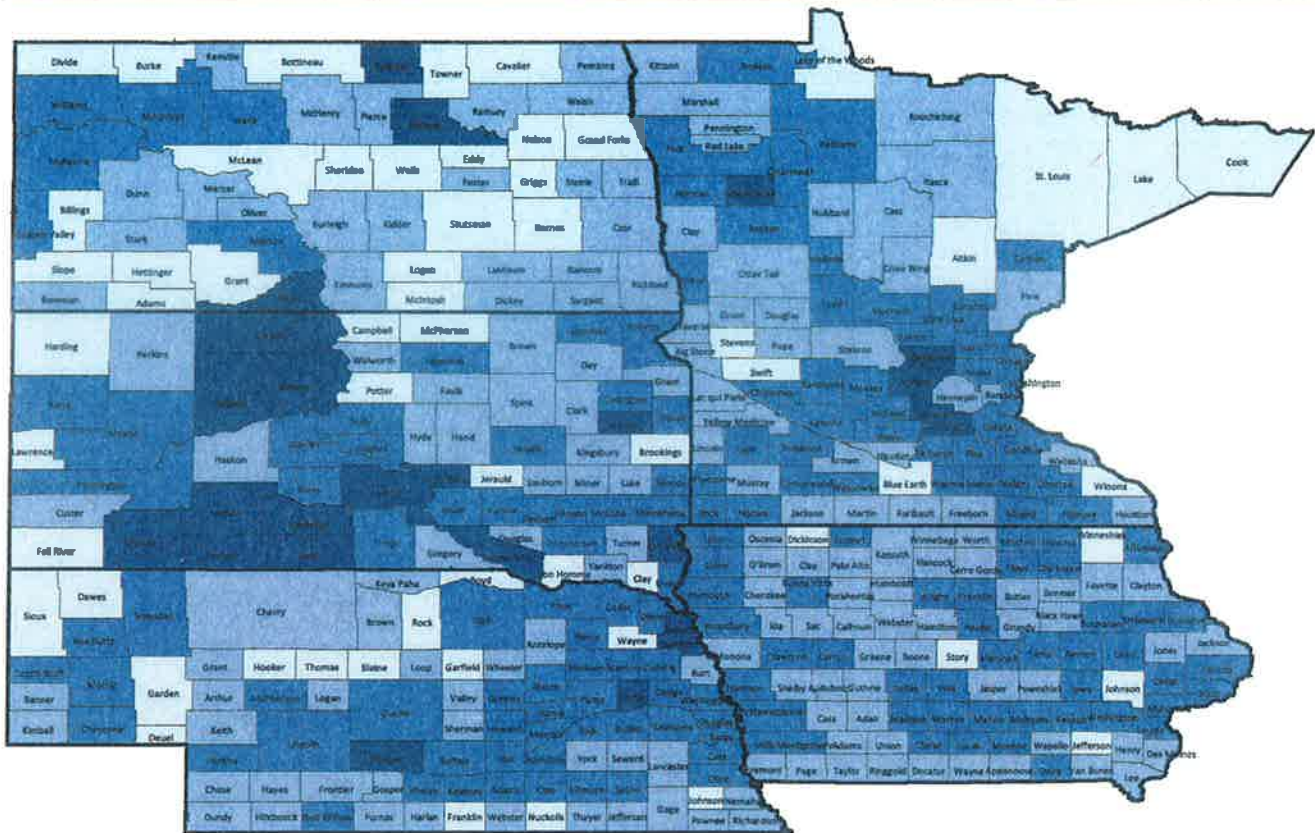
**Importance:** The availability of recreational facilities can influence individuals' and communities' choices to engage in physical activity. Proximity to places with recreational opportunities is associated with higher physical activity levels, which in turn is associated with lower rates of adverse health outcomes associated with poor diet, lack of physical activity, and obesity.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

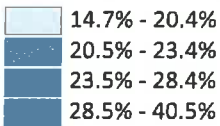
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# Youth - A demographic measure

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Persons ages 0 through 17 as a percent of the total population, 2009



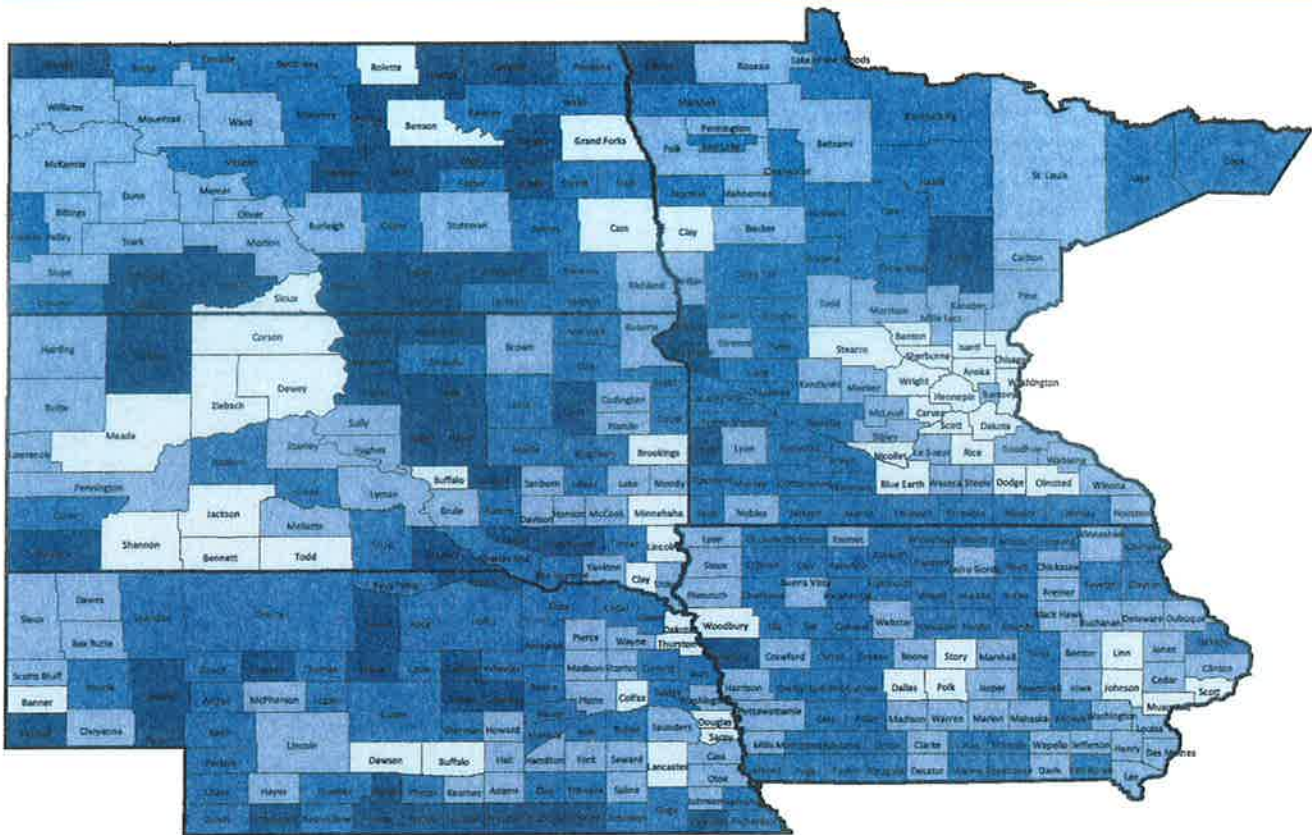
## CONTEXT

**What It Is:** This measure represents the percent of a county’s population that is less than 18 years of age.

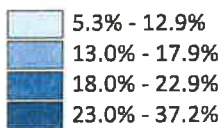
**Where It Comes From:** County demographic figures come from the U.S. Census Bureau’s annual population estimates.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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Persons ages 65 and older as a percent of the total population, 2009



CONTEXT

**What It Is:** This measure represents the percent of a county’s population that is 65 years of age and older.

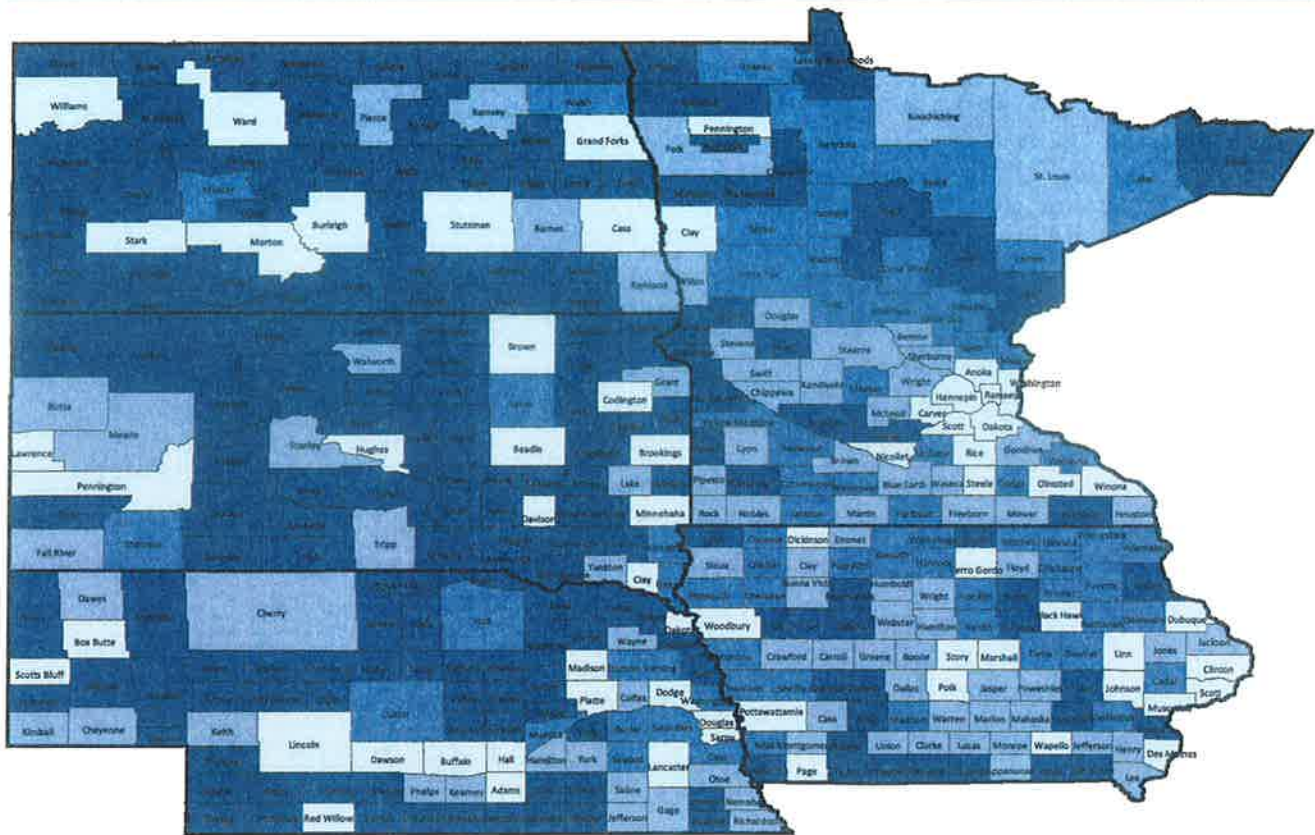
**Where It Comes From:** County demographic figures come from the U.S. Census Bureau’s annual population estimates.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

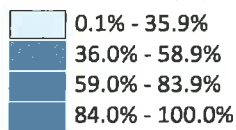
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# Rural - A demographic measure

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of total population living in a rural area, 2000



### CONTEXT

**What It Is:** This measure represents the percent of a county's population that lives in a rural area, which the U.S. Census Bureau defines as all territory located outside of urbanized areas and urban clusters. Urbanized areas and urban clusters are geographic areas with a core population density of at least 1,000 people per square mile that are surrounded by areas with an overall population density of at least 500 people per square mile.

**Where It Comes From:** This measure is calculated by the U.S. Census Bureau using data from 2000.

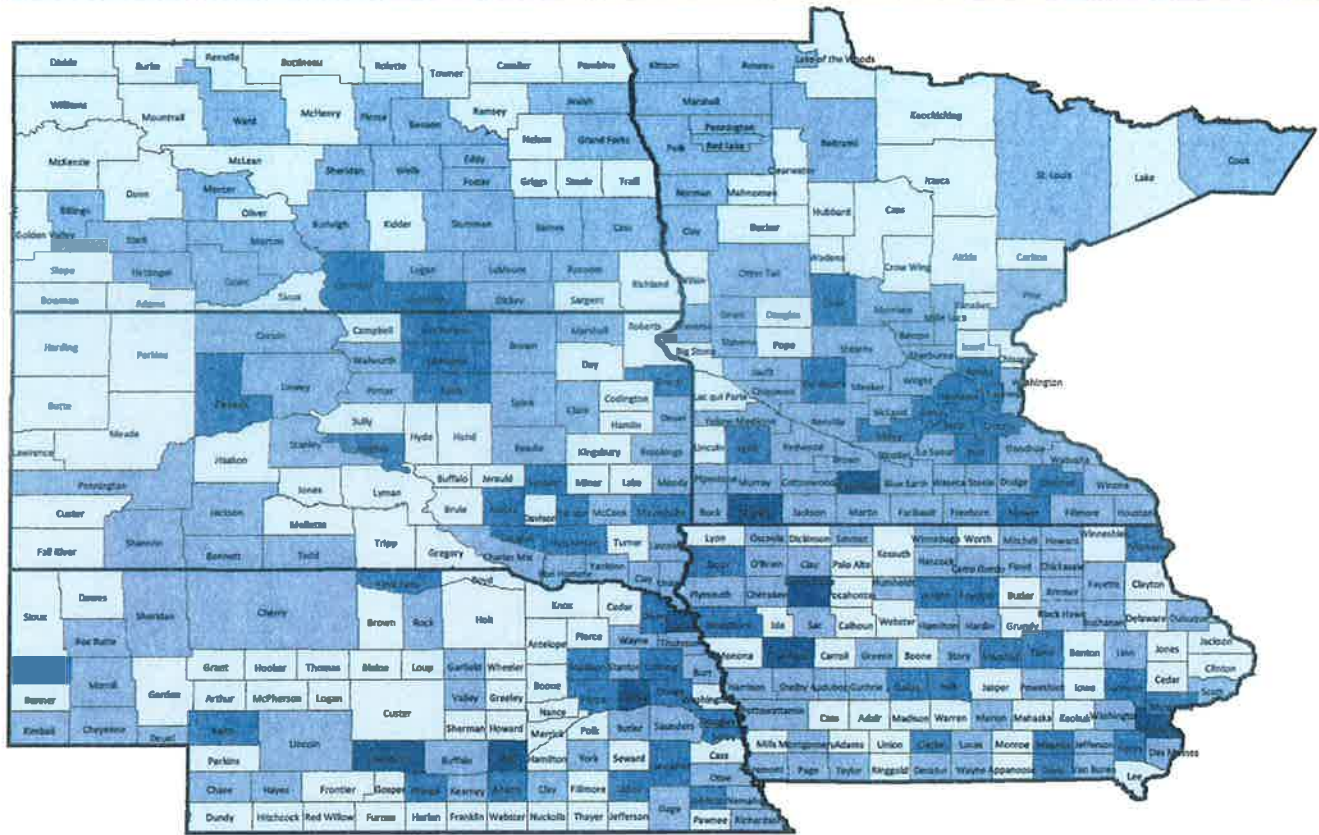
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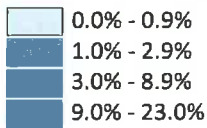


# Not English Proficient - A demographic measure

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of total population that speaks English less than "very well", 2005-2009



## CONTEXT

**What It Is:** This measure represents the percent of the total population that reports speaking English less than "very well."

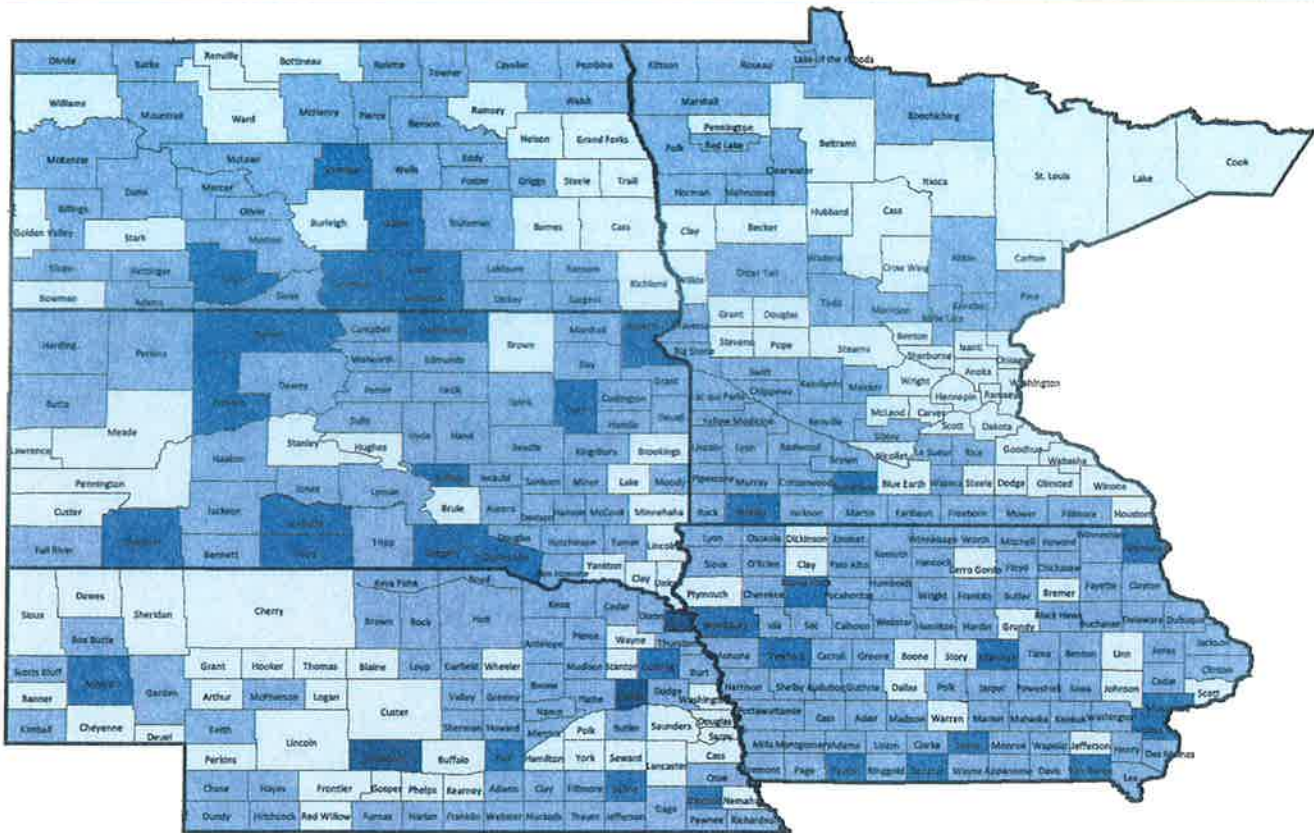
**Where It Comes From:** Data on spoken English proficiency come from the U.S. Census Bureau's American Community Survey 5-year estimates.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

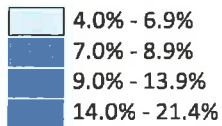
Disclaimer: The data displayed are from the source indicated; we do not vouch for the accuracy of the data or ensure they are the most recent available. The information is intended for personal, non-commercial use. It can be shared freely if it is not used for profit and appropriate acknowledgments are given. This map was prepared by researchers at North Dakota State University in Fargo for the 2011-2013 Fargo-Moorhead Community Health Needs Assessment Collaborative. December 2011

**Illiteracy** - A demographic measure

County distribution map for Iowa, Minnesota, Nebraska, North Dakota, and South Dakota



Percent of population ages 16 and older that lacks basic prose literacy skills, 2003



**CONTEXT**

**What It Is:** This measure reflects the percent of the population ages 16 and older that lacks basic prose literacy skills.

**Where It Comes From:** This measure is obtained from the National Center for Education Statistics and is based on the 2003 National Assessment of Adult Literacy.

- Data and associated context were obtained from County Health Rankings, a key component of the Mobilizing Action Toward Community Health (MATCH) project - a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, <http://www.countyhealthrankings.org/>.

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## Community Health Needs Assessment Asset Mapping Categorized by Identified Concerns

### **Health Care/Health Insurance (Cost, access, coverage)**

Blue Cross Member Advocate Program  
Caring for Children (The North Dakota Caring Foundation, Inc.)  
Community Care Programs (Sanford Health and St. Alexius Medical Center)  
Health Insurance counseling (N.D. Dept. of Insurance)  
Medicaid (Burleigh County and N.D. Dept. of Human Services)  
Medical Home Program  
Sanford Health Case Managers  
Sanford Health Parish Nurses  
Sanford Health Social Workers

### **Dental Care (Cost, access to care)**

Bridging the Gap (dental care)  
Ronald McDonald Care Mobile (mobile dental clinic focusing on underserved children)

### **Prescription Medications (Cost, program registration assistance)**

AID, Inc.  
Burleigh County Public Health  
Burleigh County Senior Adults  
Burleigh County Social Services  
Burleigh County Veterans Service  
Prescription Connection (N.D. Dept. of Insurance prescription assistance program)  
Salvation Army  
United Tribes Technical College

### **Vision/Hearing Impaired**

Hear-O-Program (donated hearing aids for income-eligible applicants)

### **Senior Care (Availability of long-term care, cost of long-term care, services to help care for elderly family members, transportation)**

#### **Resources to help seniors live independently**

Burleigh County Senior Adults Program  
Catholic Charities North Dakota  
Easter Seals  
Good Samaritan Society Home Care  
Gracefully Aging (Pride, Inc.)  
Guardian and Protective Services  
Lutheran Social Services

ND Aging and Disability Resource Link  
North Dakota Aging and Disability Resource Link  
Northland PACE program  
Sanford Health Help at Home  
Sanford Health Home Health  
Sanford Meals on Wheels  
Spectrum  
St. Alexius Home Care  
Support systems, Inc.  
Visiting Angels  
Volunteer Caregiver Exchange

**Medical Equipment Resources**

Amvets  
Easter Seals  
Great Plains Rehabilitation services  
Interagency program for assistive technology (IPAT)  
PraxAir (oxygen)  
Sanford Health Care Accessories

**Adult Day Care Resources**

Missouri Slope Lutheran Care Center  
Enable, Inc.  
Maple View

**Long Term Care (Nursing Homes)**

Baptist Home Apartments, 701-223-3040  
Baptist Home, 701-223-3040  
Brandon Heights Village, 701-221-1163  
Crescent Manor, 701-255-2540  
Edgewood Vista on Dominion, 701-258-7489  
Edgewood Vista Village, 701-751-5300  
Good Samaritan Society, 701-255-1084  
Maple View East, 701-223-4133  
Maple View North, 701-223-4133  
Marillac Manor, 701-258-8702  
Missouri Slope Lutheran Care Center, 701-223-9407  
Patterson Place, 701-255-6067  
Primrose Retirement Communities, 701-222-8183  
Sanford St. Vincent's Care Center, 701-323-1999  
St. Gabriel's Community, 701-751-4224  
The Terrace, 701-258-1980  
Touchmark, 701-323-7000  
Valley View Heights, 701-221-3018

**Assisted/Independent Living Resources**

Edgewood Vista on Dominion, 701-258-7489  
Edgewood Vista Village, 701-751-5300  
Good Samaritan Society, 701-255-1084  
Marillac Manor, 701-258-8702  
Patterson Place, 701-255-6067

Primrose Retirement Communities, 701-222-8183  
The Terrace, 701-258-1980  
Touchmark, 701-323-7000  
Valley View Heights, 701-221-3018

**Transportation**

Bis-Man Transit  
Burleigh County Veterans Affairs transit services  
CAT (Capital Area Transit) Bus

**Financial Assistance**

Burleigh County Housing Authority  
Burleigh County Social Services  
Legal Services of North Dakota

**Children and Youth (Availability of affordable childcare, services for at-risk youth, pediatric obesity)**

**Youth Resources**

Aqua Storm Swim Team  
ARC, 701-222-1854  
Bismarck Mandan Tennis Association  
Bismarck Midget Football  
Bismarck Parks and Recreation, 701-222-6455  
Bismarck Soccer League  
Bismarck Youth Baseball  
Bismarck Youth Fast Pitch Softball  
Bismarck's Life After School Time (B.L.A.S.T.), 701-222-6771  
Bobcats Youth Hockey School  
Boy Scouts, 701-223-7204  
Catholic Family Services, 701.255.1793  
Central Dakota Cyclists  
Central Dakota Diving Club  
Charles Hall Youth Service, 701-255-2773  
Child Care Resource and Referral, 701-223-1510  
Dakota Boys and Girls Ranch, 800-344-0957  
Dakota Family Services, 701-255-4020  
Dakota United Soccer Club  
Dakota West Arts Council  
Dakota Zoo  
Gateway to Science  
Girl Scouts, 701-223-4525  
Go! Bismarck-Mandan  
Good Bird Home, 701-255-3563  
Great Plains Track & Field Club  
Hall Home, 701-223-0751  
Head Start, 701-323-4400  
Lutheran Social Services, 701-223-1510  
Missouri Valley Family YMCA, 701-255-1525  
Mountain Plains Youth Service, Inc., 701-255-7229  
Open Door Community Center, 701-222-3004  
Shade Tree Players  
Sleepy Hollow Theater & Arts Park

Special Olympics  
The Village, 701-255-1165  
Theo Art School  
Youth Works, 701-255-6909

**Economic Issues (Poverty, availability of affordable housing, homelessness)**

**Poverty Resources**

Numerous thrift shops  
Burleigh County Social Services  
Legal Services of North Dakota  
Sanford Health and St. Alexius Medical Center Community Care Programs

**Homeless Shelters/Emergency Housing**

Abused Adult Resource Center/Pam's House, 701-222-8370  
Ruth Meiers Hospitality House, 701-222-2108  
West Central Human Services Center, 701-328-8888

**Food Pantries**

All Nations Assembly of God, 701-663-5177  
Bismarck Emergency Food Pantry, 701-258-9188  
Community Action Program, 701-258-2240  
Corpus Christi Church, 701-255-4600  
Crystal River Ministry Center, 701-258-1508  
Faith Center, 701-255-2704  
Helping Hand Food Pantry, 701-223-0332  
Salvation Army of Bismarck, 701-223-1889  
Stone Soup Kitchen/Ruth Meiers Hospitality House, 701-222-2108

**Mental Health (Access to mental health services for adults and children, access to drug/alcohol treatment services)**

**Mental Health Resources**

Burleigh County Social Services  
Dakota Boys and Girls Ranch  
EAP programs  
Local mental health providers  
Mental Health Association  
Partnerships Program for Children's Mental Health (N.D. Dept. of Human Services)  
Pride, Inc.  
Sanford Health (medical providers, therapists and case workers)  
St. Alexius Medical Center (medical providers, therapists, case workers)  
The Village  
West Central Human Services Center

**Drug and Alcohol Abuse Resources**

ACS Crisis Residential, 701-223-4517  
ADAPT, Inc., 701-255-3717  
Alcoholics Anonymous, 701- 222-2100  
Heartview Foundation, 701-222-0386  
Lutheran Social Services  
New Freedom Center, 701-222-4673  
Pathways to Freedom, 701-426-6308

Sanford Health, 701-323-6000  
St. Alexius Medical Center, 701-530-7212  
Village Family Services  
West Central Human Service Chemical Dependency Program, 701-328-8888  
Whole Person Recovery Center, 701-224-1261

**Physical Health (Increased obesity, decreased activity levels, chronic disease)**

**Physical Health Resources**

Bismarck Parks and Recreation Department programming and facilities  
City of Bismarck bike and pedestrian strategic plans  
Community wellness centers including Sanford Women's Health Center and Sanford Go! Bismarck-Mandan  
Let's Move! (N.D. Dept. of Health)  
Missouri Valley YMCA  
School programs and activities

**Smoking Cessation**

St. Alexius Medical Center, 701-530-3370  
Bismarck-Burleigh Public Health, 701-355-1597  
Tobacco Prevention and Control Program (N.D. Dept. of Health), 701-328-2036

**Community Support Groups**

A.W.A.K.E: Alert, Well and Keeping Energetic (Sleep support group), 701-323-8500  
Alzheimer's, Dementia and Memory Loss Care Givers' Support Group, 701-530-7755  
Bismarck Autism Support Group, 701-323-4433  
Breast Cancer Support Group, 701-222-6100  
Cancer Caregivers Support Group for Men, 701-222-6100  
Cancer Support Program, 701-323-9900  
Celiac Support Group, 701-530-7836  
Compassionate friends (For bereaved parents after the death of their child), 701-258-2219  
Congenital Heart Defect Support Group, 701-527-0721  
Diabetes, 701-323-6382  
Healthy Steps (Lebed Method), 701-222-6100  
Hepatitis B and C, 701-222-4136  
Look Good/Feel Better (For women undergoing cancer treatment), 701-222-6100  
Look Out for Lymphedema, 701-222-6100  
Lord of Life Lutheran Church Cancer Support Group, 701-223-2986  
Lupus Support Group, 701-258-6345  
Mastectomy Education and Support Group, 701-530-4000  
Multiple sclerosis, 701-220-4181  
National Autism Connection Support Group, 701-202-8194  
N.D. Autism Connection Bismarck Support Group, ndautismconnection.org  
Parkinson's Support Group, 701-223-9216  
Stroke and brain injury groups, 701-323-6616 or 701-530-7700  
Us Too! Prostate Cancer Support Group, 701-323-5880

**Prioritization Worksheet**

**Criteria to Identify Priority Problem**

- Cost and/or return on investment
- Availability of solutions
- Impact of problem
- Availability of resources (staff, time, money, equipment) to solve problem
- Urgency of solving problem (H1N1 or air pollution)
- Size of problem (e.g. # of individuals affected)

**Criteria to Identify Intervention for Problem**

- Expertise to implement solution
- Return on investment
- Effectiveness of solution
- Ease of implementation/maintenance
- Potential negative consequences
- Legal considerations
- Impact on systems or health
- Feasibility of intervention

| Health Indicator/Concern<br><i>(from asset mapping and gaps analysis worksheet)</i>   | Round 1 Vote | Round 2 Vote | Round 3 Vote |
|---|--------------|--------------|--------------|
| <p><b>Pediatric Obesity</b><br/>Using the multi-voting technique, the Bismarck Burleigh Community Health Coalition ranked pediatric obesity as its top initiative. Criteria included impact of problem, urgency of solving the problem, size of the problem and return on investment.</p>   |              |              |              |
| <p><b>Diabetes</b><br/>This condition was chosen based upon several factors including return on investment (both financially and in terms of quality of life) and urgency of the problem. While North Dakota has long had a relatively prevalence of diabetes, the number of patients diagnosed with diabetes and pre-diabetes in recent years in increasing at alarming rates.</p> |              |              |              |
|   |              |              |              |



