

The Health of Southwest Health and Human Services

2019 Community Health Assessment

Lincoln, Lyon, Murray, Pipestone, Redwood, and Rock Counties



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Public Health
Prevent. Promote. Protect.

Message to the Community



I am pleased to present the Southwest Health and Human Services (SWHHS) Community Health Assessment (CHA). The CHA provides a snapshot of the health of people who live in our region and the many factors that impact our health. Health is defined by the World Health Organization as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.” This kind of health is not just about individuals but includes families, communities, and systems. This kind of health starts long before illness starts: it begins where we live, learn, work, and play.

The purpose of the CHA is to collect and analyze data and helps determine important health priorities. Based on this data, we have been able to develop effective strategies to improve the health of our residents. These strategies can be found in the Community Health Improvement Plan (CHIP) and are a plan of action to improve the community's health.

We welcome your feedback on this report and encourage you to use this information in your work with communities in Lincoln, Lyon, Murray, Pipestone, Redwood, and Rock Counties.

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Acknowledgments

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2019 Southwest Health & Human Services Community Health Assessment

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Introduction

In 2013, Southwest Health and Human Services (SWHHS) became the first and largest joint-powers health and human services agency in Minnesota. The model of this agency, at its core, is a sustainable local government that provides continuity of service across a six-county region of Lincoln, Lyon, Murray, Pipestone, Redwood, and Rock counties.

In 2016, staff reviewed our mission statement and, in the end, did not change it. The mission of SWHHS is a multi-county agency committed to strengthening individuals, families, and communities by providing quality services in a respectful, caring and cost-effective manner.

County Commissioners from each of the member counties serve on the Human Services, Public Health and Governing Board. One layperson from each of the member counties also serves on the Human Services Board.

SWHHS is divided into three divisions: public health, human services, and business division. Each division has a Division Director that is overseen by the Agency Director. There are separate fund accounts for public health and human services.

The Healthy Southwest Health and Human Services Partnership

Every five years public health agencies are required to assess the health of their community to determine if interventions and programs are on target for the population the public health agency serves. Planning is done for the next five years based on the data collected about the service area.

Since public health services are not provided in a bubble, community input on health priorities and concerns from residents, community leaders, and service organizations is key to developing plans that are on target for the implementation period to come. Where data is lacking, local surveys have helped fill the void.

Public Input

The Health of Southwest Health and Human Services was made available to community members for review. Any comments and additional data provided by the community were reviewed and incorporated as needed.

Limitations

The data collected in this document does not represent a total picture of the health of SWHHS. It was meant to be a snapshot of where the health of citizens in the six-county area is at and to help focus decision-makers as to where to place limited resources. Data collection was limited by the availability of county-level data or lack of study or survey in an area. Not all areas of health were covered due to the sheer volume of topics and the time limitations of this assessment process.

Community Health Assessment data was collected from various local, state, and federal data sources. Some of these resources include the 2015 Southwest Minnesota Healthy Communities Survey, the Minnesota Student Survey (1998 through 2016), Minnesota Center for Health Statistics, Atlas of Minnesota Online, Minnesota State Demographer, Minnesota Department of Natural Resources, various departments at Minnesota Department of Health, Behavioral Risk Factor Surveillance System, U. S. Census Bureau, and Centers for Disease Control.

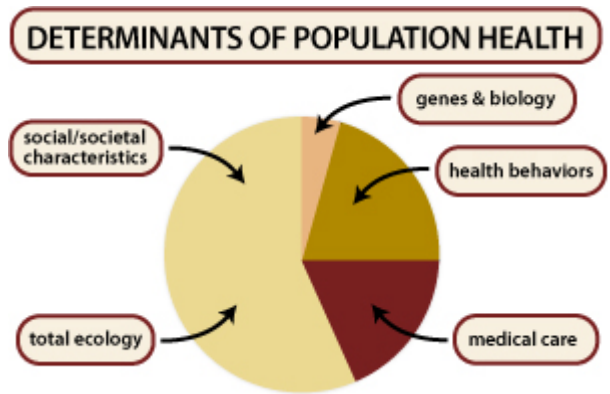
A Framework for Assessing Health

Social determinants of health are conditions that influence the health of people and communities. These conditions are economic and social in nature and influenced by the amount of money, power, and resources that people have. The factors affect policy and impact health outcomes. Examples include early childhood development, education, employment, occupation, food security, access to quality health services, housing, income and assets, discrimination and social support. (1)

Determinants of health influence a person's current state of health. A person's determinant factors may be biological, socioeconomic, behavioral, psychosocial or social in nature. (1)

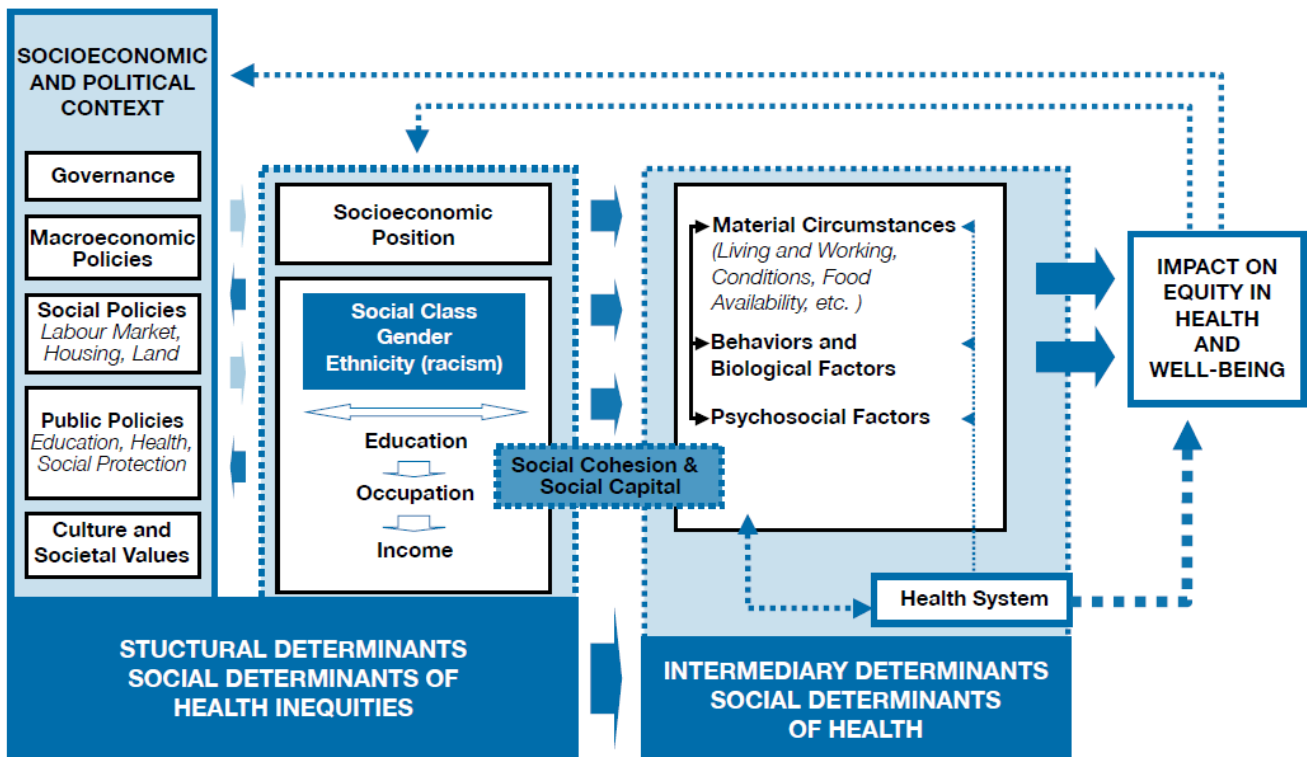
These determinants can be extended to the population in the form of five determinants of health of a population; genes and biology, behaviors, social environment or social characteristics, physical environment or total ecology, health services or medical care. (1)

Additional influences could also include social status, culture, and healthy child development. It is not known what portion of what determinant contributes to what portion of population health. The figure to the right is scientists' best estimate of the influence of five determinants. (1)



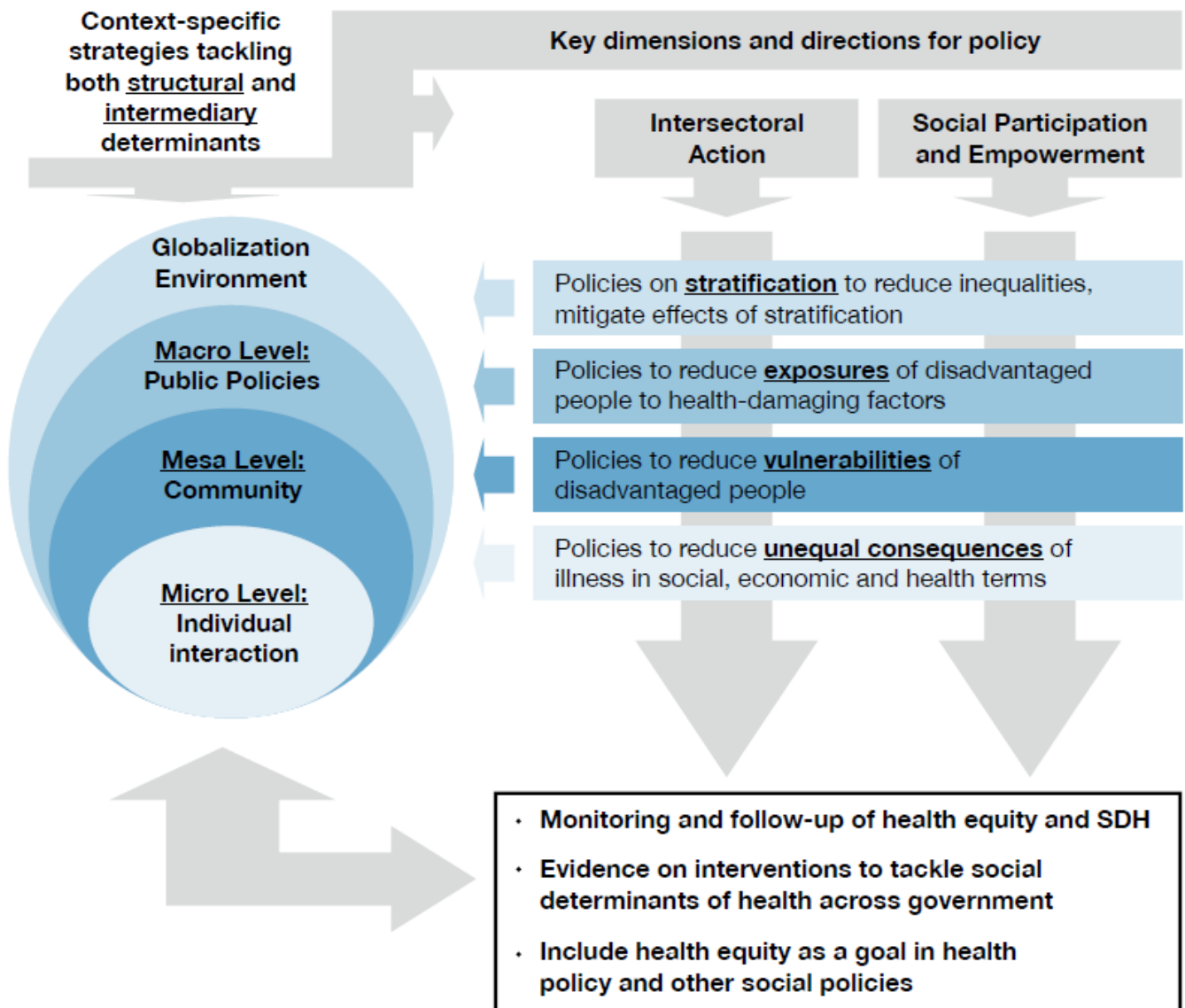
Source: Centers for Disease Control and Prevention (1)

In 2010, the World Health Organization published a report on how to influence social determinants of health in order to reduce health inequities. In the figure below structural mechanisms in the socio-economic and political context of policies, governance, and culture give rise to a socioeconomic position where people are stratified by how much money they have, the color of their skin, education attainment, gender, occupation, and other factors. These factors shape the intermediary determinants, which include where people are in social hierarchies. Social status determines exposure level and how vulnerable a person is to experiencing a negative health condition. Once a person becomes ill, you will see that impact feedback through the system influencing structural determinants. (2)



Source: World Health Organization, 2010 (2)

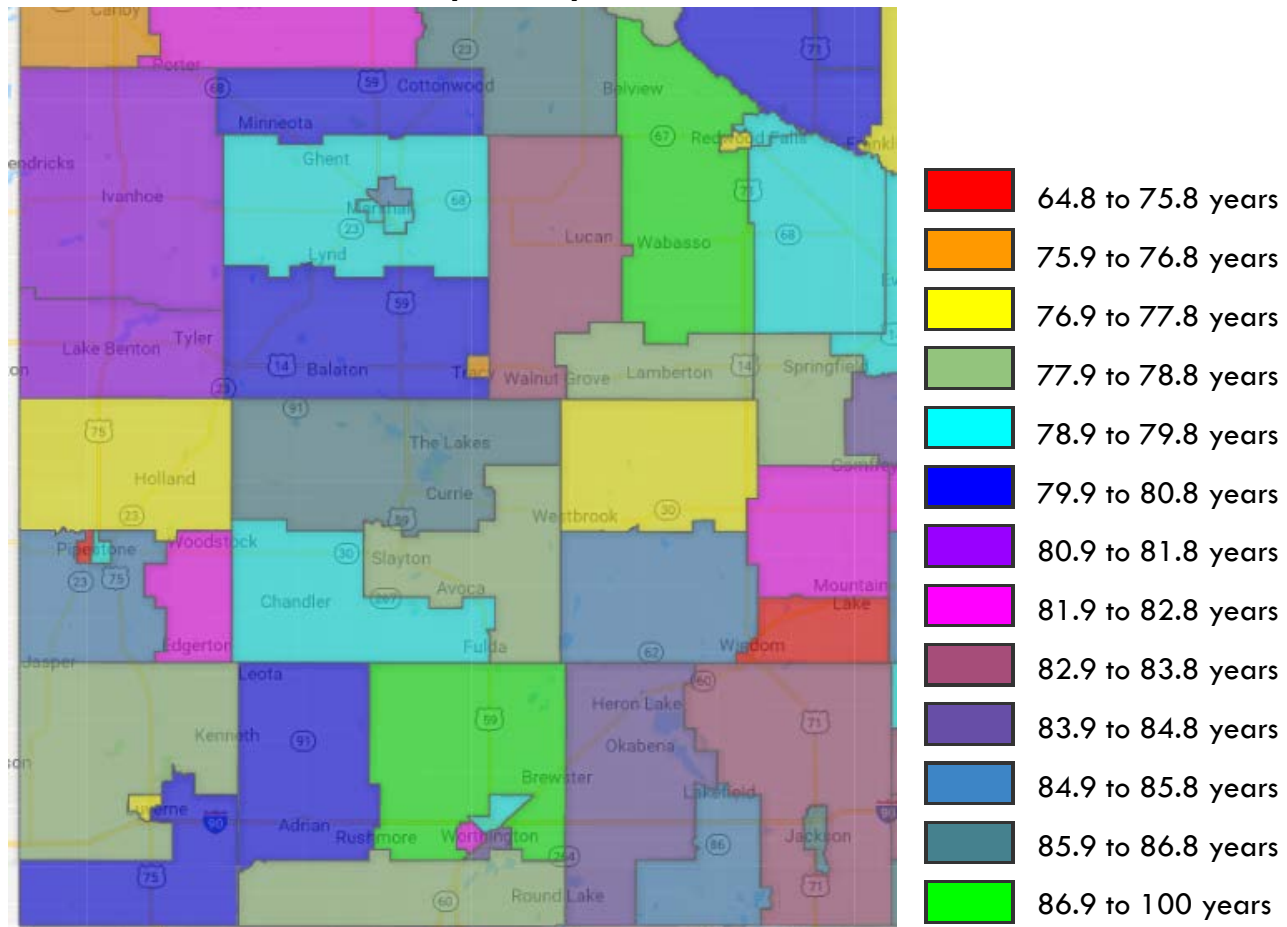
The reason this community health assessment is looking at these various determinants is to ensure that programs that are put in place to address health needs that are identified by community input and data collection have a health equity component to them. As populations of color increase in the six-county area, SWHHS staff can be mindful of how to eliminate health disparities. Education on how current systems, policies, and environments have worked to limit health in low-income populations and populations of color will bring about needed policy changes at all levels of structural and intermediary determinants as described in the figure below. (2)



Source: World Health Organization, 2010 (2)

Health equity also makes SWHHS staff ask “Should the census tract you live in make a difference in the years you live?” The U.S. Small-area Life Expectancy Estimates Project (USALEEP) was put together by Robert Wood Johnson Foundation and National Association for Public Health Statistics and Information Systems (NAPHSIS) to show for most census tracts what the average number of years a person can expect to live for the birth period of 2010-2015. The results are surprising across the state and in the six SWHHS counties. Census tract 27127750400, which makes up the center section of Redwood County, has the highest estimated life expectancy rate of 87.4 years (shown in bright green on the map), while the lowest estimated life expectancy census tract 27117460300, which is located in the city of Pipestone west of Highway 67 and South Hiawatha and east of 60th Avenue, is 75.6 years (shown in red on the map). The difference between the highest and lowest life expectancy is 11.8 years. (3)

Estimate Census-tract Life Expectancy at Birth for the Period 2010-2015



Source: Centers for Disease Control. (2018) (3)

Organization

The organization of this document is in four main sections. The first three sections review conditions and factors that assure health and the fourth section focuses on outcomes of health, including the diseases, conditions, and injuries that health-related strategies, programs, and services hope to prevent. The four sections are:

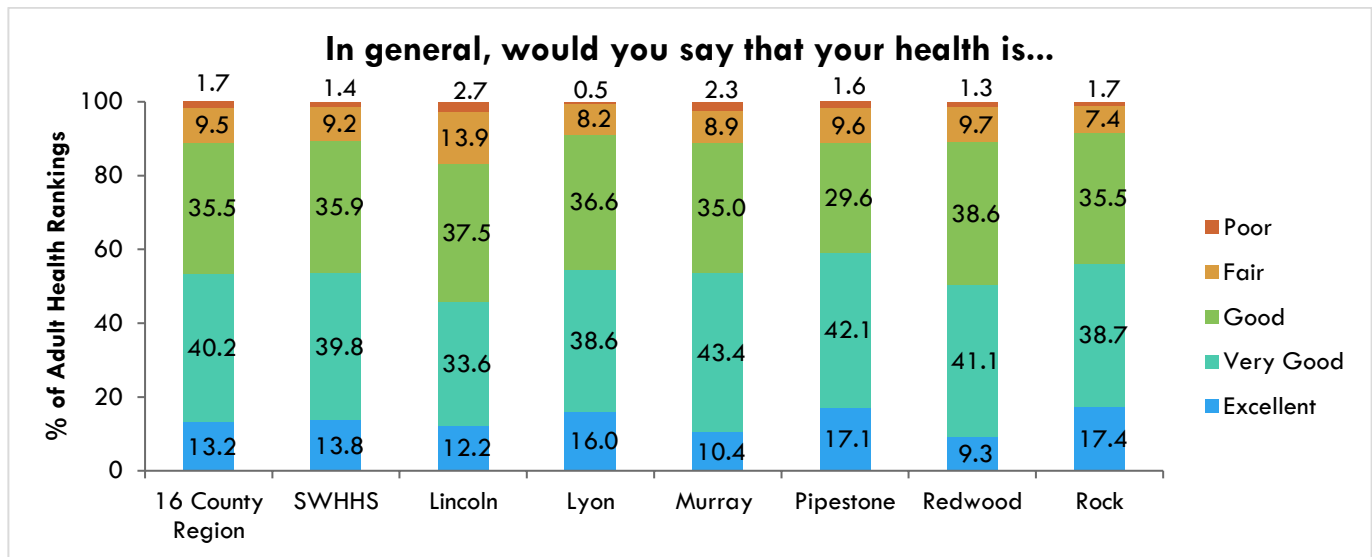
- People and Place: Who we are and our natural environment; the people of SWHHS counties; and the air, water, and land that surround them
- The Opportunity for Health in Southwest Health and Human Services: The social, economic, and community factors that have a potent influence on our health
- Healthy Living in SWHHS Counties: The ways in which individuals and communities act to protect and improve health
- Health Outcomes: Where are health outcomes at now for residents of SWHHS counties

General Health Status

In 2015, Southwest Health and Human Services participated in a regional adult health survey through the Statewide Health Improvement Partnership. Because of limited funding, 16 counties joined with Wilder Research and the Minnesota Department of Health to complete the Southwest Minnesota Healthy Communities Survey.

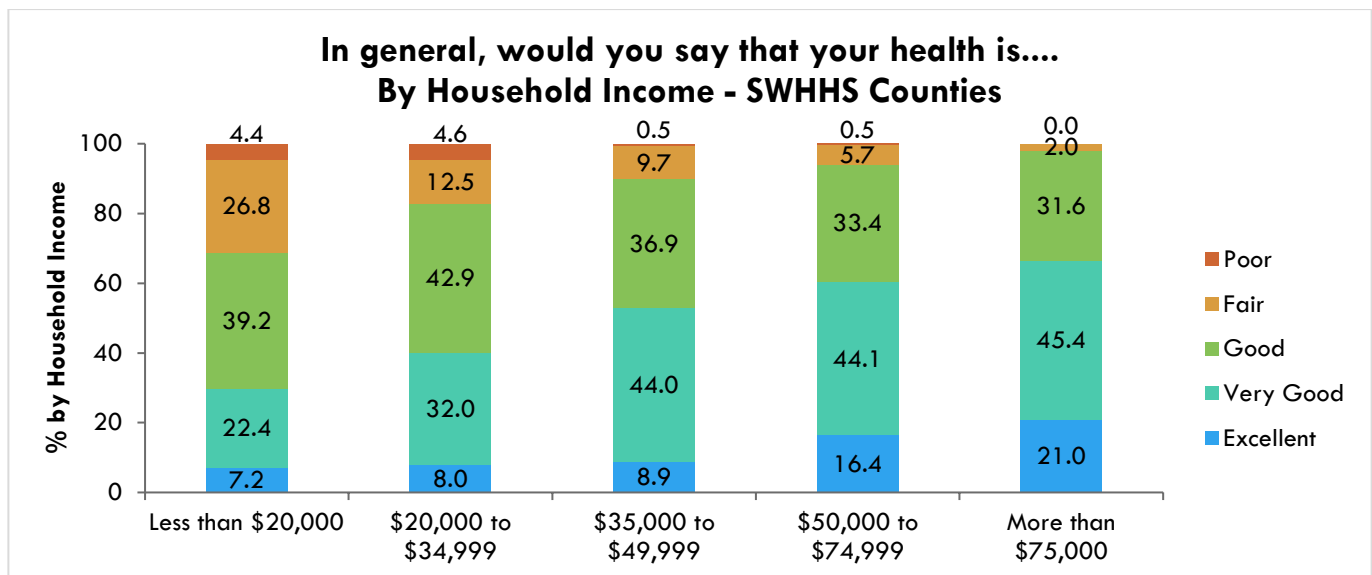
Overall, the data obtained from this survey has been valuable for determining a snapshot of adult health in the SWHHS coverage area. The 2015 survey results showed SWHHS residents felt their overall general health status was similar to the rest of the citizens in the 16-county region. 13.8 percent of residents in the SWHHS counties

ranked their health as “excellent” in comparison with the regional 13.2 percent. This was also the case for the percent of residents who ranked their health as “very good” with SWHHS at 39.8 percent vs. Region at 40.2 percent. (4)



Source: Wilder Research, 2015 Southwest Minnesota Healthy Communities Survey (4)

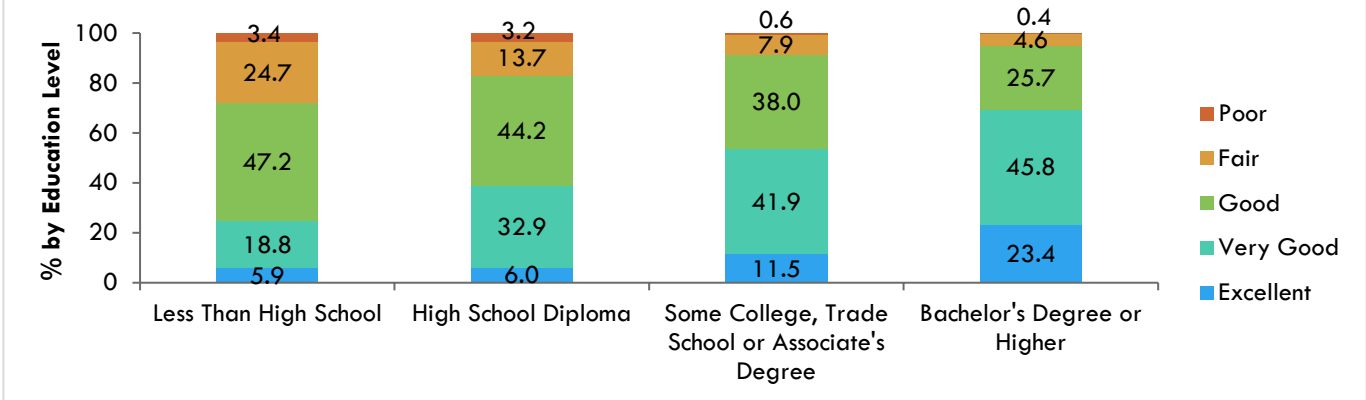
A comparison of overall health status and household income for SWHHS residents showed that the higher an individual’s household income was, the more likely they would rank their health as “excellent” or “very good.” The difference between “less than \$20,000” and “more than \$75,000” for “excellent” and “very good” combined was 36.8 percentage points. (4)



Source: Wilder Research, 2015 Southwest Minnesota Healthy Communities Survey (4)

Similar trends were seen with residents who obtained a higher educational degree: residents who lived in the SWHHS counties with a bachelor’s degree or higher were more likely to rank their overall general health in the “excellent” or “very good” range. The difference between “less than high school education” and “bachelor’s degree or higher” for “excellent” and “very good” combined was 44.5 percent. (4)

In general, would you say that your health is.... By Education Level - SWHHS Counties



Source: Wilder Research, 2015 Southwest Minnesota Healthy Communities Survey (4)

Health Disparities in Southwest Minnesota

Rural-Urban Health Disparities Counties

Health Equity Report 2017 published by Health Resources and Services Administration (HRSA) highlighted the many health disparities that rural residents across the United States face: higher premature mortality rate, higher infant mortality rate, and lower life expectancy. (5) Rural adults are more likely to have a poorer health status, higher chronic disease prevalence, lower use of preventative services, less access to clinic services, specialty care, mental health services, drug treatment, and detox facilities, and more likely to be uninsured. In addition, rural residents are older, poorer, and have fewer physicians to care for them, which further contributes to the challenges of having positive health outcomes. (5)

In Southwest Minnesota, all six SWHHS counties have a higher percentage of people who are physically inactive and higher prevalence of diabetes than the state average. (6) In addition, nearly two-thirds of the rural counties in the U.S. are designated health professional shortage areas (HPSAs). Lincoln, southern Lyon, Murray, Redwood, Pipestone and Northern Rock counties have U.S. Dept. of Health & Human Services Health Resources and Services Administration (HRSA)-designated Health Professional Shortage Area (HPSAs) and Medically Underserved Areas/Populations (MUA/Ps). (7)

From 2012-2016, all SWHHS counties, which averaged 30.8 percent, saw a higher percentage of people living at or below 200 percent of poverty than Minnesota at 25.9 percent. Redwood County experienced the highest rate at 33.2 percent. (8) The 2011 CDC Health Disparities & Inequities Report showed persons whose household incomes were below or near the federal poverty level had a substantially higher prevalence of smoking, compared with persons whose household incomes were above the federal poverty level. (9)

Heart disease, diabetes, obesity, elevated blood lead level, and low birth weight are more prevalent among individuals with low income and low educational attainment. (10) According to the 2012-2016 American FactFinder, all six counties in the SWHHS service area had an above-average number of persons age 25+ with a high school diploma or equivalent 35.4 percent compared to Minnesota's 25.7 percent and a below-average number of bachelor's degree or higher 20.3 percent compared to Minnesota's 34.3 percent. (8)

Health Disparities in Populations of Color

Populations of color live throughout the SWHHS service area. The city of Marshall, located in central Lyon County, is the most diverse city in the six-county area with its racial makeup being very similar to Minnesota.

Lyon County with 6.2 percent and Pipestone County with 5.3 percent are estimated to have a higher Hispanic or Latino population than the state average of 5.1 percent. In the city of Marshall, you will find 77.9 percent of Lyon

County's Hispanic or Latino population, while the city of Pipestone is home to 76.6 percent of Pipestone County's Hispanic or Latino population.

The city of Marshall in Lyon County has 63.7 percent of the total Black or African American population from the six-county area residing in the city. A large portion of the Black or African American community in the city of Marshall is from Somalia. Somali refugees began arriving in Minnesota in 1993 after the central government fell apart in 1991. (11)



The cities of Marshall and Tracy (both located in Lyon County) and Walnut Grove (in Redwood County) have the largest concentration of Asian population making up 72.2 percent of the total for the six-county area. (8) The majority of the Asian population is from the Hmong community, who became refugees from Laos after the country fell to the Communists in 1975. The Hmong people collaborated with Americans who were fighting Southeast Asian Communists, which made them a target once the government fell to communism. (11)

Redwood County is home to the Lower Sioux Indian Community, which is part of the Mdewakanton Band of Dakota, in which 4.9 percent of Redwood County and 8.3 percent of Redwood Falls' population is American Indian. Redwood County has 66.3 percent of the total six-county American Indian population. The city of Marshall has 10.2 percent of the total six-county American Indian population, while Pipestone has 8.6 percent. (8)

The 2015 Southwest Minnesota Healthy Communities Survey was not able to gather enough information from the various populations of color to develop an informed picture of what challenges are faced by minority populations in SWHHS. It is difficult to find county-level data to correlated racial disparities, but there is data available at the state and national levels that show a variety of areas where racial and ethnic groups are seen to have great disparities.

The 2011 Wilder Research Community Assessments of Native American, Somali, Latino, and Hmong populations in Southwest Minnesota showed high unemployment and high smoking rates in SWHHS local minority populations. Hmong and Latino populations had higher rates of diabetes and pre-diabetes than the general population. (12)

In the summer of 2017, SWHHS worked with Wilder Research to collect information from focus group participants from American Indian, Hispanic/Latino, Hmong, and Somali groups to better understand what areas of health were most important to the groups. All four of the cultural groups were concerned with chronic diseases like diabetes and high blood pressure. They were also concerned about access to health and dental care. One participant stated, *"Insurance only covers dental care further away from town. Anything in town is private so a lot of the private dental places don't accept medical assistance."* People with medical assistance end up having to travel an hour or two in order to access the care they need. Transportation can be a challenge to get to appointments that far away. (13)

Access to healthy affordable and quality food is a challenge also. Most people in the Somali community eat Halal foods which are a practice observed in the Islamic faith. Halal slaughtering techniques are not generally practiced locally, so Somali people tend to get their meats from frozen and processed food sources. These food sources are more affordable but less nutritious than fresh sources. The Hmong community, because of their farming roots, prefer to grow their own vegetables, but lack land to do so. This has caused a shift to more meat in their diets. Access to healthy food on the Lower Sioux Reservation can be especially challenging for those that are low income and lack transportation. The closest grocery store is in Redwood Falls, which is about six to seven miles away. There is a convenience store, but fresh fruits and vegetables are not sold there. (13)

Physical activity has similar barriers in all four communities. Generally, the communities expressed low motivation, lack of time due to long work hours, lack of money, and lack of transportation as barriers. Many of these barriers

are similar to what was found in the 2015 Southwest Minnesota Healthy Communities Survey. Somali religious practices require additional consideration when developing fitness centers. There needs to be separate gender-specific workout spaces and the availability of culturally appropriate sportswear for Muslim women. (13)

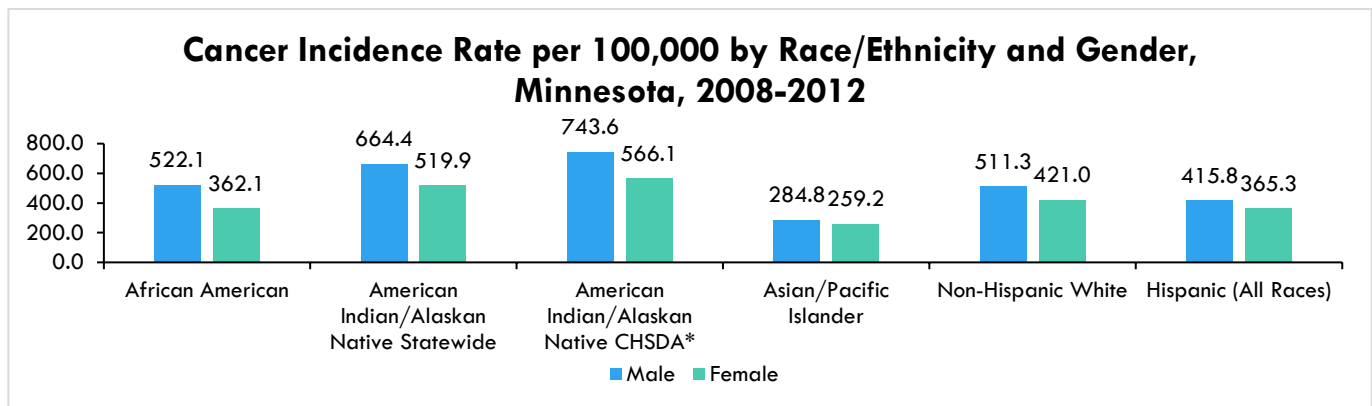
Mortality rates by cause of death during 2010-2014 in Minnesota for American Indians show the highest mortality rates for 10 of the 16 causes of death listed below, with cancer, heart disease, unintentional injury and diabetes being the top four. Asian and African Americans have the highest mortality rates for stroke. African American mortality rates by cause of death are highest for AIDS/HIV, homicide, nephritis and perinatal conditions. White highest mortality rate by cause of death was Alzheimer's disease. (14)

Age-Adjusted Mortality Rates per 100,000 by Race and Ethnic Group, Minnesota, 2010-2014

Cause of death	African American	American Indian	Asian	Hispanic	White
AIDS/HIV	4.7	*	*	*	0.4
Alzheimer's Disease	15.6	*	10.2	10.3	23
Cancer	176.3	220.7	106.9	94.4	157.1
Chronic Lower Respiratory Disease	30.6	48.7	20.3	11.3	36.1
Cirrhosis	5.8	41.6	*	6.1	7.5
Congenital Anomalies	4.8	5.8	3.8	2.5	3.2
Diabetes	28.9	67.6	27.2	18.5	17.9
Heart Disease	107.8	184.6	68.9	65.8	116.9
Homicide	12.3	8.5	1.7	3	1.2
Nephritis	21.3	21	19.8	9.1	11
Perinatal Conditions	5.7	3.8	2.8	2.5	2.4
Pneumonia and Influenza	8.1	22.7	7.1	8.2	10.3
Septicemia	11.3	13.6	4.8	4.6	5.6
Stroke (Cerebrovascular Disease)	41.5	34.4	41.6	25.2	32.9
Suicide	7.5	18.2	8.4	3.7	12.2
Unintentional Injury	41.2	98.8	20.7	27.6	38.8

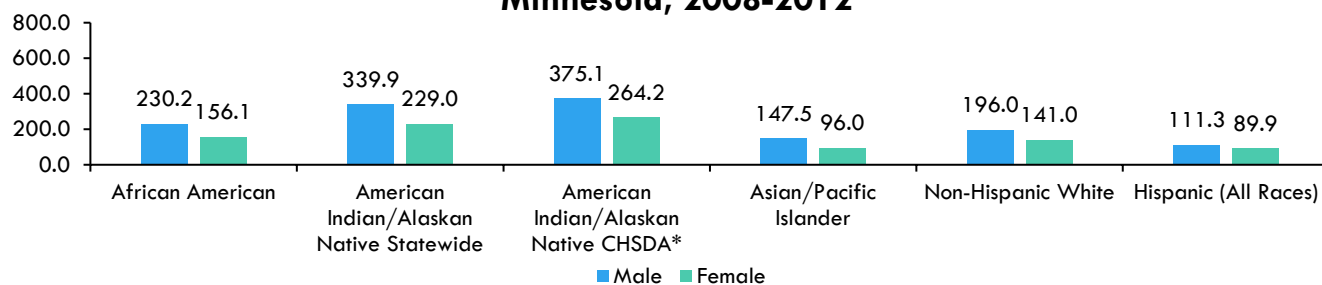
*Age-adjusted rates are not calculated for 20 or fewer cases.
Source: Minnesota Department of Health. (2015). (14)

Cancer incidence rates over 2008-2012 for American Indian/Native Alaskan in Minnesota's Contract Health Service Areas (CHSDA), which include 29 Minnesota Counties, is 45 percent higher than for Non-Hispanic White men and 90 percent higher than for Non-Hispanic White women. Mortality rates for cancer in American Indian/Native Alaskan in Minnesota's CHSDA are 50 percent higher for men and 85 percent higher for women than Non-Hispanic Whites.



* American Indian/Alaskan Native CHSDA: Contract Health Services Delivery Area counties in Minnesota: Aitkin, Becker, Beltrami, Carlton, Cass, Chippewa, Clearwater, Cook, Goodhue, Houston, Hubbard, Itasca, Kanabec, Koochiching, Lake of the Woods, Mahnommen, Marshall, Mille Lacs, Norman, Pennington, Pine, Polk, Redwood, Renville, Roseau, St. Louis, Scott, Traverse, and Yellow Medicine
Source: American Cancer Society. (2015). (15)

Cancer Mortality Rate per 100,000 by Race/Ethnicity and Gender, Minnesota, 2008-2012



* American Indian/Alaskan Native CHSDA: Contract Health Services Delivery Area counties in Minnesota: Aitkin, Becker, Beltrami, Carlton, Cass, Chippewa, Clearwater, Cook, Goodhue, Houston, Hubbard, Itasca, Kanabec, Koochiching, Lake of the Woods, Mahanomen, Marshall, Mille Lacs, Norman, Pennington, Pine, Polk, Redwood, Renville, Roseau, St. Louis, Scott, Traverse, and Yellow Medicine

Source: American Cancer Society. (2015). (15)

People and Place

Southwest Health and Human Services serves a largely rural area with rolling farmland in Lincoln, Lyon, Murray, Pipestone, Redwood, and Rock. This primarily agricultural area produces corn, soybeans, winter wheat, hogs, feeder cattle, dairy products, and in Pipestone County, lambs, and sheep.

Lincoln County

Lincoln County was organized in 1873 and includes the cities of Lake Benton, Tyler, Ivanhoe, Hendricks, and Arco and the unincorporated community of Wilno. (16) The citizens are Polish, Danish, Norwegian and Icelandic heritage. Ivanhoe is the home of the county seat. Lincoln County is 100 percent rural and is one of a small number of counties in the state without a traffic light. The county's population was the eighth smallest in Minnesota in 2016. Lake Benton is home to the Lake Benton Opera House, which is on the National Registry of Historic Buildings, and Heritage & Wind Power Learning Center. In Hendricks, you will find Lincoln County Pioneer Museum where you can see a one-room schoolhouse, Icelandic church, train depot and a Sears house furnished with turn of the century décor.

Lyon County

Lyon County is the largest of the six counties and was settled between 1868 and 1892 in the communities of Lynd, Tracy, Taunton, Minnesota, Ghent, Russell, Garvin, Cottonwood, and Marshall by people of Icelandic, Belgian, Swedish, and Norwegian heritage. (16) Lynd was the county seat but was moved to Marshall. Marshall is now the largest city in the county and Southwest Minnesota. Marshall is the home of The Schwan Food Company, an international food processing, and distribution company; ADM, a corn processing plant; and Turkey Valley Foods, a turkey processing plant. Due to the availability of jobs in these companies, Lyon County is the home of several minority populations, including Hispanics, Somalis, Hmong, and Karen. Marshall is also the home of Southwest Minnesota State University (SMSU), rated by U.S. News and World Report as the top public liberal arts university in the upper Midwest.

Murray County

Murray County was created in 1857 through a bill passed in the Minnesota legislature. The first city established in Murray County was Currie in 1872 followed by Fulda, Hadley, Avoca, Iona, Slayton, Lake Wilson, Chandler, and Dovray. Unincorporated communities in Murray County are Current Lake, Kelley, Lime Creek, Mason, Owanka and Wirrock. (16) Primarily the county was settled by Irish Catholics, Norwegians, and Dutch immigrants. The county seat is Slayton; however, Currie and Slayton competed for the county seat. Murray County is also home to Lake Shetek and Lake Shetek State Park providing water and trail recreational opportunities. End-O-Line Railroad Park and Museum is located in Currie, which is next to the Casey Jones Bike Trail. Murray County is host to Fenton Wind Farm; Minnesota's largest wind farm project located on the Buffalo Ridge.

Pipestone County

Pipestone County was established in 1857- although the City of Pipestone, the largest city in Pipestone County and county seat, was settled in 1874. The cities of Edgerton, Woodstock, Trosky, Jasper, Holland, Hatfield, Ruthton, and Ihlen were then settled primarily by immigrants from Norway and Holland. Pipestone has two unincorporated

communities which are Airlie and Cazenovia. (16) Pipestone National Monument is located in Pipestone, which is the “Home of the Peace Pipe”, because of its rock formation that yielded the stone used by Native Americans to make peace pipes. Edgerton is the home of the Dutch Festival in July, while in August, Pipestone Civil War Days in Pipestone provides a glimpse into a Civil War battlefield. Split Rock Creek State Park is located north of Jasper and has amenities such as boating, fishing, swimming, and walking trails available to the public.

Redwood County

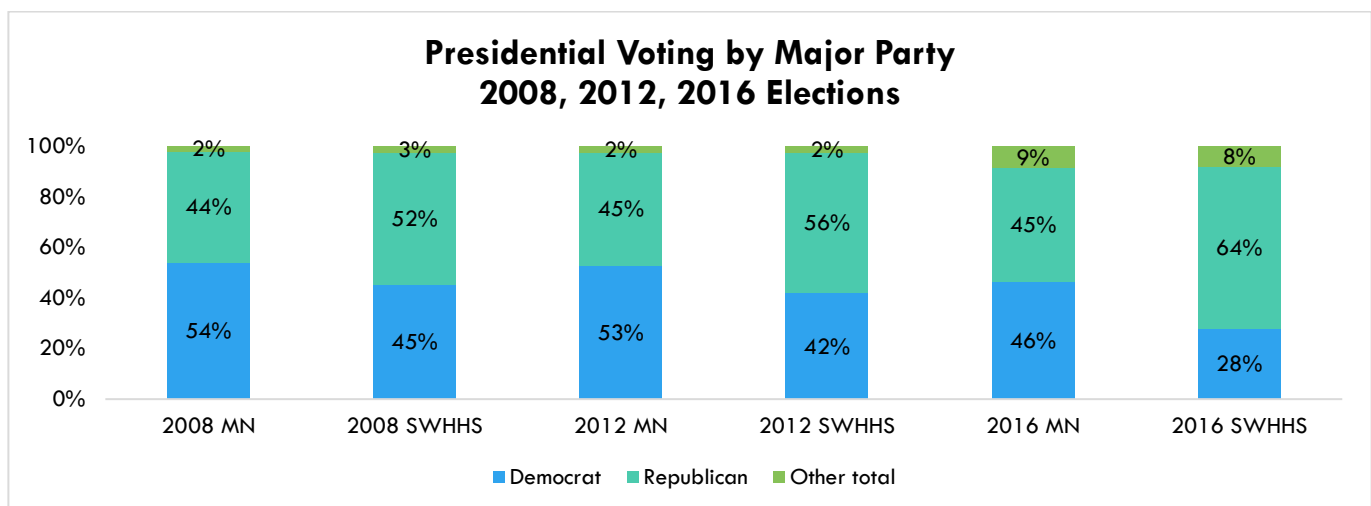
Redwood County was established in 1862 and settled by German, Norwegian, Irish, English, Swedish, and Danish immigrants. Unincorporated communities include Gilfillan and Rowena and cities include Belview, Clements, Delhi, Lamberton, Lucan, Milroy, Morgan, Redwood Falls, Revere, Sanborn, Seaforth, Vesta, Wabasso, Wanda, and Walnut Grove, which is the childhood home of the Laura Ingalls Wilder and hosts pageant weekends in July. (16) Walnut Grove is also home to a large Hmong community. The Lower Sioux Indian Community, who is part of the Mdewakanton Band of Dakota, calls the northeast portion of Redwood County home. Redwood County has the Minnesota River as its northeastern border. Redwood Falls is the county seat and home to Minnesota’s largest municipal park, Alexander Ramsey Park, which contains a beautiful waterfall, trail system, and camping. In August, Minnesota Farmfest calls the historic Gilfillan Farm Estate home, which is located between Redwood Falls and Morgan.

Rock County

Rock County, which is situated in the southwest corner of Minnesota, bordering South Dakota on the west and Iowa to the south, was established by the Original Act of 1857. Rock County was named for the immense quantities of rock within its borders. Cities included in Rock County are Jasper, Hardwick, Kenneth, Beaver Creek, Luverne, Magnolia, Hills, and Steen with unincorporated communities of Ash Creek, Kanaranzi, and Manley. (16) Rock County was primarily settled by German, Dutch and Norwegian immigrants. Blue Mounds State Park is located near the town of Luverne and is named after a linear formation of Sioux Quartzite bedrock, which is said to have appeared blue in the distance to early settlers. The park contains 100-foot cliffs for rock climbing, campsites, prairie hiking trails, and a state-owned bison herd, which grazes on one of the state’s largest prairie remnants. The county seat of Luverne has the Verne Drive-In Theater, the only drive-in theater for hundreds of miles and hosts the Tri-State Band Festival in September, which has taken place for over 60 years.

Pressures on Rural Counties

The political systems in Lincoln, Lyon, Murray, Pipestone, Redwood, and Rock Counties trend toward thinking that is more conservative. The results of who residents voted for in the last three Presidential elections show this trend. While the state as a whole tends to vote for the Democratic Party, the residents of the six counties tend to vote for the Republican Party in Presidential elections. (17)



Source: Office of the Minnesota Secretary of State. (2017). (17)

The pressure on rural counties continues to be to cut property taxes and provide more services, a pressure that will only continue to grow as the population ages. The demand for improved roads, bridges, and ditches for residents of rural areas continue as levy limits continue to deny counties flexibility in assigning costs. The increased cost of road

maintenance activities will directly affect the availability of the rural population to access needed services and markets.

Overall, the population in five of the six counties has declined, which leaves fewer residents to shoulder the burden of the cost of taxes. There continues to be a significant loss of population in the 20-29-year-old categories, which has been labeled “brain drain”. (18) Sixty-two of the eighty-seven counties in Minnesota experienced a loss of 25 percent or greater of this age group. (19) Location of higher institutions of learning influences this migration, which tends to be in greater populated cities/towns.

What most people do not know is what is happening with the 30-49 age group in rural counties. This population group, according to research by Ben Winchester, Research Fellow at the University of Minnesota Extension Center for Community Vitality, is moving back to rural Minnesota counties for a simpler way of life, safety and security, and low housing costs. (19) This migration is causing a “brain gain” in rural communities. (18) One of the benefits of the “brain gain” migration is 51 percent bring with them children which shows an increased number of children in the 10 to 14-year-old category. (19) The challenge for communities and counties is to figure out how to change the narrative that “small towns are dying” to “small towns are a great place to live.”

One of the efforts needed to assure that people can work remotely and enjoy what rural areas have to offer is to bring affordable high-speed broadband connections to all areas of the rural landscape. This can be a challenge as broadband companies prioritize investment in communities with a higher population over smaller ones based on return on investment numbers. (20) According to the 2016 Annual Report from the Governor’s Task Force on Broadband, those non-metro counties with broadband adoption rates of greater than 60 percent had significantly higher rates of growth in median household income and reduced unemployment when compared to similar counties that did not meet the broadband adoption threshold. (21) Broadband subscriptions vary widely across our six counties because of these service gaps with the lowest subscriptions being in Redwood County at 66.9 percent and highest in Lyon County 79.7 percent, which is a 12.8 percentage point difference. SWHHS as a whole has a 7.1 percentage point fewer broadband subscriptions than the state.

Percent of Households with Computers and Broadband Internet Subscription, 2013-2017, By County, Minnesota

	Minnesota	SWHHS	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
Households with a Computer	89.1%	84.0%	77.2%	88.4%	82.6%	79.7%	82.1%	86.0%
Broadband Internet Subscription	80.8%	73.7%	68.2%	79.7%	73.2%	70.4%	66.9%	77.0%

Source: American Community Survey. DP02. (2017) (8)

The healthcare systems in Lincoln, Lyon, Murray, Pipestone, Redwood, and Rock Counties are more integrated as large systems take over management responsibilities at local hospitals and clinics. The connectivity with major health systems has increased the availability for a specialty referral and can transfer patients to specialists or bring specialists to the area for local specialized care. Without support from the health systems, local hospitals would have greater trouble maintaining a strong financial standing and thus would have trouble staying open. This has become more evident as Federal cuts have come to Medicare and Medicaid programs and payment models begin to move away from fee for service models.

School systems also struggle to remain viable. Some schools have combined while others continue to put many resources into maintaining the school system in the community. Both public and private schools are available to residents as well as secondary schools in Luverne, Marshall, and Pipestone.

SWHHS conducted a Quality of Life Survey in all six counties. Anyone that lives, works, or plays in the six-county area was encouraged to take the convenience sample survey. In the survey people were asked “Are you happy with the quality of life in your community?” and 86 percent of the 1,842 responded yes, they are happy with the quality of life in their community. (22)

Quality of life experience changes as you look at race and income. White only said yes 88 percent of the time which is two percentage points higher than all races together, American Indian only said yes 83 percent of the time

which is three percentage points lower, and more than one race reported said yes 69 percent of the time which is 16 percentage points lower. (22)

Household income also determines what a person's quality of life looks like in the six-county area. Those that made \$75,000 or higher reported yes 92 percent of the time, which is six percentage points higher than all household income categories versus those that made less than \$20,000 reported yes 69 percent of the time, which is 17 percentage points lower than all household income categories. (22)

Also asked in the quality of life survey was:

“Is your community a welcoming community?” and 83 percent of the 1,837 responded yes, the community is welcoming. (22)

“Is your community a good place to raise children?” and 86 percent of the 1,847 responded yes, this is a good place to raise children. (22)

“Is your community a good place to grow old?” and 86 percent of the 1,837 responded yes, this is a good place to grow old. (22)

“Is your community a safe place to live?” and 89 percent of the 1,826 responded yes, this is a safe place to live. (22)

Urban and Rural Population Trends

The current population estimate as of 2015 in the six-county area is 74,332. (23) The largest city within the service area is Marshall with a population of 13,793. (24)

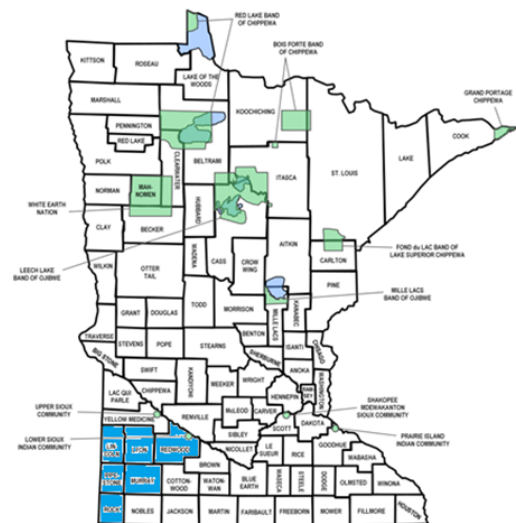
Marshall, 13,793; Redwood Falls, 5,214; Luverne, 4,707; Pipestone, 4,200; Tracy, 2,132; Slayton, 2,131; Minneota, 1,373; Fulda, 1,287; Cottonwood, 1,209; Edgerton, 1,138; Tyler, 1,127; and are the top eleven cities in population and represent fifty-two percent of the total population in the SWHHS counties. All the rest of the cities in the six-county region each have a population of under 1,000 people with Florence being the smallest with an estimated population of 39 people. (24)

SWHHS has one federally recognized American Indian Tribe, which is the Lower Sioux Indian Community in Redwood County.

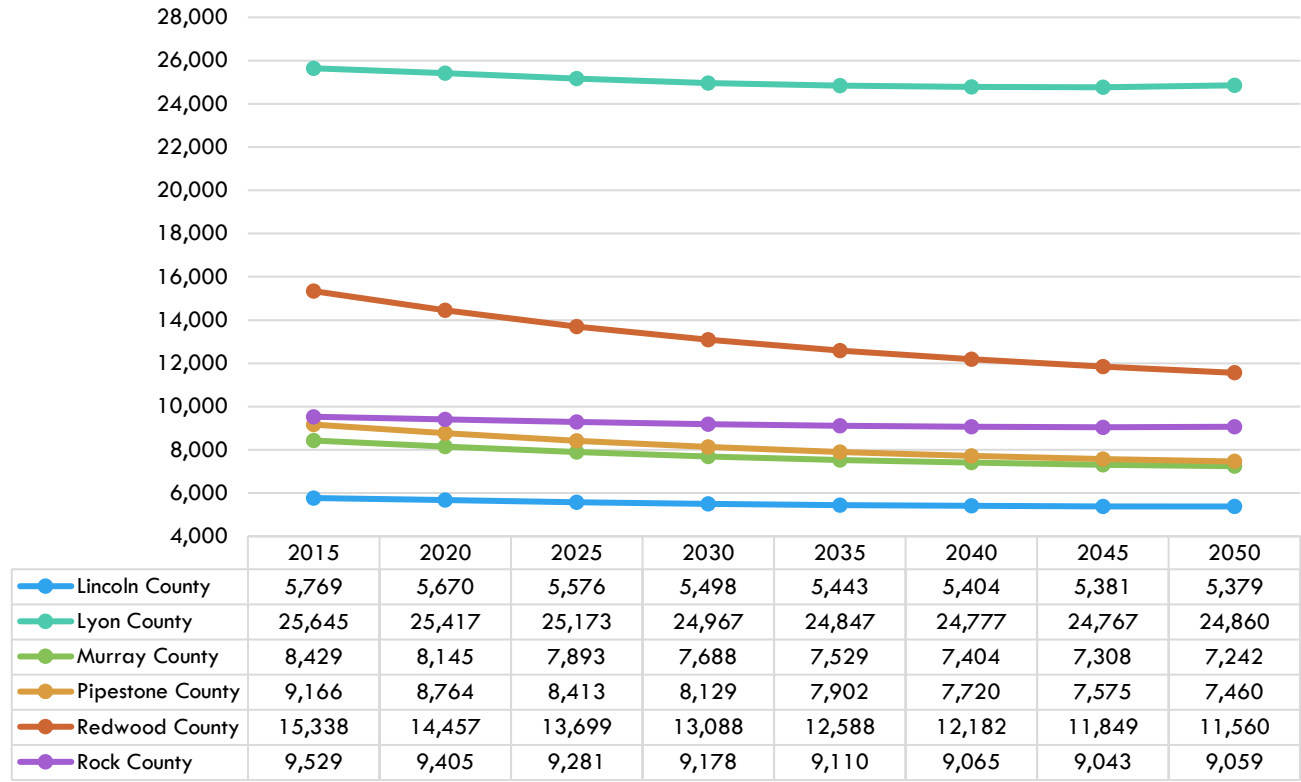
Overall, the population has been on the decline in five of the six counties that are represented by SWHHS. From 2000 to 2010, Lyon County was the only county out of the six with a population gain. (8)

Demographic projections for SWHHS population have changed slightly since the last Community Health Assessment in 2014 and now show the trend between 2015 and 2050 will begin declining for all six counties with a slight uptick in the Lyon County population in 2050. (25)

Minnesota counties and tribal nations



SWHHS Population Projections 2015 to 2050

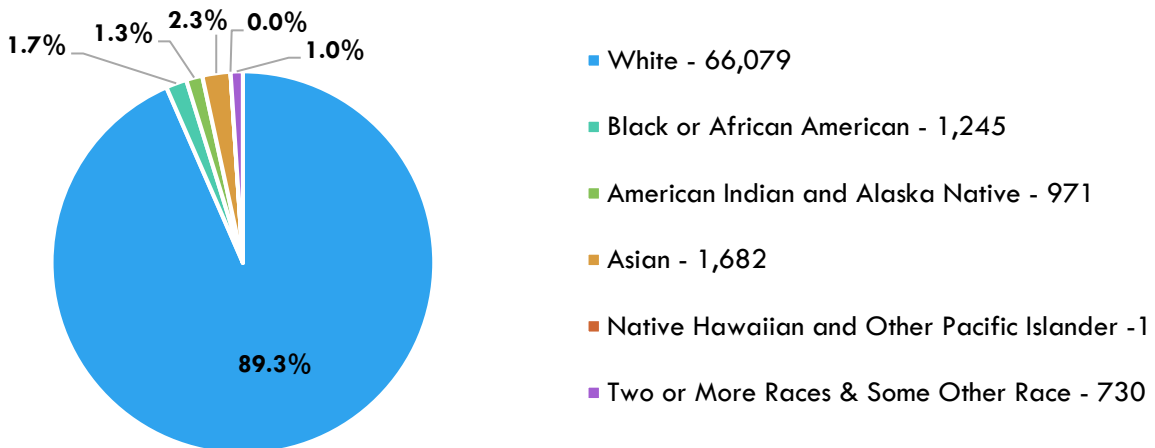


Source: Minnesota State Demographic Center. (2019). (25)

Immigration and Growing Diversity

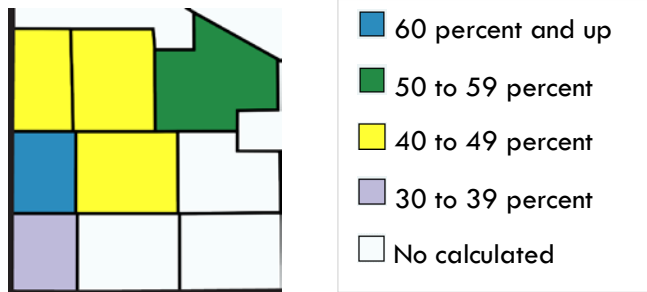
The population within Southwest Health and Human Services remains a high percentage of white. The region saw a shift in the distribution of populations of color from 98.6 percent white in 1990 to 92.6 percent in 2010. In 2017, the percent of white decreased slightly to 89.3 percent. (26) Population of color have increased in all SWHHS counties since 2000 with the largest increase happening in Pipestone County with a 68 percent increase. Rock had the smallest increase of population of color with a 37 percent increase. (26) In 2016-2017, three SWHHS school districts had 35.1 percent or higher minority student population; two districts had 25.1 to 35 percent of the minority student population. (27)

SWHHS Race 2017 Estimate



Source: United States Census Bureau; American FactFinder. (2016) (26)

Percentage of Change in Populations of Color from 2000 to 2017



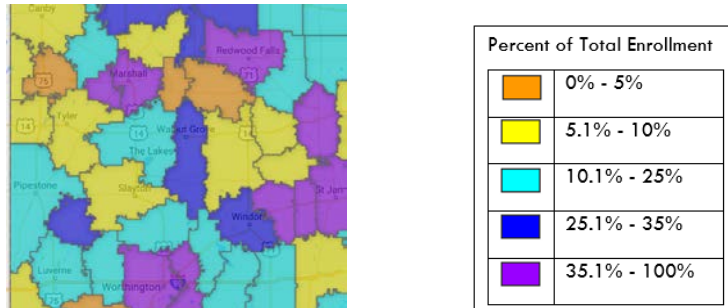
Source: United States Census Bureau; American FactFinder. (2016) (26)

Percent of Persons age 5 Years and Older Where Language Other than English is Spoken at Home, 5 Year Estimate, 2012-2016

Other Than English	
Minnesota	11.1
SWHHS	5.1
Lincoln	1.3
Lyon	10.7
Murray	4.5
Pipestone	6.1
Redwood	4.6
Rock	3.5

Source: United States Census Bureau; American FactFinder. (2016) (26)

Students of Color by School District, 2016-2017 Enrollment



Source: Minnesota Department of Education (2017). (27)

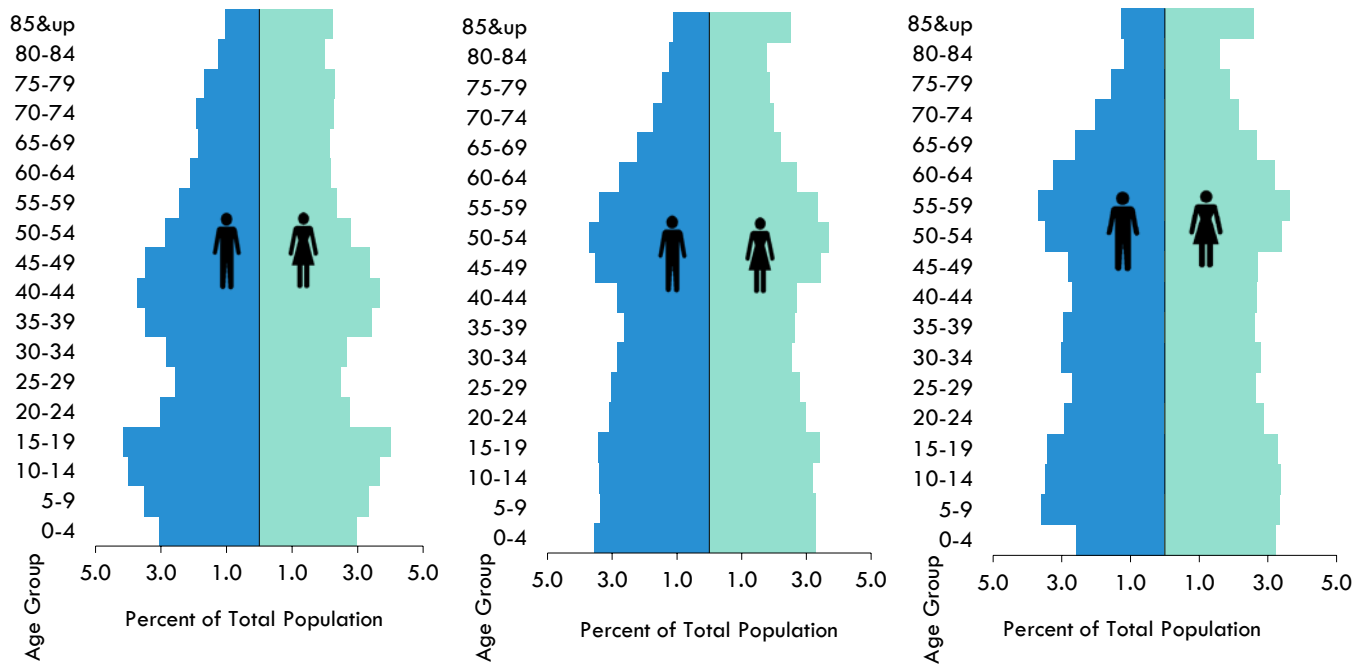
Aging and Retirement

Demographics for the SWHHS counties show that the population is continuing to get older. From 2000 to 2015, there was a sharp increase of 4,571 people in the 50-69 age ranges. In 2000 there were two bulges in the graph: one 35-49 age range and the other in the 10-19 age range. By 2015, the 10 to 19-year-old population bulge shrunk by 2,336 children. From 2000 to 2015, the 0-19 age range has lost 2,928 children. (6)

SWHHS Population by Age Group[^] and Gender, 2000

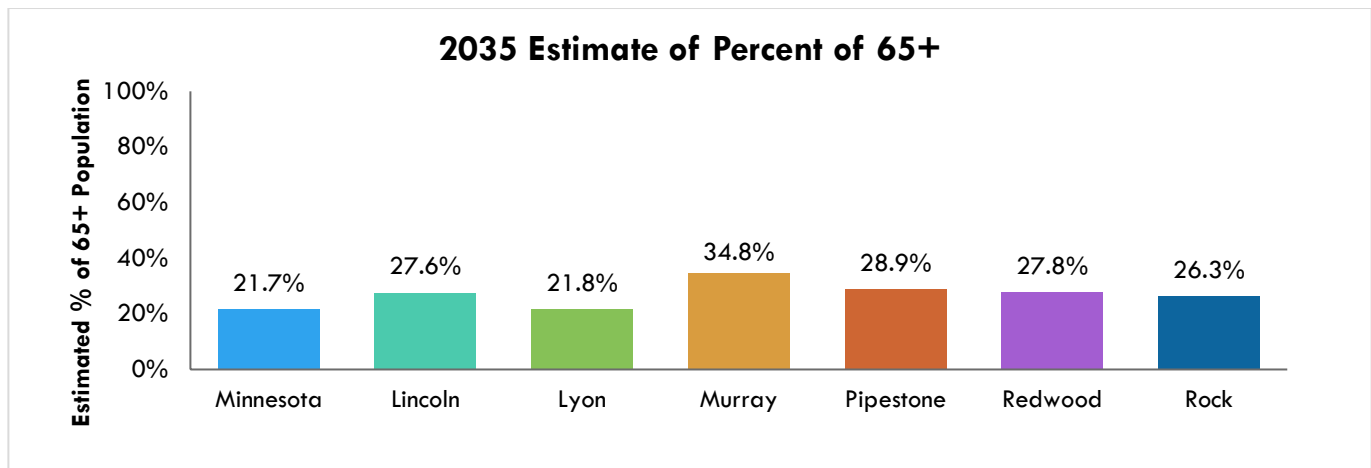
SWHHS Population by Age Group[^] and Gender, 2010

SWHHS Population by Age Group[^] and Gender, 2015



Source: Minnesota Department of Health. (2017). (6)

In five out of six counties, the percent of the population 65 and over is higher than the state average. Lyon County, at 21.8 percent, is very close to the state average of 21.7 percent. In 2035, Murray County is projected to have 34.8 percent of its population 65 and over. This is a 13.1 percentage point difference between the two counties. Because of these projected population trends, programs around elder care will need to be addressed. (6)



Source: Minnesota Department of Health. (2017). (6)

LGBTQ Population

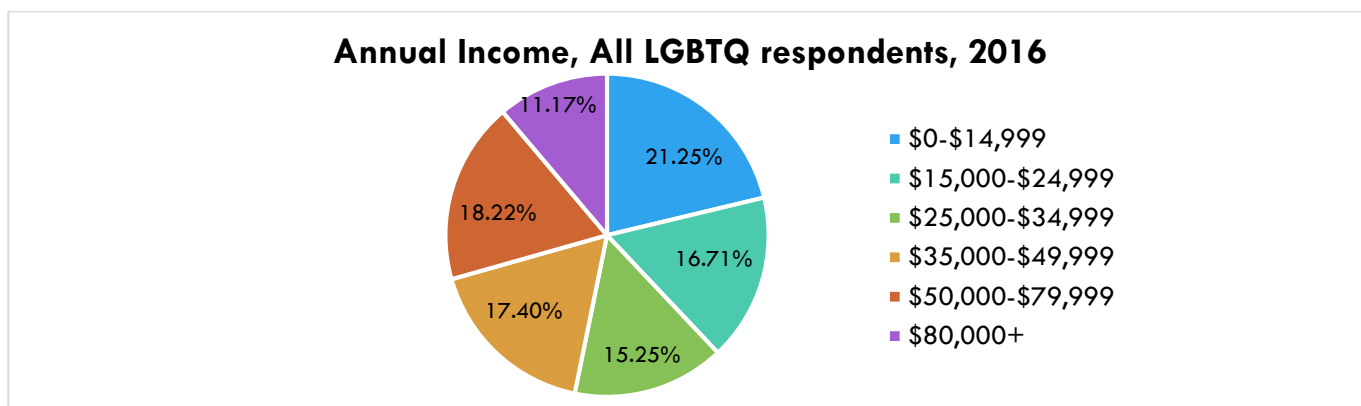
Data on lesbian, gay, bisexual, transgender and queer/questioning (LGBTQ) is slowly becoming more available. In the 2015 Southwest Minnesota Healthy Communities Survey, the 16-county region asked for the first time a question that mixed LGBT sexual orientation and gender identity to understand the population of our counties better. The weighted averages for SWHHS show 99 percent of the population identify themselves as heterosexual or straight, while 0.6 percent of the population identify themselves to be gay, lesbian or homosexual; 0.5 percent identify themselves bisexual; 0.2 percent identify themselves as transgender.

2015 Adults: Do you think of yourself as...

	Heterosexual or Straight	Gay, Lesbian, or Homosexual	Bisexual	Transgender
16 County	98.7	0.7	0.9	0.3
SWHHS	99.0	0.6	0.5	0.2
Lincoln	99.2	0.5	1.1	0.0
Lyon	98.7	1.1	0.4	0.4
Murray	98.1	0.6	1.4	0.0
Pipestone	99.9	0.3	0.1	0.0
Redwood	99.2	0.5	0.3	0.3
Rock	99.6	0.1	0.0	0.3

Source: Wilder Research, 2015 Southwest Minnesota Healthy Communities Survey (4)

Since 2010, The Rainbow Health Initiative has conducted an annual convenience sampling survey across Minnesota to better understand the needs and challenges faced by the LGBTQ community. In the 2016 survey, a variety of challenges were found in the LGBTQ community, which in many instances were consistent with past surveys. (28)



Source: Rainbow Health Initiative. (2016). (28)

Food Security: 30.8 percent of respondents reported they could not afford enough food at least once in the past year. Of those, 72.3 percent of respondents reported they cut meals, ate less or went hungry some months or almost every month in the past year. (28)

Homeless: 32 percent of respondents reported they had been homeless at least once in their lifetime. (28)

Mental Health: 61 percent of LGBTQ respondents reported being diagnosed with depression. (28)

45 percent of LGBTQ respondents reported being diagnosed with post-traumatic stress disorder.

36 percent of LGBTQ respondents reported being diagnosed with some form of anxiety disorder.

Tobacco Use: 21.5 percent of LGBTQ respondents smoke every day or some days per week. (28)

41.45 percent of LGBTQ respondents have smoked 100 cigarettes (5 packs) or more in their lifetime. (28)

Sexual Violence: 58.08 percent of LGBTQ respondents had experienced any unwanted sexual contact during their lifetime. (28)

Access to Care: 50.5 percent of LGBTQ respondents reported that even if they had insurance, the cost was a barrier to accessing health care. (28)

22.0 percent of LGBTQ respondents reported they postponed care when injured or sick because they could not afford it, in the last year. (28)

21.0 percent of LGBTQ respondents reported they postponed checkups because they could not afford it, in the last year. (28)

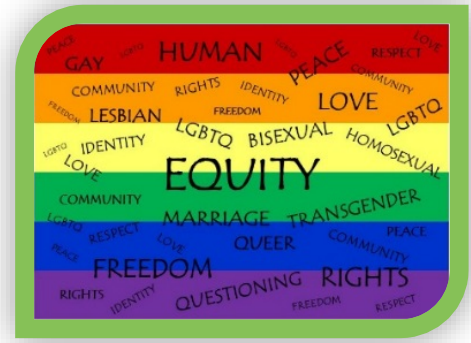
7.9 percent of LGBTQ respondents reported they postponed care when injured or sick because of discrimination from healthcare providers, in the last year. (28)

7.8 percent of LGBTQ respondents reported they postponed checkups because of discrimination from healthcare providers, in the last year. (28)

1.9 percent of LGBTQ respondents reported their doctor refused care because I am LGBTQ, in the last year. (28)

7.9 percent of LGBTQ respondents reported they had to teach their doctor about LGBTQ people to receive proper care, in the last year. (28)

57 percent of LGBTQ respondents reported they are “out” to their doctor or primary care provider. (28)



In the 2016 Minnesota Student Survey, surveyors also asked for the first-time questions about LGBTQ sexual orientation, gender identity, and gender expression. Minnesota ninth-grade students, who identify as gay, lesbian, or homosexual, bisexual, or questioning, make up 11 percent of the state student population. SWHHS area ninth-grade students who identify as gay, lesbian, or homosexual, bisexual, or questioning make up 6.8 percent of the student population, which is 4.2 percentage point difference from the state.

2016 Ninth-grade Students: Which of the Following Best Describes You? Percent by County, Minnesota

	Heterosexual or Straight	Gay, Lesbian, or Homosexual	Bisexual	Questioning
Minnesota	89%	1%	5%	5%
SWHHS	92%	1%	4%	4%
Lincoln	100%	0%	0%	0%
Lyon	90%	1%	4%	5%
Murray	92%	0%	4%	4%
Pipestone	95%	0%	4%	1%
Redwood	90%	1%	5%	4%
Rock	93%	1%	2%	3%

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

2016 Ninth-grade Students: Do you consider yourself transgender, genderqueer, genderfluid, or unsure about your gender identity? Percent by County, Minnesota

Grade 9	Yes	No
Minnesota	3%	97%
SWHHS	3%	97%
Lincoln	0%	100%
Lyon	3%	97%
Murray	5%	95%
Pipestone	4%	96%
Redwood	4%	96%
Rock	2%	97%

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Persons with Disabilities

The American Community Survey has used a consistent definition to collect disability data since 2008 where functional difficulties are measured rather than specific conditions. Six functional difficulties are considered disabilities:

- **Hearing:** Those who are deaf or having serious difficulty hearing.
- **Vision:** Those who are blind or have serious difficulty seeing, even when wearing glasses.
- **Cognitive:** Because of a physical, mental, or emotional problem, those who have difficulty remembering, concentrating, or making decisions.
- **Ambulatory:** Those who have serious difficulty walking or climbing stairs.
- **Self-care:** Those who have difficulty bathing or dressing.
- **Independent living:** Because of a physical, mental, or emotional problem, those who have difficulty doing errands alone such as visiting a doctor's office or shopping. (30)

Causes of disability can range from disorders in single genes (ex. Duchenne muscular dystrophy) or chromosomes (ex. Down Syndrome), maternal exposure during pregnancy to alcohol, drugs, cigarettes or infections (ex. rubella), developmental conditions that appear during childhood (ex. autism spectrum disorder or ADHD), related to injury, chronic conditions (ex. diabetes, heart disease), progressive disease (ex. Alzheimer's disease) or intermittent disease (ex. some forms of multiple sclerosis). (31)

In Minnesota in 2015, it is estimated 593,700 people have one or more of the above-listed disabilities, which is about 10.9 percent of the population. In SWHHS counties people with disabilities are estimated to be 8,890 or 12.4 percent of the population. Of those Minnesotans that said they have any disability; 44 percent have also said they have two or more disabilities. As Minnesotan age, disabilities also increase from five percent for ages 5-17; 9 percent for ages 18-64; 22 percent for ages 65-74; 46 percent for ages 75 and over. Minnesotan disabled males make up 11.2 percent of the population while females make up 10.7 percent. (30)

Number and Percent of People with Disabilities, by County, Minnesota, 2011-2015

	People with a disability	People with a disability, Margin of error (+/)	Percent with a disability	Percent with a disability, Margin of error (+/)
Minnesota	561,901	4,277	10.5%	0.1%
Lincoln	795	91	14.1%	1.5%
Lyon	2,650	244	10.4%	1.0%
Murray	1,121	90	13.3%	1.1%
Pipestone	1,234	147	13.4%	1.6%
Redwood	2,074	130	13.4%	0.8%
Rock	1,069	101	11.4%	1.1%

Source: American Community Survey. S1810. (2015) (8)

Estimated Percent of People with Disabilities by Age, by County, Minnesota, 2011-2015

	All Ages Combined	Under 5 Year	5 to 17 Years	18 to 34 Years	35 to 64 Years	65 to 74 Years	75 Years & Over
Minnesota	10.5%	0.7%	5.0%	5.3%	10.2%	21.3%	45.4%
Lincoln	14.1%	0.3%	4.9%	3.0%	10.1%	28.1%	48.3%
Lyon	10.4%	0.0%	4.8%	5.9%	10.2%	17.0%	49.6%
Murray	13.3%	0.0%	6.1%	5.2%	10.7%	21.9%	42.9%
Pipestone	13.4%	0.3%	5.5%	6.4%	10.3%	27.1%	48.3%
Redwood	13.4%	0.0%	3.6%	6.5%	10.2%	28.6%	50.7%
Rock	11.4%	0.8%	6.5%	2.9%	11.5%	18.6%	38.3%

Source: American Community Survey. S1810. (2015) (8)

The most common disability reported by Minnesotans was ambulatory, cognitive, hearing, independent living, self-care, and vision. Cognitive is the leading cause of disability in ages 5-17 and 18-64, while ages 65 and older were ambulatory followed by hearing and independent living. (30)

Estimated Most Common Disability Reported by Number of People, by County, Minnesota, 2011-2015

	Ambulatory	Cognitive	Hearing	Independent Living	Self Care	Vision
Minnesota	253,113	217,736	180,661	184,699	105,104	79,898
Lincoln	399	219	303	251	150	126
Lyon	1,170	859	923	697	360	303
Murray	459	302	474	276	170	192
Pipestone	663	366	352	377	174	187
Redwood	888	692	827	699	452	281
Rock	565	364	342	363	206	116

Source: American Community Survey. S1810. (2015) (8)

Cultural groups in Minnesota age 18-64 are much more likely to suffer from a disability compared to white Minnesotans. Below are the Minnesota cultural group numbers with only the most commonly found cultural groups in the SWHHS service area listed. The Minnesota cultural groups with the biggest disparities that live in the SWHHS region are American Indian/Dakota at 22 percent and Black/African-American at 19 percent. (30)

Number and Percent of People with Disabilities, Ages 18-64, By Cultural Groups, Minnesota, 2010-2014

Broad Race or Ethnicity Group	Cultural Group Within Broad Race or Ethnicity Group	Estimated People (Age 18-64) with a Disability	Estimated Percent of (Ages 18-64) with a Disability
American Indian	Dakota	900	22%
Asian	Hmong	3,700	10%
Black	African-American	24,100	19%
Black	Somali	2,000	9%
Hispanic	Mexican	7,100	7%
White	White, Not Russian	227,500	8%
All Minnesotans	All Minnesotans	287,400	9%

Source: Minnesota Demographic Center (2017) (30)

Estimated Percent of People with Disabilities by Race, by County, Minnesota, 2011-2015

	White	Black or African American	American Indian/Alaska native	Asian	Native Hawaiian/Other Pacific Islander	Some Other Race	Two or More Races
Minnesota	10.6	12.6	15.4	6.8	13.2	6.6	9.7
Lincoln	14.0	0.0	48.6	22.2	-	7.7	14.8
Lyon	11.1	4.2	0.6	6.5	-	1.7	10.6
Murray	13.5	0.0	40.7	0.0	0.0	0.0	12.6
Pipestone	13.2	0.0	7.3	0.0	0.0	0.0	50.6
Redwood	13.9	15.4	6.2	15.5	-	0.0	4.8
Rock	11.5	10.2	19.3	5.6	-	11.8	11.5

Source: American Community Survey. S1810. (2015). (8)

An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

Among Minnesotan ages 18-64 with disabilities are 3.4 times more likely to not be participating in the labor force. In 2015, 56 percent of the disabled population ages 18-64 were working with 26 percent of this population

working full-time and year-round and 30 percent working part-time and/or part-year. Those without disabilities in the 2015 workforce experienced unemployment at 3.7 percent compared to 9.6 percent of those with disabilities. This translates into large income disparities. Earning of \$35,000 or more was achieved by 16 percent of disabled people while 45 percent of people with no disability made \$35,000 or more during 2010-2014. (30)

Share of MN Population with Disabilities, Ages 18-64, by Annual Earnings, 2010-2014

	No earnings	\$1 \$14,999	\$15,000 \$34,999	\$35,000+
ANY DISABILITY	48%	23%	14%	16%
Self-care	69%	17%	7%	7%
Independent Living	65%	23%	7%	5%
Ambulatory	62%	16%	11%	11%
Cognitive	55%	29%	10%	7%
Hearing and/or Vision	36%	18%	17%	28%
NO DISABILITY	12%	20%	23%	45%

Source: Minnesota Demographic Center (2017) (30)

Estimated percent of People with Disabilities Who are Unemployed, by County, Minnesota, 2011-2015

	Minnesota	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
Unemployed Disabled	12.7	3.3	10.8	9.7	12.9	10.8	4.7

Source: United States Census Bureau. American FactFinder: S2301. (2017) (8)

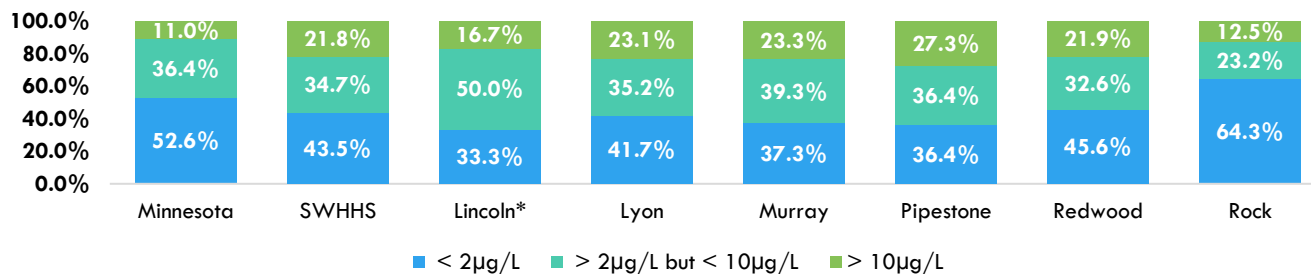
Water, Weather and the Air

Water

Clean and safe water is essential for good health. There are a variety of contaminants that occur naturally in the ground like arsenic and those that are man-made that can get into well water like volatile organic chemicals. New well testing reported to the State of Minnesota from August 2008 to March 2017 showed that new wells in SWHHS counties had 10.8 percentage points more arsenic in the ten micrograms per liter or above range than Minnesota. The lower detection limit for arsenic used by most laboratories is two micrograms per liter ($\mu\text{g/L}$), while ten $\mu\text{g/L}$ is the Maximum Contaminant Level (MCL) for arsenic, which is the national enforceable standard for community water supplies. (32)



Percent of New Private Wells Constructed and Tested for Arsenic August 2008 to March 2017



*Counties with less than 20 total wells tested should be interpreted with caution; the data may be unstable because it can change dramatically with the addition or subtraction of one well.

Source: Minnesota Department of Health. Minnesota Public Health Data Access Portal. (2018) (33)

In SWHHS counties, there are a number of private wells that need to be tested regularly to ensure water quality. Some of the issues that need to be tested for are coliform bacteria (annually or if you notice a change to the taste, color or odor), nitrate (one to every two years and always test before giving to an infant), lead (once), and an overabundance of naturally occurring fluoride. (32)

Weather and Climate

Climate has an impact on health from increasing the habitat that breeds infectious disease vectors like mosquitos and ticks to causing exposure-related illnesses. The normal precipitation range for the SWHHS counties is between 24 and 30 inches annually. (34)

In Minnesota, there has been an increase in historic mega rain events with two events occurring in 2016. In the last two decades, there has been an increase in the number of these events: 1970's-2; 1980's-1, 1990's-0, 2000's-3; and 2010's there have been 4 so far. (35)

One mega rain happened on August 11, 2016, where Redwood Falls received 4.95 inches of rain. In this event, the highest total was 9.74 inches east of Willmar in Kandiyohi County.

Mega rain events are defined as where six inches of rain covers more than 1,000 square miles and the core of the event topped eight inches. (35) Rain events of this magnitude cause flooding which causes wet basements that breed mold triggering respiratory illnesses, exposure to contaminated floodwater that can infiltrate the drinking water systems and spread waterborne illness, stress and mental health impacts from damaged or destroyed crops, homes and businesses, and injury or death.

Locally significant rain events can be just as devastating. The Redwood Falls area experienced extremely heavy rain on August 16-17, 2017 when the Redwood Falls Airport recorded 9.45 inches of rain and another National Weather Service observer in Redwood Falls reported 8.12 during the 24 hour period. This was one of the largest official rain totals since the rain event in Two Harbors on June 20, 2012, which brought 10.45 inches to the area.

Another significant rain on July 3, 2018, affected portions of Cottonwood, Lyon, Murray, and Redwood Counties. This rain caught residents in bed as it started around 4:30 am with thunderstorms continuing to build over and rain over the same area until the afternoon.



There were reports of people waking to rushing water coming in and around basement egress windows. Unofficial rain reports from Wabasso had rain totals at 11 inches causing extensive flooding and road closures. In cities affected by the rain like Currie, Tracy, and Wabasso, rainwater overwhelmed the city sewer system causing backups in basements. As the rainwater ran off, many streams and rivers in the area became flooded and overtopped many local township, county, and state roads causing closures. Lake Shetek in Murray County closed the three dike bridges that led into Valhalla and Keeley Islands and declared a no-wake zone on the lake until the water could recede.

Snowfall in the region annually ranges from 35 to 40 inches. (36) Annual mean temperatures range from 16° to 72° Fahrenheit in the six-county region. (37) This does not reflect the extreme temperature fluctuations that can happen. Lamberton in Redwood County currently holds the record for the largest 24-hour temperature change of 71° F on April 3, 1982. (38)

Normal Mean Temperature (Last Updated May 2003)

	Spring	Summer	Fall	Winter
Lincoln	44-46°	68-72°	44-48°	16-18°
Lyon	44-46°	68-72°	44-48°	16-18°
Murray	44-46°	68-70°	44-48°	16-18°
Pipestone	44-46°	68-70°	44-48°	16-18°
Redwood	44-46°	68-72°	46-48°	16-18°
Rock	44-46°	68-72°	44-48°	16-18°

Source: University of Minnesota. Minnesota State Climatology Office. (2014). (37)

The lowest low temperature can reach -40° F while the highest high temperature can be upward of 109° F. (39) Those temperature extremes can impact health in negative ways from frostbite to heat stroke if a person does not manage them properly.

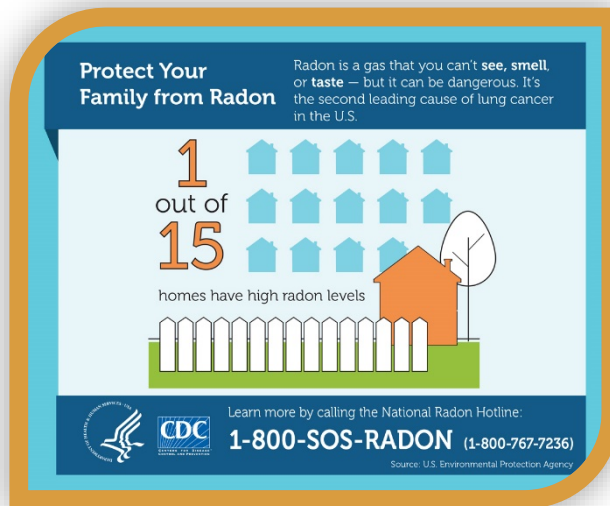
Extreme heat events can affect people 65 years and older and children five years and young at a higher rate than other groups. Other demographic groups that are at increased risk are people at or below the poverty line, people with pre-existing diseases or mental health conditions or people on certain medications. Certain behaviors can also increase the risk of heat-related illnesses like social isolation, prolonged exposure to the sun or the use of alcohol. Where you live can affect a person’s risk factors such as living in urban areas because of the heat island effect, living in top floor apartments, lack of air conditioning, or living in nursing homes. (40)

Air Quality

Radon

Radon is a colorless and odorless radioactive gas that occurs in the environment naturally but is the leading cause of lung cancer in non-smokers. Radon may also be found in drinking water. According to the EPA map of Radon Zones, all of the counties in SWHHS are in the highest potential category predicted average indoor radon screening level greater than four pCi/L (picocuries per liter). (41) Because of this, SWHHS has been offering short and long-term radon testing at a nominal price to citizens in the SWHHS catchment area.

Below are radon testing results from 2010-2014 for Minnesota and SWHHS counties. SWHHS counties average (arithmetic) radon values are 1.6 to 2.25 times higher than the state average. The EPA recommends considering mitigation if a home tests at ≥ two pCi/L and highly encourages mitigation is a home tests at ≥ four pCi/L. (42) Based on testing results in 2010-2014, homeowners should look into testing their homes.



Radon Testing, by County, Minnesota, 2010-2014

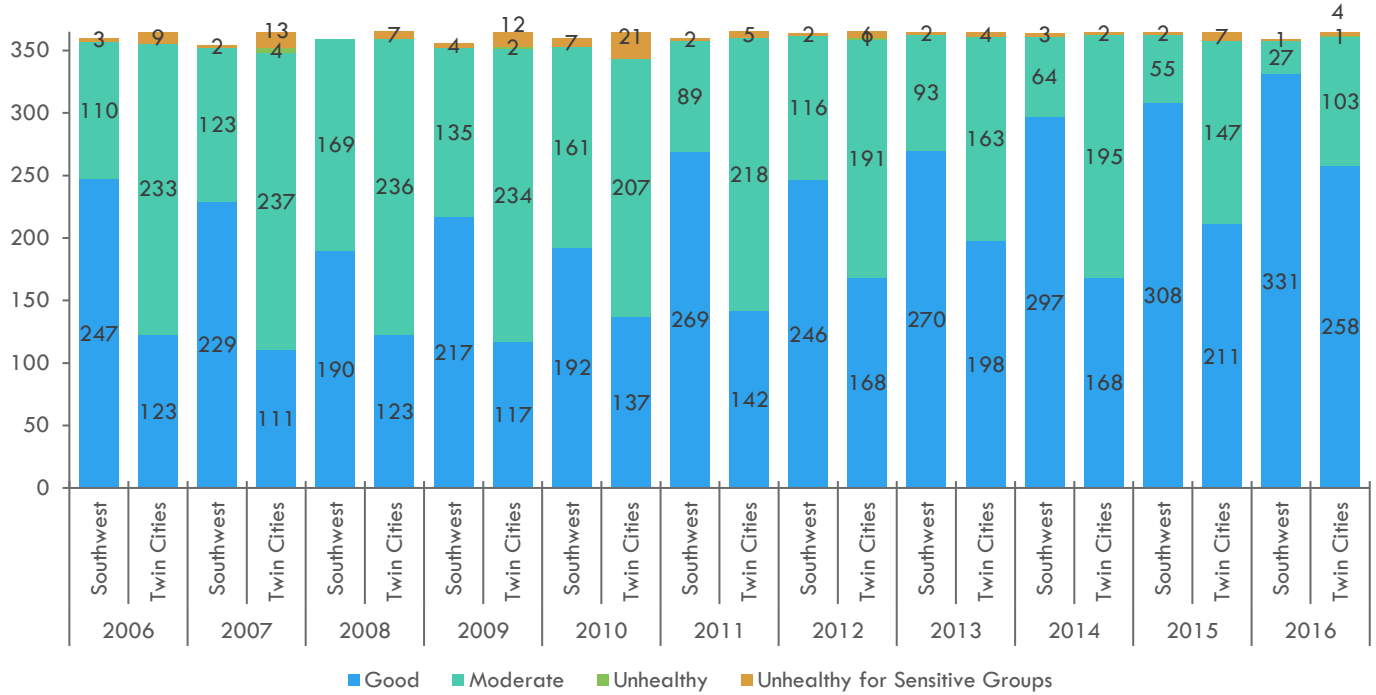
	Properties Tested Per 10,000	Percent of Properties Tested ≥ 2 pCi/L	Percent of Properties Tested ≥ 4 pCi/L	Average (Arithmetic) Radon Value pCi/L
Minnesota	105.4	74.5%	45.3%	4.6
Lincoln	79.4	90.3%	72.6%	9.5
Lyon	128.4	81.0%	64.9%	7.6
Murray	129.4	94.6%	79.6%	9.0
Pipestone	59.4	91.7%	72.2%	10.4
Redwood	121.6	91.3%	74.4%	7.9
Rock	56.0	91.8%	78.1%	9.7

Source: United States Environmental Protection Agency. (2017). (42)

Air Quality

Air quality, if heavy with ground-level ozone, air particulate pollution, sulfur dioxide, and carbon monoxide can make it hard for people to breathe and cause illness. Some of the causes of ground-level ozone and air particulate pollution are combustion from motor vehicles, power plants, residential wood burning, forest and agricultural fires, and some industrial processes. Unhealthy air can irritate your respiratory system, reduce your lung function, damage and inflame the lining of your lungs, make your lungs more susceptible to infections, aggravate other chronic lung diseases like asthma, chronic bronchitis, COPD, emphysema, and cause permanent lung damage. (43) From 2006-2016, the Southwest region of Minnesota averaged three unhealthy air days for sensitive groups per year while the twin cities region averaged nine unhealthy air days for sensitive groups and one unhealthy day per year. (44)

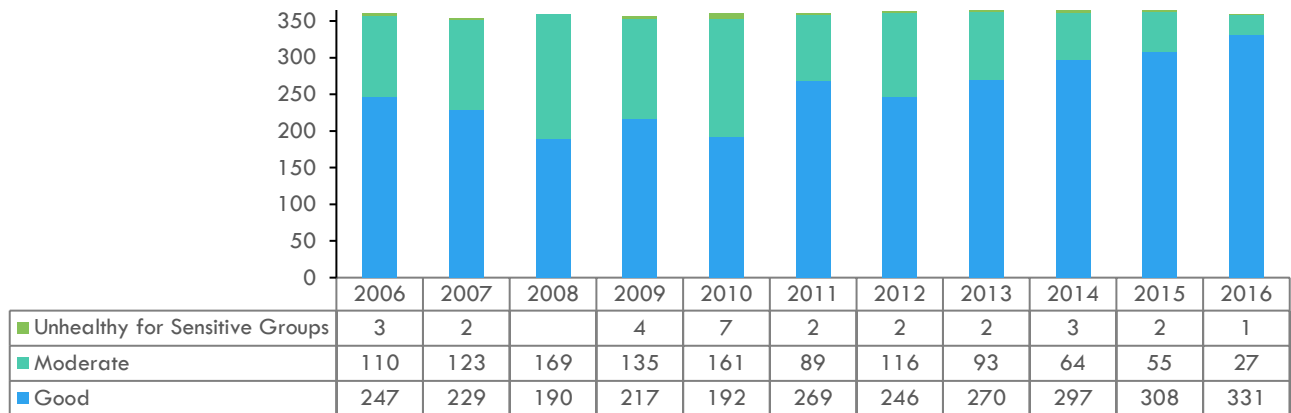
2006-2016 Air Quality Comparison Southwest Minnesota Region and Twin Cities Region



Minnesota Pollution Control Agency. (2017). (42)

Healthy People 2020: EH-1: Target 10 percent improvement

2006-2016 Air Quality Days in Southwest Minnesota



Minnesota Pollution Control Agency. (2017). (42)

In the chart above each category corresponds to a different level of health concern:

- **Good.** The Air Quality Index (AQI) value for your community is between zero and 50. Air quality is satisfactory and poses little or no health risk.
- **Moderate.** The AQI is between 51 and 100. Air quality is acceptable; however, pollution in this range may pose a moderate health concern for a very small number of individuals. People who are unusually sensitive to ozone or particle pollution may experience respiratory symptoms.
- **Unhealthy for Sensitive Groups.** When AQI values are between 101 and 150, members of sensitive groups may experience health effects, but the general public is unlikely to be affected.

- **Ozone:** People with lung disease, children, older adults, and people who are active outdoors are considered sensitive and therefore at greater risk.
- **Particle pollution:** People with heart or lung disease, older adults, and children are considered sensitive and therefore at greater risk.
- **Unhealthy.** Everyone may begin to experience health effects when AQI values are between 151 and 200. Members of sensitive groups may experience more serious health effects.
- **Very Unhealthy.** AQI values between 201 and 300 trigger a health alert, meaning everyone may experience more serious health effects.
- **Hazardous.** AQI values over 300 trigger health warnings of emergency conditions. The entire population is even more likely to be affected by serious health effects. (43)

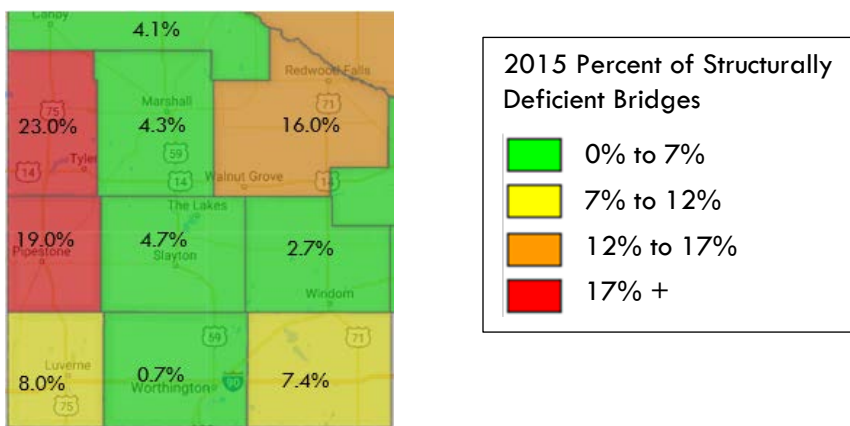
Roads, Highways, and Bridges

Properly maintained roads and bridges are important to commerce and the ability for citizens to be able to get to work, access healthy foods, and health care. Below is a snapshot of the percent of bridges that are structurally deficient in each of the six SWHHS counties. In 2015, two of the counties had rankings above 17 percent of their bridges with structural deficiencies, which is a reduction of two counties from 2010.



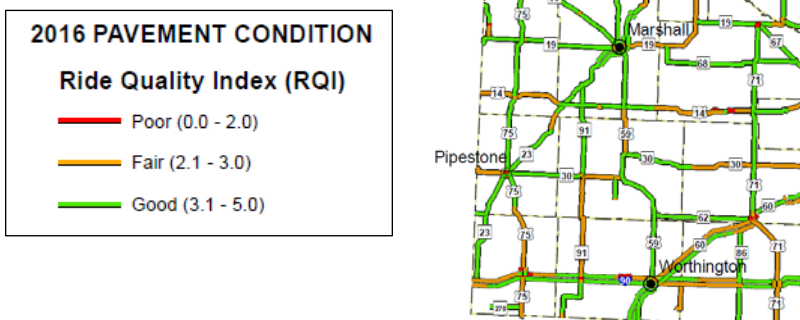
(45) The next graph shows the ride quality index for southwest Minnesota. The lower the index, the more likely the road requires repair. (46) As different departments vie for funding at the state and county level, it can be difficult for decision-makers to see public health programs in the same light as more tangible programs like road and bridge funding. The impact of Public Health dollars can be harder to demonstrate since Public Health is a long-term outcome/impact.

Percent of Structurally Deficient Bridges



Source: Transportation for America (2015) (45)

2016 Ride Quality Index



Source: Minnesota Department of Transportation (2017) (46)

The Opportunity for Health in SWHHS

Education and Employment

Education

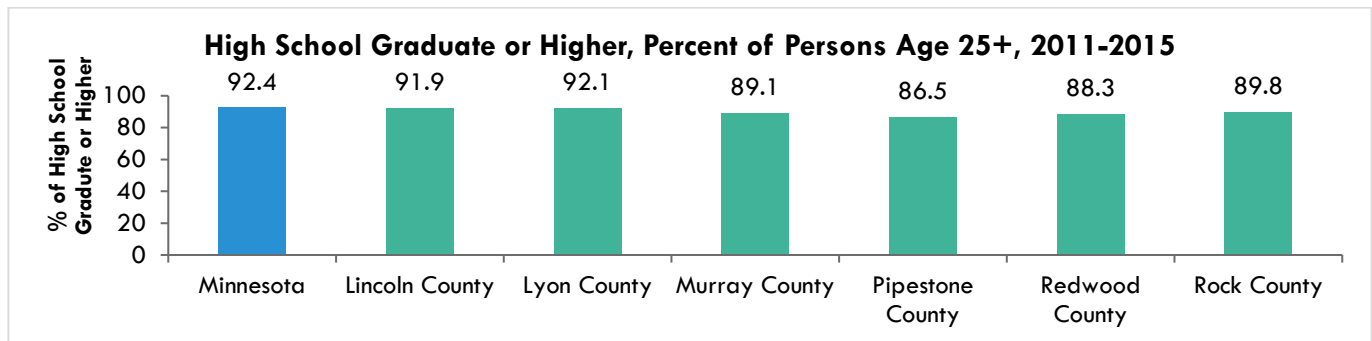
Education is a key component to social determinates of health, as it is a predictor of the quality and longevity of a person's life. (1) When we invest in education and developmental resources starting in early childhood, society sees a return on that investment in increased cognitive and social skills. These skills result in citizens that are more capable, productive and will influence the earning potential of the individual. (47) It has been determined through research that the more education a person has, the more likely they are to have a higher income and have better health outcomes. (48)

Percent of High School Students Graduating On Time, By County, 2012-2018

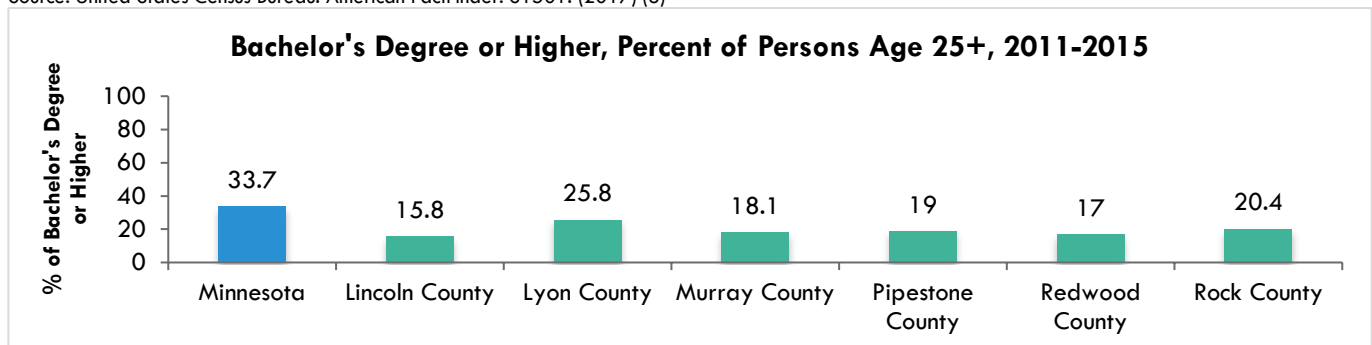
	2012	2013	2014	2015	2016	2017	2018
Minnesota	78.4%	80.4%	81.4%	82.1%	82.5%	82.7%	83.2%
Lincoln	81.8%	86.7%	87.8%	87.3%	79.2%	85.7%	87.5%
Lyon	86.0%	89.5%	86.1%	90.6%	87.2%	86.0%	83.3%
Murray	92.7%	95.7%	93.5%	96.0%	90.8%	97.6%	89.3%
Pipestone	86.8%	83.9%	88.8%	87.7%	92.3%	86.4%	78.3%
Redwood	88.5%	88.4%	86.9%	88.2%	89.9%	92.9%	91.6%
Rock	81.4%	76.9%	84.1%	87.7%	92.5%	93.9%	90.2%

Source: Minnesota Department of Education. (2017). (49)
Healthy Minnesota 2020: Indicator 2.1

From 2012 to 2018, SWHHS counties generally had higher rates of high school students graduating on time than that of the State of Minnesota on average. (49) Yet, the rate of high school or higher education in people age 25 and older and the percent of persons living in SWHHS counties with Bachelor degrees or higher, are below the State of Minnesota averages. (8)



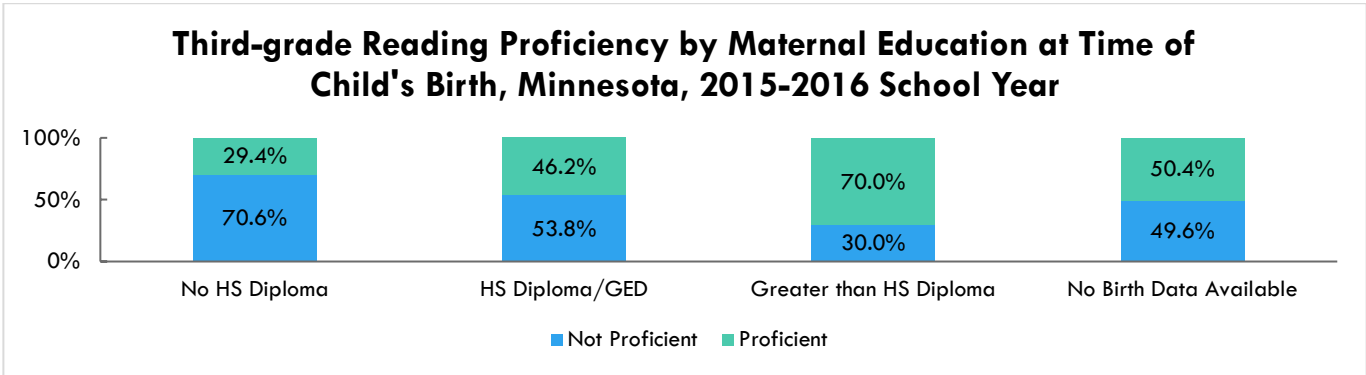
Source: United States Census Bureau. American FactFinder: S1501. (2017) (8)



Source: United States Census Bureau. American FactFinder: S1501. (2017) (8)

When the data is looked at with a health equity lens to determine what impacts education, research points toward the education of the mother as a determinant of her child's third-grade reading proficiency. Statewide reading proficiency in third grade averaged 57.5 percent. The difference between third-grade children with mothers who

have education at greater than high school diploma versus high school diploma or GED is 23.8 percentage points. The gap widens to 40.6 percentage points if the mother has no high school diploma. (50)



Source: Minnesota Early Childhood Longitudinal Data System (2017). (50)

High School students on free and reduced lunch program were far more likely to drop out of school and in SWHHS counties, they did so at a higher rate than the State of Minnesota. (49) Finally, the percent of SWHHS minority high school students who dropped out were lower than the state average. (49)

Percent of High School Students that Dropped Out Who are Enrolled in Free and Reduced Lunch 2005-2016, 5 Year Averages

	2005 2010	2011 2016
Minnesota	63.8%	72.5%
SWHHS	64.7%	87.1%

Source: Minnesota Department of Education. (2017). (49)

Percent of High School Students that Dropped Out Who Are Minority* 2005-2016, 5 Year Averages

	2005-2010	2011-2016
Minnesota	69.0%	60.9%
SWHHS	27.5%	29.0%

* Minority Demographics included Hispanic, American Indian/Alaskan Native, Asian/Pacific Islander, Black-not of Hispanic origin
Source: Minnesota Department of Education. (2017). (49)

SWHHS high school students who dropped out were less likely to be enrolled in special education or be limited language proficient than the state of Minnesota. (49)

Percent of High School Students that Dropped Out Who Were Enrolled in Special Education, 2005-2016, 5 Year Average

	2005 2010	2011 2016
Minnesota	23.3%	24.1%
SWHHS	19.6%	19.4%

Source: Minnesota Department of Education. (2017). (49)

Percent of High School Students that Dropped Out that are Limited Language Proficient, 2005-2016, 5 Year Average

	2005 2010	2011 2016
Minnesota	18.2%	13.3%
SWHHS	3.9%	12.9%

Source: Minnesota Department of Education. (2017). (49)

Correlations can be found between individuals with higher education levels and lower chronic disease diagnoses. Regional and state-level data on diabetes diagnosis and education attainment show a pattern of increased prevalence in the chronic disease if the individual has less than a high school education when compared to those with a bachelor's degree or higher.

Have you ever been told by a doctor or other health care professional that you had DIABETES? Yes, by Education

	Less than a High School	High School Diploma or GED	Some College, Trade School, or Associate's Degree	Bachelor's Degree or Higher
SWHHS	18.3%	9.8%	6.3%	6.5%
16 Co Region	18.4%	12.8%	7.6%	5.5%

Source: Wilder Foundation (2015). (4)

Percent of Adults (18+) Diagnosed with Diabetes by Educational Attainment, Minnesota, 2015

	Less than a High School	High School Diploma or GED	Some College, Trade School, or Associate's Degree	Bachelor's Degree or Higher
Minnesota	11.1%	9.7%	6.9%	5.4%

Source: MNCompass (2015). (51)

Additional data shows besides education reducing chronic conditions, people with higher levels of education are also less likely to smoke based on regional and state-level data.

Percent of Adults that are Currently Smoking, by Education, 2015

	Less than a High School	High School Diploma or GED	Some College, Trade School, or Associate's Degree	Bachelor's Degree or Higher
SWHHS	18.4%	14.3%	10.1%	5.3%
16 Co Region	18.3%	15.0%	11.6%	5.0%

Source: Wilder Research Foundation (2015). (4)

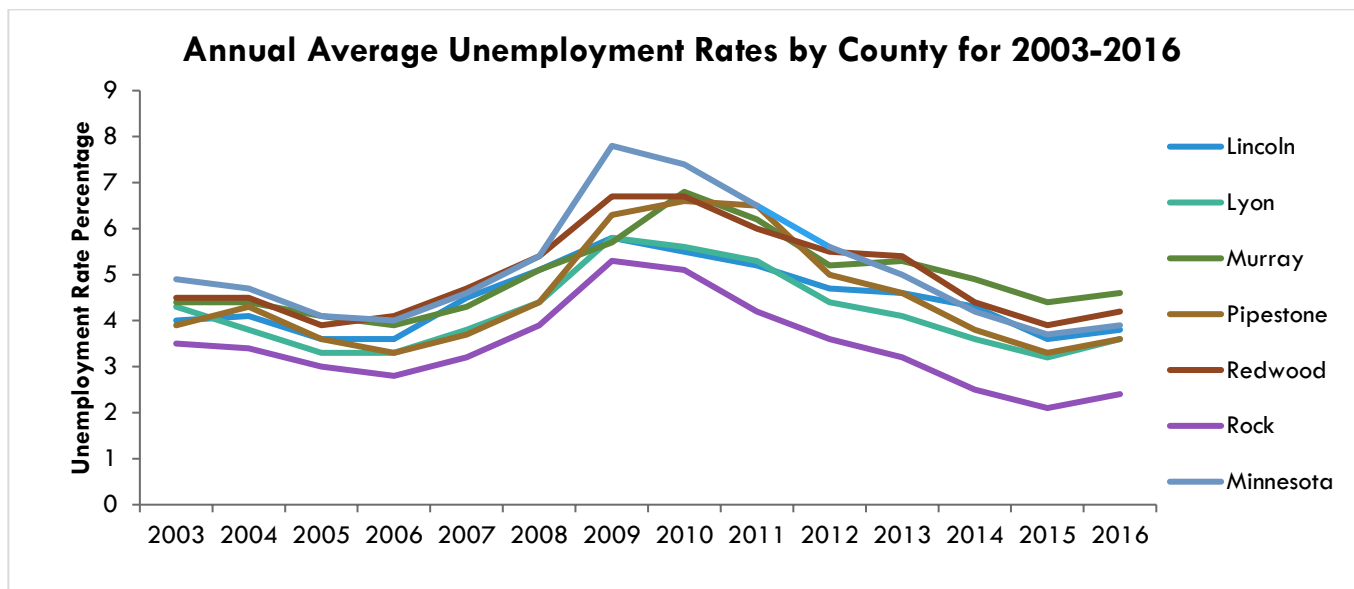
Estimated Percent of Adults that are Currently Smoking, by Education, 2015

	Less than a High School	High School Diploma or GED	Some College, Trade School, or Associate's Degree	Bachelor's Degree or Higher
Minnesota	34.6%	21.8%	15.4%	7.1%

Source: Minnesota Public Health Access Data. (2017). (42)

Employment

Employment that provides a living wage can decrease overall stress in a person's life. In addition, employee benefits, especially medical insurance, provide medical care access and necessary care to improve health. From 2003 to 2012, unemployment rates in the SWHHS counties had remained below the State of Minnesota's unemployment rates. Starting in 2013, Murray and Redwood Counties started trending above Minnesota's annual average by 0.4 to 0.7 percentage rate. (52)



Source: Minnesota Employment and Economic Development (2017) (52)

The more education an individual has the less likely they will be unemployed.

Estimated Percent of Unemployment by Educational Attainment, Age 25 to 64 Years, by County, Minnesota, 2013-2017

	Less than High School Graduate	High school Graduate/GED	Some College or Associate's Degree	Bachelor's Degree or Higher
Minnesota	3.5	4.9	3.5	2.1
SWHHS	9.6	2.6	2.9	1.8
Lincoln	5.6	4.8	2.8	0.6
Lyon	17.8	1.6	3.0	3.1
Murray	11.5	3.1	4.4	0.4
Pipestone	1.5	3.2	4.6	1.6
Redwood	6.0	1.8	1.8	0.9
Rock	5.1	3.8	1.4	0.3

Source: United States Census Bureau. American FactFinder: S2301. (2017) (8)

The unemployment rate is much higher in the Black or African American and American Indian populations than it is for Whites. In SWHHS counties, Black or African Americans see a 17.2 percentage point difference and American Indians see a 6.7 percentage point difference.

Estimated Percent of Unemployment by Race and Ethnicity, Age 25 to 64 Years, by County, Minnesota, 2013-2017

	White	Black or African American	American Indian/Alaskan Native	Asian	Some Other Race	Two or More Races	Ethnicity: Hispanic or Latino Origin of Any Race
Minnesota	3.6	11.0	13.3	5.2	7.5	9.1	7.2
SWHHS	2.7	17.4	6.7	5.0	9.2	15.0	10.4
Lincoln	2.8	0.0	0.0	0.0	0.0	60.0	0.0
Lyon	2.8	25.6	0.0	5.2	5.1	2.7	6.4
Murray	3.4	25.0	22.2	4.3	0.0	23.1	8.2
Pipestone	3.8	0.0	5.6	0.0	0.0	27.6	19.4
Redwood	2.2	0.0	9.2	4.0	22.4	13.6	21.8
Rock	1.8	0.0	0.0	13.6	7.7	0.0	0.9

Source: United States Census Bureau. American FactFinder: S2301. (2019) (8)

Income and Poverty

Income

The income you have determines the access you have to healthy food, medical care, transportation, the type of housing you live in, and your ability to participate in physical activity. The less income you have, the fewer choices you have. From 2012-2016, the per capita income for the SWHHS counties was, on average, under the state average except 2013. In 2013, the overall average for the six counties was greater than the Minnesota average by \$2,013. The income per capita for SWHHS counties in 2016 was \$3,941 below Minnesota. (53)

Estimate Per Capita Income – Adjusted to 2016 Dollars

	2012	2013	2014	2015	2016
Minnesota	\$49,348	\$48,614	\$49,875	\$51,848	\$52,038
SWHHS	\$48,612	\$50,627	\$49,362	\$50,576	\$48,097
Lincoln	\$46,984	\$49,345	\$46,100	\$47,614	\$46,011
Lyon	\$44,959	\$45,820	\$44,817	\$46,082	\$44,580
Murray	\$53,856	\$58,736	\$53,913	\$56,291	\$53,013
Pipestone	\$50,325	\$52,509	\$53,432	\$53,408	\$50,828
Redwood	\$50,322	\$53,083	\$52,726	\$54,238	\$51,227
Rock	\$50,161	\$51,202	\$50,113	\$50,722	\$46,901

Source: Minnesota Department of Health. Minnesota Center for Health Statistics. (2019) (53)

Healthy Minnesota 2020: Indicator 2.2

A deeper dive into median income shows there are still gaps between women and men. In the six-county area income gaps are between \$7,391 and \$15,701, which is larger than the average gap in Minnesota of \$8,152 in five of the six counties.

Estimate Median Income in 2017 Inflation-Adjusted Dollars, by Gender, 2013-2017

	Female Householder, Living Alone	Male Householder, Living Alone
Minnesota	\$28,607	\$36,759
Lincoln	\$18,864	\$27,583
Lyon	\$24,467	\$31,858
Murray	\$22,194	\$31,371
Pipestone	\$20,486	\$29,853
Redwood	\$21,765	\$35,948
Rock	\$20,445	\$36,146

* means that the estimate is not applicable or not available.
 Source: United States Census Bureau. American FactFinder: S1903. (2017) (8)

Estimated Median Income in the Past 12 Months (in 2017 Inflation-Adjusted Dollars), by Race and Ethnicity, 2013-2017

	White	Black or African American	American Indian/Alaskan Native	Asian	Some Other Race	Two or More Races	Ethnicity: Hispanic or Latino Origin of Any Race
Minnesota	\$68,530	\$32,743	\$36,017	\$71,865	\$42,476	\$52,522	\$46,232
Lincoln	\$51,335	-	\$42,083*	-	-	\$33,393*	\$27,083*
Lyon	\$56,684	\$42,885*	-	\$50,978*	\$18,000	\$35,833*	\$27,583*
Murray	\$53,973	-	-	\$74,107*	-	\$91,667*	\$43,750*
Pipestone	\$49,725	-	\$33,846*	-	\$65,481*	-	\$27,292*
Redwood	\$53,276	-	\$34,531*	\$27,917*	\$59,000*	\$73,365*	\$58,500*
Rock	\$56,860	-	\$130,714*	-	-	-	\$40,833

An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.

*Indicates margin of error over +/- \$5,000 and higher
 Source: United States Census Bureau. American FactFinder: S1903. (2017) (8)

As data is looked at for other connections between disease and income, the data shows the higher the income level of an individual, the less likely they will be diagnosed with a chronic condition like diabetes. Regional and state-level data on diabetes diagnosis as it corresponds to income shows a pattern of increased prevalence if the individual makes less than \$35,000 when compared to individuals that make greater than \$75,000 annually. Statewide data showed households earning less than \$35,000 per year, which in Minnesota is one in four households make less than \$35,000 per year, were 2.5 times more likely to report having diabetes than people with incomes of more than \$35,000. (54) Southwest Minnesota Healthy Community Survey from 2015 saw a slightly less disparity of 1.6 times more likely to report having diabetes than people with incomes of more than \$35,000.

Have you ever been told by a doctor or other health care professional that you had Diabetes? Percent of Yes, by Income

	< \$20,000	\$20,000- \$34,999	\$35,000- \$49,999	\$50,000- \$74,999	> \$75,000
SWHHS	16.3%	10.7%	7.7%	5.4%	4.7%
16 Co Region	20.7%	11.0%	8.7%	7.0%	4.1%

Source: Wilder Foundation (2015). (4)

Poverty

Choices are limited for people who live in poverty. Limited incomes hinder a person's ability to have reliable transportation, to purchase high-quality healthy food, live in safe housing, have health insurance and medical care,

the ability to get a college education, and choose their type of employment. Poverty also causes chronic stress, which can lead to health problems.

Poverty levels in SWHHS counties, on average between 2010-2016, were below the State of Minnesota poverty levels four of the seven-year, but as of 2016 are above state levels by 0.7 percent. (53)

During this same time frame, Lyon County experienced above state-level poverty percentages in six of the seven years. This could be attributed to the downsizing of industries and a greater number of diverse populations living in this county. Poverty is generally higher in populations of color and from 2013-2017, Lyon County had the greatest percentage of populations of color at 11.9 percent and the greatest diversity of races compared to the other counties in SWHHS. (8)

Percent of All Ages Living in Poverty¹

	2010	2011	2012	2013	2014	2015	2016
Minnesota	11.5	11.8	11.4	11.2	11.4	10.2	9.9
SWHHS	10.4	11.2	11.1	11.4	11.2	10.9	10.6
Lincoln	10.0	9.8	10.3	11.4	10.2	9.3	12.7
Lyon	11.4	12.1	12.3	12.8	11.5	12.2	12.8
Murray	8.9	9.4	10.0	9.6	9.6	9.0	9.3
Pipestone	10.5	12.7	11.2	12.4	12.2	11.0	10.9
Redwood	9.6	10.4	11.1	10.2	12.4	11.0	9.1
Rock	10.8	10.9	9.6	10.5	9.6	9.7	9.4

¹ US Census www.census.gov Poverty estimates and median household income
 Source: Minnesota Department of Health, Minnesota Center for Health Statistics. (2019). (53)

Percent of All Ages by Race Living in Poverty, 2013-2017, 5 Year Estimate

	White	American Indian/ Alaskan Native	Black or African American	Asian	Hispanic or Latino Origin (of any race)
Minnesota	7.9	31.5	31.9	15.4	20.9
SWHHS	10.0	29.2	28.5	29.4	36.2
Lincoln	11.1	12.5	0.0	0.0	4.2
Lyon	10.9	14.1	25.0	24.1	50.8
Murray	7.8	0.0	47.2	3.3	14.3
Pipestone	10.2	16.8	73.9	0.0	28.0
Redwood	9.3	32.5	4.7	48.8	30.7
Rock	9.9	54.7	20.9	43.6	15.0

Source: United States Census Bureau. (2019). (8)

The poverty by race figure above shows a large disparity between populations of color and white populations. Redwood County’s American Indian/Native Alaskan population was estimated to have 32.5 percent of the population in poverty, while Pipestone County’s Black or African American population was estimated to have 73.9 percent of the population in poverty. (8) This is compared to the SWHHS’s white population, which was estimated to be at 10.0 percent of the population living in poverty.

Besides the United States Census data, SWHHS asked residents in SWHHS Quality of Life Survey “Do you feel there are jobs available in your community where the pay meets your monthly bills?”. Of the 1,825 people that responded, 56 percent stated: “yes, they feel there are jobs available where the pay meets monthly bills”. (22)

When the question is looked at from a race perspective, American Indian only said “yes, they feel there are jobs available where the pay meets monthly bills” at 47 percent (nine percentage point lower difference from total yes responses), more than one race at 44 percent (12 percentage point lower difference from total yes responses), white only at 57 percent (one percentage point higher difference from total yes responses), and Asian or Pacific Islander, Black or African American or African and Hispanic/Latino did not have sufficient participation to report. (22)

The higher the educational attainment the more like a person is to say “yes, they feel there are jobs available where the pay meets monthly bills” Those with a high school diploma/GED said yes at 47 percent, which is nine percentage points lower than all education levels combined and those with a master’s degree said yes at 68 percent which is 12 percentage points higher than all education levels combined.

When the question is looked at from an income lens much high differences between “All Income” and the other income categories are observed. Those with incomes \$75,000 and higher are much more likely to think there are jobs where the pay meets your monthly bills. Incomes with \$74,999 and lower see a substantial drop in percentage points as the categories become lower. (22)

Quality of Life Survey: Do you feel there are jobs available in your community where the pay meets your monthly bills? SWHHS services area by Income, 2018

	All Income	Less than \$20,000	\$20,000 \$34,999	\$35,000 \$49,999	\$50,000 \$74,999	\$75,000 \$99,999	\$100,000 or more
SWHHS	56%	41%	41%	48%	50%	63%	72%
Difference	0%	-15%	-15%	-8%	-6%	+7%	+16%

Source: Southwest Health and Human Services. Quality of Life Survey. (2019). (22)

Children in Poverty

Poverty has a negative effect on both adults and children. Children who grow up in a chronic stress environment caused by poverty have a greater risk of developing health problems. Studies have also shown that the quality and stability of the parent-infant relationship is diminished by poverty. This relationship impacts the child’s cognitive stimulation, speech development, and emotional and behavioral development. (55)



Researchers have also linked brain, cognitive, and behavioral development in early childhood to the outcomes of chronic disease, smoking, drug use, obesity and depression in adulthood. Early childhood development also influences health-related behaviors and education attainment as self-regulation is impacted. (55)

From 2008-2017, SWHHS experienced an increase in poverty in those people under 18 years (3.2 percent) while the State of Minnesota experienced a 0.9 percent decrease. Lincoln County experienced the largest increase of 9.0 percent while Murray and Rock County experienced a decrease of 6.5 and 3.8 percent respectively. The poverty level for people under 18 years by race was not available at the county level. (8)

Percent of People Under 18 Years Living in Poverty

	2008 2012	2009 2013	2010 2014	2011 2015	2012 2016	2013 2017
Minnesota	14.3	14.7	14.8	14.5	13.9	13.4
SWHHS	12.7	14.3	15.0	14.9	17.0	15.9
Lincoln	5.0	7.8	8.0	7.2	16.3	14.0
Lyon	16.0	17.9	17.9	20.2	18.8	18.4
Murray	15.8	15.7	13.3	12.5	12.7	9.3
Pipestone	9.7	12.2	16.6	17.5	18.4	16.0
Redwood	13.4	12.7	15.0	17.2	18.1	17.2
Rock	16.4	19.6	19.4	14.6	12.8	12.6

Source: United States Census Bureau. S1701. (2019). (8)

Poverty tends to be highest in the under five years age group with SWHHS being 6.0 percent higher than the State of Minnesota.

Estimated Poverty by Age, by County, Minnesota, 2013-2017

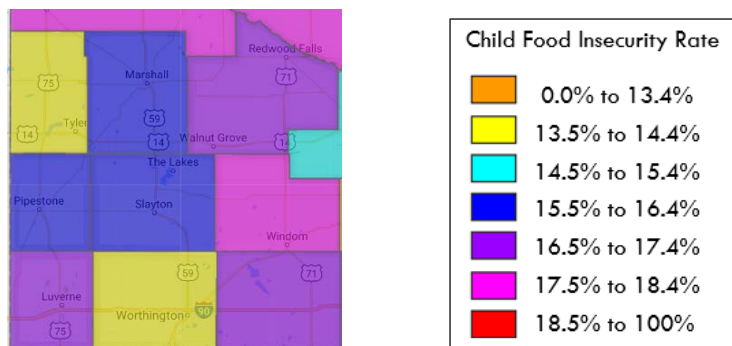
	Under 5 Years	5 to 17 Years	18 to 34 Years	35 to 64 Years	65 Years and Over
Minnesota	14.8	12.8	15.0	7.3	7.2
SWHHS	20.8	14.0	17.2	8.0	9.3
Lincoln	13.5	14.1	13.3	9.4	10.6
Lyon	25.8	15.4	21.1	7.8	9.9
Murray	12.0	8.4	14.3	6.3	6.5
Pipestone	15.7	16.1	13.2	9.1	10.5
Redwood	20.9	16.0	14.4	8.8	8.5
Rock	20.9	9.7	18.1	7.0	10.4

Source: United States Census Bureau. S1701. (2017). (8)

Food Security

On average, children in the SWHHS counties experience 14.5-15.4 percent food insecurity. (56) Food security, according to the Economic Research Service at the USDA, means, “Access by all people at all times to enough food for an active, healthy life.” (57) Children who grow up food insecure can have lifelong health consequences because the development of the body is optimal when enough healthy food is available. When food is available for the food insecure child, the quality of the food is likely to be high in calories and low in nutrition. Exposure to food choices that are inadequate nutritionally can lead to childhood obesity. (55)

Child Food Insecurity Rate, 2014



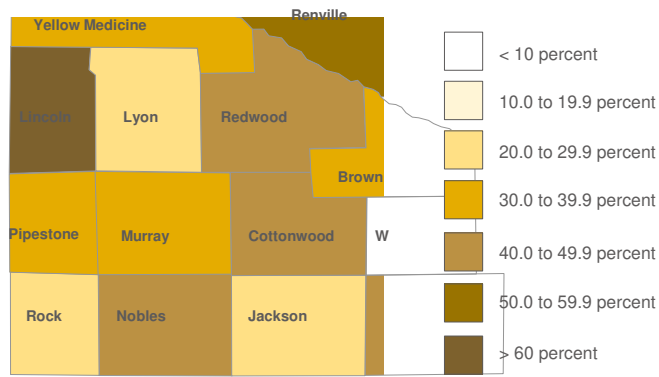
Source: Feeding America. (2014). (56)
Healthy Minnesota 2020: Indicator 1.3

As SWHHS counties lose population, businesses, including grocery stores, no longer have enough population to sustain a profit margin that business owners can live on. Many small towns have a convenience store that sells gas and a few food staples like milk and bread, but many residences must drive 30 miles to find a grocery store that has fresh fruit and vegetable choices. A growing trend across the SWHHS counties has seen summer farmers’ markets in the most populated cities of SWHHS counties being set up to take EBT cards so low-income residents can purchase food. Unfortunately, there is a struggle to find volunteers to run the EBT card readers. An additional barrier for low-income residents that live outside of the populated city may be reliable transportation to access the farmers’ market.



Lincoln County has greater than 60 percent of its residents with low access to a grocery store. (57)

Percent of Residents with Low Access to Supermarket/Large Grocery Stores



Low access to the store is defined as living more than 10 miles from a supermarket or large grocery store if living in a rural area, or more than one mile from a supermarket or large grocery store in an urban area. Supermarkets/large grocery stores are food retailers reporting at least \$2 million in annual sales and containing all the major food departments found in a typical supermarket, including fresh meat and poultry, dairy, dry and packaged foods, and frozen foods.

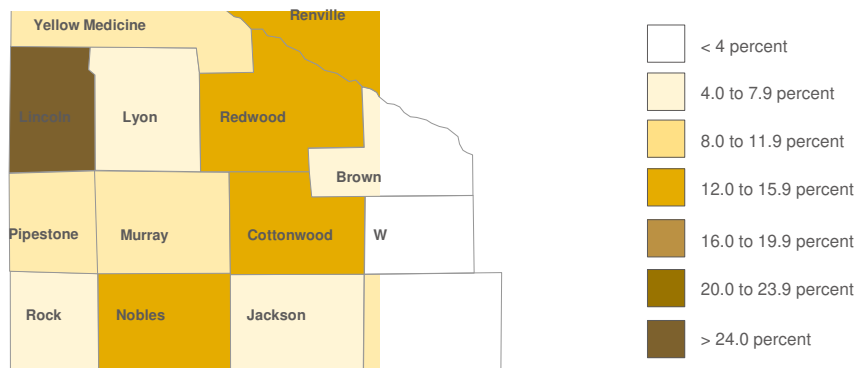
Data sources: USDA Food Environment Atlas (released Nov 2012, 2010 estimates)

Source: United States Department of Agriculture. (2017) (57)

Low-income residents have an additional burden of not having reliable transportation to purchase food along with not enough money to buy the more expensive healthy food needed to promote good health. This is the case in Lincoln County where it is estimated that over 24 percent of its residents are in low-income households with low access to a grocery store. Redwood County falls into the 12.0 to 15.9 percent range of households with low income and low food access. (57)

Percent of Low-income Households with Low Access to Supermarket/Large Grocery Store

Low-income is defined as 200% of Poverty Level



Source: United States Department of Agriculture. (2017) (57)

Food shelf use in the SWHHS counties is on the rise from 2013 to 2017 with the exception of Lyon and Redwood Counties. Children in Rock County saw the biggest increase in going to the food shelf with 78.9 percent, while seniors in Lincoln county saw a 193.9 percent increase in going to the food shelf. Lincoln County overall saw the largest increases in almost all population types. (58)

Percent of Change from 2013 to 2017 in Food Shelf Visits by County & Population Type

	Child Visits	Adult Visits	Senior Visits	Individual Visits	Household Visits
Lincoln	39.2	62.6	193.9	65.8	67.4
Lyon	-56.7	-37.1	-33.1	-46.1	-33.5
Murray	13.4	8.3	31.9	11.8	7.9
Pipestone	51.9	21.5	69.8	35.2	23.1
Redwood	-6.1	-9.2	-5.3	-7.6	0.0
Rock	78.9	53.0	-22.8	52.0	9.1

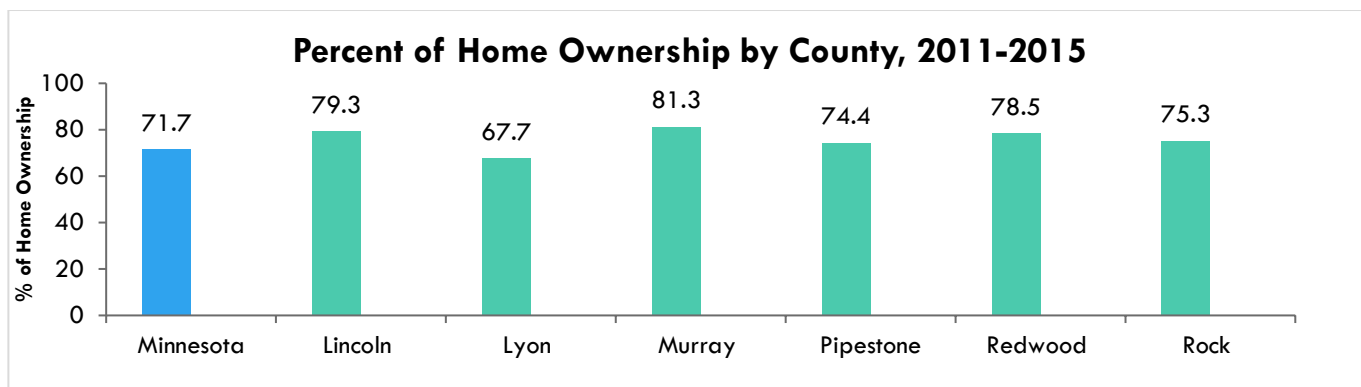
Source: Hunger Solutions. (2018) (58)

Housing and Home Ownership

As one of the determinants of health, stable, safe, and affordable housing is an important factor. Housing that is considered “safe” is free of mold, lead-based paint, plumbing that is free of lead solder, and asbestos. Older housing tends to have lead-based paint if built before 1978, asbestos wrapped ductwork or flooring, and old lead soldered pipes. Older homes also tend to be more affordable for low-income buyers with limited resources to address the potential safety issues that may be present in the home. (59)

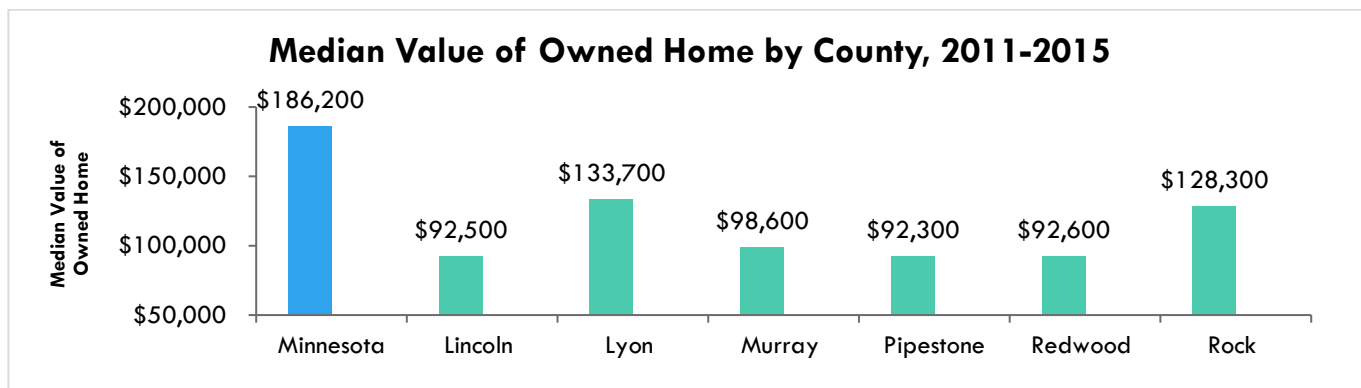
Homeownership can provide a source of financial stability as you build home equity as an asset. Control of one living situation is also a benefit of homeownership. With that feeling of control, homeowners feel the need to participate in their community through crime prevention activities like a community watch, environmental awareness, civic organizations and social life of their community. Children that live in a home owned by their parents perform better in school, are more likely to graduate high school, less likely to become pregnant as a teen, and have better health outcomes. (60)

From 2011-2015, homeownership rates in five of the six counties were at or exceeded the State of Minnesota homeownership rate of 71.7 percent. Only Lyon County’s homeownership rate of 67.7 percent was lower than Minnesota’s. Lyon County has a higher number of college rentals and a larger immigrant population, which contributes to a lower ownership rate. (8)



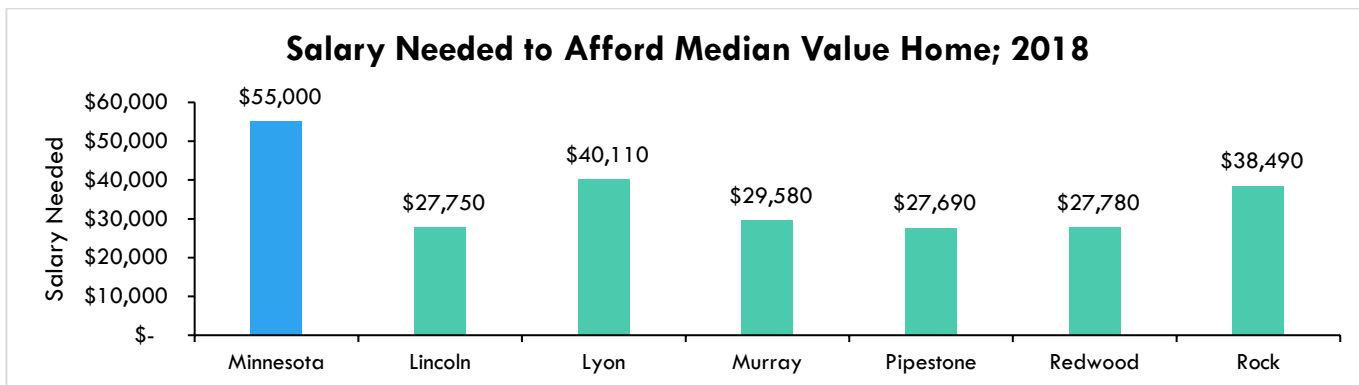
Source: United States Census Bureau. American FactFinder. DP04. (2016) (8)
Health Minnesota 2020: Indicator 3.2

A high ownership rate may also be contributed to the median price of a home. In Minnesota, the median value of a home owned is \$186,200, while in the SWHHS counties the range is from \$92,300 in Pipestone County up to \$133,700 in Lyon County. (8)



Source: United States Census Bureau. American FactFinder. DP04. (2016) (8)

Salary Needed to Afford Median Value Home; 2018



Source: Minnesota Housing Partnership. Out of Reach Minnesota 2018. (61)

Not everyone is able to own their own home. Minnesota Housing Partnership report Out of Reach Minnesota 2018, estimates that between 19 and 32 percent of households in SWHHS counties will be renters. Renters that make minimum wage, which is \$9.65 per hour or \$20,700 per year, will need to work 1.4 jobs to afford a two-bedroom fair market rent unit in the SWHHS counties. A household that needs to spend more than 30 percent of their income on housing will have difficulty purchasing basic daily needs like food, transportation, and medicine. Fair market rent at the Federal level is calculated as the 40th percentile of gross rents for typical, non-standard rental units in a local housing market. Anything 30 percent and under is considered affordable. (61)

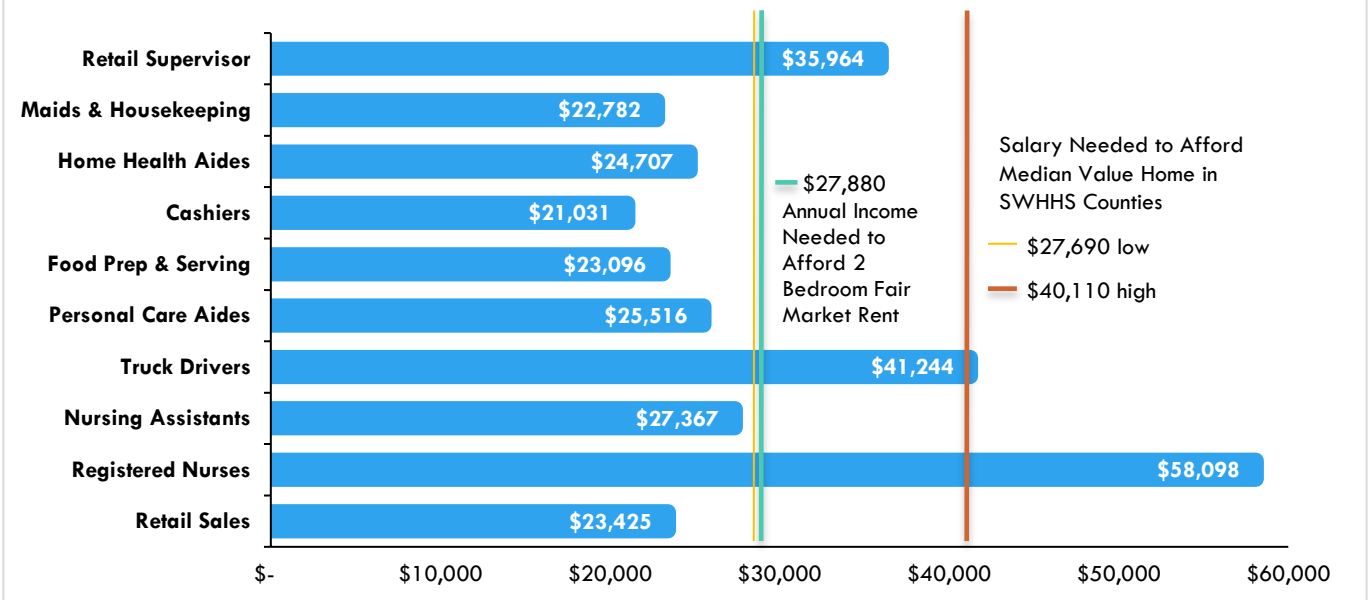
2018 Housing and Renter Characteristics

	Hourly Wage Necessary to Afford Fair Market Rent	Estimated Hourly Mean Renter Wage	Full time Jobs at Mean Renter Wage Needed to Afford 2 Bedroom Fair Market Rent	Full time Jobs at Minimum Wage Needed to Afford 2 Bedroom Fair Market Rent	2 Bedroom Fair Market Rent	Monthly Rent Affordable at Mean Renter Wage	Estimated Count of Renter Households (2012-2016)
Minnesota	\$18.82	\$14.84	1.3	2.0	\$979	\$772	609,699
Combined Non-metro Areas	\$14.30	\$10.01	1.4	1.5	\$744	\$520	118,739
Lincoln	\$13.40	\$8.71	1.5	1.4	\$697	\$453	513
Lyon	\$13.40	\$9.90	1.4	1.4	\$697	\$515	3,254
Murray	\$13.40	\$11.71	1.1	1.4	\$697	\$609	717
Pipestone	\$13.40	\$9.04	1.5	1.4	\$697	\$470	962
Redwood	\$13.40	\$10.30	1.3	1.4	\$697	\$536	1,297
Rock	\$13.40	\$11.84	1.1	1.4	\$697	\$615	1,020

Source: Minnesota Housing Partnership. Out of Reach Minnesota 2018. (61)

When you look at the top ten in-demand jobs in Minnesota by Southwest Economic Development Region Eight wages, you will see that there are very few in-demand jobs that can afford a two-bedroom fair market rental unit. In the first quarter of 2018, there are only three jobs listed that make enough to afford a two-bedroom fair market rental unit: retail supervisor, truck driver, and registered nurse.

Quarter 1 2018 Median Wage for Southwest Economic Development Region 8 Most In-demand Jobs



Source: Minnesota Department of Employment and Economic Development. Labor Market Information: Occupations In Demand 2018 (62) (61)

Public Housing Availability Under Housing and Urban Development Program (HUD), 2017

	Number of units under contract for federal subsidy and available for occupancy for all HUD Programs	Occupied units as the % of units available for all HUD Programs	Total number of people in all HUD Programs	Average months on a waiting list for all HUD Programs
Lincoln	98	65%	87	17
Lyon	600	86%	877	8
Murray	81	64%	62	-1
Pipestone	208	85%	269	26
Redwood	174	73%	242	3
Rock	149	97%	194	2

Source: Association of Minnesota Counties. (2018) (63)

Homelessness does happen in SWHHS counties. The number of homeless households in SWHHS from April 2017 to March 2018 was estimated to be 71 with 40 adult-only households and 31 adults with children households. (64)

Outdoor and Indoor Environments

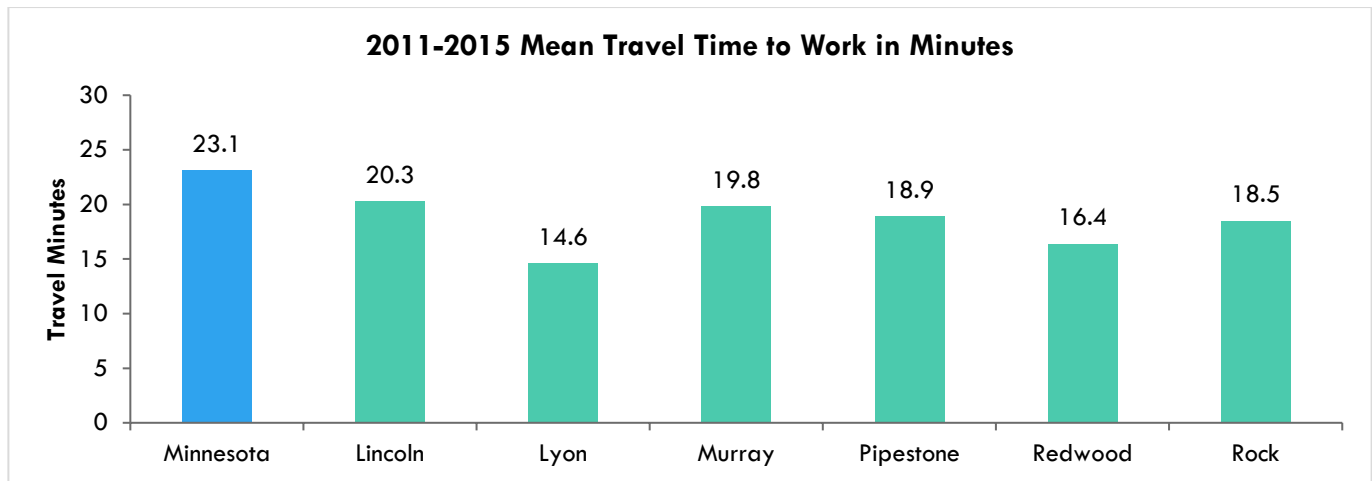
The environments that a person lives in can be inferred from their income. If a person has a low income, it is more likely that they will live in an older indoor environment that has lead paint, radon, and asbestos. Options for where the housing is will also be reduced and include less desirable areas that may have higher traffic, close proximity to industrial areas, or even outdoor areas that have been contaminated. Many rural cities do not have sidewalks or sidewalks that are not well maintained. This can make it difficult to walk or ride a bike in a community. (65)

Transportation

Transportation across the SWHHS counties can be challenging if you are a low-income resident. Many of the jobs, food, and health care tend to be in larger communities. If a person does not have reliable transportation, it can make it difficult to maintain a job, get to or purchase quality food, or get to health care appointments. There are very few public transit options in the SWHHS counties. The systems that do function in the area are a shared ride option, which means all rides are coordinated with as many passengers as possible based on when and where

passengers need to be transported. (66) The figure below showed the mean travel time to work in minutes for SWHHS counties from 2011-2015. All of the counties were below the State of Minnesota average. (8)

Having a health-oriented transportation system should include systems that make it easy to walk, bike, and avoid driver, pedestrian, and bicyclist injury. Providing a safe transportation environment would also include well-maintained sidewalks and bike lanes, which maximizes physical activity in a community.



Source: United States Census Bureau. (2016). (8)

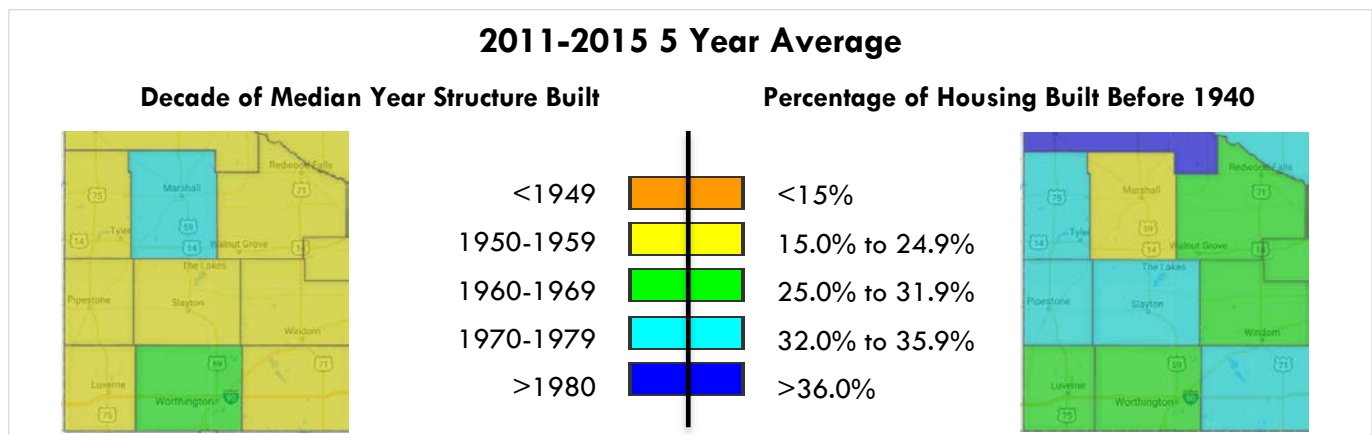
Parks and Playgrounds

Parks and playgrounds in communities, if well maintained, provide ways for people to get physically active on a regular basis. There are four state parks, over 75 county and city parks and 251 state wildlife management areas in the SWHHS counties. (67) (68)

Lead

Lead is an environmental factor that can be seen in both the indoor and outdoor environments. The main cause of contamination is lead paint, which was banned in residential use in 1978. There are other ways of being exposed to lead; contaminated soil from lead gasoline, hobbies like stain glass or jewelry making, some imported products, traditional remedies, etc. Because of the variety of ways one can be exposed to lead, it is the most common environmental threat to children. Exposure to lead can result in lowered IQ, behavioral problems, and learning difficulties. (69)

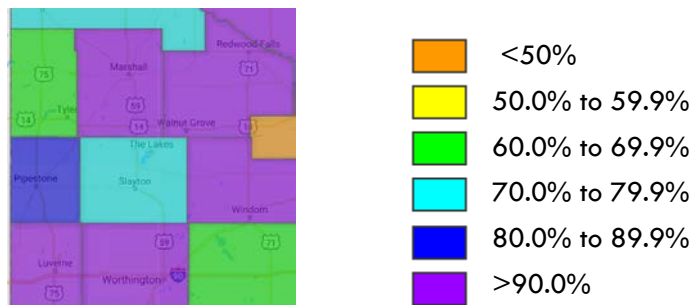
SWHHS counties' median house was built in the 1950s, with three of the six counties having between 32 and 35.9% percent of their houses built before 1940. (8) Because lead paint was not banned until 1978, it puts a large percentage of the population at risk for lead poisoning across the SWHHS counties. (69)



Source: United States Census Bureau. B25035. S2504. (2016). (8)

Because of this high risk to the SWHHS population, lead testing is promoted. In SWHHS counties, there is a wide range of testing levels from 96 percent in Lyon County to 67.7 percent in Lincoln County. (42)

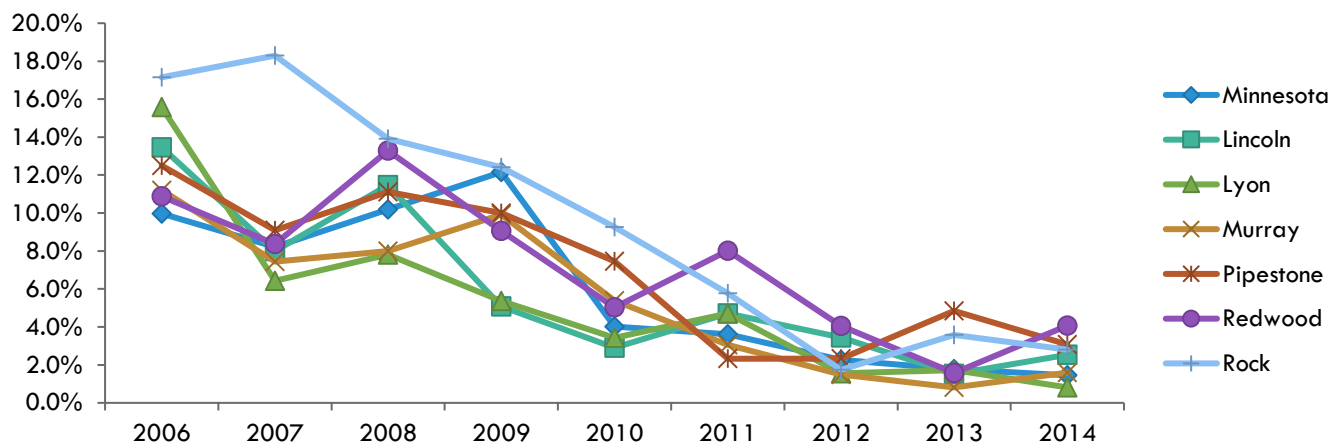
2012 Birth Year Cohort, Percent Tested for Lead Among Children Under 3 Years



Source: Minnesota Department of Health. Minnesota Public Health Data Access. (2017). (42)

Since 2006, the number of children aged six and under testing with a blood lead level of five and greater $\mu\text{g}/\text{dL}$ has decreased from 10.9 and 17.1 percent to 0.8 to 4.1 percent. Health promotion that is provided to pregnant women at prenatal visits along with testing at nine months and 24 months is key to maintaining this downward trend. (69)

Percent of Children Less than 6 Year with Blood Lead Level of 5 or greater $\mu\text{g}/\text{dL}$



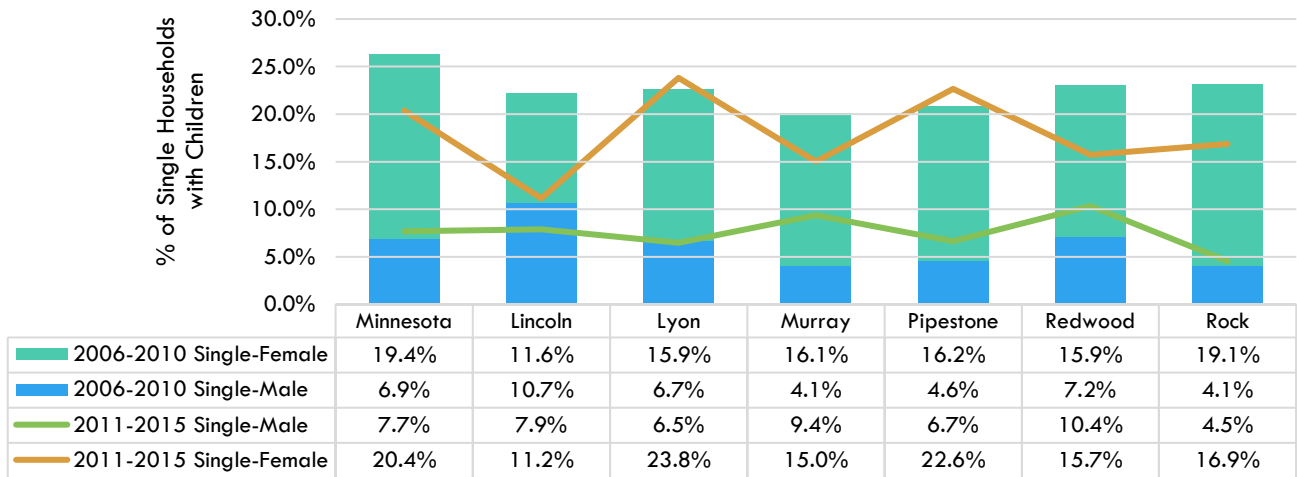
Source: Minnesota Department of Health. Minnesota Blood Lead Surveillance Data Table. (69)

Social Connectedness

Single-Parent Families

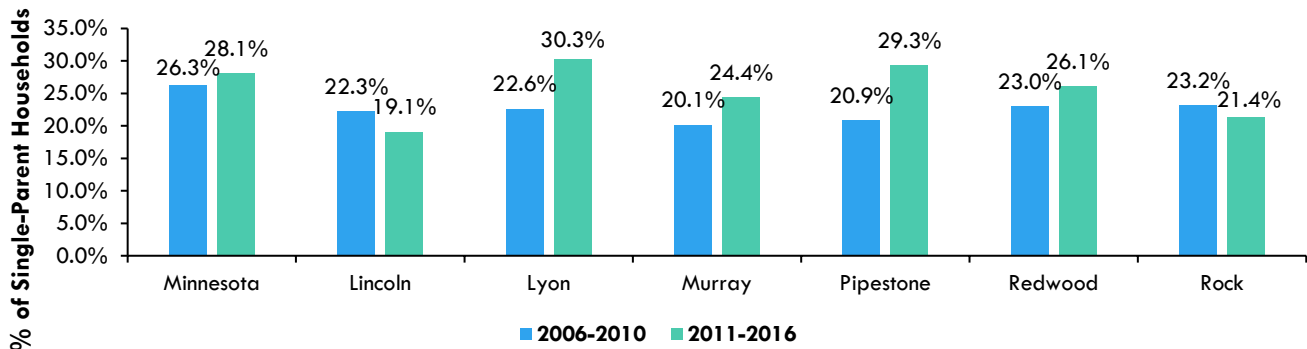
A single-parent family can develop in a variety of ways from those that have chosen not to marry to those that have experienced divorce or the death of a spouse. When a single-parent household also is a low-income household, children are at a disadvantage. Children and adults in these households are likely to experience chronic stress due to economic factors, stigma, and social isolation. This chronic stress can lead to unhealthy outcomes and behaviors. (65)

Single-Parent Household Type for Children Under 18 Years 2006-2010 and 2011-2015 5 Year Estimates



Source: United States Census Bureau. B09005. (2016). (8)

Percent of Single-Parent Households 2006-2010 & 2011-2015 5 Year Estimate



Source: United States Census Bureau. B09005. (2016). (8)

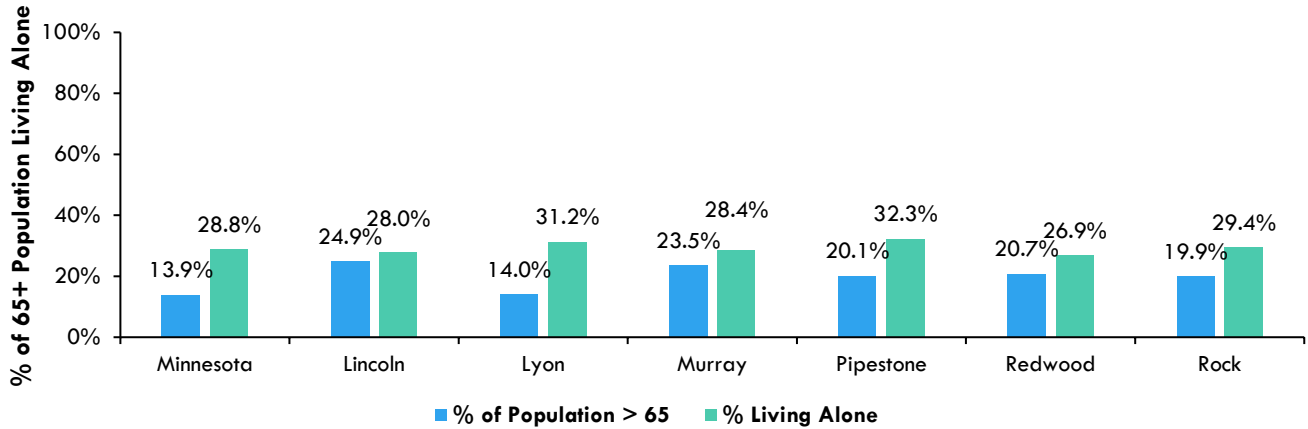
Growing Older

SWHHS counties experience a higher percent of the aging population than the state average. Along with an older population comes loneliness (loss of life partner) and increased health issues. This can cause mobility within the community to become more challenging. In rural areas, resources are more likely available in small cities and less available in smaller towns.

In reviewing demographic information from all six SWHHS counties, they all have a greater percentage of the elderly population than the Minnesota average. Additionally, Lyon, Pipestone and Rock Counties, have more elderly living alone than the Minnesota average. (70)



Percent of 65+ Population Living Alone, 2015

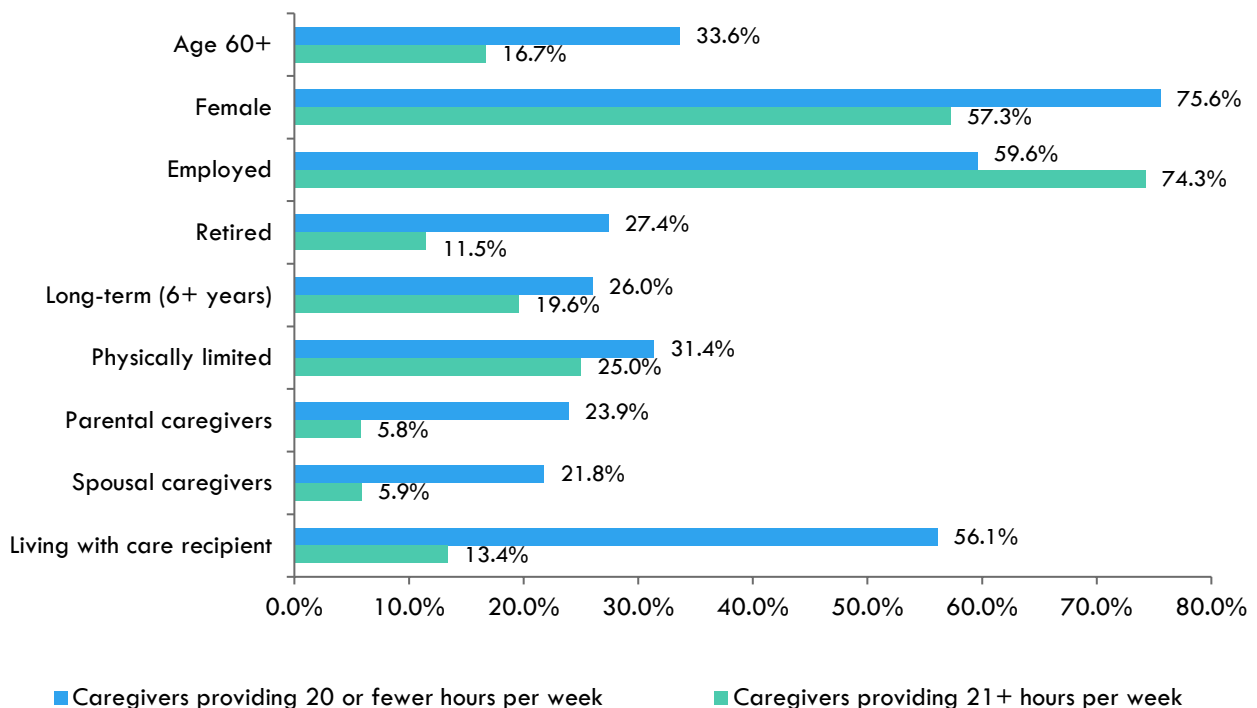


Source: Aging 2030 –Minnesota Department of Human Services and Minnesota Department of Health. (2017). (70) Social Associations

Informal Caregivers

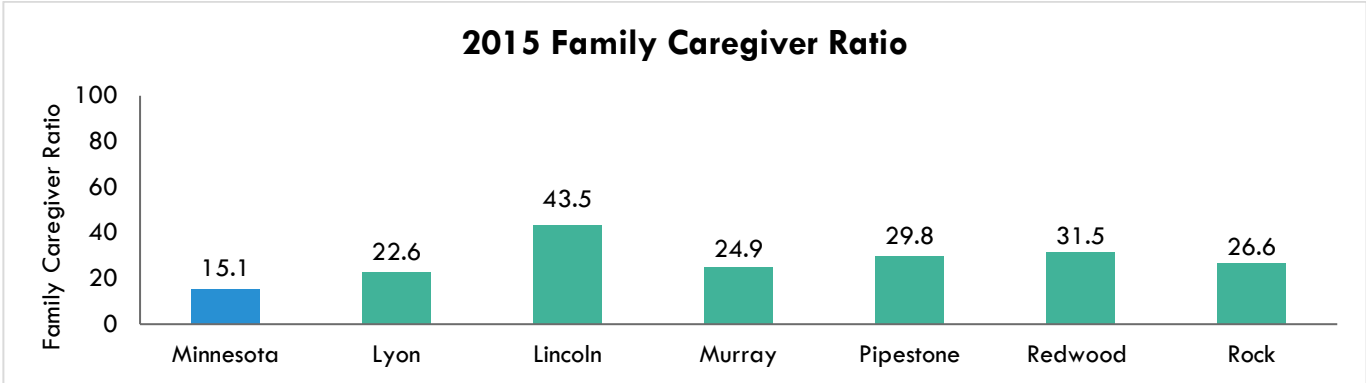
Informal caregivers in Minnesota, according to research done by the Centers for Disease Control and Prevention, tend to be female over age 60, employed, and take care of either their parents or spouse most often. (71) Depending on the amount of time needed for care, informal caregivers will most likely be living with the person that needs care because of chronic disease, physical disabilities, or cognitive impairment. Caregiving can have negative effects on the caregivers like reduced income and later reduced social security payments, additional medical expenses, elevated levels of anxiety and depression, worse self-reported physical health, compromised immune function, and increased risk of early death. (72)

Characteristics of Minnesota's Informal Caregivers: 2008



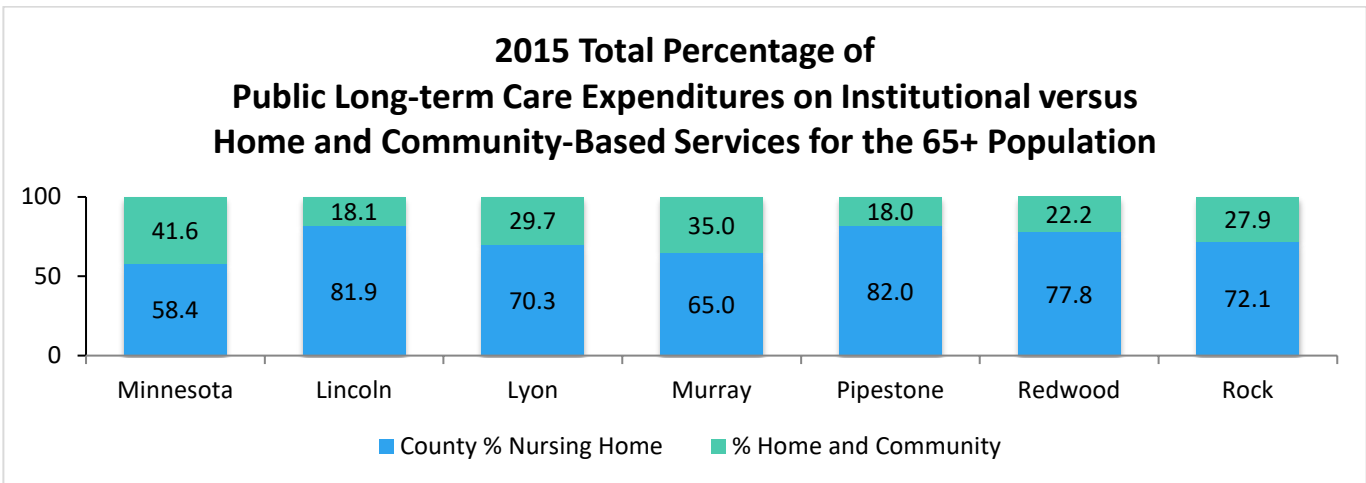
Source: MN Department of Human Services Aging and Adult Services. (2009). (71)

The family caregiver ratio across the SWHHS counties, which is the ratio of older adults age 85 and older to the number of females ages 45-64 who typically are the caregivers, follows the demographic trends reviewed in an earlier demographic section of this document. The six-county region family caregiver ratio is, on average, twice that of the State of Minnesota. (70) Programing for the elderly needs to keep the needs of, not only the elderly in mind but also the caregivers. Because much of the caregiver population is employed, extended or flexible business hours may need to be added to accommodate caregiver involvement in decisions.



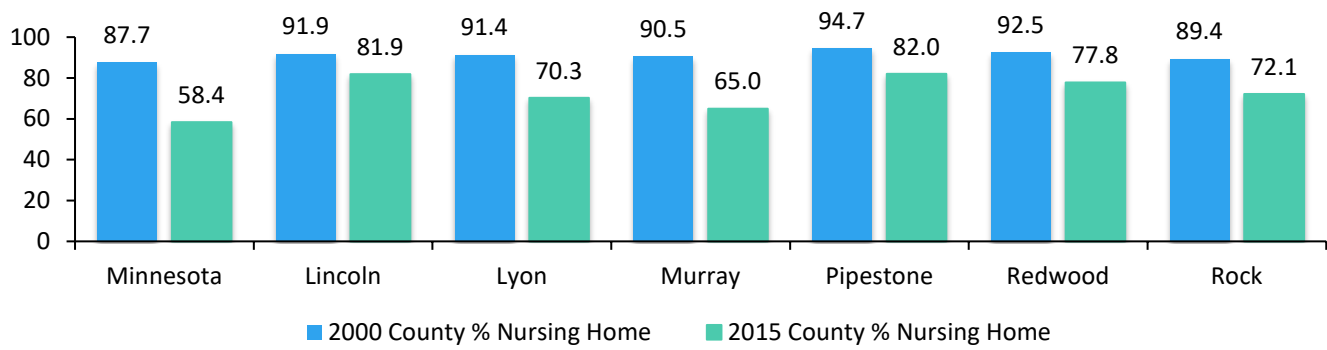
Source: Aging 2030 –Minnesota Department of Human Services and Minnesota Department of Health. (2017). (70)

Another trend across the SWHHS counties are higher than state averages on the expenditures of people in nursing homes versus those that are taken care of in their home and community setting. Nursing home expenditures are, on average, 16.4 percent higher in the region while home and community care expenditures are 19 percent less than the Minnesota average. (70) Between 2000 and 2015 public long-term care expenditures in nursing homes for the SWHHS counties shifted to home and community-based services on average 16.9 percent. During the same period, the State of Minnesota saw a shift of 29.3 percent to home and community-based services.



Source: Aging 2030 –Minnesota Department of Human Services and Minnesota Department of Health. (2017). (70)

Public Long-term Care Expenditures on Nursing Homes 2000 and 2015

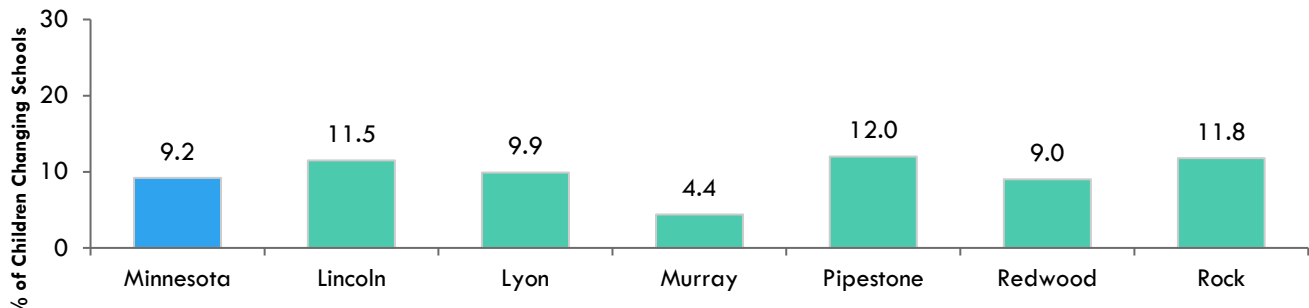


Source: Aging 2030 –Minnesota Department of Human Services and Minnesota Department of Health. (2017). (70)

School Mobility

The more frequently a child moves, the less they feel part of the community. This creates issues with learning due to the disruption and the ability to form attachments for the parent and child. Minority students, according to Minnesota state data, are three to four times more likely to move at least once during the school year. With the exception of Murray and Redwood Counties, the other four counties within the SWHHS service area had higher than the State of Minnesota average of children changing schools in 2015. (49)

Percent of Children Changing Schools in 2015-2016



Source: Minnesota Department of Education. (2017). (49)

Social Trust

Social trust at high levels can result in people feeling healthier. The lower the social trust the more likely people will rank their health as fair or poor. One way to measure social trust is to look at social association membership in a community. People that belong to a social association like civic organization, sports clubs, political organization, religious institutions, professional organization, etc. are more likely to trust those that belong to the same organization. (73)

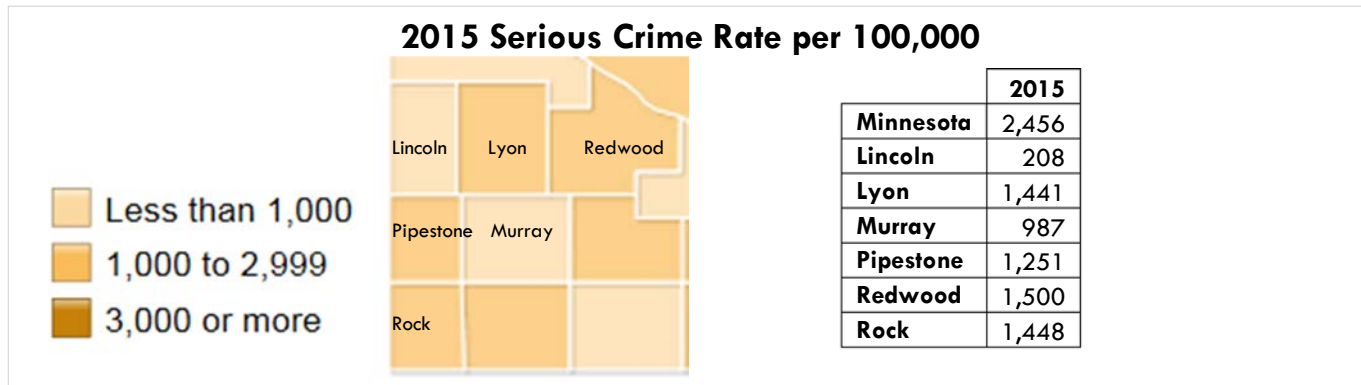
Social Associations-Number of Membership Associations per 10,000 population, 2016

	Number of Associations	Association Rate	Rank Across MN Counties
Minnesota	7162	13.0	-
SWHHS	196	30.0	16 th
Lincoln	21	36.3	4 th
Lyon	42	16.3	56 th
Murray	34	40.8	1 st
Pipestone	26	28.3	18 th
Redwood	47	30.8	13 th
Rock	26	27.2	20 th

Source: County Health Rankings (2018) (73)

Community and Personal Safety

Violence and crime can negatively affect a community and the people that live there. High crime areas are less likely to have people go outdoors which limits physical activity and decreases community connectedness. People in SWHHS counties enjoy some of the lowest violent crime rates in the State of Minnesota. (51)



Source: Minnesota Compass. (2017). (51)

Access to Health Care

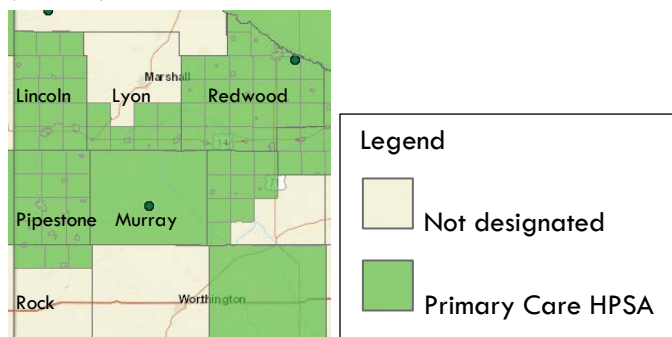
Health care access can depend on several factors such as the availability of health professionals in an area to the affordability of insurance. Insurance affordability generally depends on the employment of the person along with whether the employer offers a subsidized employee health plan or if the person needs to obtain insurance on the open market. Those that need to utilize the open market are scrutinized based on health history, age and smoking history, among other things to determine pricing. If you have a chronic condition, your choice is to pay out of pocket or purchase insurance through the high-risk insurance pool with limited coverage and a high deductible.



Health Care Workforce

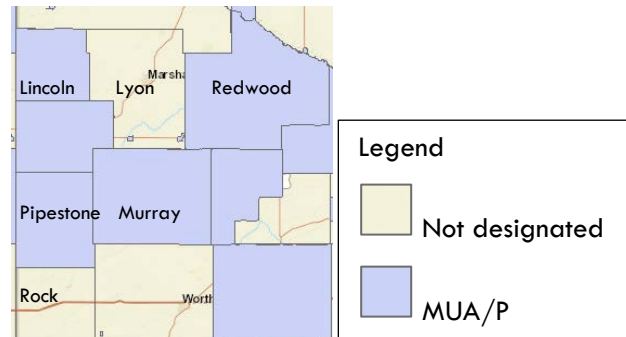
Rural areas of Minnesota struggle with the recruitment and retention of dentists, physicians, and mental health workers. In addition to a medical shortage, SWHHS counties also have been designated as underserved in dental and mental health. (74)

Health Professional Shortage Area-Primary Care (HPSAs)



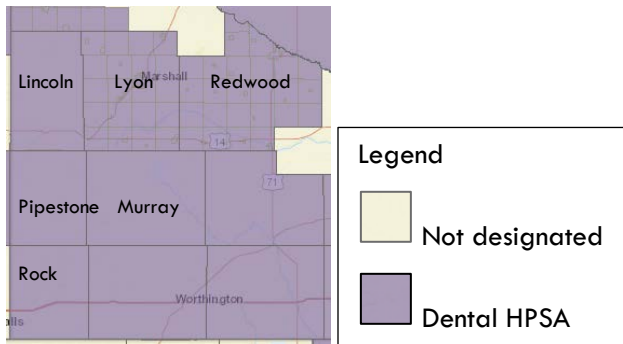
Health Resources & Services Administration (7)

Medically Underserved Areas/Populations (MUA/Ps)



Health Resources & Services Administration (7)

Health Professional Shortage Area-Dental



Health Resources & Services Administration (7)

Health Professional Shortage Area-Mental Health

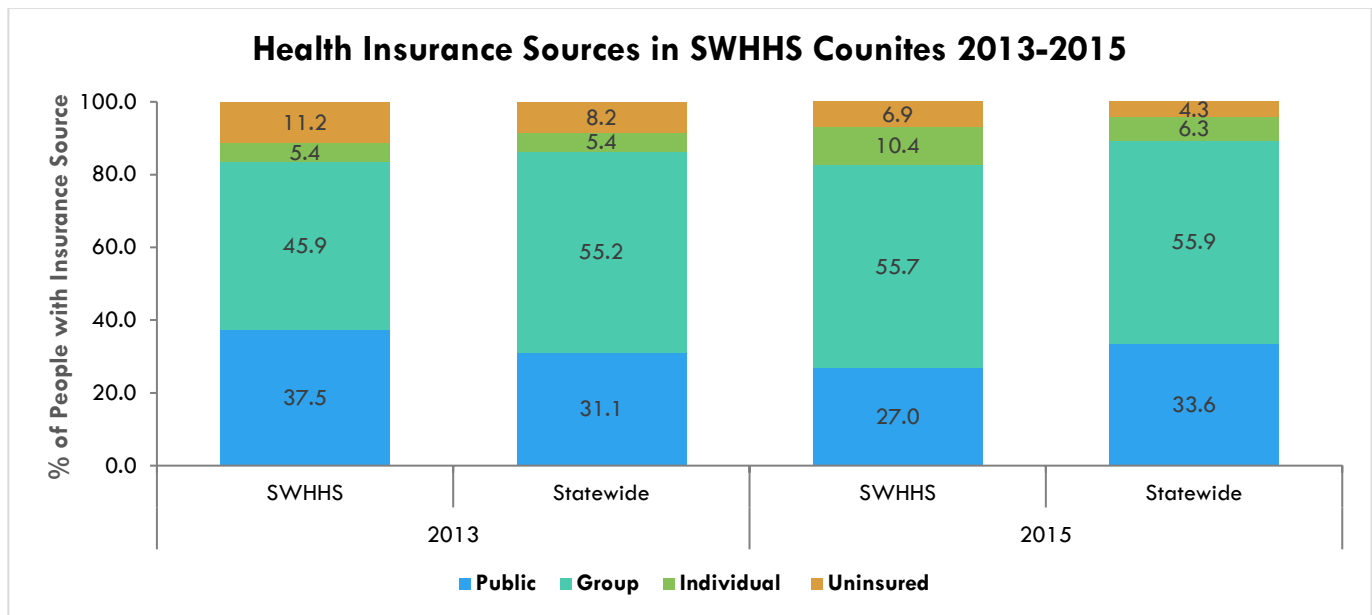


Health Resources & Services Administration (7)

For people that are low income across the SWHHS counties, the dental shortage is at a crisis level, as many dental providers will not take clients that have Medical Assistance or Prepaid Medical Assistance. Adults and children that have these payment sources are forced to go without dental care or travel long distances and wait several months for care. Many end up in the emergency room looking for relief from dental pain because primary preventative dental care was not available to them. (75)

Health Insurance Coverage

Adequate health insurance coverage can provide people with better health outcomes since people with adequate health insurance tend to go in for more preventative care exams and are less likely to delay coming to the doctor when not feeling well because of cost concerns. Early intervention in disease treatment can translate into better health outcomes and reduce the financial risk associated with uninsured and underinsured people. For those that are uninsured and underinsured, hospital-based charities help with costs but do not cover the gap that adequate health insurance coverage would. People find themselves turning to their community to do fundraisers to help with the financial burden of illness.



Source: Minnesota Department of Health. Health Economics Program.
Healthy People 2020: AHS-1: Goal 100%

From 2013 to 2015, the SWHHS counties experienced a 4.3 percent decrease in individuals being uninsured. During the same timeframe, 10.5 percent of individuals in the region left public insurance programs and moved to group and individual insurance plans. (76) The shifts could be attributed to the Affordable Care Act, also known as Obamacare, going into full effect on January 1, 2014. The Affordable Care Act came with a mandate for all Americans to have an insurance plan or pay a tax penalty.

When the uninsured population is looked at for health inequities it shows that whites are far less likely to be uninsured than other races. When looking at Minnesota the American Indian/Alaskan Native population, which is at 20.0 percent, has the highest rate of being uninsured. The population of Hispanic or Latino Origin also experienced a higher rate of uninsured at 26.0 percent.

Estimated Percent Uninsured by Race and Ethnicity, by County, Minnesota, 2011-2015

	White	Black or African American	American Indian/Alaskan Native	Asian	Some Other Race	Two or More Races	Hispanic or Latino Origin (of any race)
Minnesota	5.9	12.1	20.0	8.9	33.3	9.3	26.0
SWHHS	6.7	8.8	43.8	7.8	38.3	4.9	29.0
Lincoln	5.8	0.0	91.9	0.0	21.5	0.0	32.3
Lyon	5.6	5.9	5.6	5.8	28.4	1.4	29.4
Murray	6.7	46.7	51.9	16.2	50.9	17.9	30.8
Pipestone	8.6	0.0	12.1	0.0	33.9	0.0	20.5
Redwood	7.0	0.0	36.4	10.1	12.9	10.1	28.4
Rock	6.3	0.0	64.9	14.6	82.4	0.0	32.3

Source: United States Census Bureau. American FactFinder. S2701. (2017) (8)

When the uninsured are looked at from educational attainment, there is a large difference between the population that has less than high school graduate education and bachelor’s degree or higher by 14.6 percentage points in Minnesota and 9.6 percentage points in SWHHS counties.

Estimated Uninsured by Educational Attainment, by County, Minnesota, 2011-2015

	Less than a High School Graduate	High school Graduate/GED	Some College or Associate’s Degree	Bachelor’s Degree or Higher
Minnesota	17.5	9.3	7.4	2.9
SWHHS	13.3	8.0	6.6	3.7
Lincoln	9.5	9.6	6.3	2.0
Lyon	14.9	7.1	6.2	3.6
Murray	12.9	7.0	6.9	2.1
Pipestone	13.3	8.6	7.7	8.0
Redwood	12.4	7.1	7.0	3.6
Rock	17.0	8.6	5.2	2.9

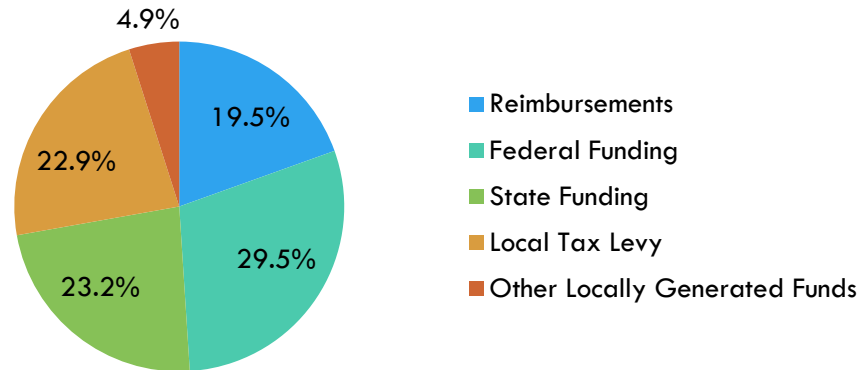
Source: United States Census Bureau. American FactFinder. S2701. (2017) (8)

Public Health Infrastructure

Public Health Funding

Funding from federal, state, local tax levy, and other local sources are critical to providing strong public health infrastructure for public health programs that prevent disease, promote health, and address population-based issues and unhealthy social norms. In 2016, Federal funding provided 29.5 percent of the SWHHS funding while local funding was 4.9 percent of the agency’s funding. During 2017, funding for the SWHHS counties was set at \$10.75 per resident. Median per capita funding in Minnesota in 2015 was \$55.00 and in the Southwest Region \$73.78 per capita according to the Local Public Health Planning and Performance Measurement Reporting System (PPMRS), which provides data reporting on all public health expenditures in the state. (77) According to 2017 America’s Health Rankings, Minnesota ranks 33rd out of 50 states in combined state and federal funding for public health per resident at \$73.00. (78)

SWHHS Public Health Funding Sources 2016



Source: Southwest Health and Human Services.

Healthy Living in SWHHS Counties

Healthy living is a choice that an individual and a community make. Healthy communities make choices to spend local resources and promote social norms in a way that promotes active living, healthy food options, safe housing, and appropriate alcohol and tobacco use among other things. Individuals make choices every day about how active they will be, what food choices they will make, what type of housing they will live in, and how much tobacco and alcohol they will use. The individual choices are influenced by the determinants of health as described on page eight of this document. (1)

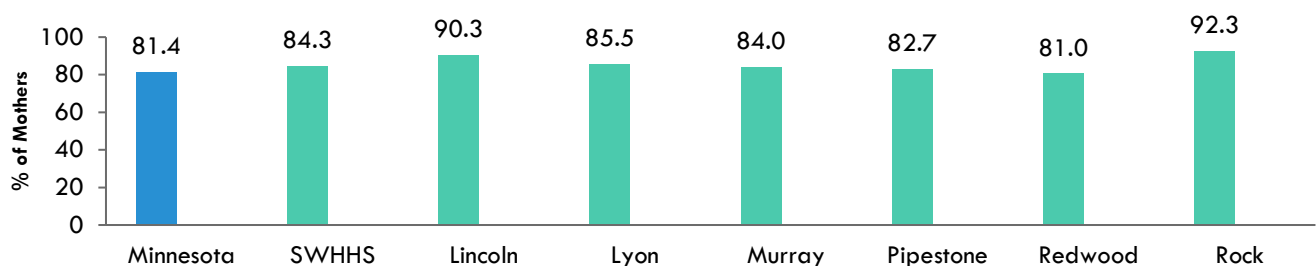
A Healthy Start for Children

Children from birth to age eighteen have much of their future adult health impacted by childhood health experiences. Poor nutrition, lack of parental attachment, physical or sexual abuse, smoking exposure, violence in the home, substance abuse, a parent that is incarcerated, divorced or separated parents, for example, can adversely impact child health and increase the rates of depression, suicide, addiction to alcohol, drugs, or tobacco, obesity, sexually transmitted infections, and chronic disease. (65)

Prenatal Care and Healthy Pregnancies

Early prenatal care is the building block of a healthy pregnancy and prevents low birth weight and premature babies, which in turn decreases infant mortality and reduces health care costs. Prenatal care can be delayed by a number of factors, which include inadequate insurance, a misunderstanding of the importance of prenatal care in the first trimester, etc. In 2016, 84.3 percent of mothers across the six SWHHS counties sought prenatal care in the first trimester, which was slightly higher than the state average of 81.4 percent. Redwood County was below the state average by 0.4 percentage points. (6)

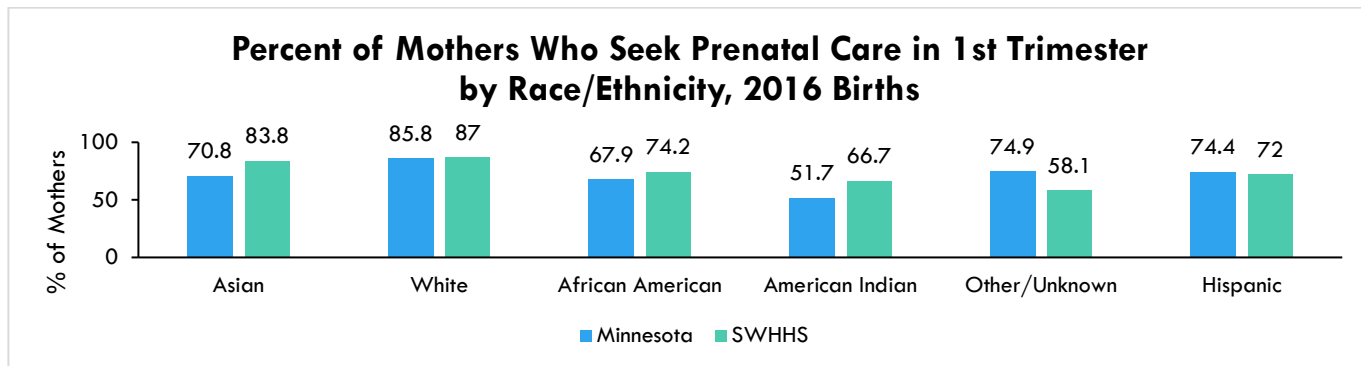
Percent of Mothers Who Seek Prenatal Care in 1st Trimester, 2016 Births



Source: Minnesota Department of Health, Minnesota County Health Tables. (2018). (29)

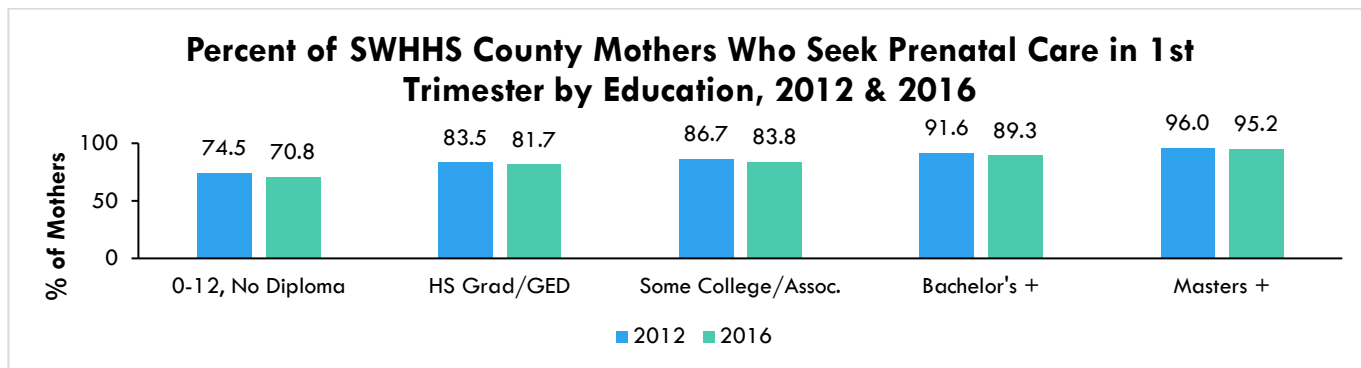
A different story emerges when the prenatal care data is further split by race. Disparities between whites and minority populations emerge in similar ways by geography between Minnesota and SWHHS counties. American

Indians mothers that gave birth in 2016 had one of the larger disparity gaps of 20.3 percentage points in SWHHS counties when compared to white mothers.



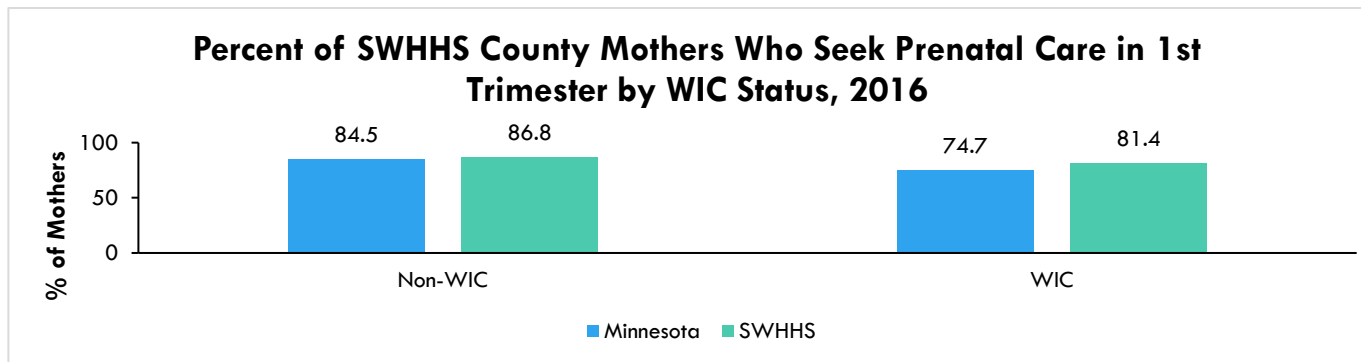
Source: Minnesota Department of Health, Minnesota County Health Tables 2015, (2017). (29)

Race is not the only area where we see disparities in prenatal care. The more education a mother that delivered a child in 2016 had, the more likely the mother obtained prenatal care in the first trimester. Mothers of children born in 2016 that did not have a diploma had a gap of 24.4 percentage points when compared to SWHHS mothers that received a bachelor's degree or higher.

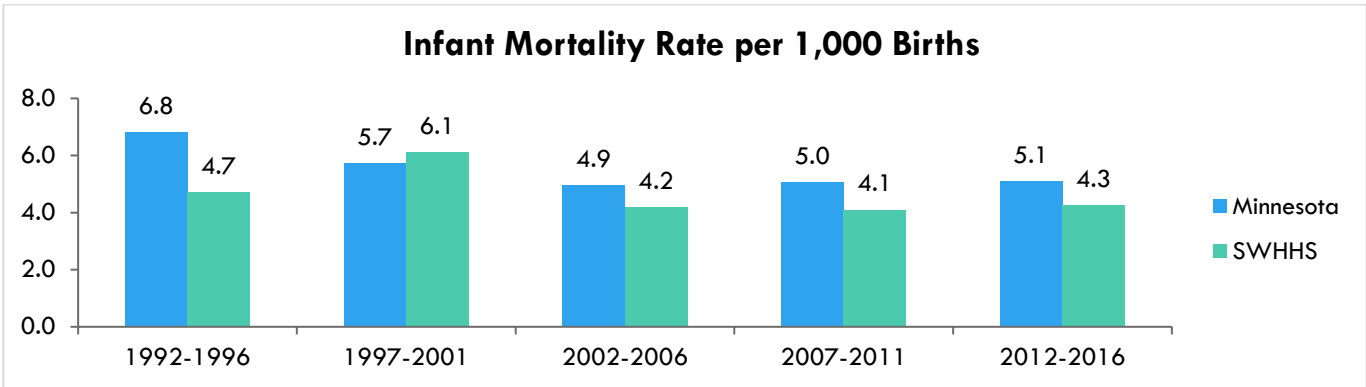


Source: Minnesota Department of Health, Minnesota County Health Tables 2016, (2018). (29)

Birth records do not record a mother's income, but the records do record Women, Infant, and Children (WIC) status. WIC is a nutrition education program that provides supplemental foods that promote good health for pregnant, breastfeeding and postpartum women. Infant and children up to age five may also participate in this program. Eligibility for the program is based on income. Some assumptions can be made based on the knowledge that non-WIC mothers have higher incomes than WIC mothers do. The lower the mother's income the less likely they obtained prenatal care in the first trimester. The difference that was seen in SWHHS WIC mothers that delivered in 2016 was 5.4 percentage points when compared to non-WIC mothers, while it was 9.8 percentage points for Minnesota non-WIC versus WIC mothers.



Source: Minnesota Department of Health, Minnesota County Health Tables 2016, (2018). (29)



Source: Minnesota Department of Health, Minnesota County Health Tables 2015, (2017). (29)

Infant mortality rates across the SWHHS counties are, with the exception of 1997-2001, below the State of Minnesota rates. (53)

Smoking and Alcohol Use during Pregnancy

One of the most preventable causes of maternal and infant illness and death is smoking during pregnancy. Smoking during pregnancy increases the risk of stillbirth, premature birth, and lowers birth rates. Once the baby is born, there is an increase in the risk of sudden infant death (SIDS), respiratory problems, behavior and cognitive delays in the infant if the mother smokes, and these children are more than twice as likely to grow up to be smokers as children of non-smoking mothers. (65)

On average, SWHHS counties saw a steady increase in the percent of women who reported smoking during pregnancy. Between 1997 and 2016, there was a 3.7 percentage point increase across the six counties. (53)

Percent of Births in which Mothers Reported Smoking During Pregnancy

State/County/CHB	1997 2001	2002 2006	2007 2011	2012 2016
Minnesota	11.9	10.1	10.6	13.0
SWHHS	13.1	13.9	14.5	16.8
Lincoln	15.0	13.9	16.2	13.9
Lyon	12.6	11.8	11.7	13.3
Murray	11.0	13.1	17.2	17.9
Pipestone	14.6	17.6	17.9	20.6
Redwood	15.2	17.7	18.3	22.1
Rock	10.0	9.8	10.0	15.7

Source: Minnesota Department of Health, Minnesota Center for Health Statistics. (2018). (53)

Fetal alcohol disorders (FASDs), stillbirth, and miscarriage can be caused by drinking alcohol during pregnancy. Currently, there is no known safe amount of alcohol or time to drink during pregnancy. (65)

County-level data is not available on mothers who drink during pregnancy. In Minnesota, data is collected on a mother’s alcohol use during the three months prior to pregnancy. According to the Minnesota Pregnancy Risk Assessment Monitoring System, women who are white, non-Hispanic, have greater than 12 years of education, and an annual income of \$50,000 or more are three times more likely to drink during the three months before pregnancy than other women. (65)

Breastfeeding

Breastfeeding is one way to boost an infant’s immune system, promote maternal-child bonding, and prevent obesity. Healthy Minnesota 2020 has a goal of exclusive breastfeeding until six months of age. The American Academy of Pediatrics recommends “exclusive breastfeeding for about the first six months of a baby’s life, followed by breastfeeding in combination with the introduction of



complementary foods until at least 12 months of age, and continuation of breastfeeding for as long as mutually desired by mother and baby.” (79) (80) The World Health Organization recommendation includes “Exclusive breastfeeding...up to six months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond.” (81)

In 2016, mothers in two of the six SWHHS counties who participated in the Minnesota Women, Infants and Children (WIC) program were below the state average of 80.9 percent in initiating breastfeeding. In 2015, mothers in four of the six counties were also below the state average in initiation rates. Breastfeeding duration rates followed the same trend as initiation, at six months, while at three and 12 months, five of the six counties were below the State of Minnesota average. (82)

Percent of Breastfeeding Initiation for MN WIC Infants Born During Calendar Year 2016 by County

Minnesota	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
80.9	*	77.4	80.9	85.5	86.6	67.3

*Lincoln County counts under-reporting threshold
Source: Minnesota WIC Information System. (2017). (82)

Percent of Breastfeeding Initiation and Duration at Three, Six, and Twelve Months for MN WIC Infants Born During Calendar Year 2015 by County of Residence

State/County	Initiated Breastfeeding	Breastfed 3 Months	Breastfed 6 Months	Breastfed 12 Months
Minnesota	80.6	47.7	35.4	18.0
Lincoln	*	*	*	*
Lyon	73.5	41.7	28.7	13.9
Murray	75.7	35.1	21.6	*
Pipestone	83.8	57.7	46.8	21.9
Redwood	64.8	29.6	19.4	9.5
Rock	77.4	45.1	39.2	17.0

*Counts under-reporting threshold of 30 participants
Source: Minnesota WIC Information System. (2017). (82)
Health Minnesota 2020: Indicator 1.2

Violence Against Children and Teens

Adverse Childhood Experiences

As a child grows to become an adult, it is experiences that a person has had in childhood that can influence the trajectory of the adult’s life. Studies around adverse childhood experiences (ACE) that look at traumatic events in a child’s life before they are 18 years old are finding the more ACEs an adult has the more likely they will rate their health as fair or poor compared to those with no ACEs. (83)

There are three categories of ACEs that have been split into multiple subcategories that generally have been studied:

Abuse: physical abuse, sexual abuse, emotional abuse;

Household Challenges: witnessing domestic violence towards a parent, problematic drinking or alcoholism of a household member, illegal street or prescription drug use by a household member, mental illness of a household member, divorce or separation of a parent, and incarceration of a household member;

Neglect: Emotional neglect and Physical neglect. (84)

Studies have found the more ACEs a person has the more likely a person is at risk for health issues as an adolescent and adult, like obesity, diabetes, depression, suicide, sexually transmitted infections, heart disease, cancer, stroke, COPD and broken bones. (84) The more ACEs a person has the more likely they are to smoke, abuse alcohol and drugs and miss work, and they are less likely to exercise. (84) People with six or more ACEs die on average twenty

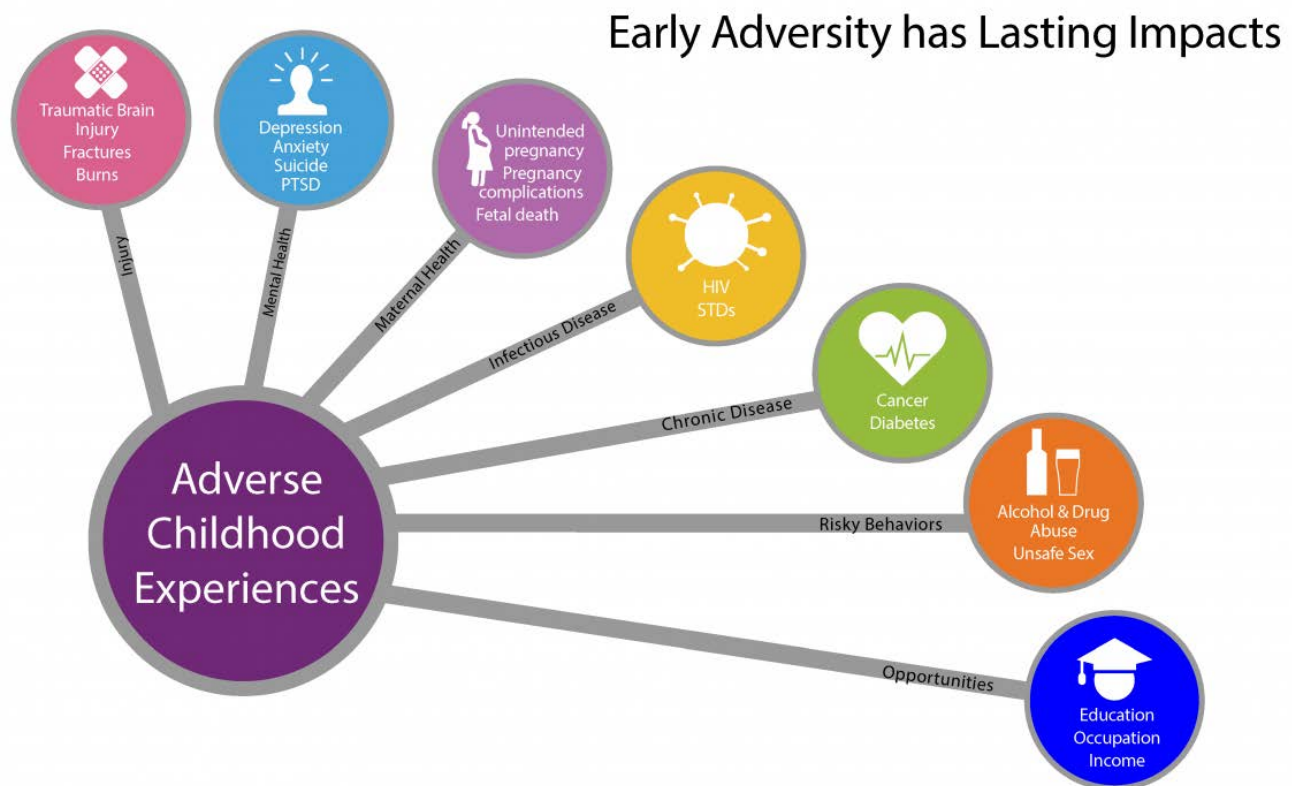
years sooner than people without ACEs. (84) Findings also suggest teens from low-income families, LGB teens, and American Indian teens are the most likely to experience four or more ACEs. (85)

The Minnesota Student Survey has incorporated adverse childhood experience questions into the 2016 survey tool. It is a glimpse of where our ninth-grade students, who are ages fourteen and fifteen, are at in the ACEs spectrum. When compared to Minnesota, SWHHS ninth-grade students on average are very similar to Minnesota percentages at all ACE counts. The largest spread in percentages is seen in students that have two ACEs. SWHHS is two percentage points lower than the state. When you start to look at each county, there seems to be a larger percentage of ACEs happening in Lincoln County students. In the “4 or more ACEs” category, Lincoln County has 7.5 percentage points and Redwood County has 2.2 percentage points higher than Minnesota students do. (85)

2016 Percent of Ninth-grade Students that have Adverse Childhood Experiences (ACE)

	0 ACE	1 ACE	2 ACEs	3 ACEs	4 or More ACEs
Minnesota	64.3	18.7	8.4	4.6	3.9
SWHHS	65.9	18.2	6.4	5.3	4.2
Lincoln	54.3	17.1	8.6	8.6	11.4
Lyon	68.7	18.3	4.0	5.0	4.0
Murray	62.7	21.3	5.3	6.7	4.0
Pipestone	59.0	25.6	3.8	7.7	3.8
Redwood	64.1	16.0	9.2	4.6	6.1
Rock	73.3	11.6	12.8	2.3	0.0

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)



Source: Centers for Disease Control and Prevention. 2019. (84)

When you look at SWHHS ninth-grade students that have answered yes to ACE questions, you see American Indian or Alaskan Native have the highest percentage of yes answers compared to other races, which is also true for

Minnesota ninth-grade students in all but one question. SWHHS Asian ninth-grade students have the lowest percentages of yes answers in five of the seven questions listed. (85)

2016 Percent of Ninth-grade Students that have Answered Yes to ACE Questions, by Race & Ethnicity

	Hispanic or Latino(a)		American Indian or Alaskan Native		Asian		Black, African or African American		White	
	SWHHS	MN	SWHHS	MN	SWHHS	MN	SWHHS	MN	SWHHS	MN
Has parent or guardian ever been in prison or jail?	30.2	29.1	43.6	40.6	11.5	12.9	29.2	30.7	16.4	15.4
Do you live with anyone who drinks too much alcohol?	9.1	11.6	21.8	15.0	3.8	9.1	12.5	9.6	9.3	9.9
Do you live with anyone who uses illegal drugs or abuses prescription drugs?	4.5	6.9	10.7	9.2	0.0	3.5	4.2	8.1	4.0	4.6
Does a parent or other adult in your home regularly swear at you, insult you or put you down?	13.6	17.3	23.6	20.8	11.5	14.5	12.5	16.9	14.5	13.5
Has a parent or other adult in your household ever hit, beat, kicked or physically hurt you in any way?	11.4	17.4	16.4	16.7	11.5	17.4	12.5	18.7	10.0	10.9
Have your parents or other adults in your home ever slapped, hit, kicked, punched or beat each other up?	4.5	10.1	10.9	12.7	7.7	8.9	4.2	10.4	6.5	5.8
Have you experienced sexual abuse from a person within or outside the family?	4.7	8.4	9.1	9.4	3.8	3.9	8.3	6.7	4.7	4.4

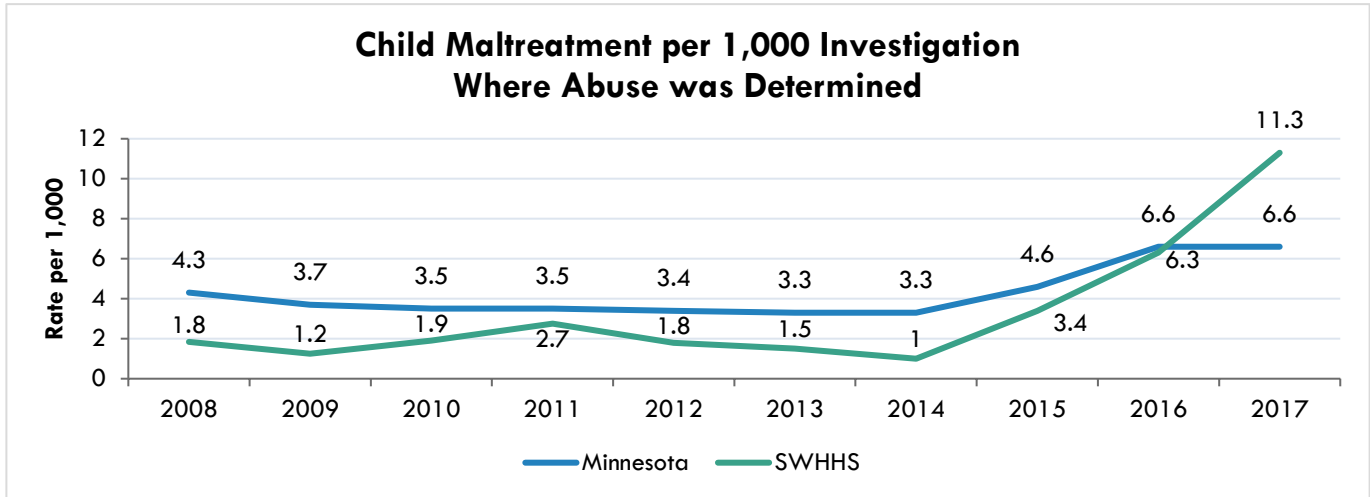
Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

There is a wide range of prevention measures that can be done to limit ACEs from happening. Some of these programs include:

- Home visiting to pregnant women and families with newborns
- Parent training programs
- Intimate partner violence prevention
- Social support for parents
- Parent support programs for teens and teen pregnancy prevention programs
- Mental illness and substance abuse treatment
- High-quality child care
- Sufficient income support for lower-income families (84)

Child Abuse

Child abuse can lead to poor health outcomes by causing emotional and physical harm to the child. In 2016, 114 children across the six counties had been determined after investigation to have been abused or neglected. From 2008 to 2016, the rate of child maltreatment in the region was lower than in the State of Minnesota. In 2016, of the children that were allegedly maltreated in the SWHHS counties, 65 percent was from neglect, 34 percent was from physical abuse, 11 percent was from sexual abuse, five percent was from mental injury, and two percent was from medical maltreatment. (86)



Source: Minnesota Child Welfare Reports. Minnesota Department of Human Services. (2018) (86)

Percent of Alleged Victims in Accepted Maltreatment Reports by Maltreatment Type, 2016

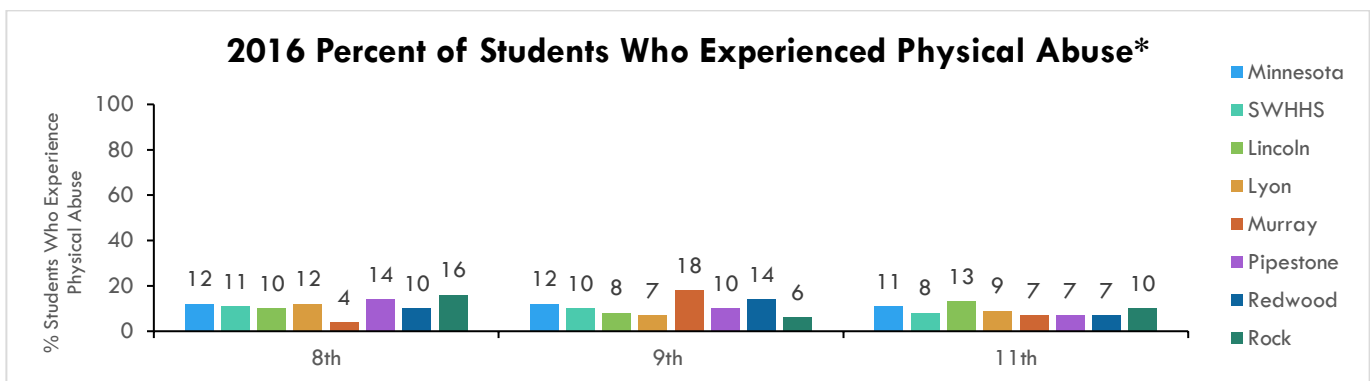
	Neglect (non-medical)	Physical Abuse	Sexual Abuse	Mental Injury	Medical Neglect
SWHHS	65	34	11	5	2
MN	61	41	12	2	1

*Percentages are great than 100 as a child can have more than one type of abuse recorded

Source: Minnesota's Child Maltreatment Report. Minnesota Department of Human Services. (2016) (86)

Physical Abuse

Physical abuse can have lasting negative health outcomes for children. Abused children are much more likely to participate in risky behaviors like sexual activity at an early age, alcohol and drug use, and violence. (65) The 2016 Minnesota Student Survey showed that SWHHS students were experiencing physical abuse on average at a roughly similar to lower rate as other students in Minnesota. (29)

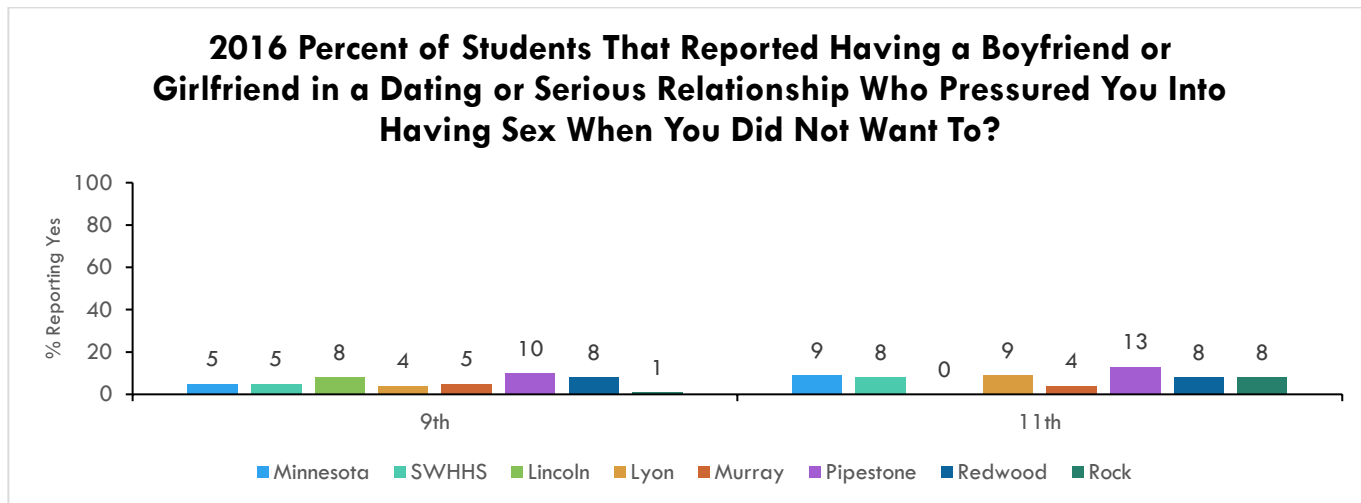


*Has a parent or other adult in your household ever hit, beat, kicked or physically hurt you in any way?

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

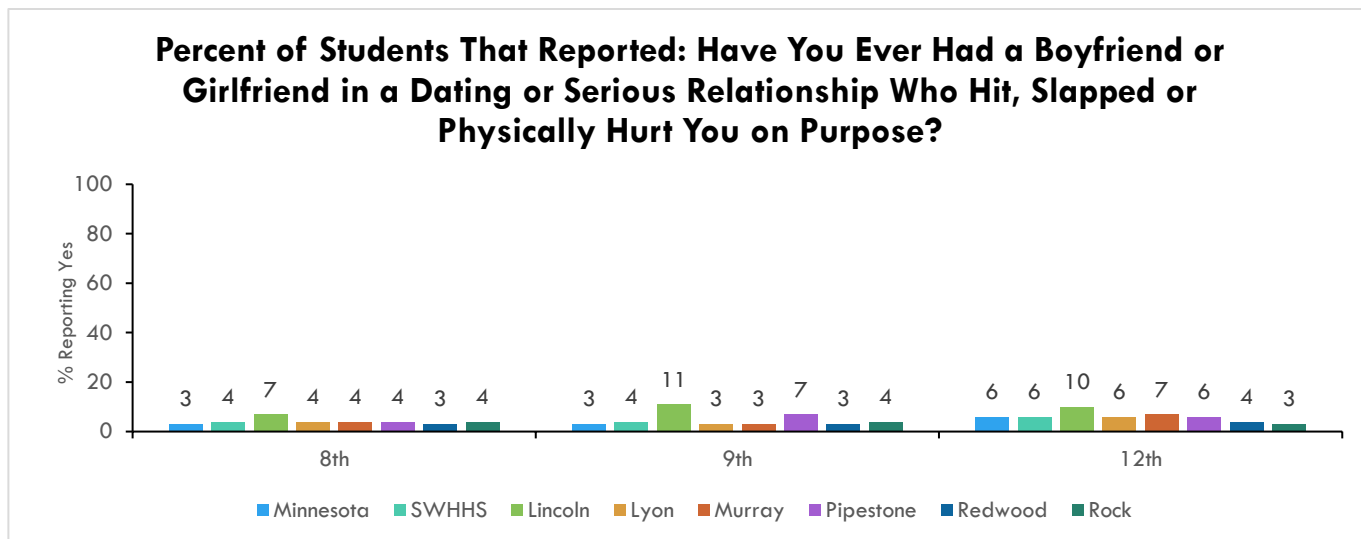
Sexual and Relationship Violence

Dating violence, sexual or physical, is not limited to adults. In the 2016 Minnesota Student Survey, on average, SWHHS students were at or below the state average for feeling pressured to have sex when they did not want to. However, Lincoln, Pipestone and Redwood ninth-graders reported this at a higher rate than the State of Minnesota and Pipestone County 11th grade students were above State average. When compared to the 2013 Minnesota Student Survey there was no change in the ninth or 11th grade averages for SWHHS Counties. (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Rates of physical dating violence in the SWHHS counties are also, on average, the same or slightly above the State of Minnesota rates. However, similar to the trends above, several counties are above the state average. In eighth-grade, five of the six counties are higher than the State of Minnesota with Lincoln County being twice as high; in ninth-grade, Redwood is nearly twice as high and Lincoln is nearly four times as high as the State of Minnesota; and in 12th grade, Lincoln County is nearly twice as high as the State, while Murray County is slightly higher. (29)

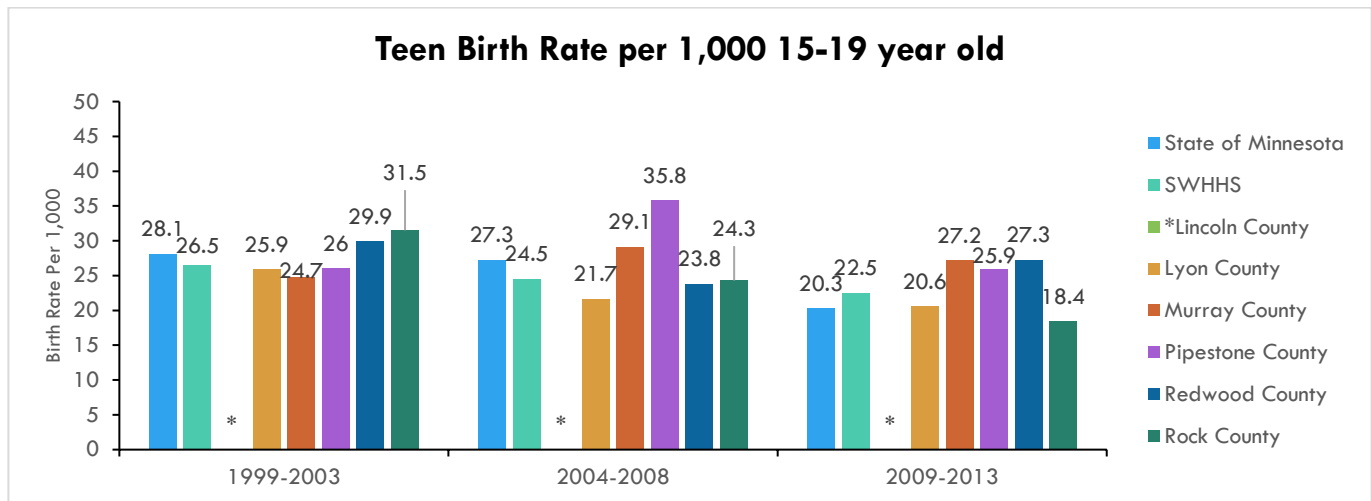


Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Teen Parenting

Teen parents are less likely to graduate from high school, which can result in a higher rate of poverty and reliance on government assistance. Prenatal care is less likely to happen for a teen mom, which can cause low birth rates and later, children that perform poorly on cognitive and behavioral tests in school. Children of teen parents are much more likely to become teen parents themselves. (65)

Teen birth rates in SWHHS counties overall have been lower than the State of Minnesota average- with the exception of the 2009-2013 timeframe when SWHHS counties were at 22.5 percent and the State of Minnesota was at 20.3 percent. (53)

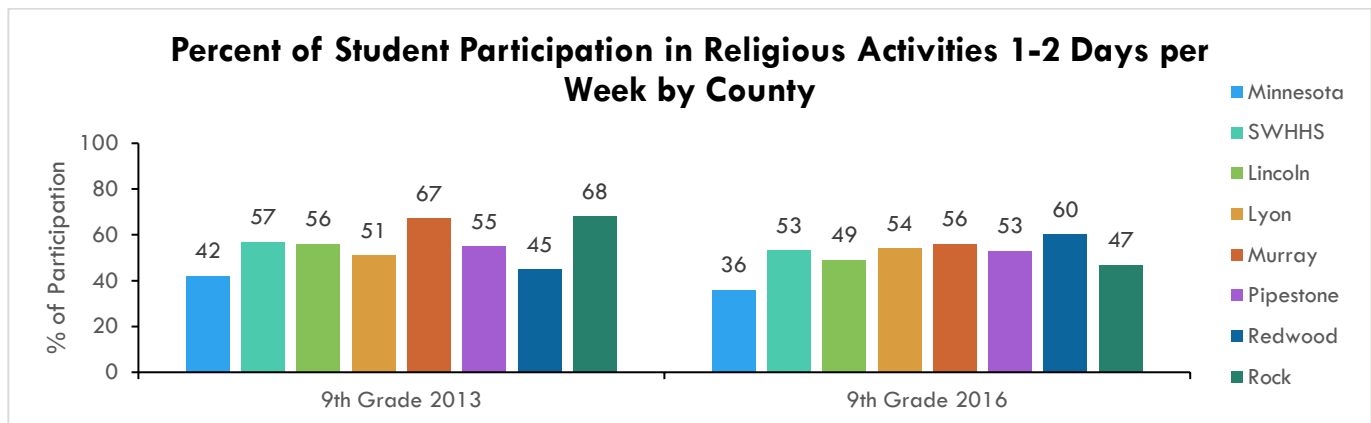


*Note: The number of teen births in Lincoln County was less than 20; therefore, rates were not presented for these time periods. Source: Minnesota Department of Health. Minnesota Center for Health Statistics. (2014). (53)

Youth-Community Involvement

Youth involvement in communities, according to Restless Development and the United Nations Programme on Youth, builds trust and social capital, and prevents and reduces vulnerability to economically, politically, and socially unstable environments. (87)

Data from the 2013 and 2016 Minnesota Student Surveys showed SWHHS ninth-grade youth were above the State of Minnesota average for participation in religious activities. (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

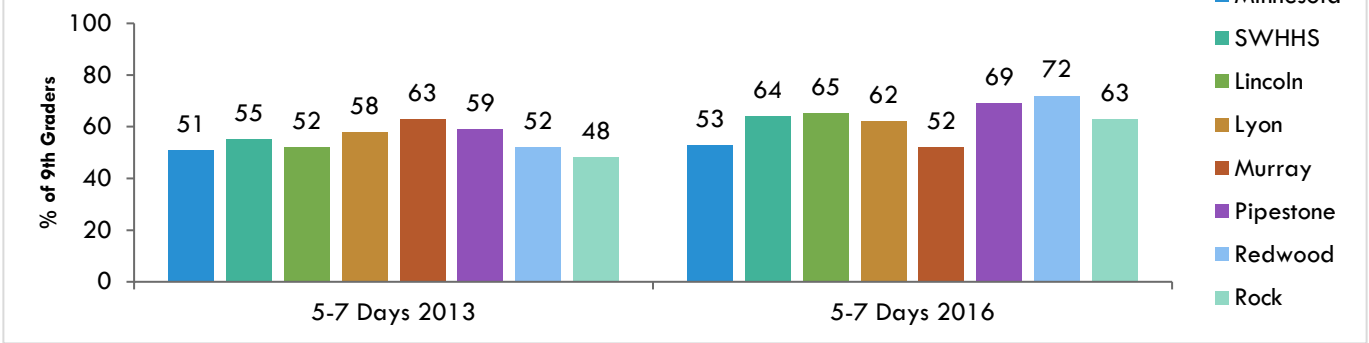
Physical Activity and Eating Habits

Physical Activity

Being physically active is important at any age for overall health and wellbeing. National physical activity guidelines recommend that youth participate in 60 minutes of moderate and vigorous physical activity throughout the day. Adults are recommended to participate in 150 minutes of moderate physical activity per week. (88)

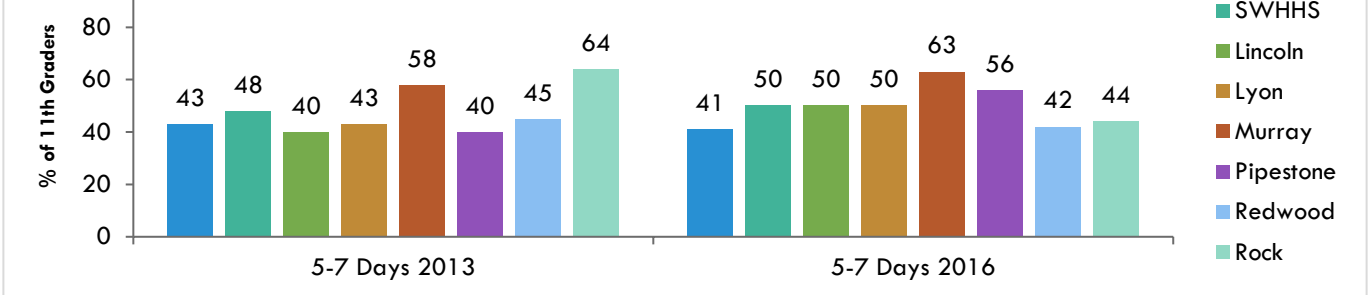
In the 2013 Minnesota Student Survey, the response to being physically active 5-7 days for 60 minutes a day on average for SWHHS ninth-graders were 55 percent, which is four percent higher than the state average of 51 percent. In the 2016 Minnesota Student Survey, the ninth-grade percentage for being physically active 5-7 days for 60 minutes a day went to 64 percent, which was an increase of nine percent and again about the state average. (29)

Ninth-grade: During the Last 7 Days, on How Many Days Were You Physically Active for a Total of at Least 60 Minutes per Day?



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

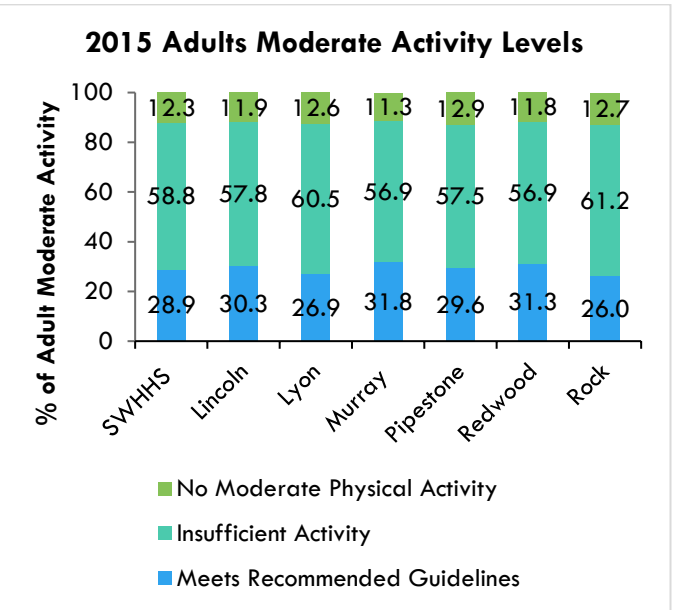
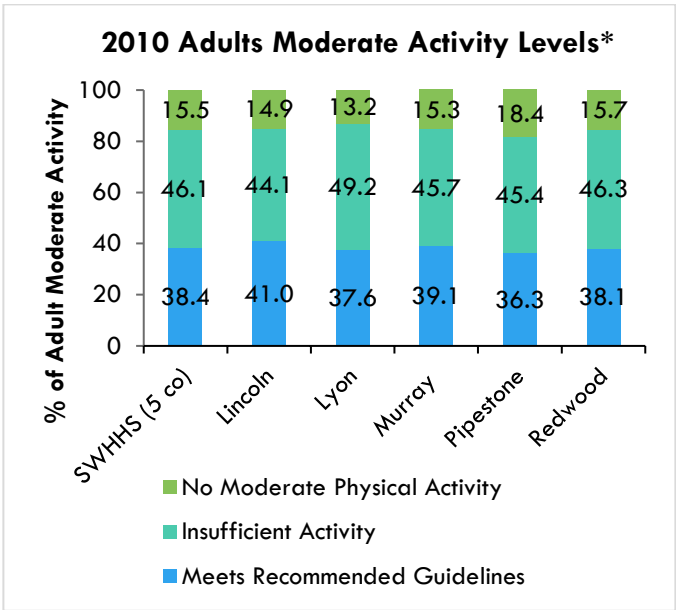
11th Grade: During the Last 7 Days, on How Many Days Were You Physically Active for a Total of at Least 60 Minutes per Day?



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

The 2013 and 2016 Minnesota Student Survey data for ninth and 11th grade activity showed a decrease among the older students. In Minnesota schools, physical education is offered through ninth-grade. This leaves students that are not participating in team sports without required activity starting in 10th grade. There was however a modest increase in being physically active 5-7 days for 60 minutes a day for the 11th grade students between the 2013 and the 2016 Minnesota Student Surveys of two percent while the State of Minnesota saw a two percent decrease. (29)

Adult physical activity information was gathered in a 2010 Wilder Research Study covering five of the six SWHHS counties (Lincoln, Lyon, Murray, Pipestone, and Redwood). The average adult physical activity that met recommended guidelines for those surveyed was 38.4 percent in 2010. In the 2015 Adult Health Survey, that number had dropped to 30.0 percent without including Rock County, since Rock did not participate in the 2010 survey. With Rock County included the average drops to 28.9 percent for the six SWHHS counties. There was some good news in the survey, those with no moderate physical activity dropped to an all six-county average of 12.3 percent (12.1 percent without Rock County).

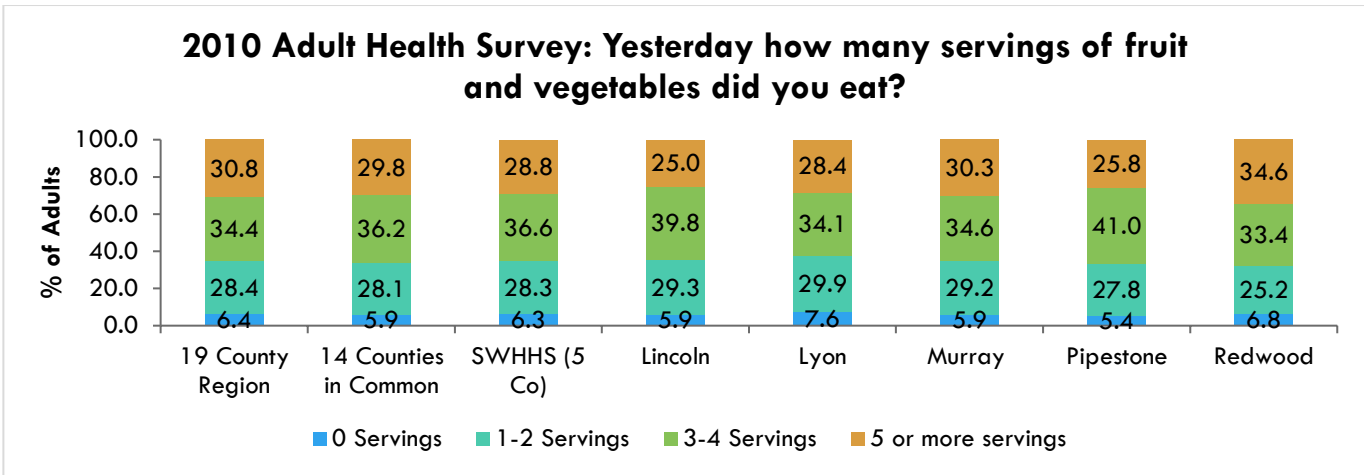


*Rock did not participate in 2010 Southwest/South Central Adult Health Survey
 Source: Amherst H. Wilder Foundation. 2010 Wilder Research Study. (2014). (4)

Eating Habits

Food plays a big role in how healthy a person is. Dairy, grains, proteins, fruits, and vegetables that are recommended by the United States Department of Agriculture on “ChooseMyPlate.gov” are important for the nutrients that they provide. (89) Poor eating habits at any age can decrease the amount of nutrients that can result in obesity, which increases rates of chronic diseases like diabetes, stroke, and heart disease. Poor eating habits can also affect dental health and cause increased tooth decay from drinking sugary drinks. (65)

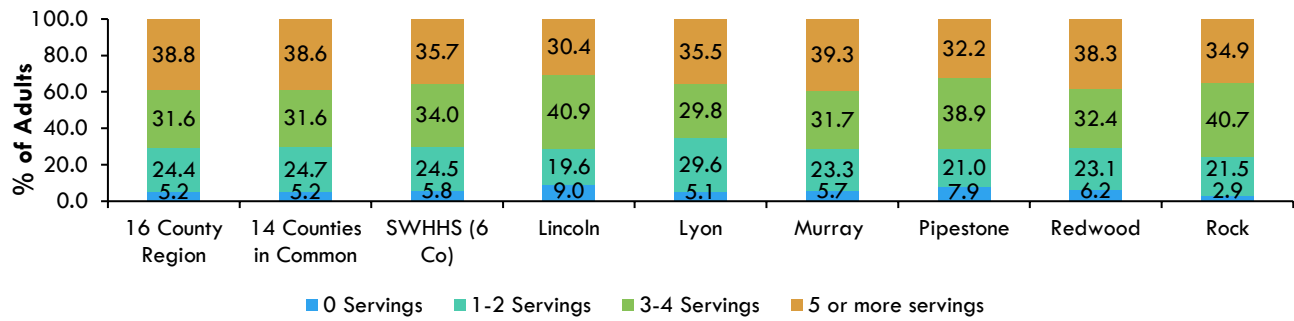
In the 2010 Southwest/South Central Adult Health Survey, responses from SWHHS adults on servings of fruits and vegetables consumed in the past day showed 65.4 percent eating three or more servings yesterday. This was similar to the overall 19-County survey response of 65.2 percent. Individuals that ate zero servings and one to two servings locally and regionally were similar in data trends, too. (4) (90)



*Rock did not participate in 2010 Southwest/South Central Adult Health Survey
 Source: Amherst H. Wilder Foundation. 2010 Wilder Research Study. (2014). (90)

In the 2015 Southwest Minnesota Healthy Communities Survey, there were improvements in the percent of people that responded eating three or more servings yesterday. The five SWHHS that participated in 2010 saw an increase of 4.5 percentage points in those that ate three or more servings and the 14 counties that participated in both 2010 Southwest/South Central Adult Health Survey and 2015 Southwest Minnesota Healthy Communities Surveys saw an increase of 4.2 percentage points. (4) (90)

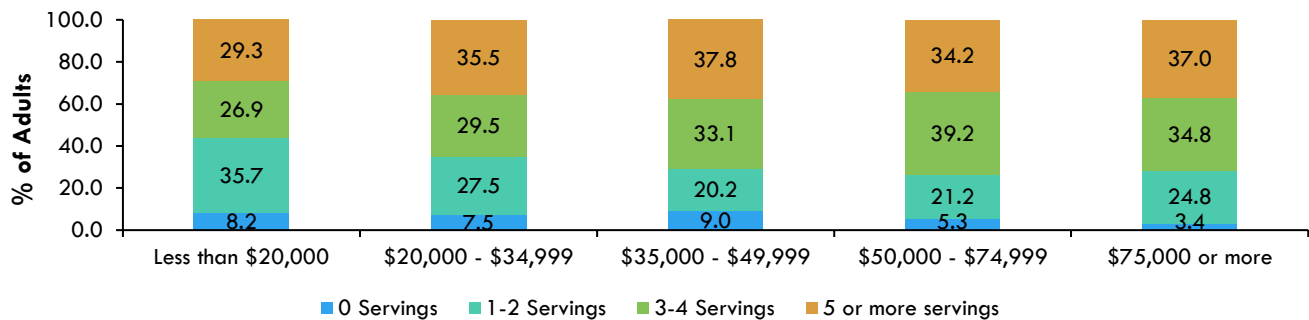
2015 Adult Health Survey: Yesterday how many servings of fruit and vegetables did you eat?



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

The challenge is how to move 30.3 percent of the population that eats two or fewer servings to eating more fruits and vegetables. When the data is looked at from a household income perspective, the data shows that some of the challenge is with how much a household makes. The difference between people that responded eating two or fewer servings yesterday that make less than \$20,000 and people that make \$75,000 or more is 15.7 percentage points. (4)

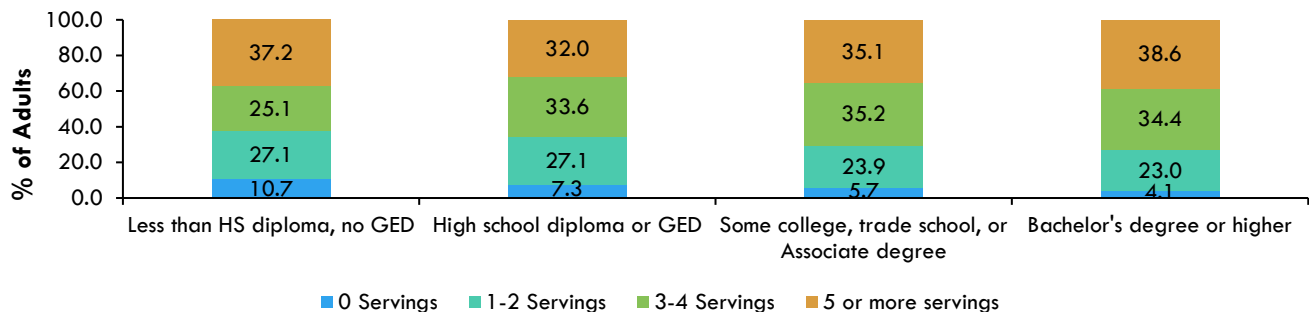
2015 Adult Health Survey: Yesterday how many servings of fruit and vegetables did you eat?, SWHHS, Household Income



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

A similar pattern is seen when looking at the education level of the people that eat two or fewer servings yesterday. The difference between those with less than HS diploma, no GED and bachelor's degree or higher is 10.7 percentage points. (4)

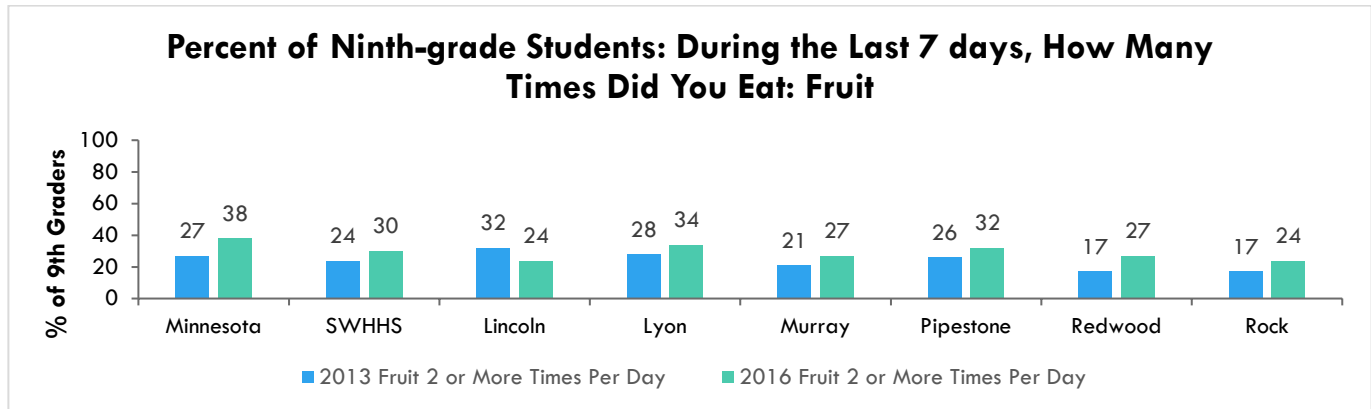
2015 Adult Health Survey: Yesterday how many servings of fruit and vegetables did you eat?, SWHHS, Education



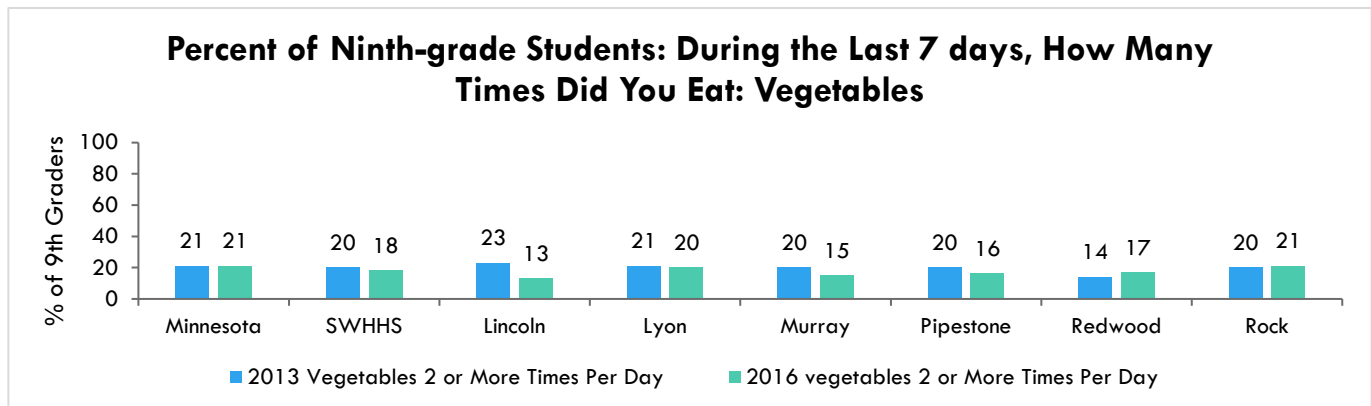
Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Adult females tend to eat more fruits and vegetables with 76.0 percent eating three or more fruits and vegetables yesterday, while males responded 62.7 percent, a 13.3 percentage point difference. (4)

Student data below shows those ninth-graders who ate vegetables two or more times per day and those who ate fruit two or more times per day. Results showed only 20 percent of SWHHS ninth-grader students ate vegetables two or more times per day in 2013 and dropped to 18 percent in 2016; the state average was 21 percent for both years. In 2013, 24 percent of ninth-grade students ate fruit two or more times per day in comparison with the state average of 27 percent. By 2016 SWHHS ninth-grade students had increased fruit consumption to 30 percent, with Minnesota increasing to 38 percent. (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Use of Alcohol, Tobacco and Prescription & Illicit Drugs

Like most things, alcohol and prescription drugs, if used in moderation or as directed and with a sense of responsibility, can be used with few problems. Issues arise when prescription drugs are mixed with alcohol, too much of a substance is used, addiction becomes an issue, or a person engages in unsafe behavior like driving under the influence or risky sexual behavior because of the influence a person is under due to these substances.

According to the Centers for Disease Control, “Tobacco use is the leading preventable cause of death” and “For every smoking death there are 30 more people suffering from at least one serious illness from smoking”. These serious illnesses range from a variety of lung ailments like COPD, emphysema, and bronchitis to other chronic diseases like cancer, heart disease, diabetes, and stroke. Oral tobacco use can cause nicotine addiction, oral cancers in the mouth, lip, tongue, pharynx, and cancer of the esophagus. (91)

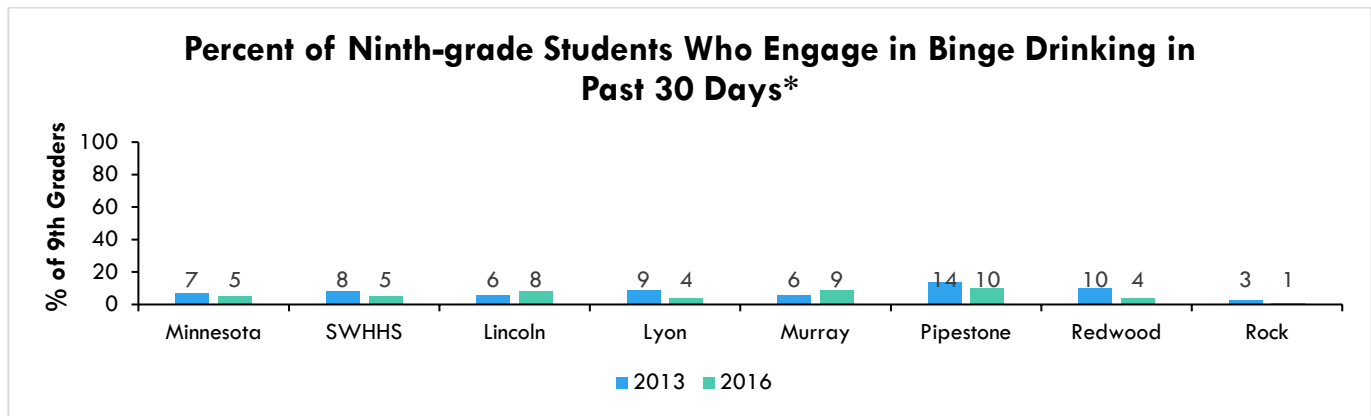
Tobacco use does not only impact the user, but it also impacts people that breathe in the smoke that the smoker exhales. Infants and children of smoking parents are more likely to have asthma, higher rates of respiratory

infections, and sudden infant death syndrome (SIDS) than children of non-smoking parents are. Adults that are exposed to secondhand smoke (SHS) have a higher occurrence of lung cancer, heart disease, and stroke than adults who are not exposed to SHS. (92)

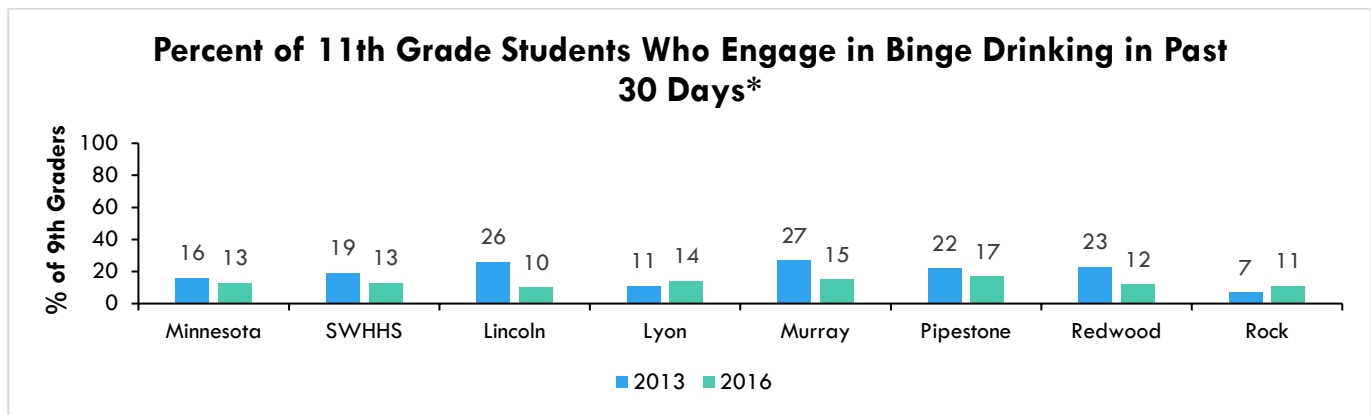
Alcohol Use and Binge Drinking

Alcohol use in our society is part of the social fabric. When people drink alcohol in excess, poor outcomes may occur. People who drink in excess have higher rates of injury, violence, alcohol poisoning, risky sexual behaviors, miscarriage, stillbirth, and children born with fetal alcohol syndrome than people who drink more moderately or who don't drink at all. Long-term excessive alcohol use can lead to heart disease, cancer, learning and memory problems, mental health problems, and addiction. (93)

Binge drinking is defined as a pattern of drinking that brings a person's blood alcohol concentration to 0.08 grams percent or above. People who consume alcohol in a two-hour period would need to drink four or more drinks for a woman or five or more drinks for a man to exceed 0.08 grams percent or above. According to the Centers for Disease Control, most people who binge drink are not alcohol dependent. (93) In the United States, binge drinkers are more likely to be men than women and have household incomes of \$75,000 or more than to have lower incomes. Binge drinking is most common in the 18-34 years category but can be found in all age groups. (94)



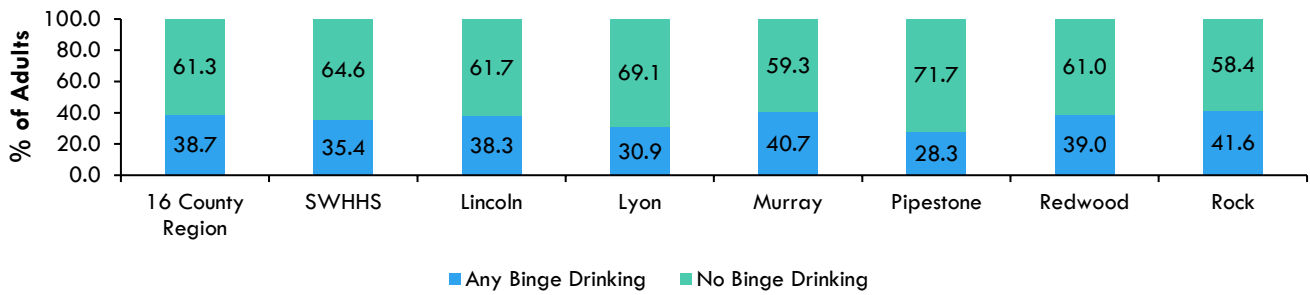
*5 or more drinks in a row within a couple of hours
 Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)



*5 or more drinks in a row within a couple of hours
 Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

In the 2015 Southwest Minnesota Healthy Communities Survey, surveyors asked about binge drinking to get a baseline in the region. In the survey, binge drinking was defined as a female drinking four or more drinks on an occasion and males drinking five or more drinks on an occasion. In the SWHHS counties, 35.4 percent of the adults surveyed had binge drank in the last 30 days while the 16 county region 38.7 percent had binge drank. (4)

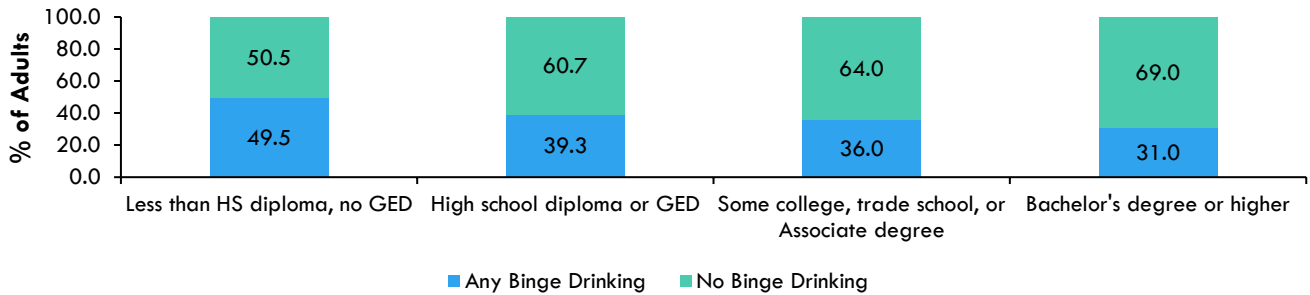
2015: Percent How Many Times During the Past 30 Days Have You Engaged in Binge Drinking?



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4).

As we look at binge drinking by education, people with “less than HS diploma, no GED” had an 18.5 higher percentage point difference than those with a “bachelor’s degree or higher”. (4)

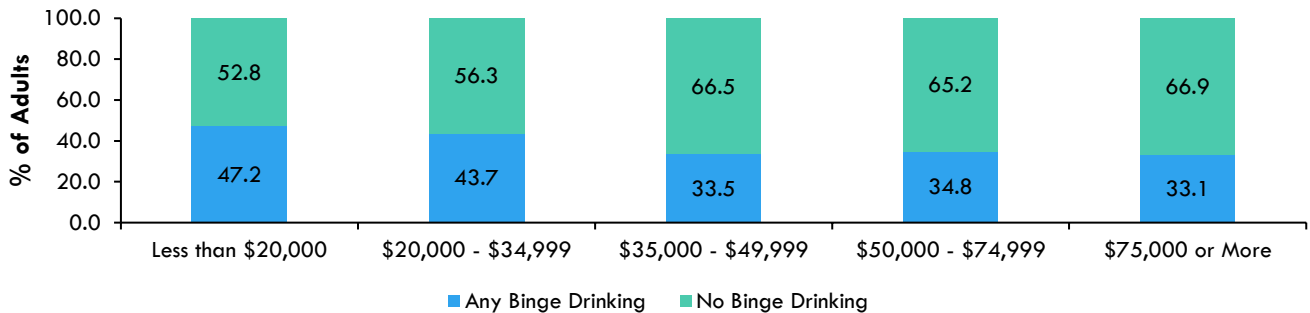
2015: Percent How Many Times During the Past 30 Days Have You Engaged in Binge Drinking?, SWHHS, Education



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Unlike the findings of CDC reference on the previous page, those that make less than \$20,000 are much more likely to binge drink than those that make \$75,000 or more by 14.1 percentage points. (4)

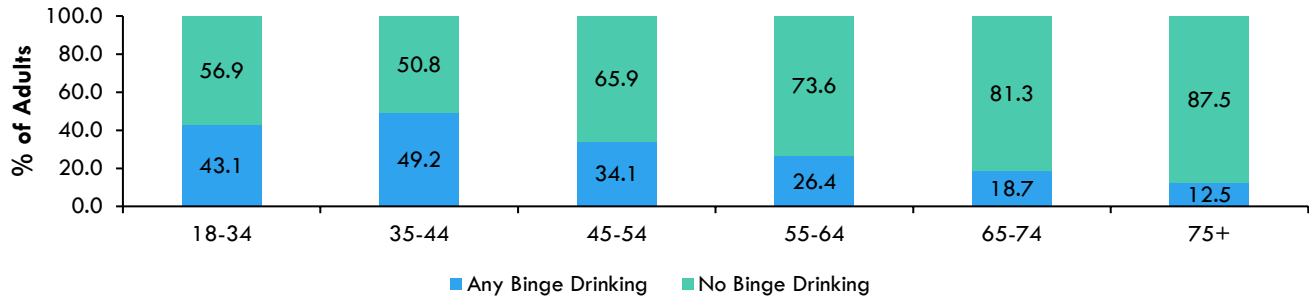
2015: Percent How Many Times During the Past 30 Days Have You Engaged in Binge Drinking?, SWHHS, Household Income



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When you look at age, the narrative that binge drinking is a college-age problem does not hold up in the data. The highest age group is actually people age 35-44 with 49.2 percent having binge drank in the last 30 days. In SWHHS counties, 40.5 percent of males and 30.2 percent of females binge drank. (4)

2015: Percent How Many Times During the Past 30 Days Have You Engaged in Binge Drinking?, SWHHS, Age

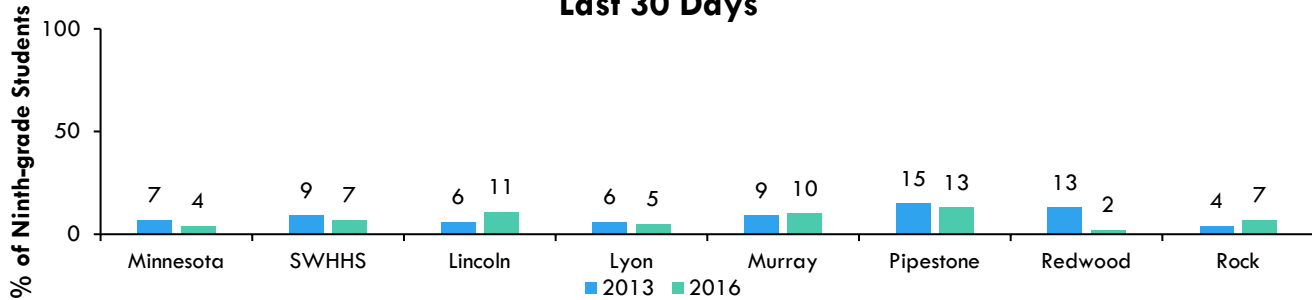


Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Tobacco Use and Exposure to Secondhand Smoke

From 1998 to 2013, SWHHS ninth-graders saw a downward trend in smoking, from 31 percent to nine percent, which was consistent with state-level data. The trend continued in SWHHS ninth-graders as a whole. Lincoln, Murray, and Rock counties in SWHHS did see one to five percentage points increase.

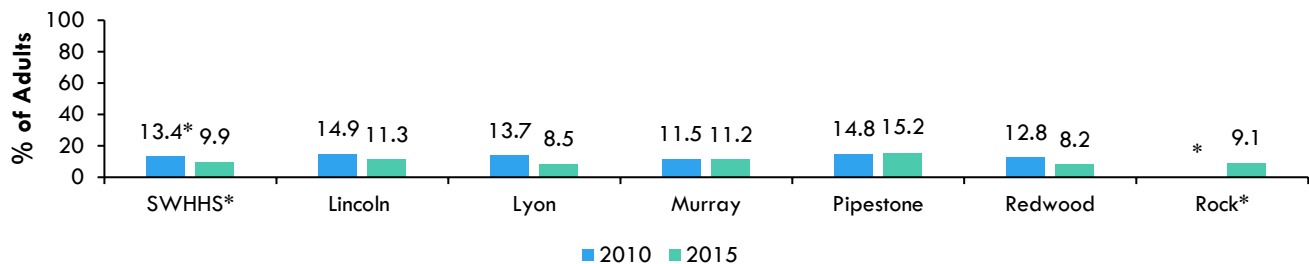
Percent of Ninth-grade Students Who Smoked Cigarettes During the Last 30 Days



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

In the 2010 Southwest/South Central Adult Health Survey and 2015 Southwest Minnesota Community Health Survey, the level of current smokers has gone down in all SWHHS except Pipestone County. It is unknown if Rock County has gone down since they did not participate in the 2010 Southwest/South Central Adult Health Survey.

Percent of Current Adult Smokers Status



*SWHHS contains 5 counties that participated in the Adult Health Survey in 2010 and 6 counties in 2015. Rock County did not participate in the 2010 Survey. Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

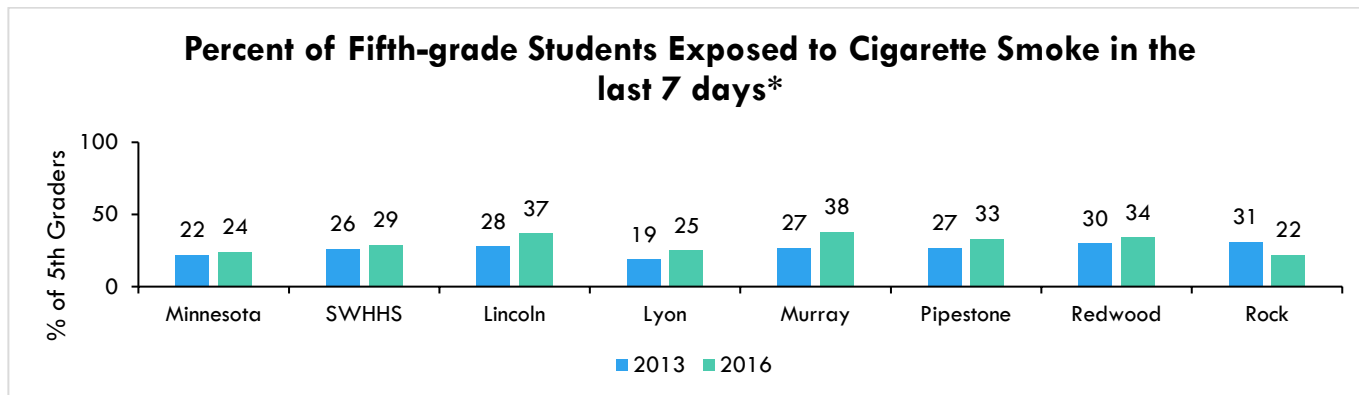
The percent of pregnant women that smoke during 2012-2015 was higher than the state average in four of the six counties, with all six counties being higher than the national average.

Percent of Pregnant Women Who Smoke, 2012-2015

	USA	Minnesota	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
Pregnant Women	8.3%	10.2%	8.8%	9.4%	13.6%	15.1%	18.8%	10.4%

Source: Minnesota Department of Health. (2018). (95)

Starting in 2013, the Minnesota Student Survey asked about student exposure to secondhand smoke. The survey reported 26 percent of SWHHS fifth-grade students had been exposed to cigarette smoke in the last seven days versus 22 percent for the State of Minnesota. In 2016, the percent of students exposed to secondhand smoke in the last seven days increased to 29 percent in SWHHS counties and 24 percent in Minnesota. (29)



* In the same room as someone who was smoking cigarettes- 1 to 7-day range combined
Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

In the 2010 Southwest/South Central Adult Health Survey, 32.7 percent of people in SWHHS counties surveyed said yes, they had experienced secondhand smoke in Minnesota in the last seven days. In 2015, when the same question was asked, 24.5 percent had experienced secondhand smoke in Minnesota in the last seven days, a reduction of 8.2 percentage points.

In Minnesota, in the past 7 days, has anyone smoked near you at any place besides your home, workplace, or car? 2015

		Of those who answered "yes" to the question above; The last time this happened in Minnesota, where were you?							
Yes		A restaurant's or bar's outdoor area	An outdoor shopping mall or strip mall	A park or outdoor recreation area	A Parking Lot	An outdoor community sports event	A sidewalk or building entrance	Somewhere else outdoor	Other
16 County Region	25.8	19.2	4.8	6.6	25.7	2.9	24.2	32.7	25.1
SWHHS	24.5	18.6	4.7	7.5	27.4	1.9	20.0	35.5	21.6
Lincoln	26.7	18.4	7.6	8.4	27.9	0.8	30.0	30.2	29.1
Lyon	24.5	18.2	3.1	5.4	28.9	3.1	18.7	37.5	14.5
Murray	25.3	15.7	1.0	3.5	23.2	1.2	26.2	44.4	18.9
Pipestone	26.4	25.6	6.8	14.3	24.5	2.5	17.3	36.5	15.0
Redwood	23.7	13.3	9.8	9.8	27.3	0.6	17.2	28.8	36.7
Rock	22.8	24.6	0.4	4.9	30.9	1.5	18.1	35.1	19.3

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

E-Cigarette Use

E-cigarette use is an emerging public health concern in the school environment. SWHHS staff have been providing education to multiple schools in our service counties on what to look for and the health effects of e-cigarettes or vaping.

In the 2016 student survey, three of the SWHHS counties were high than the state average.

Percent of Ninth-grade Students: During the last 30 days, on how many days did you use an electronic cigarette (e-cigarette, e-hookah, vaping pen)? - 1 or More Days

2016	
Minnesota	8
SWHHS	8
Lincoln	8
Lyon	5
Murray	11
Pipestone	16
Redwood	10
Rock	2

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

E-cigarette use in adults has been a vehicle for smoking cessation. Use in our six counties ranges from 0.8 percent in Rock County to 3.7 percent in Redwood County. This emerging issue was not asked in the 2010 Southwest/South Central Adult Health Survey.

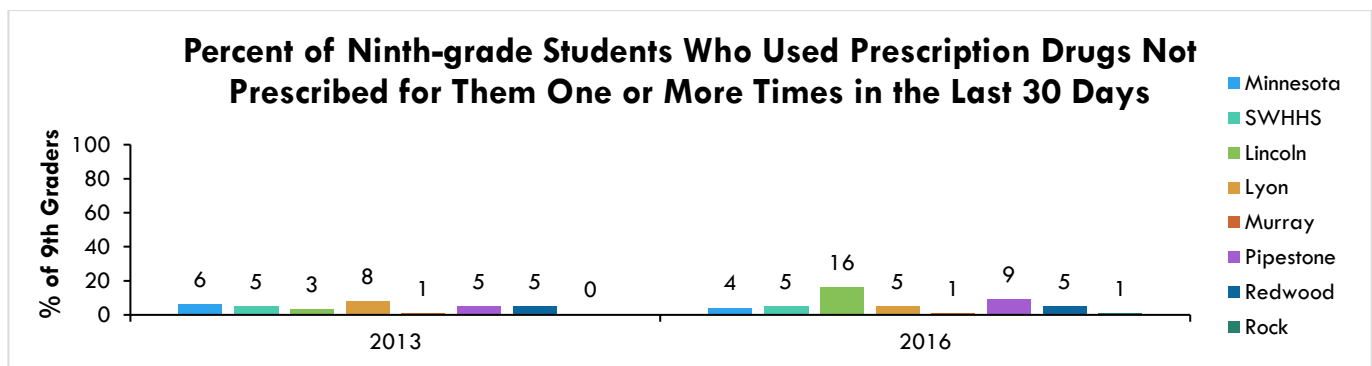
Percent of Adults: How often do you use e-cigarettes? 2015

	Everyday	Some days	Not at All
16 Co Region	0.5%	2.2%	97.3%
SWHHS	0.5%	2.5%	97.0%
Lincoln	1.9%	2.4%	95.7%
Lyon	0.2%	2.5%	97.3%
Murray	0.6%	2.6%	96.9%
Pipestone	0.3%	1.9%	97.8%
Redwood	0.6%	3.7%	95.6%
Rock	0.0%	0.8%	99.2%

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Prescription and Illicit Drug Use

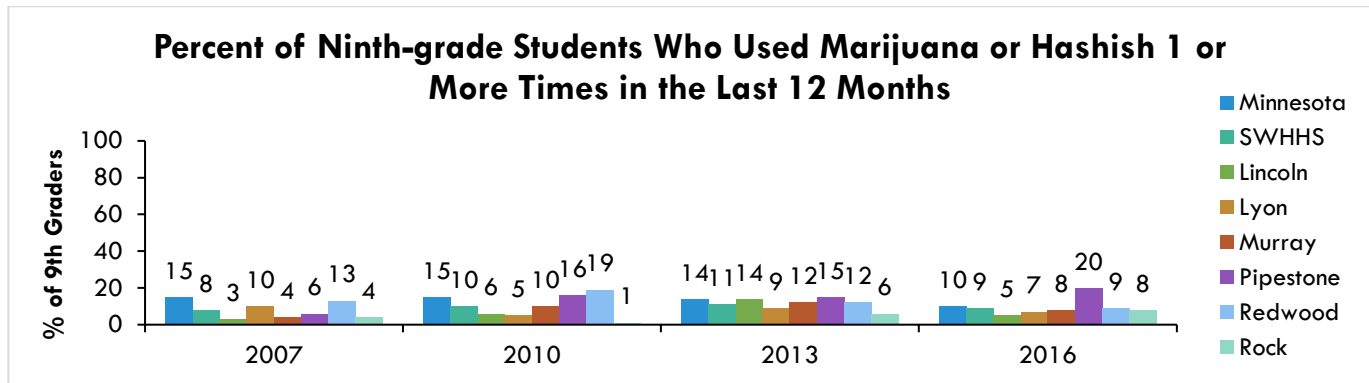
Prescription drug use among SWHHS ninth-grade students was lower than the state average by one percentage point in 2013 but one percentage point higher in the 2016 Minnesota Student Survey. Lincoln County was four times higher than the State average and Pipestone County was double that of the state average in the 2016 survey. (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

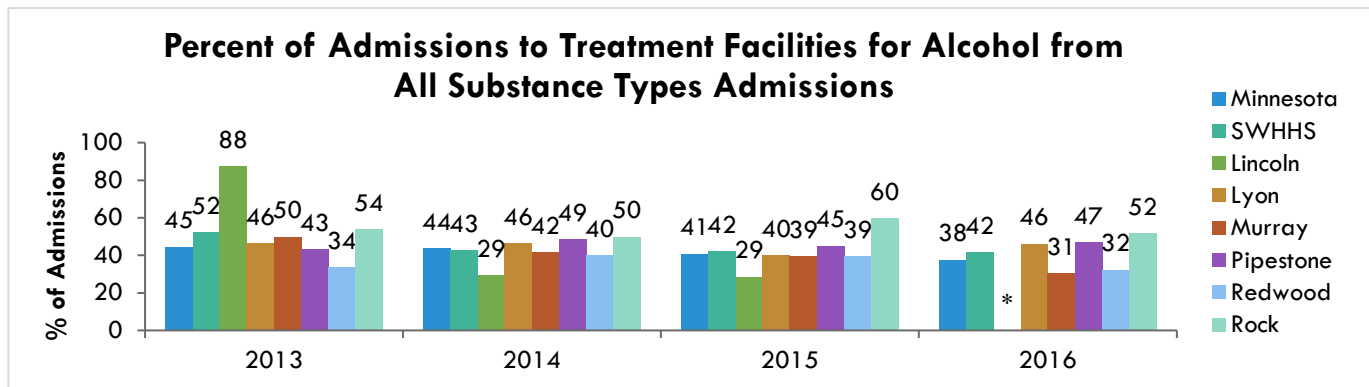
In 2013, the average percent of SWHHS ninth-grade students that used marijuana or hashish in the past 12 months had reach eleven percent, which was the highest level in the four surveys shown below. Based on 2016 Minnesota

Student Survey results, marijuana or hashish use in SWHHS ninth-graders decreased two percentage points to nine percent but remained under the Minnesota rate of ten percent. (29) Between 2013 and 2016, marijuana or hashish use has gone down in all the counties except Pipestone County where the use has jumped from fifteen to twenty percent, which is double the state average.



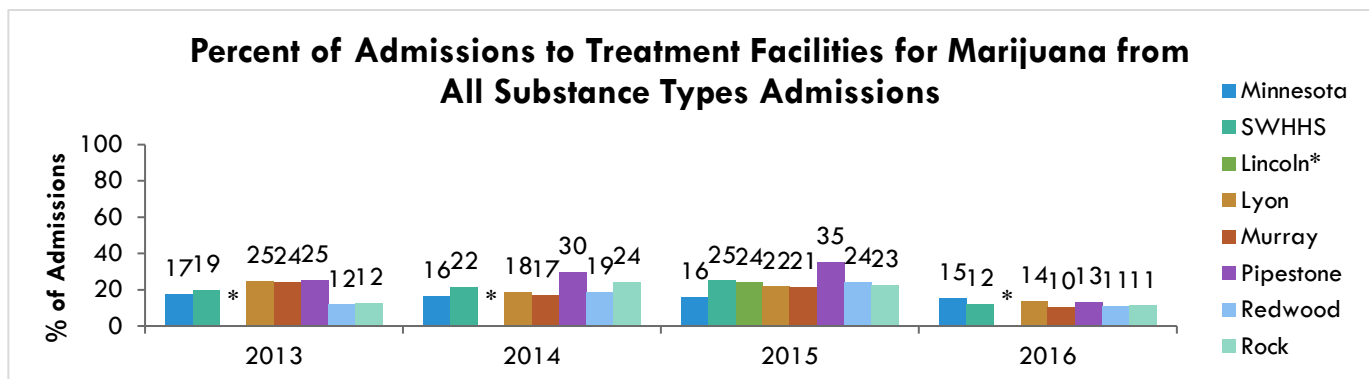
*Slight questions variation 2007 & 2010-During the last 12 months, on how many occasions (if any) have you used marijuana (bud, weed, pot) or hashish (hash, hash oil)? 2013- During the last 12 months, on how many occasions (if any) have you used marijuana or hashish? 2016- During the last 12 months, on how many occasions (if any) have you used marijuana or hashish? (Do NOT count medical marijuana prescribed for you by a doctor) ^
 Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Of all treatment sought by people for alcohol and drug substances, alcohol has the highest percentage of all substances in the SWHHS counties. SWHHS residents sought out alcohol treatment at a higher rate than the state average in 2013, 2015, and 2016. In 2014 and 2015 the level of treatment that was sought was within one percentage point. (96)



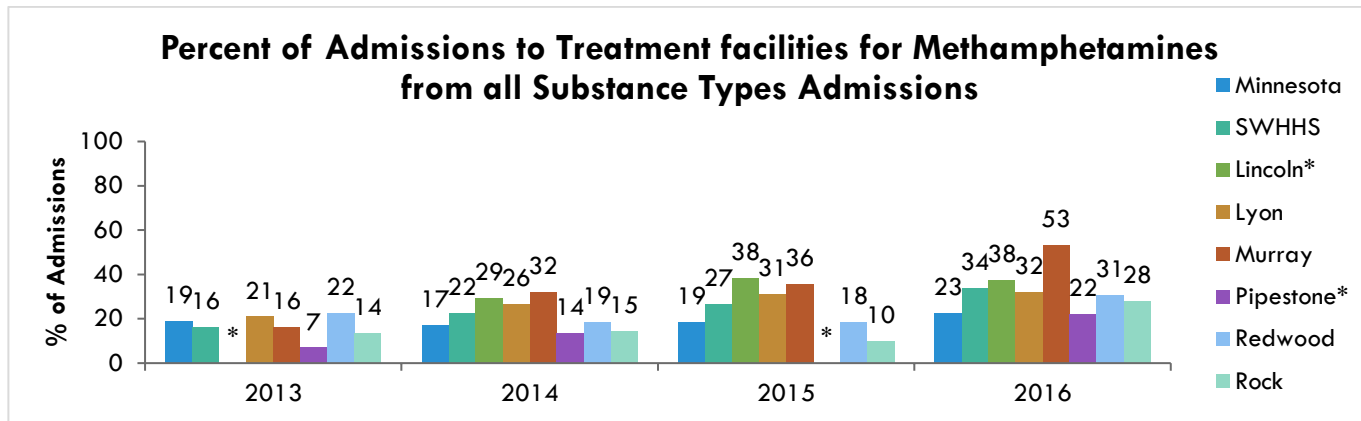
* Indicates numbers are 5 or under
 Source: Substance Use in Minnesota. (2014). (96)

Treatment for marijuana addiction is seen at a much higher rate than all substance types in SWHHS counties compared to Minnesota. (96)



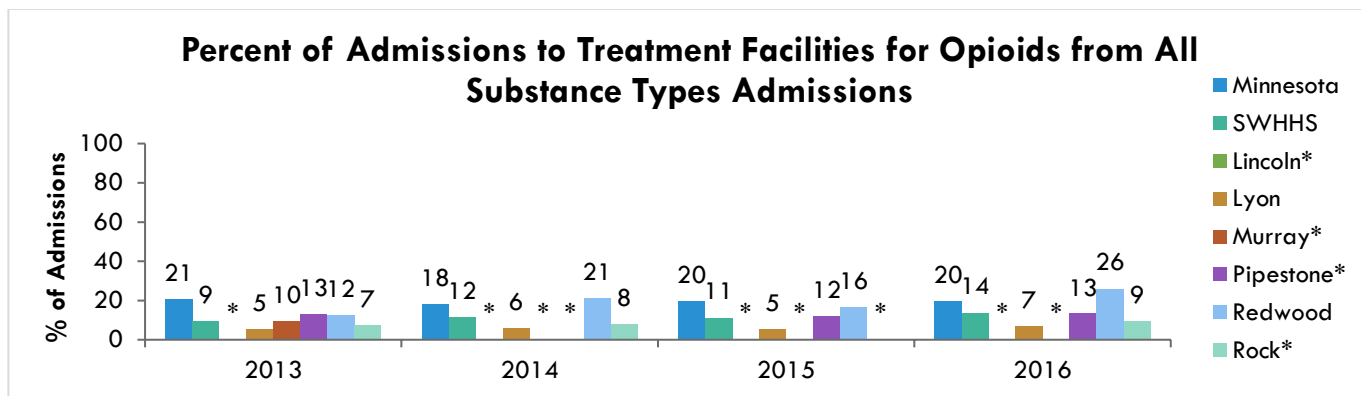
* Indicates numbers are 5 or under
 Source: Substance Use in Minnesota. (2014). (96)

From 2012, 2014 and 2015, data showed methamphetamine treatment at higher rates for SWHHS residents than for Minnesota as a whole. (96)



* Indicates numbers are 5 or under
 Source: Substance Use in Minnesota. (2014). (96)

While other areas of the nation and Minnesota are seeing increases in opioid treatment, SWHHS counties are well under Minnesota average by four to sixteen percentage points. The only exception is Redwood County, which bounces above and below the state average for the last four years. (96) Opioid treatments in Redwood County between 1995 and 2007 were zero or suppressed because the value was between one and five according to data available on SUMN.org. The rise in treatment started in 2008 with 5.0 percent of all treatments being for opioids and jumped to 15.7 percent by 2010 and then to 26.0 percent by 2016. (96)



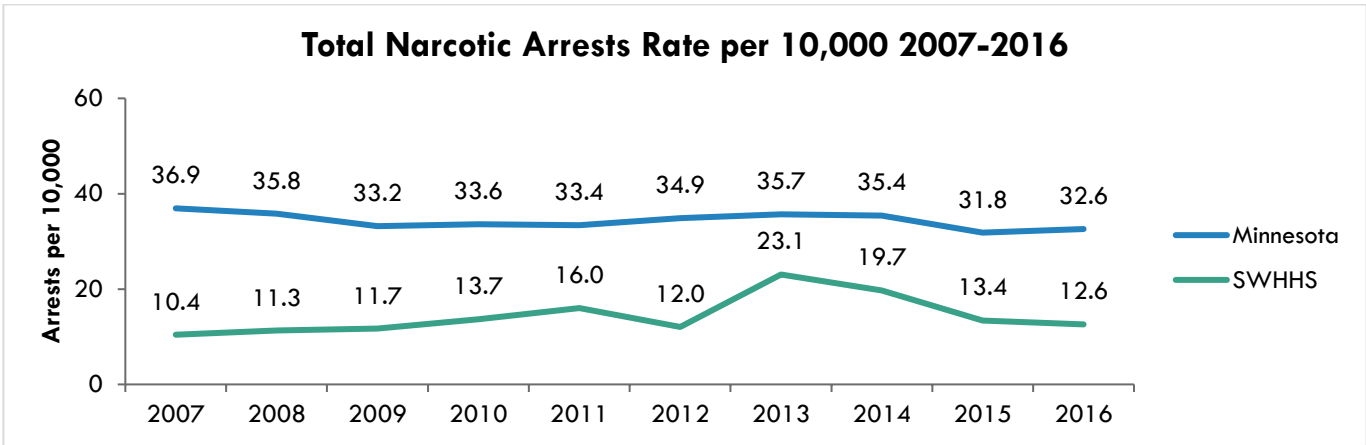
* Indicates numbers are 5 or under
 Source: Substance Use in Minnesota. (2014). (96)

Admissions to drug treatment facilities for the following groups of drugs: amphetamines and stimulants (other than methamphetamines); crack/cocaine; hallucinogens, phencyclidine, inhalants, and all other; and sedatives, hypnotics, and anxiolytics in all SWHHS counties are suppressed since the information is at five or less. The exceptions to this were in Lincoln County in 2015, amphetamines and stimulants (other than methamphetamines) treatment was at 4.8 percent and in Murray County in 2013, crack/cocaine treatment was at 2.3 percent. (96)

Arrests per 10,000 individuals for narcotics in SWHHS counties are below the state rate by nearly half or more in most years. The top narcotic to be arrested for in the SWHHS counties and Minnesota is marijuana, followed by other (includes meth). From 2007 to 2016, overall narcotic arrests in the SWHHS counties totaled between 78 and 175 arrests per year, with marijuana making up 56.0 percent of the arrests on average. (97)

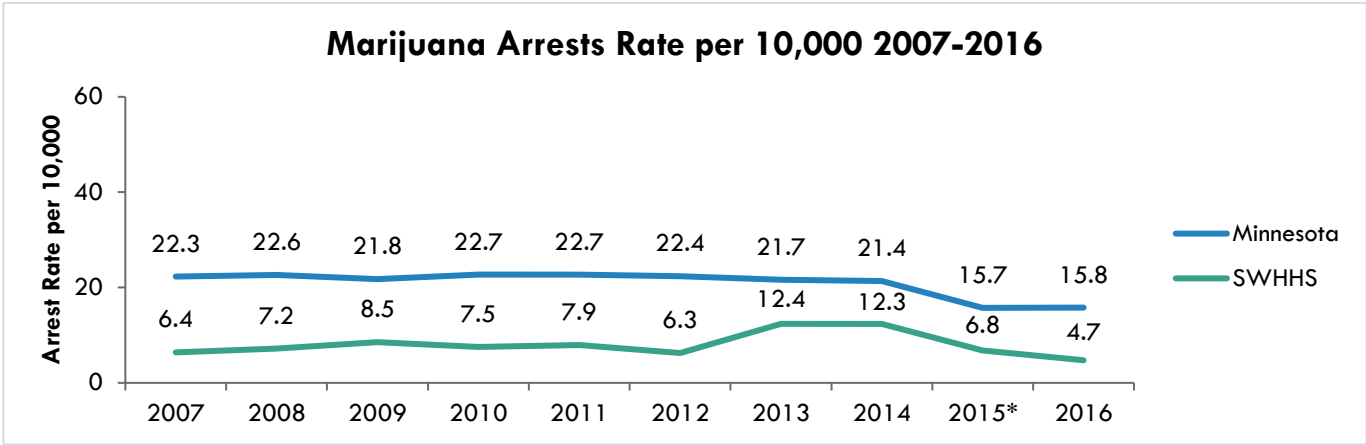
Drug overdose deaths in SWHHS Counties were very few between 2000 and 2004. In 2005 deaths began to trend upward slightly, with 2013 through 2016 having some of the highest total numbers of overdose deaths in SWHHS. Between 2012 and 2016 SWHHS drug overdose death has been below Minnesota's on average.

Total Narcotic Arrests Rate per 10,000 2007-2016



Source: Bureau of Criminal Apprehension. (2007-2016) (97)

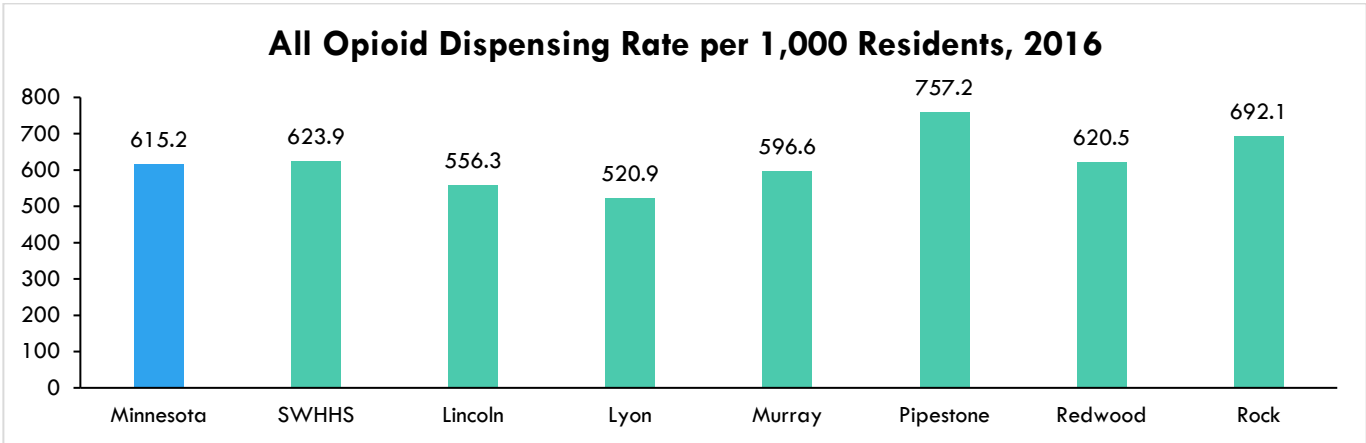
Marijuana Arrests Rate per 10,000 2007-2016



* Marijuana sales arrests for 2015 reflect a change to how arrests for drug paraphernalia are counted. Drug paraphernalia arrests are no longer counted as marijuana sales.

Source: Bureau of Criminal Apprehension. (2007-2016) (97)

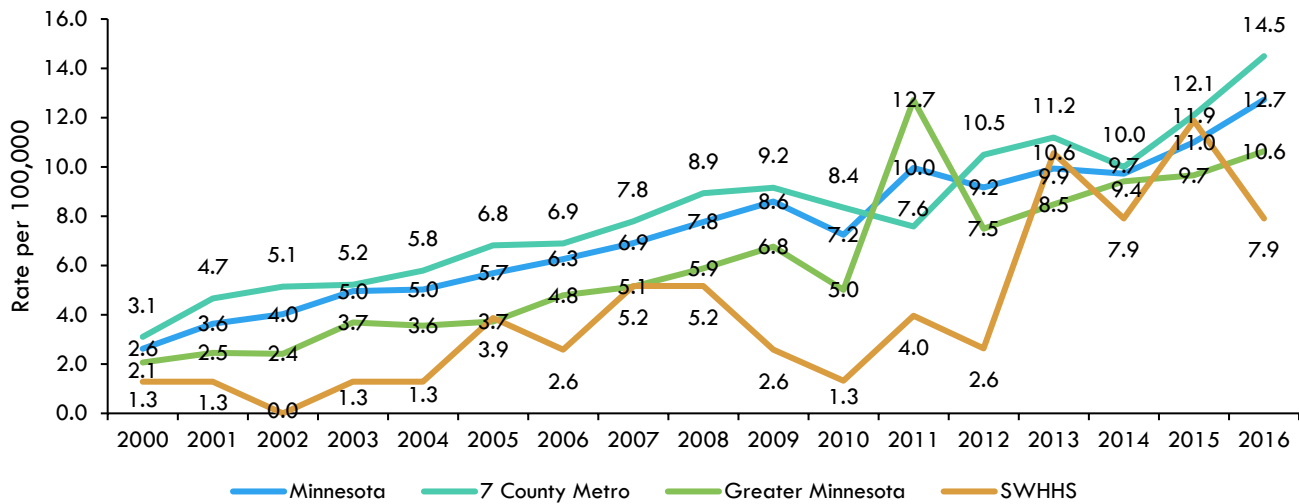
All Opioid Dispensing Rate per 1,000 Residents, 2016



Includes hydrocodone, oxycodone, tramadol, codeine, morphine, fentanyl, and hydromorphone.

Source: Association of Minnesota Counties. (2018) (63)

Rate per 100,000 of Drug Overdose Deaths (non-exclusive), By County of Residence or Metro Area and Year, 2000-2016



Rate per 100,000 for 2000-2009 based on 2000 US Census Numbers and 2010-2016 based on 2010 US Census Numbers
Source: Minnesota Department of Health. (2018) (98)

Preventing and Managing Chronic Conditions

Children with Special Health Care Needs

Children with special health care needs are defined as, “Those who have, or who are at increased risk for a chronic physical, developmental, behavioral, or emotional condition. They also require health and related services of a type or amount beyond that generally required.” (99) According to the 2009-2010 National Survey of Children with Special Health Care Needs, it is estimated that 14.3 percent of all Minnesota children ages 0-17 have special health care needs while nationally 15.1 percent do. (100)



Some of the most common conditions affecting children in Minnesota according to the National Survey of Children with Special Health Care Needs 2009-2010 are allergies (42.7 percent), asthma (34.4 percent), anxiety (19.3 percent), attention deficit hyperactivity disorder (29.8 percent), conduct disorders (10.9 percent), depression (12.6 percent), and developmental delays (14.0 percent). (101) It is unclear what percentage of children in the SWHHS counties have special health care needs, as this data is not collected at a county level. Special education enrollment is tracked at a school district and county level, which can give a glimpse at the size of the population since not every child that has a special health care need will qualify to be enrolled in special education during the IEP process. In the 2016-2017 school year, SWHHS counties saw 15.0 percent of their K-12 students enrolled in special education, which was higher than Minnesota’s rate of 13.8 percent. This rate, which was 11.7 percent in the 2004-2005 school year, has steadily increased while overall K-12 enrollment numbers have dropped from 12,347 in 2004-2005 to 11,764 in the 2016-2017 school year. It is unclear why more children need special education. One thought is with the emphasis on early intervention more children are being identified earlier. Another thought is children are, overall, unhealthier than past generations. (49)

Percent of K-12 Special Education Students Enrollment

	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Minnesota	12.9	13.0	13.2	13.3	13.4	13.4	13.4	13.4	13.6	13.8
SWHHS	13.0	13.6	13.8	14.5	14.0	14.0	14.2	14.3	14.7	15.0
Lincoln	12.0	13.0	13.2	13.7	12.3	12.7	12.9	12.4	12.7	11.3
Lyon	12.1	12.9	13.6	15.1	15.1	15.0	15.7	15.3	15.3	16.8
Murray	15.0	15.8	16.6	16.4	15.5	15.2	13.5	12.3	14.1	14.6
Pipestone	13.5	14.1	15.0	13.5	13.7	12.6	13.4	13.9	13.2	12.6
Redwood	13.2	13.1	13.0	14.3	13.6	14.0	14.5	15.6	16.9	16.9
Rock	13.7	14.6	12.7	13.6	12.0	12.4	11.6	12.8	12.8	12.2

Source: Minnesota Department of Education. (2017). (49)

Cancer Screening

Cancer screening practices have shown to be effective in detecting cancer at earlier stages in the disease process. In 2010, the State of Minnesota screened for cancer at a higher rate than the United States average. (65)

Preventing Diabetes

There are a variety of risk factors like weight, smoking status, cholesterol and blood pressure levels that contribute to diabetes. Of these risk factors, 78 percent of individuals in Minnesota with pre-diabetes are overweight or obese, 42 percent have high blood pressure, 38 percent have high cholesterol, and 16 percent smoke. (65) Additional risk factors are a family history of diabetes, being over 45 years old, are African American, Hispanic/Latino American, American Indian, or Alaska Native (some Pacific Islanders and Asian Americans are also at higher risk) and having gestational diabetes or giving birth to a baby who weighed more than 9 pounds. (102) To prevent diabetes, people need to make healthy choices early on when it comes to types, quality, and quantity of food they eat and their physical activity levels. (65)

Similar to the State of Minnesota rate, SWHHS adults have experienced an increased diagnosis rate of diabetes. From 2004 to 2013, all SWHHS counties increased in diagnosis rates. At the same time, the range at which these rates increased (in comparison with the state average) was from -0.2 to 1.5 percentage points. (103)

Age-Adjusted Estimates of the Percentage of Adults† with Diagnosed Diabetes

	2004	2005	2006	2007	2008	2009	2010	2011*	2012*	2013*
Minnesota	5.4	5.5	5.6	5.6	5.8	6.1	6.4	6.9	6.8	6.8
Lincoln	5.6	5.7	5.9	6.1	6.4	6.6	6.3	6.6	6.5	6.6
Lyon	5.6	5.8	6.1	6.3	6.4	7.1	7.1	7.7	7.3	7.7
Murray	5.7	6.0	6.0	6.2	6.4	7.0	6.8	7.0	7.0	8.3
Pipestone	5.8	5.9	5.9	6.2	6.6	7.4	6.9	6.8	6.4	7.1
Redwood	5.8	5.9	6.1	6.2	6.6	6.9	6.9	7.0	6.8	7.0
Rock	5.9	6.1	6.1	6.2	6.5	6.7	6.6	7.3	7.7	7.4

†≥ 20 years old. See the glossary for a definition of indicator. *methodologic changes in BRFSS started in 2011 and potential effects on prevalence estimates. Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System. (2014). (103)

Oral Health

Good oral health is important to a person's overall health. Poor oral health can lead to cavities, gum disease, and potentially tooth loss. Gum disease has been linked to other chronic conditions such as endocarditis, cardiovascular disease, low birth weight, and premature death. Many diseases can, in turn, affect oral health like diabetes, immune system disorders, and osteoporosis. These diseases can cause tooth loss and bone and gum infections, which can impact a person's self-esteem, increase the use of sick-time, and reduce employment opportunities. (65)

Dental providers are hard to come by in the SWHHS counties and this region has been designated as a dental provider shortage area by the Minnesota Department of Health. Those providers that are providing services to SWHHS residents are not required by law to provide services to people with Medical Assistance, which covers dental services. Anecdotally, many dental providers who choose not to cover these patients claim that Medical Assistance reimbursement rates do not cover their costs to provide the care needed. As a result, many Medical Assistance clients either go without care or end up traveling to the metro area for treatment. A phone survey conducted by SWHHS staff in August 2014 found that only four providers are taking new Medical Assistance clients and 9 out of 24 dental providers are continuing to see Medical Assistance clients. (104)



Children with Medical Assistance are tracked through the Child and Teen Check-up (C&TC) program. In the 2012-2013 timeframe, only 31.6 percent of C&TC children in the SWHHS counties received any dental services, which was 8.7 percentage points lower than the state rate of 40.3 percent. Unfortunately, those numbers have dropped in the 2014-2015 timeframe to 28.8 percent for SWHHS counties and 39.2 percent for Minnesota. (105)

Percent Receiving Dental Services for Children Through Child & Teen Check-up Program For the period of 10/01/2014 through 09/30/2015

	MN	SWHHS	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
Total Receiving Any Dental Services	39.2%	28.8%	33.0%	30.1%	38.6%	26.4%	28.2%	18.3%
Total Receiving Preventive Dental Services	35.2%	25.5%	29.5%	26.6%	34.9%	23.7%	24.3%	16.0%
Total Receiving Dental Treatment Services	16.6%	12.8%	10.9%	14.1%	18.2%	11.0%	12.5%	7.9%
Total Receiving Sealant on a Permanent Molar	5.6%	4.7%	6.3%	4.4%	6.9%	6.0%	3.8%	2.8%
Total Receiving Diagnostic Dental Services	36.0%	26.6%	30.3%	27.7%	36.7%	25.3%	25.1%	16.8%
Total Rec Oral Health Services by Non-Dentist	4.6%	8.8%	8.1%	8.9%	9.9%	12.9%	6.2%	7.0%
Total Receiving any Dental/Oral Health Service	42.4%	35.7%	39.9%	37.3%	46.8%	35.1%	32.7%	25.0%

Source: Minnesota Department of Human Services. Child and Teen Check-up Program. (2017). (105)

Preventing Disease and Injury

Immunizations

Immunizations that one person receives protects the community as a whole. They also protect those who are unable to be immunized, like children that are too young, those with medical conditions that cannot be immunized, or those that have not developed an immunity.

In 2013, SWHHS counties' immunization rates, ranging from 52.2 to 78.1 percent, were higher than the state average of 60.2 percent. SWHHS counties have had consistently higher immunizations rates than the State of Minnesota. In 2016, SWHHS counties were again higher than the state average, but each SWHHS county saw a decrease in the completion of recommended vaccine series between 2015 and 2016 by 3.4 percentage points. The Healthy People 2020 goal of 80 percent coverage for the complete childhood immunization series has yet to be met by Minnesota or SWHHS. (106)

Percent of Children 24-35 Months with Recommended Immunizations (series)*

	2010	2011	2012	2013	2014	2015**	2016**	2017**	2018**
Minnesota	33.2	56.5	60.5	60.2	60.6	59.0	60.1	60.9	67.8
SWHHS	37.1	62.5	66.4	66.6	67.2	72.6	69.2	69.1	75.8
Lincoln	37.9	58.3	78.6	69.5	67.3	71.6	80.0	66.2	77.6
Lyon	35.0	68.2	40.6	78.1	72.1	75.4	74.9	75.8	78.6
Murray	42.4	56.0	66.3	57.7	54.4	73.3	62.7	74.7	79.0
Pipestone	34.1	63.9	74.1	65.2	64.8	64.4	62.6	62.4	71.3
Redwood	37.3	72.0	74.1	76.6	75.1	83.4	74.4	75.0	74.2
Rock	36.0	56.4	64.6	52.2	69.2	67.5	60.3	60.6	74.2

*Recommended # of doses by 19 months Series of recommended vaccines for children between 24 and 35 months old: 4+ DTaP (Diphtheria, tetanus and acellular pertussis), 3+ polio, 1+ MMR (Measles, mumps, and rubella), Completed Hib (Haemophilus influenza type b), 3+ Hep B (Hepatitis B), 1+ varicella (chickenpox), Completed Prevnar (Pneumococcal conjugate vaccine by brand name).

**Note: In 2015, there was a change in methodology for calculating up-to-date rates. Previously, the denominator only included children ages 24-35 months with two or more non-influenza vaccinations on their MIIC record. The numerator included all children in this group who were up-to-date at the time of analysis. Beginning in 2015, the denominator includes all children ages 24-35 months in MIIC, and the numerator only includes children in this group who were up-to-date at 24 months. Source: Minnesota Public Health Data Access. Childhood Immunization Data. MIIC. (2019). (106)

Healthy People 2020: IID-8: Target 80% (107)

Preventing Sexually Transmitted Infections

Delay of Sexual Activity

Delaying sexual activity is one important tool in preventing the spread of sexually transmitted infections and decreasing the teen birth rate. In 2016, SWHHS ninth-grade students, on average, had a higher percentage of ever having had sexual intercourse than the Minnesota Students by two percentage points, while SWHHS 11th grade students were four percentage points lower than Minnesota students. Data on 11th grade students were not collected prior to the 2013 survey. Pipestone County ninth-grade students were 17 percentage points higher than Minnesota students. (29)

Percent of Ninth-grade Students Who Have Ever had Sexual Intercourse

	1998	2001	2004	2007	2010	2013	2016
Minnesota	23	19	19	19	20	15	11
SWHHS	23	22	18	18	15	18	13
Lincoln	21	16	14	24	13	11	16
Lyon	21	22	18	14	13	17	8
Murray	31	19	15	31	17	17	11
Pipestone	20	32	21	18	18	28	28
Redwood	18	13	10	16	24	23	16
Rock	26	17	24	14	20	12	8

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Percent of 11th Grade Students Who Have Ever had Sexual Intercourse

	2013	2016
Minnesota	37	35
SWHHS	38	31
Lincoln	50	43
Lyon	22	28
Murray	54	28
Pipestone	57	32
Redwood	46	38
Rock	33	26

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Vaccination

Human papillomavirus (HPV) is the most common sexually transmitted infection, accounting for nearly all of the 12,000 cervical cancer occurrences each year in the United States. Sexually active males and females are at high risk of contracting the infection with nearly half contracting HPV at some point in their lives. HPV is a vaccine-preventable infection, with two vaccines on the market for females and one for males. Vaccination is recommended for females age 11 and 12 years old, and for those that missed the first vaccination window, it is recommended for 13 through 26-year-olds, while males are recommended to receive the vaccine between 9 through 26 years of age. (65)

Unfortunately, the stigma around giving a child a vaccine to prevent a sexually transmitted infection prevents many parents from giving this vaccination. If the parents are counting on abstinence from sexual intercourse as a safeguard, they may want to consider all types of sexual experimentation. During a study of young women ages 13 to 21 years old, those that were considered to be sexually inexperienced, 11.6 percent had contracted HPV through hand-genital or genital-skin contact. (108)

In July 2014, SWHHS counties with a 53.2 percent rate on average ranked higher than the State of Minnesota with a 45.5 percent rate for percent of HPV series completion rates. By July 2017 report, there was a drop in SWHHS completion rates by 16.1 percentage points, which may be attributable to a change in methodology in 2015. There was an increase of 23.5 percentage points in HPV 1+ immunizations in SWHHS. SWHHS counties continue to trend higher than Minnesota in HPV series completion. (109) (110)

MIIC July 2017 Adolescent HPV Immunization Coverage in Minnesota, by County Percent of Adolescents Age 13-17 Years Up to Date with a Vaccine Series and Individual Vaccines

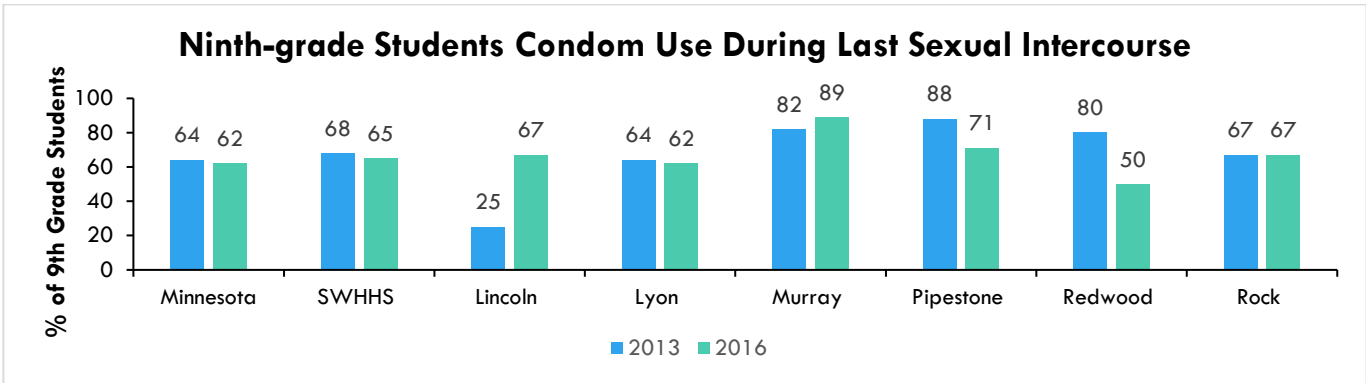
	2012 Population Estimate	MIIC Population*	2014 Percent with 1+ HPV	2014 Percent with HPV Series Completion	*2017 Percent with 1+ HPV	*2017 Percent with HPV Series Completion
Minnesota	354,757	416,996	35.8	45.5	52.3	34.1
SWHHS	5,586	5,416	30.1	53.2	53.6	37.1
Lincoln	336	360	28.1	58.7	58.2	37.3
Lyon	1,655	2153	44.7	58.2	63.5	48.3
Murray	559	494	27.5	47.1	48.6	28.7
Pipestone	640	739	14.6	60	35.3	22.5
Redwood	1,072	1107	36.2	49.6	56.2	35.1
Rock	682	733	29.5	45.4	47.4	28.7

*Please note that methodology changed in July 2015. Previously, the denominator included only 'MIIC Population with 2+ Non-influenza shots'.
Source: Minnesota Department of Health. MDH Immunization Program. Southwest Minnesota Immunization Information Connection. (2017). (109) (110)

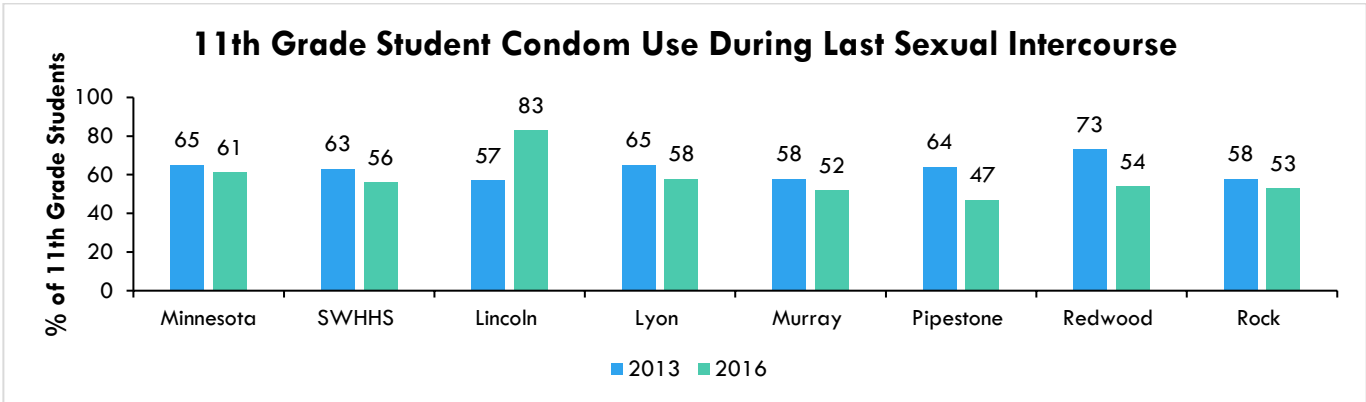
Condom Use

Condom use is another effective way to prevent sexually transmitted infections. When condoms are used with another method of birth control like birth control pills, pregnancy prevention increases.

In 2013, the Minnesota Student Survey changed the survey question from “always uses a condom” to “use a condom during last sexual intercourse.” In 2016, SWHHS ninth-grade students were above Minnesota average of 62 percent, while 11th grade students were below the state average of 61 percent. (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Safety Belts, Car Seats, and Booster Seats

The best way to reduce injuries and death in a motor vehicle crash is by using safety belts and car seats. A person is four times more likely to be injured in a crash when they are not buckled up. (111) In 2009, Minnesota adopted the Primary Seat Belt Law, which has increased the rate of seat belt use in the state to 93.2 percent in 2016, which is down from a high of 94.8 in 2013. Young males that drive pickup trucks tend to be less likely to use a safety belt than the rest of the population. (112)

Federally approved car seats and booster seats have been required by Minnesota State Law since July 2009 to be used by children that are age seven and under unless the child is 4'9" or taller. (111) In the 2014 Booster Seat survey conducted by the Minnesota Department of Public Safety, 2,348 children were observed. The vehicle's driver was wearing seat belts 97.3 percent of the time. Children with seat-belted drivers were found to be correctly restrained 74.3 percent of the time, 20.2 percent were incorrectly restrained and 5.5 percent were not restrained. In the 2011 survey, only half of young caregivers ages 16-29 years used booster seats for children riding with them. In the 2014 survey, there was a dramatic increase to 93.0 percent using booster seats, which is a 43.0 percentage point increase. (113)

In 2015, 411 people died in Minnesota from traffic fatalities and 29,981 people were injured. Of these traffic fatalities, eight were from SWHHS counties with 282 people injured. The top four contributing factors were drunk driving taking 95 lives, failure to buckle up taking 91 lives, speeding taking 78 lives, and distracted driving taking 74 lives. (114)

From 2008 to 2012, there were 4,393 crashes across the SWHHS counties with 65 deaths. Unbelted deaths, on average, made up 32.3 percent of all motor vehicle deaths. In 2011-2015, the number of crashes in SWHHS counties went down to 3,725, a reduction of 668 crashes, with 62 deaths. Overall crashes that resulted in death occurred in 1.7 percent of crashes in SWHHS counties, which is higher than the State of Minnesota average of 0.5 percent during 2011-2015. (114)

2011-2015 Minnesota Crash Statistics by County, Unbelted Deaths

	All Crashes	All Deaths	Unbelted Motor Vehicle Occupant Deaths	Percent of Deaths that were Unbelted	Percent of Crashes that Resulted in Death
Minnesota	372,228	1,922	527	27.4%	0.5%
SWHHS	3,725	62	21	33.9%	1.7%
Lincoln	326	6	3	50.0%	1.8%
Lyon	1,406	14	4	28.6%	1.0%
Murray	342	6	4	66.7%	1.8%
Pipestone	343	7	-	0.0%	2.0%
Redwood	659	16	4	25.0%	2.4%
Rock	649	13	6	46.2%	2.0%

Source: Minnesota Department of Public Safety. (2016). (114)

From 2008 to 2012, alcohol-related crash deaths across the SWHHS counties were at 23.1 percent, which was, on average, below the Minnesota average of 31.3 percent. From 2011 to 2015, alcohol-related crash deaths across the SWHHS counties were at 25.8 percent, which was, on average, below the Minnesota average of 32.9 percent. In the SWHHS counties the alcohol-related crash deaths rate increases by 2.7 percentage points between 2008 to 2012 and 2011 to 2015. (114)

2011-2015 Minnesota Crash Statistics by County, Alcohol-Related Deaths

	All Crashes	All Deaths	Alcohol-Related Deaths	Percent of Deaths that were Alcohol-Related	Percent of Crashes that Resulted in Death	DWI's
Minnesota	372,228	1,922	632	32.9%	0.5%	134,607
SWHHS	3,725	62	16	25.8%	1.7%	1,805
Lincoln	326	6	3	50.0%	1.8%	103
Lyon	1,406	14	2	14.3%	1.0%	725
Murray	342	6	2	33.3%	1.8%	97
Pipestone	343	7	2	28.6%	2.0%	205
Redwood	659	16	6	37.5%	2.4%	434
Rock	649	13	1	7.7%	2.0%	241

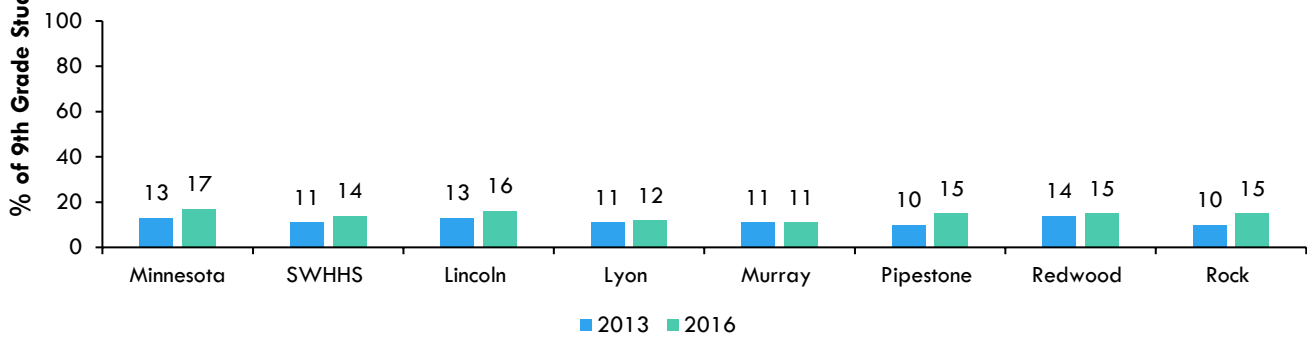
Source: Minnesota Department of Public Safety. (2016). (114)

Promoting Mental Health

Everyday functioning can be affected by mental and emotional health from relationships, physical activity, and the ability to work. Physical and medical conditions can also affect one's mental and emotional health. As people struggle with pain management, depression can become an issue. Depression is reported present in more than 65 percent of adults with a medical disorder. (65)

Poor mental health can also strike young adults. In the 2016 Minnesota Student Survey, 14 percent of SWHHS ninth-grade students reported having long-term mental health, behavioral, or emotional problems, which increased three percentage points from the 2013 Minnesota Student Survey. (29)

Percent of Ninth-grade Students That Have Long-Term Mental Health, Behavioral or Emotional Problems

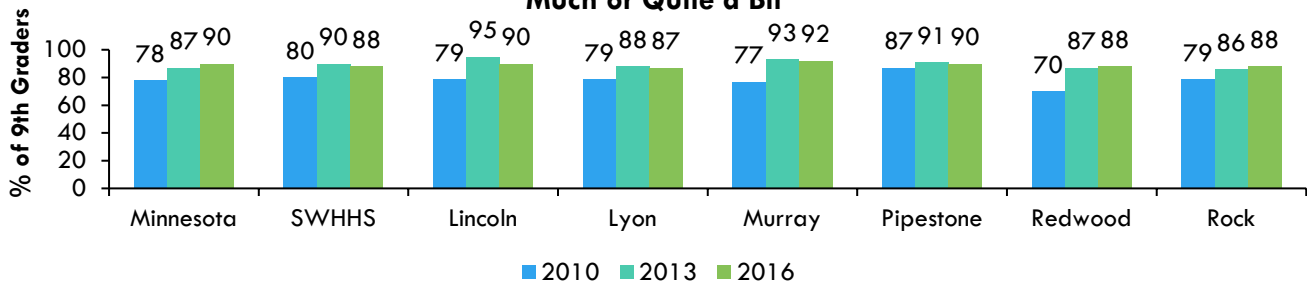


Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Development, making sound decisions, and learning can be affected when adolescents experience emotional distress. Some of the decisions that are made under emotional distress can lead adolescents to extreme behaviors like cutting and other forms of self-harm, along with an increase in suicide. (65)

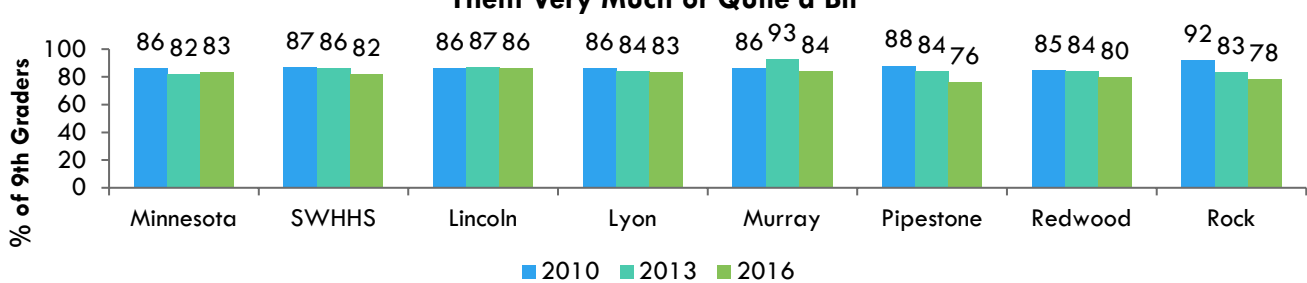
Adolescents that have at least one caring adult around them are much more likely to be better equipped to handle the emotional challenges of being an adolescent. (65) Since 1998, ninth-grade SWHHS students have increasingly felt that their parents care about them, until 2016, where there was a two-percentage point decrease. Perceptions of the caring of other adult relatives and friends have also increased over these same years until 2016 where there was a four-percentage point reduction in other adult relatives and two percentage point reduction for friends caring about them for SWHHS counties. (75) Caring friendships are also a protective factor for increased adolescent emotional wellbeing. (65)

Percent of Ninth-grade Students Who Feel that Parents Care About Them Very Much or Quite a Bit

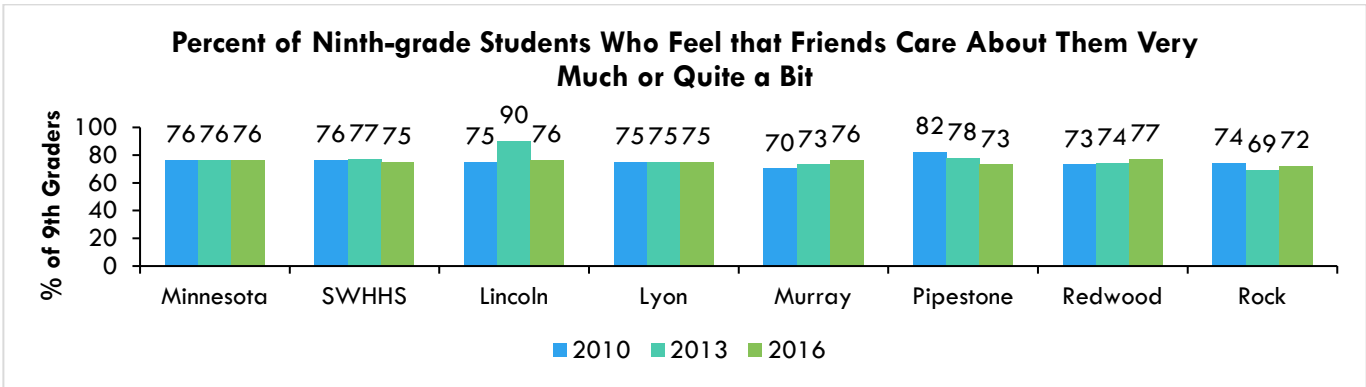


Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Percent of Ninth-grade Students Who Feel that Other Adult Relatives Care About Them Very Much or Quite a Bit

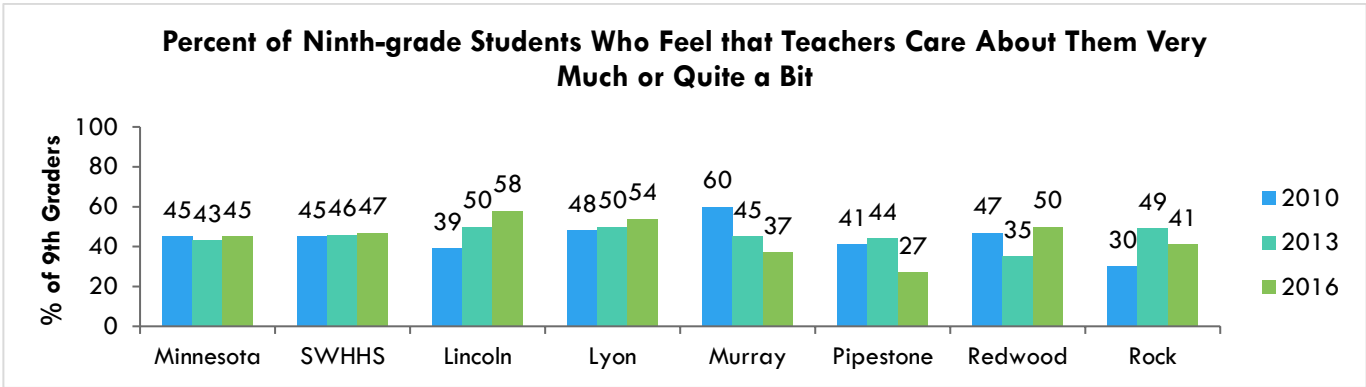


Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

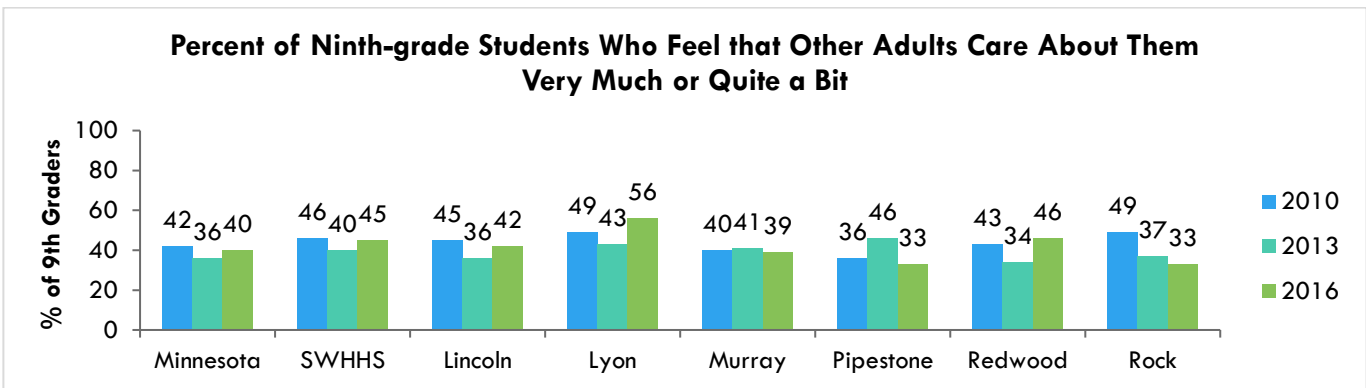


Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

On average, SWHHS ninth-grade students have felt teachers increasingly care about them very much or quite a bit (27 percent to 58 percent). This is relatively consistent with what other ninth-grade students across Minnesota have felt. (75) Perceptions of students about other adults in the community caring about them saw an on average increase of five percentage points in SWHHS counties and a four-percentage point increase in Minnesota. SWHHS counties on average were five percentage points higher than Minnesota on students feeling that other adults in the community care about them very much or quite a bit.



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)



Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Health Outcomes

Leading Causes of Death

In 2016, the leading causes of death across the SWHHS counties were heart disease, cancer, stroke, Alzheimer's disease, and chronic lower respiratory disease. That same year, the State of Minnesota saw cancer, heart disease,

unintentional injury, chronic lower respiratory disease, and Alzheimer’s disease as the overall leading causes of death. In 2011, mortality from heart disease saw 178 deaths and cancer saw 176 deaths, which are very close in numbers in SWHHS. In 2016, cancer had 27 fewer deaths associated with the disease, 149 for SWHHS. In 2016, there were 194 deaths, which is 16 more deaths due to heart disease than in 2011. (21)

Minnesota and SWHHS’s 15 Leading Causes of Death by All Ages By State and County, 2016

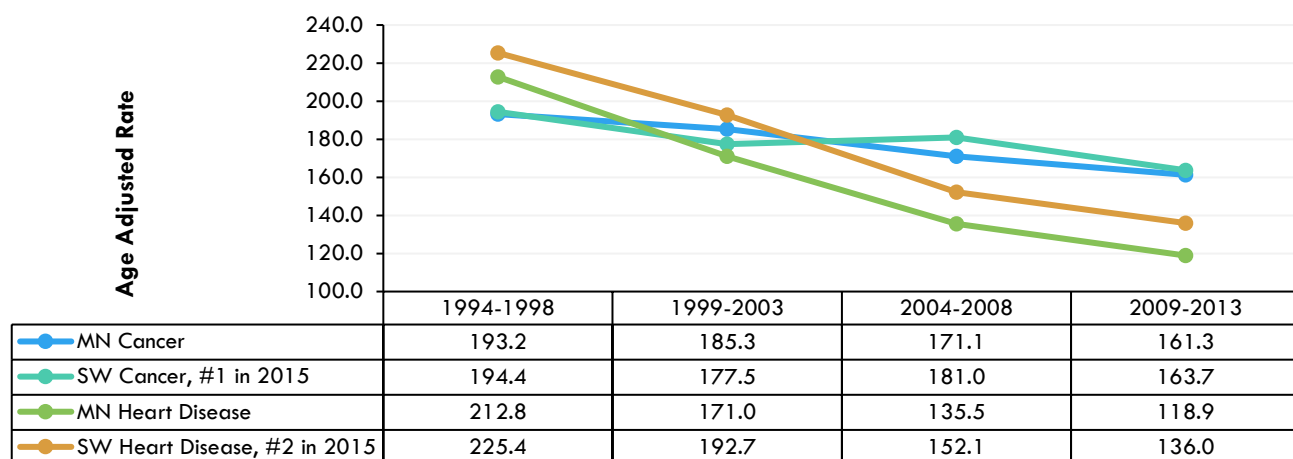
Cause	Minnesota		SWHHS		Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
	Rank	Number	Rank	Number	Rank	Rank	Rank	Rank	Rank	Rank
Alzheimer's disease	5	2,220	4	59	5	3	3	3	7	4
Benign Neoplasms	15	330	11	10	13	10	7	7	14	12
Cancer	1	9,845	2	149	2	1	2	2	2	2
Chronic lower respiratory dis.	4	2,368	5	55	4	4	4	5	3	6
Cirrhosis	10	595	13	6	11	13	10	10	14	12
Diabetes	7	1,269	7	24	6	7	13	6	6	7
Heart disease	2	7,823	1	194	1	1	1	1	1	1
Hypertension	12	569	13	6	8	15	10	13	12	8
Nephritis	11	593	11	10	13	12	7	10	9	12
Parkinson's	9	656	13	6	11	13	13	13	12	8
Pneumonia and influenza	13	527	8	13	8	7	13	10	9	8
Septicemia	14	393	10	12	8	10	7	13	11	8
Stroke	6	2,197	3	60	3	5	4	4	3	5
Suicide	8	744	8	13	13	7	10	8	8	12
Unintentional injury	3	2,661	6	42	7	6	6	8	5	3

These are the 15 leading causes of death for Minnesota in 2016, the causes may change from year to year and are not necessarily the 15 leading causes of death for each county or CHB.

Source: Minnesota Department of Health, Center for Health Statistics. (2017). (6)

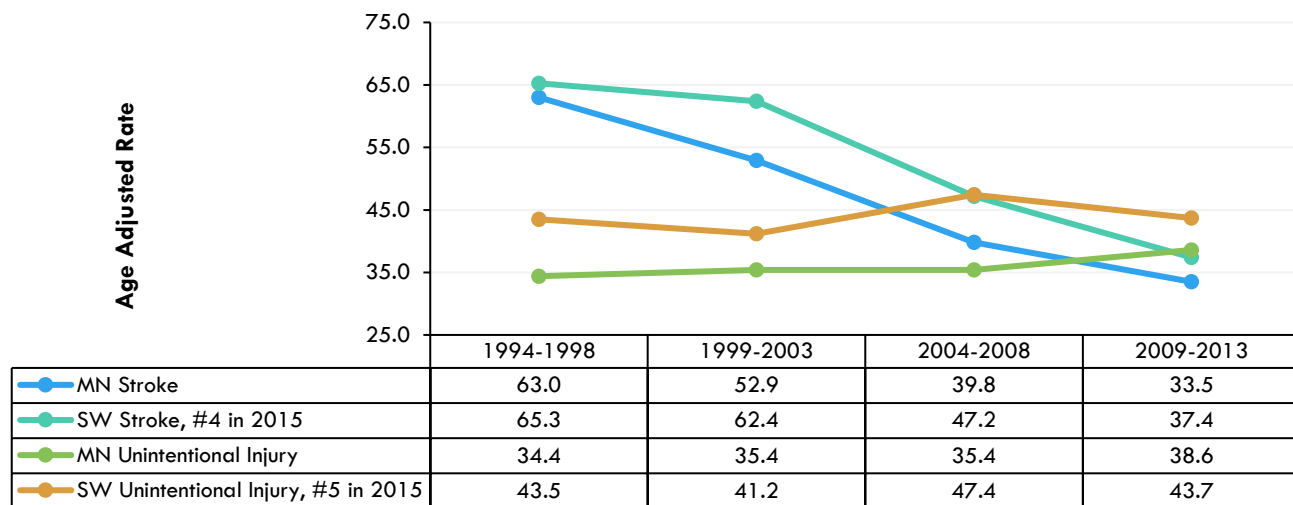
Since 1994, death from heart disease and stroke has trended downward across the SWHHS counties similar to that of Minnesota. Even though SWHHS counties have seen a reduction in heart disease, there is a 17.1 age-adjusted rate difference between SWHHS and Minnesota rates. The difference in age-adjusted rates for stroke are 3.9. Cancer and unintentional injury, however, have fluctuated a bit over the years. These are very similar trends that are also seen at the state level. (6)

MN & SWHHS Leading Causes of Death Cancer & Heart Disease-Age Adjusted Rate



Source: Minnesota Department of Health, Center for Health Statistics. (2017). (6)

MN & SWHHS Leading Causes of Death Stroke & Unintentional Injury-Age Adjusted Rate



Source: Minnesota Department of Health, Center for Health Statistics. (2017). (6)

Chronic Disease Conditions

Chronic disease conditions are long-term illnesses that impact the quality of life and contribute to lasting disability. These conditions are the leading cause of death and are contributors to premature death in the SWHHS counties and Minnesota.

Alzheimer's Disease

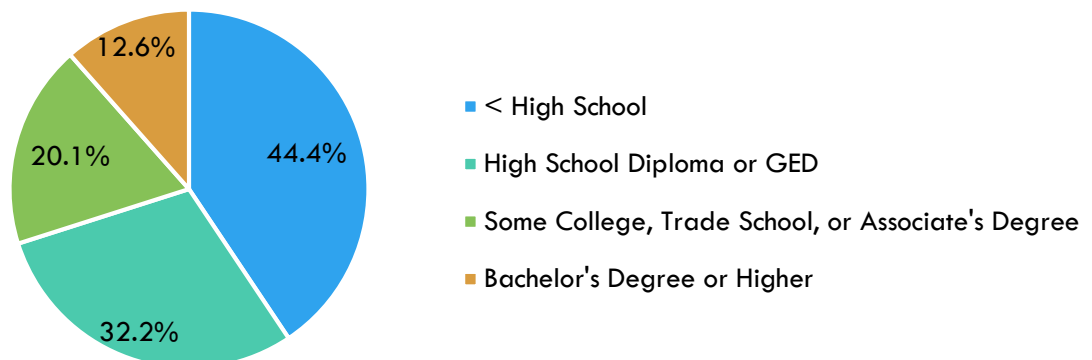
About 92,000 Minnesotans are estimated to have Alzheimer's disease in 2017, which is estimated to increase to 120,000 by 2025. In the United States, one in three seniors dies with Alzheimer's or another dementia according to the 2017 Alzheimer's Disease Facts and Figures from the Alzheimer's Association. Generally, Alzheimer's disease risk increases at a dramatic rate after age 65, with it doubling every five years beyond age 65. It is much less common for adults that are younger than age 65 to develop the disease. (115)

In 2016, Alzheimer’s disease was the fourth leading cause of death across the SWHHS counties. Lyon, Murray, and Pipestone counties had Alzheimer’s disease as their third leading cause of death for residents, while Rock County listed it as fourth, Lincoln County listed it as fifth, and Redwood County listed it as seventh. In Minnesota, Alzheimer’s disease is ranked the fifth leading cause of death for 2016. (6) Rankings reflect the demographics of the SWHHS counties as the counties with a faster-growing elderly population have a higher diagnosis rate of Alzheimer’s disease. As the population shifts with the aging baby-boomer population to more and more over 65, the leading cause of death rankings are expected to increase.

Arthritis

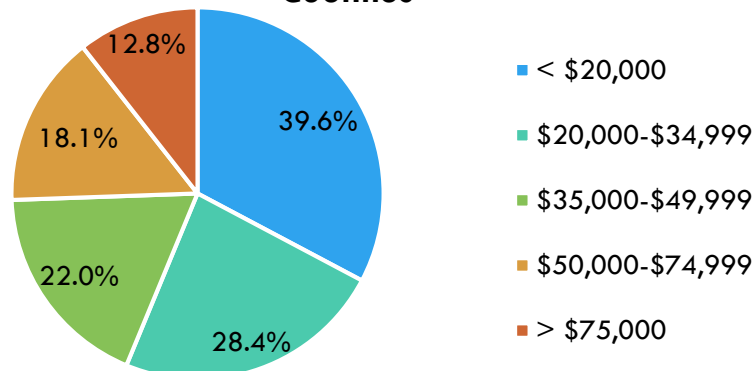
Over 100 medical conditions affecting the musculoskeletal system are considered to be in the arthritis family of disease. Arthritis conditions affect the joints and are a major cause of disability in Minnesota and the United States. Among the causes of disability, arthritis is ranked first. One-third of working-age people with arthritis have limitations to the type of work they can do or in the ability to work, which can limit income. In Minnesota, 22 percent or 907,000 adults live with arthritis. Of those living with arthritis, 43 percent have activity limitations. (116) In the 2015 Southwest Minnesota Healthy Communities Survey, 22.2 percent of adults surveyed said a doctor or other health care professional had told them that they had arthritis. Of those that said yes to being diagnosed with arthritis, there is a 26.8 percentage point difference in those with income less than \$20,000 than those with income greater than \$75,000. When those diagnosed with arthritis are looked at by education level, there is a 31.8 percentage point difference between those with less than a high school education compared to those with a bachelor’s degree or higher. (4)

Have you ever been told by a doctor or other health care professional that you had arthritis? Yes; By Education; 2015 SWHHS Counties



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Have you ever been told by a doctor or other health care professional that you had arthritis? Yes; By Income; 2015 SWHHS Counties



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Asthma

In Minnesota, asthma affects nearly 393,000 residents with 90,000 of those residents being children. Prevention is key to managing asthma and keeping those with the disease out of the emergency room and hospital. When a person with asthma manages their triggers (secondhand smoke, mold, air pollution, pollen, dust mites, stress, and viral infections), use medication, and continually monitors their disease appropriately, hospitalizations, and emergency room visits go down. The main barriers to regular asthma care are lack of health insurance and poor patient education. (117)



Asthma estimated rates per 1,000 by age from the 2012 All Payer Claims Database suggests that rates are lower than state levels for children less than 18 years and adults ages 18 through 64. For people greater than 64 years the SWHHS rate is higher than Minnesota's rate. (118) Asthma hospitalization rates per 10,000 for the SWHHS counties are at or below the state average for all three-year groupings. Lincoln County hospitalization rates were higher than the state average but were also considered unstable for 2009-2011 and suppressed for 2011-2014. Asthma emergency department visits were lower than the state average in all three of the three-year samples reviewed. (42)

Asthma Estimated Rates per 1,000 Residents by Age; 2012 All Payer Claims Database

	<18 Age	Age 18 thru 64	>64 Age
MN	121.9	99.4	145.9
SWHHS	118.8	84.6	149.0
Lincoln	114.1	83.7	139.3
Lyon	109.4	85.8	174.5
Murray	155.4	95.4	161.7
Pipestone	119.7	73.4	143.9
Redwood	114.4	85.9	137.2
Rock	99.6	83.3	137.5

Source: Minnesota all Payer Claims Database. (2016). (118)

Asthma Hospitalizations Age-Adjusted Rate per 10,000, 3 Year Averages 2006-2014

	2006 2008	2009 2011	2012 2014
Minnesota	8.4	6.8	6.1
Lincoln	9.9	9.0 (UR)	*
Lyon	6.1	6.1	5.1
Murray	8.4	4.7 (UR)	5.5 (UR)
Pipestone	6.1	4.5 (UR)	2.3 (UR)
Redwood	5.6	6.8	3.3 (UR)
Rock	5.3 (UR)	4.4 (UR)	8.1

* To protect an individual's privacy hospitalizations and ED visit counts from 1 to 5 are suppressed if the underlying population is less than or equal to 100,000.

UR = Unstable Rate. Rates based on numerators less than or equal to 20 may be unstable and should be interpreted with caution.

Source: Minnesota Public Health Access Data. (2017). (42)

Asthma Emergency Department Visits Age Adjust Rate per 10,000

	2006	2008	2009	2011	2012	2014
Minnesota	38.9		39.8		40.6	
Lincoln	23.1		20.2		10.9 (UR)	
Lyon	20.5		25.9		22.6	
Murray	35.3		25.6		20.2	
Pipestone	18.9		14.3		18.1	
Redwood	21.5		28		24.2	
Rock	19		18.6		34.7	

* To protect an individual's privacy hospitalizations and ED visit counts from 1 to 5 are suppressed if the underlying population is less than or equal to 100,000.

UR = Unstable Rate. Rates based on numerators less than or equal to 20 may be unstable and should be interpreted with caution.

Source: Minnesota Public Health Access Data. (2017). (42)

According to the 2015 Southwest Minnesota Healthy Communities Survey, 8.4 percent of SWHHS adults were reported to have asthma, which was slightly lower than the overall 16-county region at 8.9 percent. (4)

Have you ever been told by a doctor or other health care professional that you had asthma? 2015 Southwest Minnesota Healthy Communities Survey

	Overall	18-34	35-44	45-54	55-64	65-74	75+
16 County	8.9%	7.5%	10.2%	10.8%	8.4%	7.9%	8.9%
SWHHS	8.4%	4.8%	11.4%	8.9%	10.1%	7.9%	9.6%
Lincoln	10.0%	6.7%	26.0%	4.5%	11.0%	7.5%	8.5%
Lyon	10.4%	7.2%	10.6%	11.8%	12.2%	10.9%	14.3%
Murray	3.8%	3.4%	6.1%	1.5%	3.8%	4.4%	4.5%
Pipestone	9.7%	*	*	14.4%	8.8%	10.1%	8.1%
Redwood	7.6%	2.2%	10.5%	8.9%	10.4%	5.5%	9.7%
Rock	6.9%	*	6.7%	5.0%	12.3%	8.6%	8.0%

*Counts under-reporting threshold of 30+ participants

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Cancer

Cancer is the second leading cause of death in the SWHHS counties and the leading cause of death in Minnesota in 2016. (6) The most commonly diagnosed forms of cancer in the SWHHS counties are prostate, female breast, colon and rectum, and lung and bronchus, while these same forms also cause the most cancer deaths. Old age increases the likelihood that a person will develop cancer with 55 percent of cancers being diagnosed in the 65 and older age group. This age group makes up 75 percent of cancer deaths. In general, males have a 15 percent higher risk of developing cancer than females. (15)

Everyone is at risk for cancer. Some external risk factors that increase a person's chances of being diagnosed with cancer are tobacco use, chemical exposure, sunlight and other forms of radiation, viruses, and bacteria. Additionally, internal factors like inherited conditions, immune function, hormone levels and mutations that occur from metabolism can increase a person's likelihood of developing cancer. Tobacco use is responsible for 30 percent of cancer deaths. If tobacco use were eliminated, one out of three deaths would be prevented. There is an increasing body of evidence that indicates having a healthy weight, eating a healthy diet, and exercising regularly can prevent an estimated one-third of cancer deaths. Vaccines have been developed for a hepatitis B virus and human papillomavirus (HPV) that can prevent infection from certain strains of the virus. The infections can cause cancer. (15)

Average Number of New Cancer Cases Diagnosed Each Year for Selected Cancers by County, Minnesota, 2008-2012

	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
All sites (SWHHS rank)	42	133	59	57	104	56
Female Breast (2)	5	19	8	9	15	8
Cervix Uteri (10)	<1	1	<1	0	1	<1
Colon & Rectum (3)	8	15	8	8	11	6
Corpus & Uterus, NOS (9)	1	4	3	1	4	3
Leukemia (5)	1	3	3	2	2	2
Lung & Bronchus (4)	4	14	5	6	11	5
Melanoma (8)	1	7	2	2	6	2
Non-Hodgkin Lymphoma (7)	3	7	3	3	6	2
Prostate (1)	6	18	11	8	17	10
Urinary Bladder (6)	3	10	4	2	5	3

Source: American Cancer Society, Midwest Division. (2015). (15)

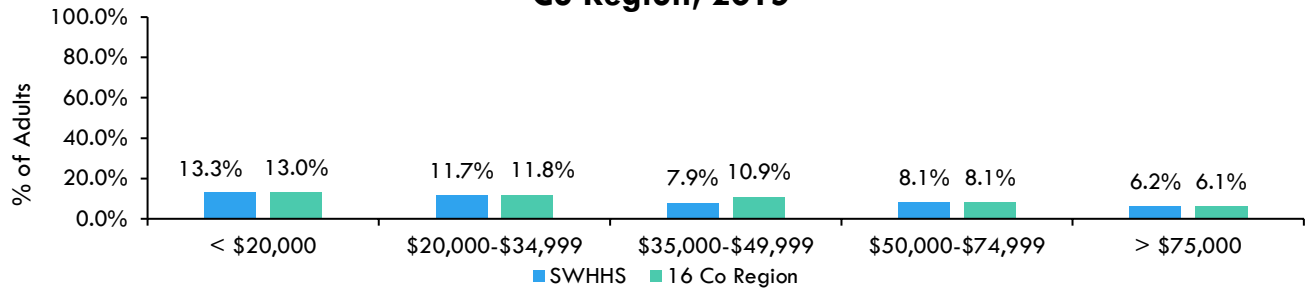
Average Number of Cancer Deaths Each Year for Selected Cancers by County, Minnesota, 2008-2012

	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
All sites	18	50	22	28	45	23
Female Breast	1	1	<1	1	1	1
Cervix Uteri	2	4	1	2	2	2
Colon & Rectum	1	6	3	3	5	2
Corpus and Uterus, NOS	1	30	1	2	2	1
Leukemia	<1	1	1	<1	1	<1
Lung & Bronchus	3	12	4	7	9	5
Melanoma of the Skin	1	2	2	2	3	1
Non-Hodgkin Lymphoma	<1	1	<1	1	2	1
Prostate	<1	<1	<1	<1	<1	<1
Bladder	2	3	2	2	4	3

Source: American Cancer Society, Midwest Division. (2015)

People living in poverty are much more likely to smoke, be obese, and live in an unhealthy environment. Because access to cancer screening is limited in impoverished populations, cancer, when found, generally is found at later stages of the illness. Treatment options tend to be much more limited at the later stage of the illness, which creates a higher potential for death. (65) In the 2015 Southwest Minnesota Healthy Communities Survey, 9.2 percent of SWHHS adults surveyed said a doctor or other health care professional had told them that they had cancer. Of those that said yes to being diagnosed with cancer, there is a 7.1 percentage point difference in those with income less than \$20,000 at 13.3 percent than those with income greater than \$75,000 at 6.2 percent. (4)

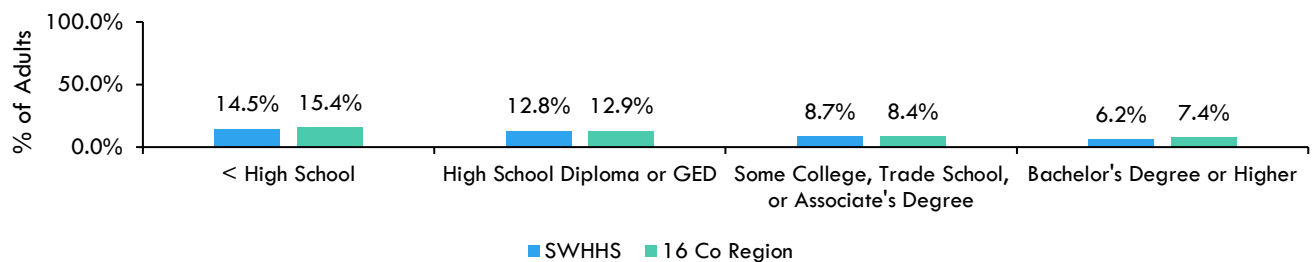
Have you ever been told by a doctor or other health care professional that you had CANCER?; Yes, by Income, SWHHS and 16 Co Region, 2015



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When those diagnosed with cancer in SWHHS are looked at by education level, there is an 8.3 percentage point difference between those with less than a high school education at 14.5 percent compared to those with a bachelor's degree or higher at 6.2 percent. (4)

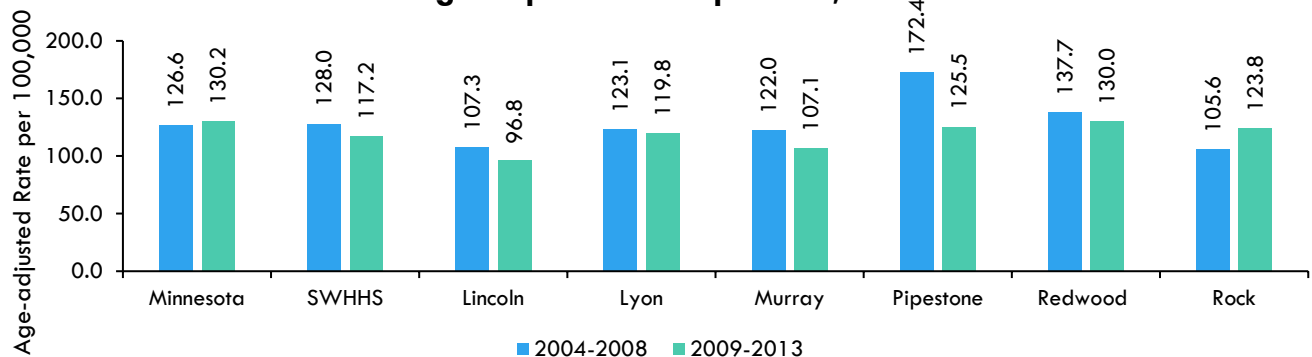
Have you ever been told by a doctor or other health care professional that you had CANCER?; Yes, by Education, SWHHS and 16 Co Region, 2015



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Between 2004-2008, breast cancer age-adjusted rates per 100,000 were slightly higher in the SWHHS counties with an average of 128.0 versus the state rate of 126.6. Pipestone County's rate of 172.4 had the largest gap between the Minnesota rate and other SWHHS counties. The 5-year average in 2009-2013 saw the SWHHS rate of 117.2 go below Minnesota's rate of 130.2. (42)

Breast Cancer Incidence (females only) Age-adjusted rates per 100,000



Source: Minnesota Public Health Access Data. (2017). (42)

Chronic Obstructive Pulmonary Disease

Emphysema and chronic bronchitis are two types of slowly progressing lung diseases that make up chronic obstructive pulmonary disease or COPD. These diseases obstruct airflow and normal breathing. Environmental exposures can make COPD worse during the fall and winter months of the year. Some of the airborne irritants are smoke, mold, dust mites, and air pollution. Even though not all tobacco smokers develop COPD, tobacco smoke is the most common cause. (65)

COPD hospitalization rates per 10,000 are slightly higher in the SWHHS counties than those across Minnesota. The lowest hospitalization rates from 2009-2011 were in Pipestone County while the highest rate was in Murray County. In 2012-2014, SWHHS counties were below Minnesota average for COPD hospitalization by 2.5 in rate. All of the counties had decreased in rates except Lyon, which had a very minimal increase of 0.4 in rate. (42)

COPD Hospitalizations, Ages 25+, All Genders, Rate per 10,000

	2009-2011	2012-2014
Minnesota	18.9	15.8
SWHHS	19.3	13.3
Lincoln	14.6	9.3 (UR)
Lyon	23.1	23.5
Murray	23.9	12.9
Pipestone	15.3	13.2
Redwood	21.1	20.3
Rock	17.9	10.1

UR = Unstable Rate. Rates based on numerators less than or equal to 20 may be unstable and should be interpreted with caution.

Source: Minnesota Public Health Access Data. (2017). (42)

Heart Disease

In 2011 and 2016, the leading cause of death in the SWHHS counties was heart disease and in Minnesota, it ranked second. From 2008-2010, SWHHS rates for heart attack hospitalizations declined but were still overall higher than the state. In 2011-2013, there was a continued decline in SWHHS rates on average. Lyon, Murray, and Rock counties saw an increase in rates from 1.0 to 3.3. (42)

Heart Attack Hospitalizations, Ages 35+ Combined, Rate per 10,000

	2008-2010	2011-2013
Minnesota	26.7	29.2
SWHHS	28.9	26.3
Lincoln	36.9	16.7
Lyon	24.8	25.8
Murray	24.9	28.0
Pipestone	32.8	29.9
Redwood	27.4	27.2
Rock	26.8	30.1

Source: Minnesota Public Health Access Data. (2017). (42)

In the 2015 Southwest Minnesota Healthy Communities Survey, participating SWHHS counties reported a lower rate of physician-diagnosed hypertension/high blood pressure than the 16-county region as a whole. (4)

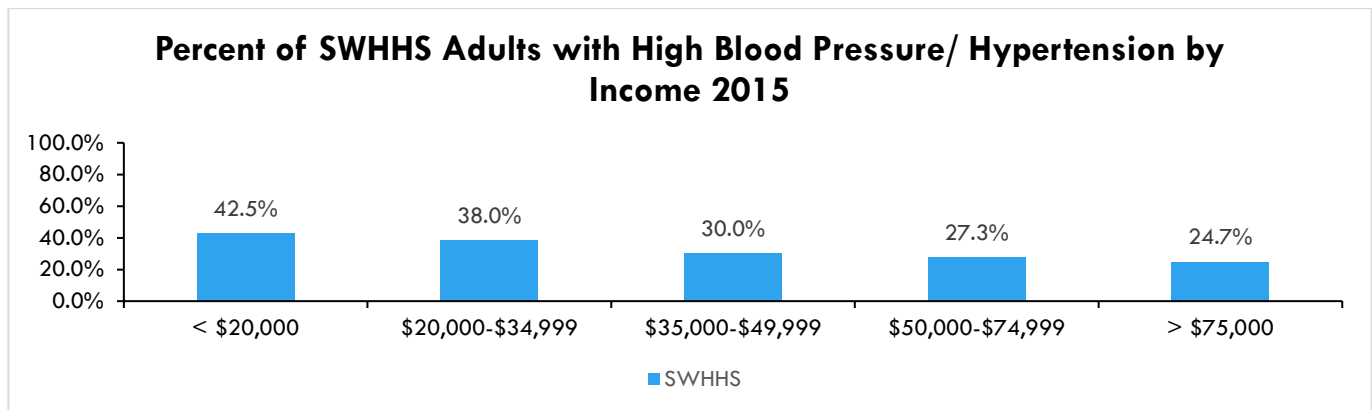
Have you ever been told by a doctor or other health care professional that you had High Blood Pressure / Hypertension? - 2015

	Overall	18-34	35-44	45-54	55-64	65-74	75+
16 County Region	32.2%	8.3%	17.0%	27.0%	41.2%	58.3%	61.6%
SWHHS	30.8%	8.5%	21.1%	23.9%	38.7%	58.4%	60.0%
Lincoln	47.1%	28.5%	26.6%	45.8%	45.3%	63.8%	73.6%
Lyon	25.0%	7.7%	27.8%	14.6%	37.7%	52.4%	51.5%
Murray	34.1%	10.3%	13.2%	24.2%	38.2%	60.8%	66.0%
Pipestone	35.6%	*	*	35.4%	36.9%	59.4%	64.9%
Redwood	30.8%	4.9%	9.6%	30.9%	38.1%	63.6%	56.0%
Rock	28.5%	*	21.3%	11.7%	40.4%	53.2%	60.9%

* Not calculated due to less than 30 respondents per age group

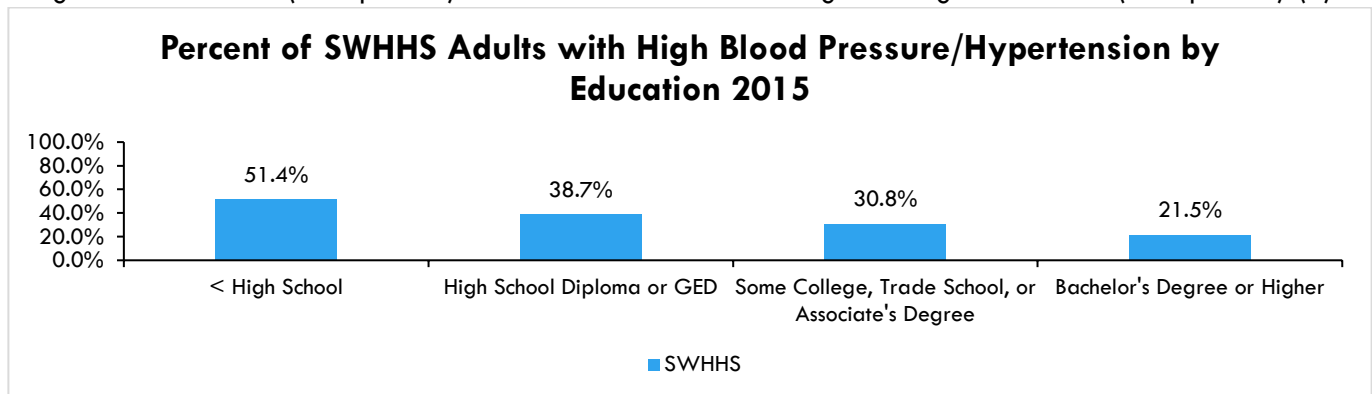
Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When those that have been told by a health care professional they have high blood pressure/hypertension is looked at by income, there is a 17.8 percentage point difference between those that make less than \$20,000 annually (42.5 percent) and those that make greater than \$75,000 annually (24.7 percent). (4)



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When the comparison was switched to education for those that have been told by a health care professional they have high blood pressure/hypertension, there was a 29.9 percentage point difference between those with less than a high school education (51.4 percent) and those with a bachelor's degree or higher education (21.5 percent). (4)



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When it came to being diagnosed with angina or heart trouble, the 16-county region was slightly lower than SWHHS counties by 0.9 percentage points. (4)

Have you ever been told by a doctor or other health care professional that you had Heart Trouble or Angina?, 2015

	Overall	18 34	35 44	45 54	55 64	65 74	75+
16 County Region	10.3%	3.0%	4.9%	5.5%	11.6%	17.3%	27.1%
SWHHS	11.2%	2.5%	6.1%	7.0%	12.2%	19.8%	30.1%
Lincoln	12.5%	0.0%	15.5%	12.5%	9.5%	18.6%	22.3%
Lyon	11.0%	3.0%	7.9%	2.0%	15.2%	28.5%	36.2%
Murray	9.6%	0.0%	1.0%	2.9%	17.0%	16.4%	21.9%
Pipestone	10.0%	*	*	9.9%	6.8%	13.7%	31.8%
Redwood	12.0%	4.9%	7.7%	12.3%	6.9%	16.6%	29.8%
Rock	12.0%	*	1.1%	8.9%	16.0%	18.9%	31.5%

* Not calculated due to less than 30 respondents per age group

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Stroke

Stroke is much more likely to cause death in a person that is over age 75. In addition, stroke mortality rates are higher in people that live in rural areas. (65)

Data from 1997-2016 showed mortality rates from strokes fell in all of the SWHHS counties, with Murray County falling below the Minnesota average in 2012-2016. The other five counties remain above the state average with Pipestone ranking first and Rock County tenth among the highest rates in the state. (53)

Stroke Age-Adjusted Mortality Rates, All Ages, Per 100,000 1997-2016

	1997 2001	2002 2006	2007 2011	2012 2016
Minnesota	57.4	45.0	35.4	32.7
SWHHS	69.3	50.5	42.4	35.7
Lincoln	89.8	60.5	44.7	45.0
Lyon	74.4	49.2	40.3	26.8
Murray	58.9	29.4	32.0	38.5
Pipestone	57.6	55.7	53.6	36.9
Redwood	60.6	51.2	39.2	39.6
Rock	79.4	61.5	46.3	34.5

Stroke was defined as ICD-9 codes 430-438 and ICD-10 codes I60-I69.

Source: Minnesota Department of Health. Minnesota Center for Health Statistics. (2019). (53)

SWHHS residents who participated in the 2015 Southwest Minnesota Healthy Communities Survey reported having been told by a doctor or other healthcare professional that they had a stroke or stroke-related health problems at a similar percentage to that of the 16-county region. When looking at the individual counties, the highest percentage was in Lincoln County at 5.5 percent and the lowest was in Lyon County with 2.8 percent. Lincoln County also had the highest percentage reported in the 35-44 age group with 13.4 percent that responded having had a stroke or stroke-related health problems. (4)

Have you ever been told by a doctor or other health care professional that you had a Stroke or Stroke-Related Health Problems? 2015

	Overall	18 34	35 44	45 54	55 64	65 74	75+
16 County Region	3.8%	1.1%	1.9%	2.3%	2.8%	6.2%	11.4%
SWHHS	3.7%	0.0%	2.2%	1.6%	4.6%	7.4%	11.2%
Lincoln	5.5%	0.0%	13.4%	0.0%	3.4%	10.8%	9.2%
Lyon	2.8%	0.0%	3.8%	0.0%	3.7%	9.3%	8.6%
Murray	3.5%	0.0%	0.0%	0.0%	3.8%	7.6%	11.0%
Pipestone	3.2%	*	*	2.2%	2.1%	3.7%	12.6%
Redwood	4.5%	0.0%	0.0%	0.8%	8.7%	7.9%	13.1%
Rock	4.6%	*	0.0%	8.9%	3.9%	3.0%	12.7%

* Not calculated due to less than 30 respondents per age group

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Diabetes

Diabetes is the leading cause of blindness, chronic kidney disease, and complications among mothers giving birth in Minnesota. The primary risk factor associated with diabetes is being overweight and obese. In Minnesota, the American Indian population is five times more likely to die from diabetes complications than the state's white population. (65)

From 2004 to 2009, the number of SWHHS adults diagnosed with diabetes increased. SWHHS rates during that time-frame also stayed above the state diabetes rate. Across all SWHHS counties, there has been a gradual climb in adults diagnosed with diabetes between 1.0 and 2.6 percentage points depending on the county. (103)

Age-Adjusted Estimates of the Percentage of Adults† with Diagnosed Diabetes

	2004	2005	2006	2007	2008	2009	2010	2011*	2012*	2013*
Minnesota	5.1	5.7	5.6	5.5	5.7	6.1	6.4	6.9	6.8	6.8
Lincoln	5.6	5.7	5.9	6.1	6.4	6.6	6.3	6.6	6.5	6.6
Lyon	5.6	5.8	6.1	6.3	6.4	7.1	7.1	7.7	7.3	7.7
Murray	5.7	6.0	6.0	6.2	6.4	7.0	6.8	7.0	7.0	8.3
Pipestone	5.8	5.9	5.9	6.2	6.6	7.4	6.9	6.8	6.4	7.1
Redwood	5.8	5.9	6.1	6.2	6.6	6.9	6.9	7.0	6.8	7.0
Rock	5.9	6.1	6.1	6.2	6.5	6.7	6.6	7.3	7.7	7.4

*Methods Change

Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System. (2017). (103)

The 2015 Southwest Minnesota Healthy Communities Survey reported that 7.9 percent of residents had been told by a doctor or other health care professional that they had diabetes. This was slightly lower than the overall 8.9 percent of residents in the 16-county region that had been told by a doctor or other health care professional that they had diabetes. (4)

Have you ever been told by a doctor or other health care professional that you had Diabetes? 2015

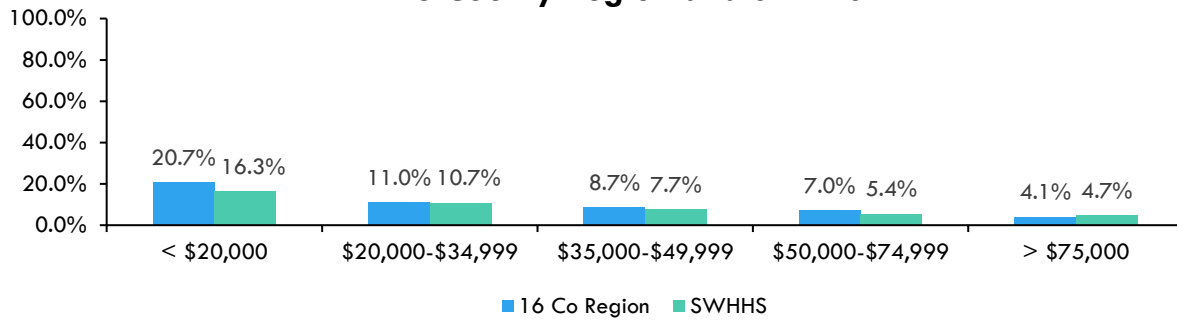
	Overall	18 34	35 44	45 54	55 64	65 74	75+
16 County Region	8.9%	1.5%	5.0%	6.3%	11.0%	17.3%	18.8%
SWHHS	7.9%	1.3%	4.0%	4.7%	9.7%	17.6%	18.6%
Lincoln	12.0%	0.0%	18.8%	4.5%	13.1%	21.0%	20.3%
Lyon	8.3%	3.0%	5.8%	4.5%	12.6%	13.9%	24.0%
Murray	9.7%	0.0%	2.0%	10.1%	8.9%	21.5%	18.3%
Pipestone	7.1%	*	*	3.9%	12.8%	13.2%	16.8%
Redwood	6.7%	0.0%	0.0%	2.4%	7.5%	21.3%	16.7%
Rock	5.5%	*	2.2%	5.0%	3.4%	15.3%	12.7%

* Not calculated due to less than 30 respondents per age group

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When those that have been told by a health care professional that they have diabetes is looked at by income, there is an 11.6 percentage point difference between those that make less than \$20,000 annually (16.3 percent) and those that make greater than \$75,000 annually (4.7 percent). In the 16 county region, there is a 16.6 percentage point difference between the two income groups previously mentioned. (4)

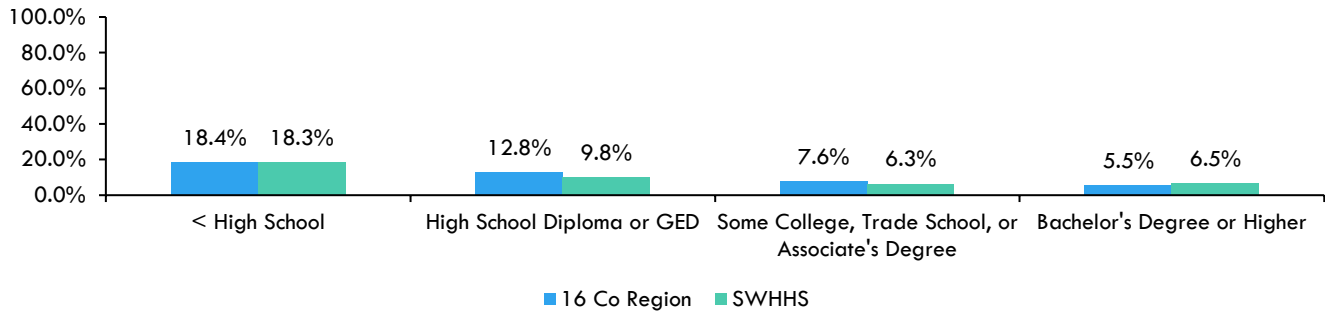
Percent of Adults with Diabetes by Income 2015 16 County Region and SWHHS



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

When the comparison was switched to education for those that have been told by a health care professional they have diabetes, there was an 11.8 percentage point difference between those with less than a high school education (18.3 percent) and those with a bachelor’s degree or higher education (6.5 percent). In the 16 county region, there is a 12.9 percentage point difference between the two income groups previously mentioned. (4)

Percent of Adults with Diabetes by Education 2015 16 County Region and SWHHS



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Additionally, 6.9 percent of surveyed SWHHS residents reported they had been told by a doctor or other health care professional that they had pre-diabetes. The 16-county region reported an average of 7.4 percent. (4)

Have you ever been told by a doctor or other health care professional that you had Pre-Diabetes? 2015

	Overall	18 34	35 44	45 54	55 64	65 74	75+
16 County Region	7.4%	2.4%	6.9%	6.9%	9.2%	12.7%	10.2%
SWHHS	6.9%	1.9%	5.6%	7.5%	8.4%	12.0%	10.2%
Lincoln	12.4%	0.0%	20.8%	13.3%	13.9%	20.6%	11.4%
Lyon	7.2%	2.5%	7.9%	5.7%	10.4%	15.2%	12.4%
Murray	5.2%	0.0%	4.1%	4.5%	8.9%	8.2%	6.2%
Pipestone	6.9%	*	*	10.1%	6.4%	8.5%	5.2%
Redwood	5.7%	0.0%	0.9%	7.3%	4.9%	13.2%	11.8%
Rock	6.1%	*	3.2%	9.5%	7.7%	5.0%	12.3%

* Not calculated due to less than 30 respondents per age group

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Mental Illness

People who live with serious mental illnesses like schizophrenia, schizoaffective disorder, and bipolar affective disorder are more likely to have a significant increase in mortality, homelessness, lack of social support and be uninsured. In a recent study of Minnesota Health Care Program recipients with serious mental illness, it was determined that the average life expectancy was age 58 while those on the program without serious mental illness lived to be an average age of 82. (65)

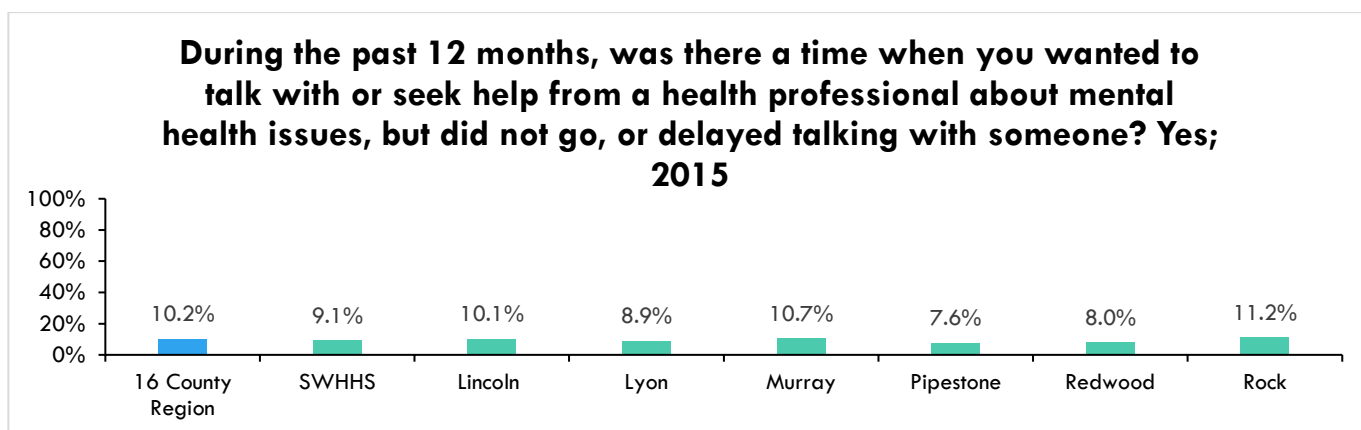
Adult mental health data at the county level has been unavailable until 2015 when questions were added to the 2015 Southwest Minnesota Healthy Communities Survey. The list of mental illnesses that were included were depression, anxiety or panic attacks and other mental health conditions. Any mental health condition is an aggregate of the three conditions that were asked in the survey. The results of how many suffer from mental health challenges were eye-opening, with one out of every five people responding yes to “any mental health condition”. In the most recent 2019 Southwest Minnesota Healthy Communities Survey one out of every four people responding yes to “any mental health condition”. Depression was found in 16.1 percent of SWHHS respondents, while anxiety or panic attacks were found in 13.8 percent of those SWHHS surveyed. Those reporting that they had other mental health conditions was 3.3 percent. (4) In the 2019 Southwest Minnesota Healthy Communities Survey saw increases in all areas of mental illness ranging from 4.5 percentage points for “any mental health condition” to 1.4 percentage points for “depression” in SWHHS.

Have you ever been told by a doctor or other health care professional that you had...

	Any Mental Health Condition		Depression		Anxiety or Panic Attacks		Other Mental Health Condition	
	2015	2019	2015	2019	2015	2019	2015	2019
SWHHS	20.7%	25.2%	16.1%	17.5%	13.0%	17.3%	3.3%	5.6%
Lincoln	23.6%	26.7%	17.2%	15.8%	17.1%	19.6%	6.6%	7.7%
Lyon	23.3%	27.0%	18.1%	18.7%	16.3%	19.3%	3.6%	7.0%
Murray	18.7%	25.1%	13.9%	19.3%	10.9%	14.1%	3.8%	3.7%
Pipestone	20.7%	21.9%	15.0%	13.5%	14.4%	14.9%	4.3%	4.9%
Redwood	16.2%	25.0%	13.0%	17.1%	8.4%	17.5%	1.3%	5.0%
Rock	21.4%	23.1%	19.1%	18.1%	10.0%	15.5%	2.4%	4.5%

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

The 2015 Southwest Minnesota Healthy Communities Survey also asked if they thought they needed mental health care, “was there a delay in getting care” and then “why the delay happened”. SWHHS respondents delayed care 9.1 percent of the time because the respondent did not think it was serious enough (46.0 percent), it cost too much (37.5 percent), they were too nervous or afraid (33.3 percent), they did not know where to go (33.1 percent) or their insurance did not cover it (15.2 percent). (4)



Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

**Why did you not get or delay getting the mental health care you thought you needed?
(mark all that apply)**

	I could not get an appointment	I had transportation problems	I was too nervous or afraid	I did not think it was serious enough	It cost too much	I did not have insurance	My insurance did not cover it	I did not know where to go
16 County Region	6.4%	2.2%	30.4%	48.3%	30.9%	9.2%	10.3%	22.1%
SWHHS	6.3%	2.4%	33.3%	46.0%	37.5%	8.9%	15.2%	33.1%

Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Rate of psychiatric hospital admissions per 1,000 Residents age 14+, 2000-2015

	Minnesota	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
Psychiatric Admissions	7.0	1.7	6.1	3.0	2.5	7.3	1.7

Source: Minnesota Compass. (2018). (51)

Rate of mental health treatment among children under age 6 enrolled in Minnesota Health Care Programs per 1,000, By SWHHS County, 2013-2016

	Minnesota	Lincoln	Lyon	Murray	Pipestone	Redwood	Rock
2013	40.0	36.0	46.0	40.0	53.0	55.0	49.0
2016	49.0	54.4	51.2	46.9	30.8	54.6	24.1

Source: Minnesota Compass. (2018). (51)

Obesity

Obesity is a risk factor in many of the chronic disease conditions like diabetes, heart disease, cancer, and stroke, and affects all sectors of the population. Healthy eating habits and physical activity are the primary ways a person can maintain a healthy weight. (65)

Body mass index (BMI) is one reliable indicator used to measure if a person is overweight or obese. For adults, it is calculated by using height and weight measurements to calculate a score. Adults that score between 25.0 and 29.9 are considered overweight; scores of 30.0 and higher are considered obese. For children, the formula also takes into account age and gender to calculate BMI-for-age percentiles. Overweight children fall in the 85th to less than the 95th percentile, and obese children are equal to or greater than 95th percentile. (119)

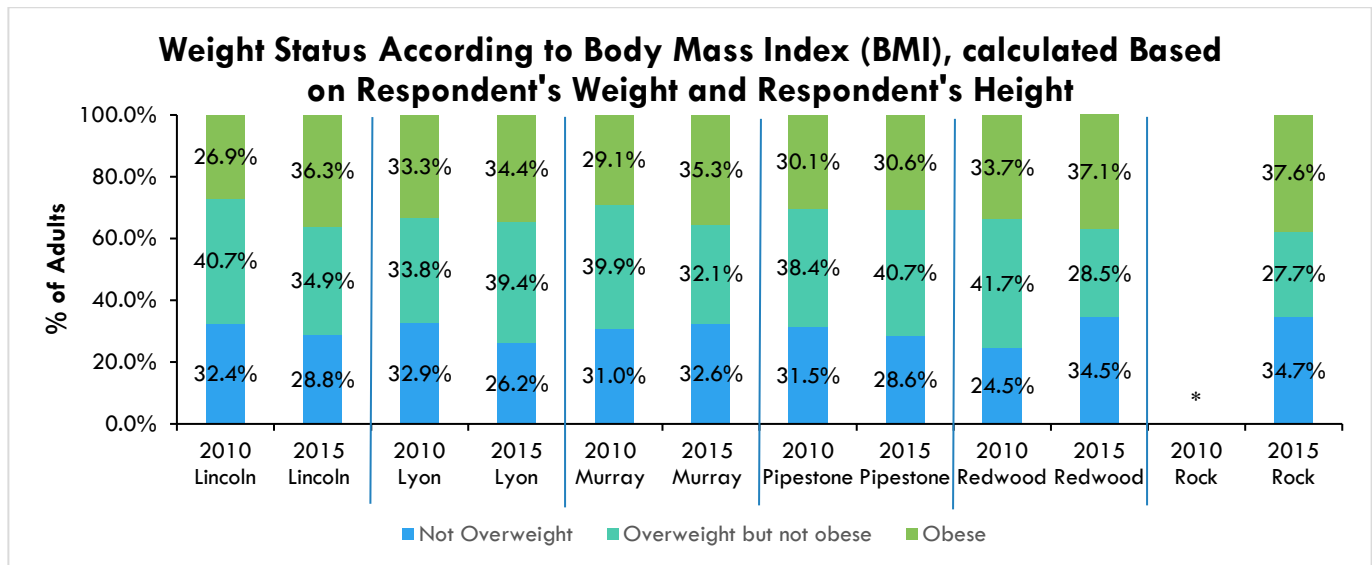


Because Rock County did not participate in the 2010 Southwest/South Central Adult Health Survey, it is difficult to compare SWHHS as a whole between 2010 and 2015. On the county level, Redwood County saw a 10.0 percentage point increase and Murray County saw a 1.6 percentage point increase in those that were not overweight based on height and weight provided by participants. The county with the highest level of not overweight in 2015 was Rock County at 34.7 percent followed by Redwood County at 34.5 percent, Murray County at 32.6 percent, Lincoln County at 28.8 percent, Pipestone County at 28.6 percent, and Lyon County at 26.2 percent. (4)

Those that saw a reduction in overweight but not obese where Redwood County (13.2 percentage points), Murray County (7.8 percentage points) and Lincoln County (5.8 percentage points). The county with the highest level of overweight but not obese in 2015 was Pipestone County at 40.7 percent, followed by Lyon County at 29.4 percent,

Lincoln County 34.9 percent, Murray County at 32.1 percent, Redwood County at 28.5 percent and Rock County at 27.7 percent. (4)

All five of the counties that participated in the 2010 Southwest/South Central Adult Health Survey saw some sort of increase in obesity with the largest increase occurring in Lincoln County (9.4 percentage points), followed by Murray County (6.2 percentage points), Redwood County (3.4 percentage points), Lyon County (1.1 percentage points) and Pipestone County (0.5 percentage point). The county with the highest level of obesity in 2015 was Rock County at 37.6 percent, followed by Redwood County at 37.1 percent, Lincoln County at 36.3 percent, Murray County 35.3 percent, Lyon County 34.4 percent and Pipestone County at 30.6 percent. (4)



* Rock County did not participate in the 2010 Southwest/South Central Adult Health Survey
 Source: Amherst H. Wilder Foundation. 2015 Southwest Minnesota Healthy Communities Survey. (2017). (4)

Body mass index has been tracked through the Minnesota Student Survey since 2007. The number of ninth-grade students who are overweight or obese according to body mass index seems to be going down in most counties between 2013 and 2015. The exception was in Lincoln and Murray counties, which saw a 15 percent and 3 percent increase. SWHHS counties and Minnesota were both at 24 percent for ninth-grade students who were overweight or obese according to BMI. (29)

Percent of Ninth-graders Who Are Overweight OR Obese According to Body Mass Index

	2007	2010	2013	2016
Minnesota	22	22	23	24
SWHHS	25	27	29	24
Lincoln	34	44	32	47
Lyon	21	28	26	21
Murray	25	10	16	19
Pipestone	24	32	35	26
Redwood	27	29	28	26
Rock	25	17	37	27

Source: Minnesota Department of Health. Minnesota Student Survey. (2019). (29)

Infectious Disease

HIV and AIDS

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) affected 8,540 people in Minnesota in 2016. SWHHS residents that have HIV or AIDS make up 0.33 percent of the Minnesota cases. HIV &

AIDS cases across the region have remained relatively stable in the last 13 years, while the State of Minnesota numbers rose from 4,873 in 2003 to 8,540 in 2016. (120)

Sexually Transmitted Infections

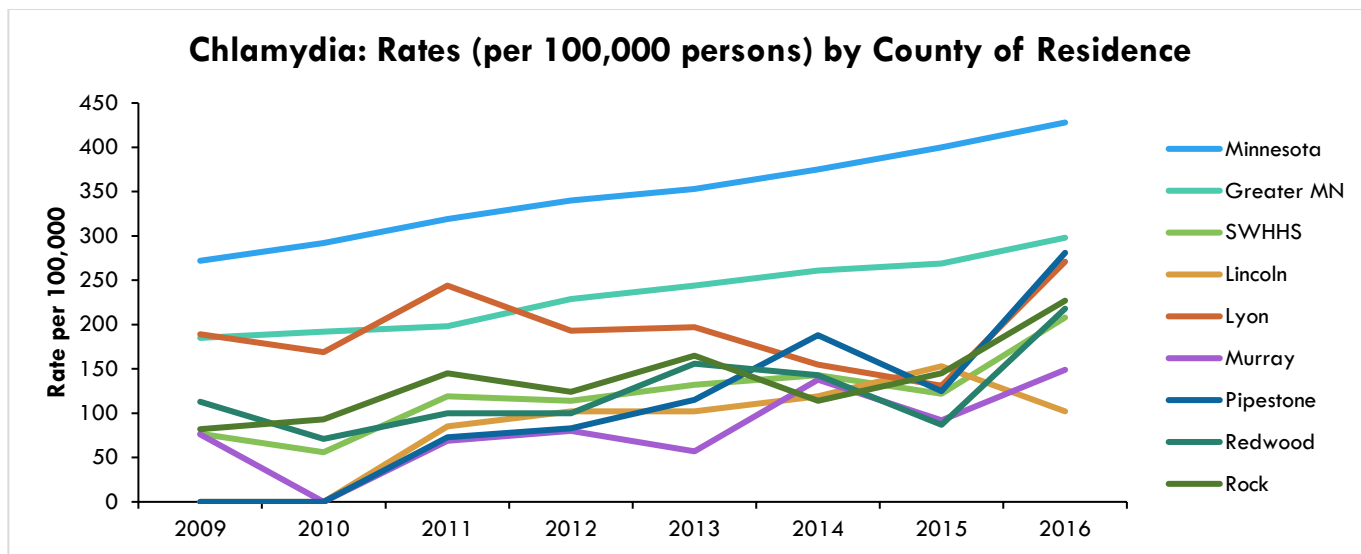
Nearly 70 percent of all commonly reported communicable diseases in Minnesota were sexually transmitted infections (STIs) - formerly called sexually transmitted diseases. The age of infection statewide continues to dominate the 15 to 24-year-old age group. This group made up 14 percent of the population but had 64 percent of chlamydia cases and 46 percent of gonorrhea cases in 2016. Females in the 15 to 24-year-old age group had 71 percent of diagnosed chlamydia or gonorrhea infections. (121)

Statewide, persons of color continue to be disproportionately affected by STIs. Chlamydia rates in Minnesota between 2006-2016 by race show Black, Non-Hispanic having 9.5 times higher rates, American Indians having nearly five-time higher rates and Asian/Pacific Islanders having nearly two times higher rates than Whites. Chlamydia rates by Hispanic ethnicity, which can be of any race, are nearly three times higher than Non-Hispanic rates. Similar disproportional trends are seen by race with other STIs. (121)

From 2009 to 2016, SWHHS chlamydia infection rates per 100,000 have nearly tripled in seven years, from 77 to 208. This is under Minnesota’s rate of 428 and Greater Minnesota’s rate of 298, which are also seeing an overall increase. In 2009 and 2010, Lincoln, Pipestone, and Murray Counties’ rates were not calculated because there were fewer than five cases. Since then, these counties have seen a significant jump in their rates with Lincoln County rate at 102, Murray County rate at 149, and Pipestone County rate at 281, which is the highest rate of all the SWHHS counties in 2016. (121)

Gonorrhea infection rates were not calculated for the SWHHS counties, as there were fewer than five cases. (121)

To stop the rising tide of STIs in Minnesota and SWHHS counties, sustainable and sufficient funding needs to be provided for education, media campaigns, screening and treatment of STIs. Teachers providing sexual health education in middle and high school settings need to be kept current on best practices. Communities need to be engaged to help support sexual health education and continue the conversation with vulnerable youth in our communities. (122)

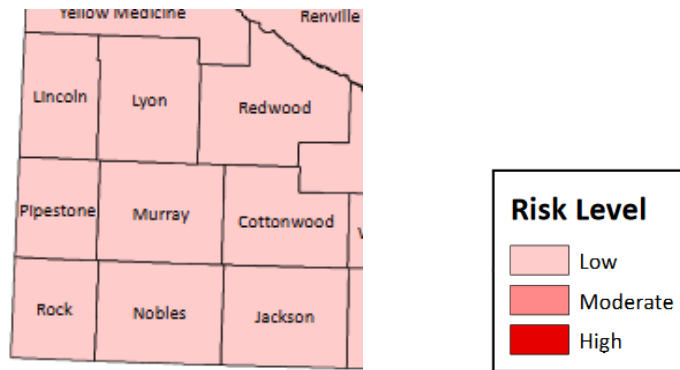


- Rates not calculated for counties with fewer than 5 cases.
Source: Minnesota Department of Health. STD Statistics and Reports. (2017). (121)

Tickborne Disease

Tickborne disease in Minnesota tends to be more prevalent in forested areas of the state. Statewide, there were 1,176 confirmed cases of Lyme disease in 2015 and 613 confirmed or probable cases of human anaplasmosis. Tickborne disease county-level data was not available from the Minnesota Department of Health. (123)

Tickborne Disease Risk in Minnesota



Risk is based on average incidence (cases/100,000 population) of Lyme disease, anaplasmosis, and babesiosis in Minnesota, 2007-2015.

Source: Minnesota Department of Health. Tick-Transmitted Disease Program. (2017). (123)

Injury and Violence

Fall-related Injury

During 2012-2016, falls were the leading cause of non-fatal injury emergency room visits, non-fatal injury hospitalization and injury deaths in Minnesota and SWHHS. Fall injuries can range in severity from sprains to hip fractures and head trauma. (124)

Emergency room visits for falls happen at 1.8 times the rate for people age 65 years and older. Fall-related hospitalizations happen 14 times more often for people age 65 years and older than for those 0-64 years. Death caused by fall happens 7.9 times more frequently in people age 65 and older. (124)

Fall data from 2012 to 2016 for all ages and genders that were hospital treated across the SWHHS counties showed lower rates than the state and Greater Minnesota. (124)

Hospital Treated Falls, All Ages and Genders, Fatal & Non-fatal, Age-Adjusted Rates per 100,000

	2012	2013	2014	2015	2016
Minnesota	1,884	1,925	1,887	2,025	2,020
Greater Minnesota	2,095	2,184	2,148	2,159	2,188
SWHHS	1,515	1,702	1,616	1,794	1,629
Lincoln	1,200	1,416	1,148	1,374	1,466
Lyon	1,762	1,650	1,627	1,879	1,820
Murray	1,502	1,731	1,423	2,140	1,771
Pipestone	1,543	2,126	1,801	1,911	1,548
Redwood	1,492	1,626	1,905	1,754	1,607
Rock	1,588	1,665	1,793	1,707	1,559

Source: Minnesota Department of Health. Injury Prevention Unit. Minnesota Injury Data Access System Report. (2017). (124)

Firearm Injury

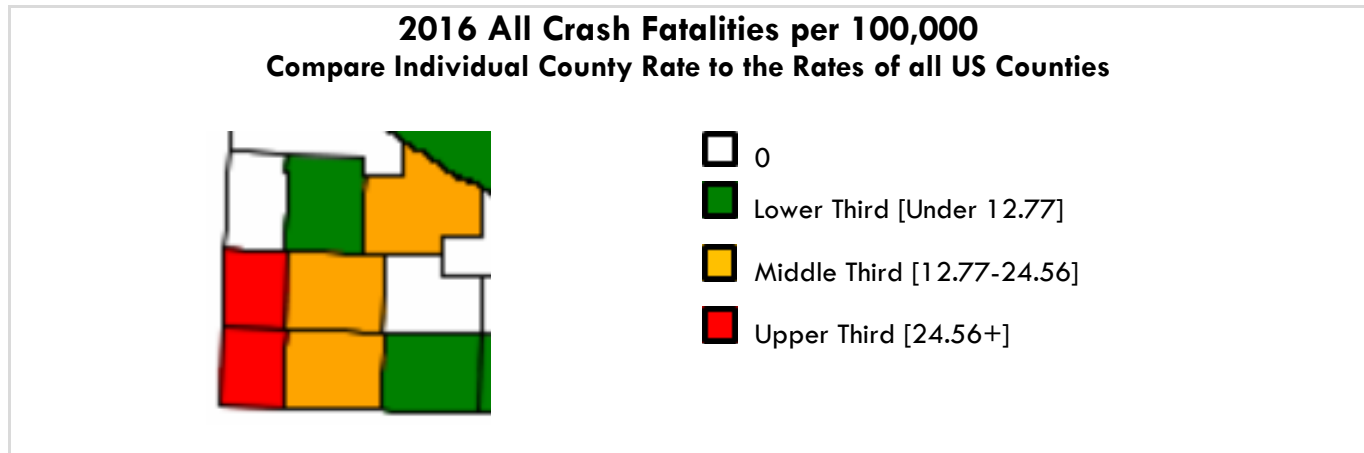
In Minnesota during 2012-2016, firearm suicides were the fourth leading cause of death. Suicide by firearm makes up nearly 45.7 percent of suicide deaths in Minnesota during the 2012-2016 timeframe. In SWHHS, suicide by firearm made up 51.5 percent of death during the 2012-2016 period. (124)

Across SWHHS counties during 1998-2016, there were 93 hospital treated firearm-related injuries and 5 firearm-related deaths. SWHHS hospital treated firearm-related injuries or deaths have been classified into 5

manners/intent, with unintentional at 79.6 percent being the highest manner/intent, followed by self-inflicted at 9.2 percent, assaultive at 5.1 percent, undetermined at 3.1 percent and other also at 3.1 percent. (124)

Motor Vehicle Injuries

Motor vehicle injuries were the fifth leading cause of an emergency room visit in Minnesota and SWHHS in 2012-2016. During the same period, motor vehicle injuries were the fourth leading cause of hospitalization in Minnesota and third in SWHHS. In Minnesota, motor vehicle injuries are the fourth leading cause of injury death while it is ranked second in SWHHS for 2012-2016. (124)



Sources: United States Department of Transportation. National Highway Safety Administration. (2017) (125)

On average, SWHHS counties' motor vehicle injury and fatalities rates are lower than Minnesota and Greater Minnesota rates.

Hospital Treated Injuries, Motor Vehicle Traffic-All Types, All Ages & Genders, Injury & Fatal, Age-Adjusted Rate per 100,000

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Minnesota	444.2	423.2	435.0	404.9	392.0	416.8	408.4	420.8	378.6
Greater Minnesota	427.8	421.5	430.4	376.2	359.7	408.9	392.5	395.0	373.7
SWHHS	436.3	364.7	521.6	356.0	269.6	286.6	271.7	260.7	310.8
Lincoln	390.0	222.0	566.6	244.7	139.8	98.6	74.9	236.1	293.6
Lyon	388.0	250.8	450.6	296.1	220.9	228.9	265.0	213.0	267.6
Murray	386.9	614.2	532.4	489.8	470.8	509.0	543.5	313.9	522.5
Pipestone	639.6	389.5	643.7	325.2	331.4	439.8	527.5	403.5	313.1
Redwood	521.8	569.1	615.6	438.1	224.3	325.4	204.8	219.4	327.0
Rock	300.4	240.2	419.2	373.7	310.6	185.8	368.8	293.1	235.2

Covers 5 Motor Vehicle traffic types-motorcyclist, -occupant, -other/unspecified, -pedal cyclist, -pedestrian

Source: Minnesota Department of Health. Injury Prevention Unit. Minnesota Injury Data Access System Report. (2017). (124)

Poisonings

Unintentional poisonings were the third leading causes of injury death for Minnesotans during the 2012-2016 period with a rate of 57.3 per 100,000. In SWHHS during 2012-2016, unintentional poisonings were the fourth leading cause of injury-related death with a rate of 36.1 per 100,000, which is lower than the state by 21.2 points. Rates were not available for all of the counties in SWHHS, but of those that were available Redwood County was 69.4, 12.4 points above the state rate and Murray County was 58.3, which is one point above the state rate. (124)

Unintentional Poisonings, Hospitalizations & ED Visits Combined, All Ages & Genders, Fatal & Non-fatal, Age-Adjusted Rate per 100,000

	2012	2013	2014	2015	2016
Minnesota	101.37	97.14	99.43	138.83	190.57
Greater Minnesota	102.69	100.3	100.49	116.99	133.25
SWHHS	74.15	62.51	87.07	85.65	99.84
Lincoln	84.13	40.38	41.17	77.70	52.41
Lyon	82.53	55.46	78.21	76.66	87.72
Murray	71.47	53.57	94.56	41.22	81.36
Pipestone	27.00	85.17	113.53	86.18	202.06
Redwood	54.60	73.41	99.65	78.21	99.59
Rock	125.15	67.07	95.27	153.91	75.91

Source: Minnesota Department of Health. Injury Prevention Unit. Minnesota Injury Data Access System Report. (2017). (124)

Suicide

Suicides, which are rarely random events, are preventable. Of those that die by suicide, 90 percent had an underlying mental illness or substance abuse problem. Minnesota's prevention model is based on mental illness being treatable. (126) Suicides are on the rise in Minnesota with 440 deaths in 2000, an 8.9 per 100,000 age-adjusted rates to 683 deaths in 2013, a 12.2 per 100,000. The US rate was 12.6 per 100,000 in 2013. (127)

In 2013, nearly four males died for every one female, with males age 45-54 being the largest group during that year to die by suicide. Rates by race vary greatly with American Indians rate being the highest at 17.2 per 100,000 followed by White at 12.0 per 100,000; Asians/Pacific Islanders at 7.9 per 100,000; and Blacks/African Americans at 6.9 per 100,000. American Indian youth age 10-24 years were the most vulnerable of the American Indian population with 28.0 per 100,000 succumbing to suicide, followed by White youth 8.8 per 100,000; Black/African American youth at 7.6 per 100,000; and Asian/Pacific Islander youth at 6.7 per 100,000. (127)

During 2012-2016, suicide by all methods was the second leading cause of injury death in Minnesota and the third leading cause of injury death in SWHHS. SWHHS rate as a whole was 14.6 points higher than Minnesota, with Redwood County's rate being the highest at 126.2 per 100,000 or 50 points higher than Minnesota. Suicide by firearm is the leading method of suicide with 34.8 rate per 100,000 and the fourth leading cause of injury death in Minnesota. In SWHHS counties, the firearm suicide rate is the third leading cause of injury death and the rate was 46.8 per 100,000, which is 12 points higher than the state. Suicide by suffocation, which is the fifth leading cause of injury death and is the second most commonly used method of suicide with 21.5 rate per 100,000 in Minnesota. In SWHHS counties, the suffocation suicide is also the fifth leading cause of injury death and the rate is 25.4 per 100,000, which is 3.9 points higher than the state. (124)

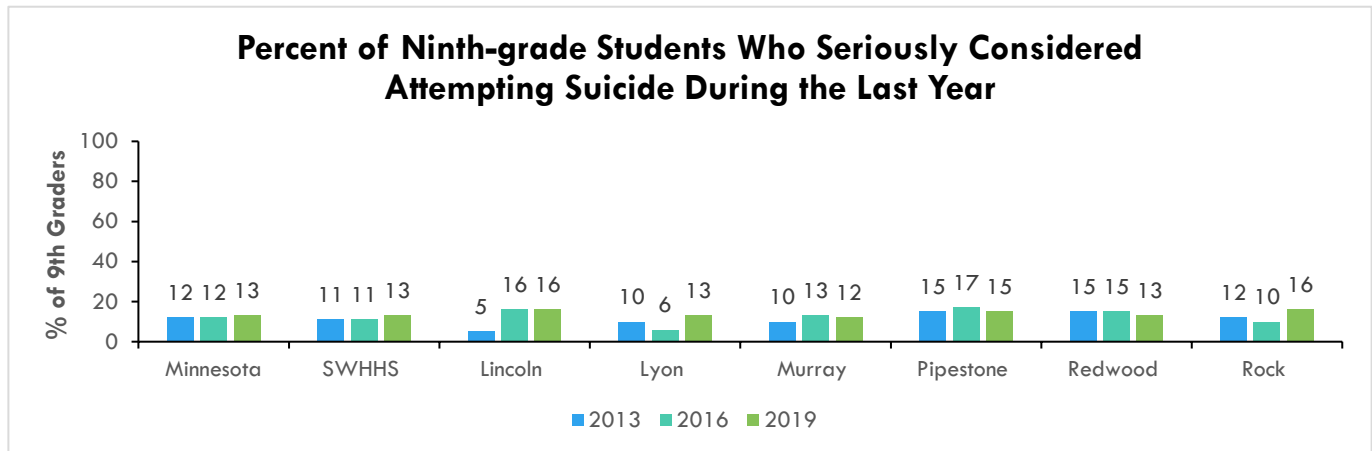
2012-2016 Suicide Death Rate per 100,000 by Method by County

	Suicides by All Methods Rate	Firearm Suicide Rate	Suffocation Suicide Rate
Minnesota	76.2	34.8	21.5
SWHHS	90.8	46.8	25.4
Lincoln	86.0	*	*
Lyon	74.0	46.8	19.5
Murray	116.6	58.3	*
Pipestone	63.9	*	*
Redwood	126.2	50.5	50.5
Rock	83.6	*	*

*Causes with less than 5 injuries in the 5-year period for a given county are not calculated.

Source: Minnesota Department of Health. Injury Prevention Unit. Minnesota Injury Data Access System Report. (2017). (124)

In the 2013 and 2016 Minnesota Student Survey, 11 percent of SWHHS ninth-grade students seriously considered attempting suicide during the last year increased to 13 percent in 2019; in Minnesota, the rate among ninth-grade students was 12 percent both 2013 and 2016 increased to 13 percent in 2019. In Redwood County, 15 percent of ninth-grade students seriously considered attempting suicide in 2013 and 2016 decreased to 13 percent in 2019 while in Pipestone County in 2013 and 2019 it was 15 percent and 17 percent in 2016. In 2019 Rock and Lyon counties saw a six and seven percentage point increase. (29)



*Have you ever seriously considered attempting suicide? Yes, during the last year.
 Source: Minnesota Department of Health. Minnesota Student Survey 2013, 2016, 2019. (2019). (29)

Vulnerable Adult

A vulnerable adult is a person age 18 and older with physical or mental disabilities. Where the person lives does not make a difference in vulnerable adult cases. Types of vulnerable adult abuse can be financial exploitation, physical, emotional or sexual abuse, neglect by a caregiver or self. On average, SWHHS counties have 1.2 percent of the state’s vulnerable adult allegations. (128)

Count of Vulnerable Adult Allegations by County

	2016	2017	2018
Minnesota	38,258	42,174	42,808
SWHHS	442	519	488
Lincoln	40	41	40
Lyon	166	203	183
Murray	42	51	35
Pipestone	37	48	65
Redwood	101	120	125
Rock	54	56	40

Source: Minnesota Department of Human Services. Vulnerable Adult protection Dashboard. (2019). (128)

Youth Violence

Risk factors for youth violence contribute to the likelihood that a child will become a perpetrator of violence. These risk factors are grouped into four categories: Individual, Family, Peer and Social, and Community. (129)

Individual Risk Factors: Individual risk factors include involvement in drugs, alcohol or tobacco use, poor behavioral control, exposure to family violence or conflict, high emotional distress, history of treatment for emotional problems, antisocial behaviors, low IQ, and learning disorders are just a few factors. (129)

Family Risk Factors: Youth with family risk factors like low parent involvement, low emotional attachment to parents or caregivers, low-income families, parents with low educational attainment, parental substance abuse, parents with a criminal record, family dysfunction or parents that either over or under discipline may have contributing factors toward violence. (129)

Peer and Social Risk Factors: Youth that are involved in gangs, are friends with delinquent youth, reject their peers socially, are not involved in standard youth activities or generally perform poorly or lack commitment to school may also have contributing factors toward violence. (129)

Community Risk Factors: When youth are surrounded by a community with little economic opportunity, high poverty, low levels of community involvement, high levels of transiency, and family disruption; youth violence may occur. (129)

SWHHS youth in ninth-grade between 2013 and 2016 Minnesota Student Surveys that reported never being pushed, shoved, slapped, hit or kicked when they were not kidding around in the last 30 days in school did not change, while ninth-grade youth in Minnesota did see a three percentage point increase in the amount of those answering never. SWHHS ninth-grade youth were three percentage points lower than Minnesota. Youth in 11th grade in SWHHS saw a two-percentage point decrease in those that could answer never in the last 30 days, while Minnesota saw a two-percentage point increase. (29)

Students Report: During the last 30 days, how often have other students at school pushed, shoved, slapped, hit or kicked you when they weren't kidding around? Never

Ninth grade	2013 Never	2016 Never
Minnesota	87	90
SWHHS	87	87
Lincoln	95	95
Lyon	87	87
Murray	88	85
Pipestone	81	86
Redwood	87	87
Rock	86	90

11 th Grade	2013 Never	2016 Never
Minnesota	92	94
SWHHS	95	93
Lincoln	88	100
Lyon	97	89
Murray	96	96
Pipestone	91	87
Redwood	93	98
Rock	97	95

Source: Minnesota Department of Health. Minnesota Student Survey 2013, 2016. (2019). (29)

Youth in Minnesota and SWHHS ninth-grade between 2013 and 2016 Minnesota Student Surveys that reported never during the last 30 days, how many times at school have you pushed, shoved, slapped, hit or kicked you when you weren't kidding around increased two percentage points. SWHHS ninth-grade was one percentage points lower than Minnesota. Youth in 11th grade in SWHHS saw a one percentage point decrease in those that could answer never in the last 30 days have you pushed, shoved, slapped, hit or kicked when you were not kidding around, while Minnesota saw a two-percentage point increase. (29)

Students Report: During the last 30 days, how many times at school have you pushed, shoved, slapped, hit or kicked you when you weren't kidding around? Never

Ninth grade	2013 Never	2016 Never
Minnesota	91	93
SWHHS	90	92
Lincoln	95	92
Lyon	91	93
Murray	89	94
Pipestone	93	90
Redwood	86	93
Rock	91	91

11 th Grade	2013 Never	2016 Never
Minnesota	94	96
SWHHS	96	95
Lincoln	98	94
Lyon	97	96
Murray	99	93
Pipestone	89	95
Redwood	96	93
Rock	96	97

Source: Minnesota Department of Health. Minnesota Student Survey 2013, 2016. (2019). (29)

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