Community Health Assessment
A Health Network Partnering Project

Partnering Agencies
Great Mines Health Center
Washington County Health Department
Washington County Community Partnership
Washington County Memorial Hospital

Funds Provided By
US DHHS Health Resources and Services Administration
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Washington County Rural Health Network (WCRHN)

Communities vary widely, and as a result, efforts to improve health will also vary. In the midst of all this variety is one constant: people working together. With a shared vision and commitment to improved health, working together yields better results than working alone.

The community health improvement (CHI) process brings together health care, public health, and other stakeholders to identify and address the health needs of communities—to have a greater impact on health and economic vitality.

The Mission of the WCRHN is to identify current community strengths, resources, needs, and gaps to help focus our community’s efforts and resources on the most important issues to achieve the greatest impact on health.

The Vision of the WCRHN is to build on existing strengths to:

$ Enhance the quality of services provided by our network members.
$ Create new and innovative approaches to effectively improve the health status of our community.
$ Improve the patient experience of care, improve the population health of Washington County and reduce the per capita cost of healthcare.

Process & Methods

Work Teams and Stakeholders

Great Mines Health Center, Washington County Memorial Hospital, Washington County Health Department and Washington County Community Partnership formed the Washington County Rural Health Network (WCRHN) to initiate the Community Health Improvement (CHI) process.
Strategies

In order to provide an updated measurement of the general health of Washington County, the WCRHN utilized two major approaches to data collection. The first approach involved the member organizations compiling the most up-to-date data from county, state and federal sources. All sources of data are referenced and cited in this document. The second approach to measure the county’s health was to conduct a county-wide survey to get input from the residents of Washington County on the health issues they felt were most important or most in need of addressing.

Surveys

The community survey developed by the WCRHN was comprised of a total of 41 questions ranging from questions about healthcare access to how safe residents feel about their drinking water. The survey was conducted in May of 2015. A total of 296 responses were received. The data obtained are included in this report as are the recommendations and actions steps to be taken by the network.

Demographics

The 2014 population estimate for Washington County was 25,077. This is a slight decrease from the 2013 population estimate of 25,137. The county is fairly evenly divided by gender, with males accounting for 51.5% of the population and females 48.5%.

The county is largely racially homogenous with the White alone population accounting for 95.6% of the total population, followed by Black or African American 2.3%, Two or More Races 1.3%, Hispanic or Latino 1.2%, American Indian and Alaska Native 0.5%, and Asian 0.3%.

Persons under 5 years of age account for 6.0% of the county population; persons under 18 years of age account for 23.2%; and persons 65 years and over represent 15.0% of the population.

Socio-Economic Characteristics

Employment & Income

The median household income (2009-2013) is $34,702 compared to a Missouri median of $47,380. The percentage of persons in Washington County that live below the Federal poverty level (2009-2013) was 23.4% compared to 15.5% for Missouri as a whole.
Education

The percent of persons age 25+ that are high school graduates or higher (2009-2013) was 71.6%, compared to a Missouri total of 87.6%. Individuals age 25+ with Bachelor's degrees or higher (2009-2013) is 8.4% compared to 26.2% for Missouri.¹

Quality of Life

Using the methodology developed in the County Health Rankings & Roadmaps/Building a Culture of Health, County by County², Washington County data is ranked among the 114 Missouri counties and organized into two broad categories; Health Outcomes and Health Factors.

Health Outcomes

Health outcomes represent how healthy a county is. There are two indicators for health outcomes: how long people live (length of life) and how healthy people feel while alive (quality of life). In the overall ranking for Health Outcomes, Washington County ranked 99 out of the 114 Missouri counties.

Length of Life (Mortality)

Mortality (or death) data shows how long people live. More specifically, measurements are taken for what is considered premature death, which are deaths before age 75. The years of potential life lost (YPLL) is a measure of premature death, based on all deaths occurring before the age of 75. Each of these deaths contributes to the total number of years of potential life lost. For example, a person dying at age 50 would contribute 25 years of life lost to the YPLL index. YPLL constitutes 50% of the health outcomes ranking.

The YPLL trend graph in Table 1 below shows premature death in Washington County from 1997 through 2011. Although it is improving, the county rate is much higher than both the Missouri and USA rate indicating that many Washington County residents die at a much younger age than 75. The latest 3 year average (2010-2012) shows Washington County losing 9,321 years of potential life, compared to the State loss of 7,714 years.³ In Years of Potential Life Lost, Washington County ranked 85 out of 114 Missouri counties.

Table 1 Source: National Center for Health Statistics-Mortality Files
Quality of Life (Morbidity)

Quality of life refers to how healthy people feel using measures of people’s reported health status and how often they feel healthy each month. The final measure of health outcomes is the percentage of the community’s youngest members that have an unhealthy start to life: babies born with low birthweight. Washington County’s low birthweight percentage of 9.5 compares with Iron County at 7.9% and St. Francois County at 8.1%. In the Quality of Life chart below, Washington County ranks 104 out of 114 Missouri counties. 4

<table>
<thead>
<tr>
<th>Health Factors</th>
<th>Washington</th>
<th>Error Rank County (of 114)</th>
<th>Top U.S. Margin</th>
<th>Missouri Performers*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor or fair health</td>
<td>26%</td>
<td>18-35%</td>
<td>10%</td>
<td>16%</td>
</tr>
<tr>
<td>Poor physical health days</td>
<td>4.5</td>
<td>2.9-6.1</td>
<td>2.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Poor mental health days</td>
<td>5.0</td>
<td>3.3-6.7</td>
<td>2.3</td>
<td>3.8</td>
</tr>
<tr>
<td>Low birthweight</td>
<td>9.5%</td>
<td>8.2-10.7%</td>
<td>5.9%</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

TABLE 2- Source: 2006-2012; Behavioral Risk Factor Surveillance System. 2006-2012 National Center for Health Stats

Health Factors

Health factors in the County Health Rankings represent what influences the health of a county. It measures four types of health factors: health behaviors, clinical care, social and economic, and physical environment factors. Of the four, social and economic factors are particularly important, contributing more toward health outcomes than any other group of factors. In turn, each of these factors is based on several measures. A fifth set of factors that influence health (genetics and biology) is not included, since these factors cannot be changed through community action.

Health Behaviors

Health Behaviors include a community’s rate of alcohol related driving deaths, smoking rates, rates of obesity, exercise or lack of exercise, sexual disease rates, and teen births. Rates for Washington County are seen in the chart below.

Washington County ranks 112 out of 114 counties regarding overall health factors, indicating that Washington County has some of the poorest health factors in the state (a combination of health behaviors, clinical care, social and economic and physical environment factors).
<table>
<thead>
<tr>
<th>Health Factors</th>
<th>Washington Rank County</th>
<th>Error Margin</th>
<th>Top U.S. Performers*</th>
<th>Missouri Rank (of 114)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Behaviors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult smoking</td>
<td>34%</td>
<td>23-47%</td>
<td>14%</td>
<td>23%</td>
</tr>
<tr>
<td>Adult obesity</td>
<td>34%</td>
<td>27-42%</td>
<td>25%</td>
<td>31%</td>
</tr>
<tr>
<td>Food environment index</td>
<td>6.3</td>
<td>8.4</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>27%</td>
<td>20-35%</td>
<td>20%</td>
<td>26%</td>
</tr>
<tr>
<td>Access to exercise opps</td>
<td>61%</td>
<td>92%</td>
<td>77%</td>
<td></td>
</tr>
<tr>
<td>Alcohol-impaired deaths</td>
<td>48%</td>
<td>14%</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>Sexually transmitted infections</td>
<td>247</td>
<td>138</td>
<td>462</td>
<td></td>
</tr>
<tr>
<td>Teen births</td>
<td>60</td>
<td>54-66</td>
<td>20</td>
<td>40</td>
</tr>
</tbody>
</table>

TABLE 3 - Source 2006-2012; Behavioral Risk Factor Surveillance System. 2006-2012 National Center for Health Stats

Social and Economic Factors

Community Safety

Injuries through accidents or violence are the third leading cause of death in the United States and the leading cause for those between the ages of one and 44.\(^5\) Accidents and violence affect health and quality of life in the short and long-term, for those directly and indirectly affected.

**WHY IS COMMUNITY SAFETY IMPORTANT TO HEALTH?**

Community safety reflects not only violent acts in neighborhoods and homes, but also injuries and deaths caused unintentionally through accidents. The following chart compares Washington County’s Unintentional Injury Death Rate to surrounding counties. This includes traffic deaths.

![Unintentional Injury Death Rates Chart]

Car accidents are the leading cause of death for those ages five to 34, and result in over 2 million emergency department visits for adults annually.\(^6\) In 2014, Washington County had the third highest rate of automobile-related accidents in Missouri Dept. of Transportation’s (MODOT) Central District of 17 counties.
Plans are underway to designate Highway 21 in Washington County from E Highway north to the Jefferson County line a Travel Safe Zone with fines doubled in an effort to reduce traffic death and injury. Traffic-related deaths have been a problem historically as evidenced by the MODHSS comparison chart in Table 5 below.

![Motor Vehicle Traffic Deaths](chart)

Violent crime is represented as an annual rate per 100,000 population. Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and the perpetrator, including homicide, forcible rape, robbery, and aggravated assault. The violent crime rate is low in Washington County at 179 compared to 261 in St. Francois, 319 in Iron and 452 in the state as a whole.\(^7\)

**Education**

Better educated individuals live longer, healthier lives than those with less education, and their children are more likely to thrive. This is true even when factors like income are taken into account.

**WHY IS EDUCATION IMPORTANT TO HEALTH?**

More schooling is linked to higher incomes, better employment options, and increased social supports that, together, support opportunities for healthier choices. High school graduation rate (defined as the percentage of the ninth grade cohort that graduates high school in four years) and the percentage of the population age 25-44 with some post-secondary education are the two indicators used to measure Educational Attainment.

In the United States in 2013, about 12% of adults older than 24 had not graduated high school and another 30% had no education beyond high school.\(^8\) In Missouri in 2013, 36.2% had no education beyond high school compared to 61.2% in Washington County.
Parental education is linked to children’s health and educational attainment. Children whose mothers graduated from college are twice as likely to live past their first birthday. Stress and poor health early in life, common among those whose parents have lower levels of education, is linked to decreased cognitive development, increased tobacco and drug use, and a higher risk of cardiovascular disease, diabetes, depression, and other conditions.9

Communities and educators can work together to increase educational attainment for children and adults, better preparing the individuals and families of today and tomorrow to live long, healthy lives.

**Employment**

Employment provides income and, often, benefits that can support healthy lifestyle choices. Unemployment and under employment limit these choices, and negatively affect both quality of life and health overall. The economic condition of a community and an individual’s level of educational attainment both play important roles in shaping employment opportunities.

**WHY IS EMPLOYMENT IMPORTANT TO HEALTH?**

Those who are unemployed face even greater challenges to health and well-being, including lost income and, often, health insurance. Unemployed individuals are 54% more likely to be in poor or fair health than individuals who are employed, and are more likely to suffer from increased stress, high blood pressure, heart disease, and depression10. Racial and ethnic minorities and those with less education, often already at-risk for poor health outcomes, are most likely to be unemployed11.

Unemployment has been high in the region for many years, but according to the Bureau of Labor Statistics, LAUS, this is improving. The following chart compares unemployment rates for Washington, Iron and St. Francois Counties with the State for May and June in 2014 and 2015:

![Unemployment rates 2014 & 2015 by County](chart)

**TABLE 6- Bureau of Labor Statistics**

Employers and communities can work together to create opportunities to increase job skills for Washington County residents, enhance local employment opportunities, and create supportive and safe work environments – to the benefit of the entire community.
Family and Social Support

People with greater social support, less isolation, and greater interpersonal trust live longer and healthier lives than those who are socially isolated. The term “social capital” hasn’t been around too long but it means the network of social connections that exist between people, and their shared values and norms of behavior, which enable and encourage mutually advantageous social cooperation. Neighborhoods richer in social capital provide residents with greater access to support and resources than those with less social capital. In some areas of the county, people know their neighbors very well and help each other out. In other areas, people may live miles apart or be newcomers to the area without any support system.

WHY IS FAMILY AND SOCIAL SUPPORT IMPORTANT TO HEALTH?

Socially isolated individuals have an increased risk for poor health outcomes\(^{12}\). Individuals who lack adequate social support are particularly vulnerable to the effects of stress, which has been linked to cardiovascular disease and unhealthy behaviors such as overeating and smoking in adults, and obesity in children and adolescents\(^ {13}\).

Adults and children in single-parent households, often at-risk for social isolation, have an increased risk for illness, mental health problems and mortality, and are more likely to engage in unhealthy behaviors than their counterparts\(^ {14}\).

The *County Health Rankings* report two measures of family and social support:

- **Social associations**: defined as the number of membership associations per 10,000 population. This county-level measure is calculated from the County Business Patterns.
- **Children in single-parent households**: defined as the percentage of children living in family households who are raised by a single parent. These data come from the American Community Survey.

Washington County does well in both measures compared with the state as a whole. Washington County has many active church groups, social safety nets and community organizations that provide residents with the opportunity to participate. The social association rate for Washington County is 10.0 compared to the Missouri rate of 11.9 and the national rate of 9.4. According to the American Community Survey, from 2009-2013, 32% of the children in Washington County lived in single-parent households compared to 34% in Missouri.

INCOME

Income provides economic resources that shape choices about housing, education, child care, food, medical care, and more. Wealth, the accumulation of savings and assets, helps cushion and protect us in times of economic distress. As income and wealth increase or decrease, so does health.

WHY IS INCOME IMPORTANT TO HEALTH?

Income allows families and individuals to purchase health insurance and medical care, but
also provides options for healthy lifestyle choices. Adults in the highest income brackets are healthier than those in the middle class and will live, on average, more than six years longer than those with the lowest incomes. Low income mothers are more likely than higher income mothers to have pre-term or low birthweight babies and are at higher risk for chronic diseases and behavioral problems, according to Braveman and Egerter (See footnote 13). In larger cities, poor families are more likely to live in unsafe homes in crime-ridden neighborhoods often with limited access to healthy foods, employment options, and quality schools.

The two indicators used to measure the economic impact on health are Children Living in Poverty and Income Inequality.

The following chart is based on 2013 data from the US Census Bureau, Small Area Income and Poverty Estimates (SAIPE) program and shows child poverty trends in Washington County compared to state and national trends (County Health Rankings & Roadmaps 2015).

![Chart showing children in poverty in Washington County, MO compared to state and national trends]

Income inequality is a measure of the divide between the poor and the affluent. Income inequality within U.S. communities can have broad health impacts, including increased risk of mortality, poor health, and increased cardiovascular disease risks. Data gathered by the US Census Bureau, American Community Survey, 2009-2013, shows income inequality (or ratio of household income at the 80th percentile to income at the 20th percentile) to be similar across our region and state: Missouri-4.6, Washington County-4.4, Iron-4.4, and St. Francois-4.8. Communities can adopt and implement policies that help reduce and prevent poverty, now and
for future generations. The greatest health improvements may be made by increasing income at the lower levels, where small increases can have the greatest impacts.

Peer Counties

Since 2000, The Centers for Disease Control and Prevention have utilized a Community Health Status Indicator (CHSI) tool that allows the health status of individual counties to be compared to those of “peer” counties across the U.S.

The tool created 89 peer groupings based on the following 19 county-level equivalent variables for all 3,143 U.S. counties:

- Population size
- Population growth
- Population density
- Population mobility
- Percent children
- Percent elderly
- Sex ratio
- Percent foreign born
- Percent high school graduates
- Single parent households
- Median home value
- Housing stress
- Percent owner-occupied housing units
- Median household income
- Receipt of government income
- Household income
- Overall poverty
- Elderly poverty
- Unemployment

2015 CHSI Peer County Comparison for Washington County

A Center for Disease Control peer comparison study for Washington County revealed that Washington County fares better than its peers in the area of Alzheimer’s death and diagnosis, stoke deaths, lower rates of gonorrhea and syphilis, reduced costs of medical care, some moderate adult physical activity, lower housing costs, and lower violent crime. Washington County did worse than its peer counties in the area of coronary heart disease deaths, cancer deaths, female life expectancy, motor vehicle deaths, unintentional injuries, adult diabetes, adult depression, adult smoking, drinking water concerns, and poverty. This is consistent with other data sources related to the health of Washington County.
<table>
<thead>
<tr>
<th>Category</th>
<th>Better</th>
<th>Moderate</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>Alzheimer's disease deaths, Stroke deaths</td>
<td>Chronic lower respiratory disease (CILD) deaths</td>
<td>Cancer deaths</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diabetes deaths</td>
<td>Chronic kidney disease deaths</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male life expectancy</td>
<td>Coronary heart disease deaths</td>
</tr>
<tr>
<td>Morbidity</td>
<td>Alzheimer's diseases/dementia, Gonorrhea, Syphilis</td>
<td>Adult obesity</td>
<td>Female life expectancy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cancer</td>
<td>Motor vehicle deaths</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIV</td>
<td>Unintentional injury (including motor vehicle)</td>
</tr>
<tr>
<td>Health Care Access</td>
<td>Cost barrier to care</td>
<td>Uninsured</td>
<td>Older adult preventable hospitalizations</td>
</tr>
<tr>
<td>and Quality</td>
<td></td>
<td></td>
<td>Primary care provider access</td>
</tr>
<tr>
<td>Health Behaviors</td>
<td>Adult physical inactivity</td>
<td>Adult female routine pap tests</td>
<td>Adult smoking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teen births</td>
<td></td>
</tr>
<tr>
<td>Social Factors</td>
<td>High housing costs, Violent crime</td>
<td>Children in single-parent households</td>
<td>Poverty</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inadequate social support</td>
<td></td>
</tr>
<tr>
<td>Physical Environment</td>
<td>Annual average PM2.5 concentration, Housing stress</td>
<td>Access to parks</td>
<td>Drinking water violations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Living near highways</td>
<td>Limited access to healthy food</td>
</tr>
</tbody>
</table>

TABLE 8: Source Centers for Disease Control and Prevention
Environmental Health

Annual public health assessments are prepared by the Missouri Department of Health and Senior Services for the areas of Furnace Creek, Old Mines, Potosi-area, and Richwoods-area. These four sites are placed on the US Environmental Protection Agency’s (EPA) National Priorities List (NPL) due to lead contamination of private drinking wells and residential yards from mining, milling, and smelter wastes. These areas are also referred to as Washington County’s lead districts. To a lesser extent, there is concern for cadmium in drinking water, arsenic in soil, and physical hazards left behind from both known and unknown diggings and shafts.¹⁵

This EPA designation requires action, therefore the EPA has conducted sampling and remediation projects over several years throughout the affected areas. Some of these projects are still in progress. At the same time, health agencies such as the US CDC, Missouri Department of Health & Senior Services, and the Washington County Health Department monitor public health. This is done through required child blood-lead level screenings for children < 5 years of age.

Since 2002, Missouri state law requires testing of children <72 months, and again when entering school. Although lead risks are present, child blood-lead levels for Washington County are recognizably low using 5 micrograms per deciliter (µg/dl) as a reference. Prior to 2014, the level of concern was 10 µg/dl, but the US CDC now considers that there is no safe level for children. For Washington County, twenty-seven children tested in 2012 had levels ranging from 5 to 9.9µg/dl. Since 2012, these numbers have steadily decreased.

The EPA’s site investigations for the Furnace Creek (Belgrade, Caledonia, Irondale) area sampled 428 residences and 207 drinking water wells. Results found 145 properties having >400 parts per million (ppm) lead with 33 properties having >1200 ppm lead. Of the 207 drinking wells, three contained levels above the EPA’s 15 parts per billion (ppb) ranging from 17.7 to 82.2 ppb.

These types of EPA site investigations have been conducted in the areas of Richwoods, Old Mines, and Potosi areas, with assessment reports for each. TABLE 9 maps all four areas and TABLE 10 shows the findings in Potosi, Old Mines and Richwoods. After site investigations, the EPA held community meetings for each of the four lead districts to report findings, discuss future actions, and respond to questions and concerns from the public.
TABLE 9: Source: EPA 2014 Washington County Lead District Sites
According to the EPA’s Region VII Project Manager, lead assessment findings for Potosi, Old Mines and Richwoods are as follows:

### Residential Soil

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Total Properties Sampled</th>
<th>Properties Over 400 ppm</th>
<th>Contaminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potosi</td>
<td>1962</td>
<td>989</td>
<td>50%</td>
</tr>
<tr>
<td>Old Mines</td>
<td>1073</td>
<td>393</td>
<td>37%</td>
</tr>
<tr>
<td>Richwoods</td>
<td>391</td>
<td>94</td>
<td>24%</td>
</tr>
</tbody>
</table>

### Groundwater

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Total Wells Sampled</th>
<th>Wells over 15 ppb</th>
<th>Contaminated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potosi</td>
<td>869</td>
<td>136</td>
<td>16%</td>
</tr>
<tr>
<td>Old Mines</td>
<td>856</td>
<td>116</td>
<td>14%</td>
</tr>
<tr>
<td>Richwoods</td>
<td>332</td>
<td>55</td>
<td>17%</td>
</tr>
</tbody>
</table>

TABLE 10: Source Environmental Protection Agency Region VII 2014

In regards to Washington County’s drinking water, the EPA responded to elevated levels of lead (or cadmium in a few cases) in private drinking wells by making available an installed under-the-sink water filtration system for those residences. During the interim, the EPA provided bottled water. However, not all residences allowed for testing of their drinking well, therefore several unknowns exist among private wells. Public drinking water wells are tested regularly and monitored by the Missouri Department of Natural Resources for contaminate levels.

Maternal and Child Health

### Prenatal Care

Prenatal care is care that a woman receives during her pregnancy. The goal of prenatal care is to monitor the pregnancy and identify potential problems for the mother and baby, as well as educate the mother about issues such as nutrition, physical activity, the birth process and caring for a newborn. Visits typically become more frequent as the due date gets closer. Women who receive adequate prenatal care typically have healthier babies, are less likely to deliver prematurely and are less likely to have other serious pregnancy-related problems. Beginning prenatal care early – in the first trimester of the pregnancy – is an important aspect of receiving adequate prenatal care. As pictured in TABLE 11, the 2013 rate for inadequate prenatal care among women in Washington County was 21.6, as compared to the state rate of 15.6.
The State of Missouri groups all counties into quintiles. A quintile is simply one-fifth of a ranked list. Quintiles are determined by ranking counties in order by rate. The rates are sorted from the highest (1) to the lowest (115) rate. Since Missouri has 114 counties (115, including the City of St. Louis, which is an independent city), there are 23 counties in each quintile.

Given this, Washington County is in the 1st quintile (highest rate) for:

- Late Prenatal Care (2nd/3rd Trimester)
- Inadequate Prenatal Care
- Weight Gain Less than 15 Pounds
- Mother Smoked During Pregnancy

However, on a positive note, Washington County scored in the 1st quintile (highest rate of participation) in:

- Prenatal WIC Involvement
- Prenatal Food Stamp Access

And was in the second quintile for:

- Prenatal Medicaid Access
### Inadequate Prenatal Care in Washington County

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
</tr>
</tbody>
</table>

38. Prenatal Care Adequacy (Missouri Index): Inadequate

### TABLE 12 Source: Missouri Information for Community Assessment (MICA)

As demonstrated in Table 14, teen pregnancy is of concern in Washington County. The 2008-2012 rates of teen pregnancies for Washington County are 25.4, as compared to the state rate of 22.45. Teen birth rates are of concern because teen girls who have babies are:

- Less likely to finish high school;
- More likely to rely on public assistance;
- More likely to be poor as adults; and
- More likely to have children who have poorer educational, behavioral, and health outcomes over the course of their lives than do kids born to older parents.¹⁶

According to the Missouri information for Community Assessment (MICA) data, the number of births in Washington County to mothers with less than a high school education was 372, for the 2008-2012 time periods. Future opportunities are diminished for teen mothers as they are more likely to drop out of high school and then face employment limitations due to a lack of skills and education. Employment limitations can potentially force the teen mother to become financially dependent on family or public assistance. Repeat pregnancies for women under the age of 20 are also higher than state rates. The Washington County repeat pregnancy rate for 2008-2012 was 2.6, as compared to the state rate of 1.80.
According to MICA data, the number of mothers who smoked during pregnancy in 2013 was 104 for Washington County, for a rate of 34.7, as compared to the state rate of 17.5. As displayed in TABLE 15, the number of mothers who smoke while pregnant has significantly increased in 2013. Smoking during pregnancy can adversely affect the health and development of children. Carbon monoxide and nicotine from tobacco smoke may interfere with the oxygen supply to the fetus. Nicotine also readily crosses the placenta, with concentrations in the fetus reaching as much as 15 percent higher than maternal levels. Nicotine concentrates in fetal blood, amniotic fluid, and breast milk. Combined, these factors can have severe consequences for the fetus and infant of smoking mothers. Thus, smoking has been linked to low birth weight and pre-term delivery for infants. Preterm births (infants born at less than 37 completed weeks) has increased from 2012-2013 as displayed in TABLE 16. Accordingly, the rates of infants with low birth weight were 9.0 for Washington County during 2008-2012, as compared to the state rate of 8.03. There were 204 babies that were born pre-term for a county rate of 13.4, as compared to the state rate of 12.23.
Diagnostic Categories

The Missouri Department of Mental Health, Division of Behavioral Health, Psychiatric Services 2015 Status Report on Missouri’s Substance Abuse and Mental Health Problems reveals the following diagnostic categories for individuals who received psychiatric treatment in Washington County. Mood Disorders such as Major Depressive Disorder and Bi-Polar Disorder account for the most prevalent diagnostic category and accounted for 42% of all diagnostic categories. Anxiety Disorders and Psychotic Disorders, such as schizophrenia, were the next largest categories of diagnoses. The primary treatment referral source was by Self/Family/Friend, followed by a Health Care Provider.

![Table 17](http://dmh.mo.gov/ada/countylinks/docs/mentaltreatment-washington.pdf)

**Suicide**

Suicide rates in the county have risen from three in 2011, to six in 2012 and 8 in 2013. Self-inflicted injuries are also on the rise. There were 29 incidents in 2011, 35 in 2012, and 50 in 2013. In May, 2014, the Missouri Behavioral Health Epidemiology Workgroup did a study of students in 6th-12th grade in Washington County. In this Behavioral Health Profile, students were
asked about their mental health. Of those who responded, 11.5% had considered suicide in the last year, 7.6% made a plan, and 1.6% actually attempted, resulting in injury. Nationally, males are four times more likely to commit suicide than females and older males have higher rates of suicide than younger males.\textsuperscript{18}

As the study points out, “Individuals struggling with serious mental illness are at higher risk for homicide, suicide, and accidents as well as chronic conditions including cardiovascular and respiratory diseases and substance abuse disorders.” Nearly 66\% to 70\% of people with serious mental illness (SMI) smoke, compared to a quarter of the general population. People with these serious disorders consume almost half of the cigarettes sold in the US. Individuals with SMI are more than twice as likely to develop cardiovascular disease, over three times as likely to develop respiratory disease and cancer, and have a life expectancy that is twenty-five years shorter than the general population.\textsuperscript{18} Some estimates indicate a higher prevalence of smoking for individuals diagnosed with schizophrenia and bipolar disorder as high as 88\%.\textsuperscript{19}

Diabetes in both adults and children has been linked with having a co-occurring mental health disorder. "As many as one in five children with newly diagnosed type 2 diabetes may also have a neuropsychiatric disorder, according to one study. The illnesses include depression, attention-deficit hyperactivity disorder, autism, developmental delay, schizophrenia, and bipolar disorder. The research suggests that children with a neuropsychiatric disease may be at risk for type 2 diabetes, and vice versa".\textsuperscript{20}

TABLE 19 below indicates the increased incidence of diabetes in schizophrenic patients compared to the general population 50 to 75 years old.

TABLE 19 Source: National Association of State Mental Health Program Directors, Medical Directors Council, July 2006
Local Hospitalization Data

Washington County Memorial Hospital had a total of 68 emergency department admissions for suicidal ideations in 2014, 38 of these were female and 30 male.

Substance Abuse

Rates of Use

There has been general decline in substance abuse admissions in the past three years with the exception of admissions for detoxification, which is up slightly 11 admissions in 2012, 19 in 2013 and 23 in 2014. The typical demographic profile for an admission for substance abuse or compulsive gambling in Washington County is a Caucasian male, aged 30-34, high school educated or G.E.D., unemployed, never married, with analgesic use (except Heroin) as the drug of choice, followed by marijuana then alcohol. 21

Student use

According to the most recent Behavioral Health Profile (June 2015), 24.5% of youth in Washington County believe that it would be easy to get alcohol, 20.5% think that their friends believe it is at least “pretty cool” to drink and 37.7% have friends who drink alcohol. As far as use rates that are higher than the State’s rates, Washington County youth abuse over the e-cigarettes and prescription medications more than the State average.

![Current Substance Use for Grades 6 - 12, 2014 data](http://dmh.mo.gov/ada/countylinks/docs/profile-washington.pdf)
An array of chronic diseases that led to inpatient hospitalizations in Washington County are listed in the table below for the time period of 2010-2012. Hospitalization rates for strokes, chronic obstructive cardiovascular disease, arthritis, and alcohol abuse and substance abuse were all on the rise during this timeframe. There is a slight decrease in hospitalizations related to heart disease; however hospitalization rates for this chronic condition remain extremely high and represent the most frequently hospitalized chronic condition in Washington County.

<table>
<thead>
<tr>
<th>Chronic Disease</th>
<th>2010 Number</th>
<th>2011 Number</th>
<th>2012 Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke/cerebrovascular disease</td>
<td>100</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Sickle cell anemia</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Other cardiovascular/circulatory conditions</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Liver disease</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Hypertension</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Heart disease</td>
<td>500</td>
<td>550</td>
<td>600</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Diabetes</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Chronic renal failure</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease (COPD)</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Cancer</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Atherosclerosis</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Asthma</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Arthritis/other joint disorders</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Alcohol/substance related disorders</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

TABLE 21 Source: Missouri Information for Community Assessment (MICA) Missouri Department of Health & Senior Services-Chronic Disease
The table below compares the above county specific chronic disease data with frequencies and rates across Missouri. **Washington County ranks higher for COPD, heart disease, and stroke/cerebrovascular disease when compared to overall state rates.** Although there are some rankings that are lower, Washington County’s total rate of 353.9 is significantly different from the state total ranking of 283.5, meaning that those higher rates significantly impact Washington County’s overall health ranking.

| Chronic Disease - Inpatient Hospitalization: Residents of Selected Counties/Cities Year=2010,2011,2012 |
|---|---|---|---|
| County | Washington County | Total for Selection | Missouri |
| Diagnosis | Number | Rate | Number | Rate | Number | Rate |
| Alcohol/substance related disorders | 87 | 11.6 | 87 | 11.6 | 34,913 | 19.8 |
| Atherosclerosis | 49 | 5.5 | 49 | 5.5 | 12,088 | 5.8 |
| Cancer | 303 | 34.1 | 303 | 34.1 | 68,339 | 33.1 |
| Chronic obstructive pulmonary disease (COPD) | 307 | 36.1 | 307 | 36.1 | 47,790 | 23.0 |
| Diabetes | 147 | 17.8 | 147 | 17.8 | 34,527 | 18.2 |
| Heart disease | 1,552 | 185.0 | 1,552 | 185.0 | 253,538 | 124.1 |
| Hypertension | 75 | 8.8 | 75 | 8.8 | 19,668 | 10.0 |
| Liver disease | 41 | 4.6 | 41 | 4.6 | 9,781 | 4.9 |
| Other cardiovascular/circulatory conditions | 143 | 16.6 | 143 | 16.6 | 30,946 | 15.4 |
| Stroke/cerebrovascular disease | 280 | 33.1 | 280 | 33.1 | 60,180 | 29.2 |
| Total for Selection | 2,964 | 363.9 | 2,964 | 363.9 | 571,571 | 293.5 |

TABLE 22 Source: Missouri Information for Community Assessment (MICA) Missouri Department of Health & Senior Services-Chronic Disease

**Cancer Rates**

Both tables 23 and 24 demonstrate cancer data for Washington County. However, Table 24 compares Washington County rates to the state of Missouri.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage: = All stages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Site</td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td>Breast</td>
<td>1</td>
<td>61</td>
</tr>
<tr>
<td>Cervix</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Colon, rectum and rectosigmoid</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>Lung and bronchus</td>
<td>42</td>
<td>34</td>
</tr>
<tr>
<td>Prostate</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Urinary bladder</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Corpus and Uterus, NOS</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Total for Selection</td>
<td>106</td>
<td>131</td>
</tr>
</tbody>
</table>

TABLE 23 Source: Missouri Information for Community Assessment (MICA) Missouri Department of Health & Senior Services-Cancer Registry
Although, overall cancer rates are lower, Washington County’s lung cancer rates are significantly higher when compared to Missouri as a whole.
This data on the high prevalence of bronchus and lung cancer rates in Washington County, along with the data that indicates higher than peer county rates of adult smoking, raises serious health concerns and will be an area focus of this rural health network.

**Hospitalizations and Injury**

**Hospitalizations**

Washington County has one hospital, a 25 bed critical access hospital county that accounted for 1,291 admissions in 2012 (Washington County Memorial Hospital, 2015). According to MICA in 2012, residents of Washington County were hospitalized 3,426 times with a rate of 1,299.4 compared with a state rate of 1,137.80, which is of high significance. See rates table below:

- The top causes of inpatient hospitalizations of Washington County residents are consistent with those in the state of Missouri. The highest ranking causes of hospitalization were heart and circulation problems followed by respiratory causes, digestive system disorders, and mental disorders.

- According to WCMH, in 2012 there was an average length of stay of 6.57 days.

- Medicare and Medicaid were the top payment sources of Washington County hospitalizations, while Medicare and Commercial payment was the top payment source for the state.

- According to the most recent data available (MICA 2010), Washington County had a preventable hospitalization rate of 198.2 while the state of Missouri had a rate of 141.3.

- Many hospitalizations often require more advanced care and treatment than is provided by Washington County Memorial Hospital. In addition a number of WCMH patients are swingbed patients that require skilled nursing care that often requires a longer length of stay.
The top cause of injury in Washington County and throughout the state is related to falls/jumps. In 2013, MICA reported that Washington County had 934 reported fall/jumps for a rate of 3791.3 while the Missouri had 164,243 reported with a rate of 2660.3. The age group highest at risk for injury in Washington County is the 25-44 age range. See Tables 27 & 28 below.
### Injuries: Residents of Washington County

**Injury Location:** All Injury Locations

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total for Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse/Neglect/Rape</td>
<td>24</td>
<td>16</td>
<td>14</td>
<td>13</td>
<td>67</td>
</tr>
<tr>
<td>Cut/Pierce</td>
<td>246</td>
<td>276</td>
<td>299</td>
<td>224</td>
<td>1,045</td>
</tr>
<tr>
<td>Drowning</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Fall/Jump</td>
<td>987</td>
<td>982</td>
<td>973</td>
<td>934</td>
<td>3,876</td>
</tr>
<tr>
<td>Fire/Burn</td>
<td>66</td>
<td>78</td>
<td>63</td>
<td>62</td>
<td>269</td>
</tr>
<tr>
<td>Firearm</td>
<td>6</td>
<td>5</td>
<td>13</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Machinery</td>
<td>24</td>
<td>27</td>
<td>20</td>
<td>24</td>
<td>95</td>
</tr>
<tr>
<td>Motor Vehicle Traffic</td>
<td>406</td>
<td>355</td>
<td>386</td>
<td>252</td>
<td>1,399</td>
</tr>
<tr>
<td>Motor Vehicle-Non Traffic</td>
<td>129</td>
<td>116</td>
<td>120</td>
<td>80</td>
<td>445</td>
</tr>
<tr>
<td>Other Transport</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Weather/Wildlife</td>
<td>227</td>
<td>268</td>
<td>226</td>
<td>244</td>
<td>965</td>
</tr>
<tr>
<td>Over-exertion</td>
<td>495</td>
<td>450</td>
<td>392</td>
<td>319</td>
<td>1,656</td>
</tr>
<tr>
<td>Poison/Overdose</td>
<td>83</td>
<td>86</td>
<td>92</td>
<td>98</td>
<td>359</td>
</tr>
<tr>
<td>Struck by/Against</td>
<td>399</td>
<td>432</td>
<td>457</td>
<td>379</td>
<td>1,667</td>
</tr>
<tr>
<td>Suffocate/Hang</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>All Other</td>
<td>483</td>
<td>501</td>
<td>562</td>
<td>756</td>
<td>2,302</td>
</tr>
<tr>
<td>Unknown</td>
<td>28</td>
<td>16</td>
<td>51</td>
<td>57</td>
<td>152</td>
</tr>
<tr>
<td><strong>Total for Selection</strong></td>
<td>3,619</td>
<td>3,620</td>
<td>3,678</td>
<td>3,457</td>
<td>14,374</td>
</tr>
</tbody>
</table>

---

Table 27 Source: Missouri Information for Community Assessment (MICA)  
Missouri Department of Health & Senior Services

### Injuries: Residents of Washington County Year=2013

**Injury Location:** All Injury Locations

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Under 15</th>
<th>15 - 24</th>
<th>25 - 44</th>
<th>45 - 64</th>
<th>65 and Over</th>
<th>All Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse/Neglect/Rape</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td>Cut/Pierce</td>
<td>42</td>
<td>26</td>
<td>93</td>
<td>46</td>
<td>17</td>
<td>224</td>
</tr>
<tr>
<td>Drowning</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Fall/Jump</td>
<td>201</td>
<td>92</td>
<td>225</td>
<td>213</td>
<td>203</td>
<td>934</td>
</tr>
<tr>
<td>Fire/Burn</td>
<td>10</td>
<td>9</td>
<td>26</td>
<td>15</td>
<td>2</td>
<td>62</td>
</tr>
<tr>
<td>Firearm</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Machinery</td>
<td>0</td>
<td>3</td>
<td>10</td>
<td>9</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Motor Vehicle Traffic</td>
<td>13</td>
<td>90</td>
<td>85</td>
<td>54</td>
<td>10</td>
<td>252</td>
</tr>
<tr>
<td>Motor Vehicle-Non Traffic</td>
<td>20</td>
<td>23</td>
<td>21</td>
<td>10</td>
<td>6</td>
<td>80</td>
</tr>
<tr>
<td>Other Transport</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Weather/Wildlife</td>
<td>79</td>
<td>42</td>
<td>64</td>
<td>38</td>
<td>21</td>
<td>244</td>
</tr>
<tr>
<td>Over-exertion</td>
<td>37</td>
<td>68</td>
<td>124</td>
<td>74</td>
<td>16</td>
<td>319</td>
</tr>
<tr>
<td>Poison/Overdose</td>
<td>13</td>
<td>15</td>
<td>41</td>
<td>24</td>
<td>5</td>
<td>98</td>
</tr>
<tr>
<td>Struck by/Against</td>
<td>100</td>
<td>69</td>
<td>135</td>
<td>56</td>
<td>19</td>
<td>379</td>
</tr>
<tr>
<td>Suffocate/Hang</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>All Other</td>
<td>133</td>
<td>126</td>
<td>287</td>
<td>152</td>
<td>58</td>
<td>756</td>
</tr>
<tr>
<td>Unknown</td>
<td>16</td>
<td>23</td>
<td>12</td>
<td>5</td>
<td>1</td>
<td>57</td>
</tr>
<tr>
<td><strong>Total for Selection</strong></td>
<td>672</td>
<td>592</td>
<td>1,131</td>
<td>700</td>
<td>362</td>
<td>3,457</td>
</tr>
</tbody>
</table>

Rates for "All Ages" are age adjusted. Others are age group specific.

---

Table 28 Source: MICA: Missouri Department of Health & Senior Services
Death and Mortality

Causes

Table 29 displays several causes and frequencies of death in Washington County for a three-year period 2011 – 2013. It also demonstrates those causes that have had a significant increase over the past three years; Suicide, Motor Vehicle Accidents, Respiratory Diseases, Kidney Disease, and Digestive Diseases.

Table 30 demonstrates those causes that are most prevalent overall; Heart Disease, Cancer, and Chronic Respiratory Diseases.

<table>
<thead>
<tr>
<th>Causes</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total for Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Septicemia</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Syphilis</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AIDS (HIV disease)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other infections and parasites</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Cancer</td>
<td>65</td>
<td>56</td>
<td>60</td>
<td>181</td>
</tr>
<tr>
<td>Diabetes</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Alzheimer's disease</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Heart disease</td>
<td>65</td>
<td>76</td>
<td>67</td>
<td>259</td>
</tr>
<tr>
<td>Essential hypertension</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cerebrovascular disease (Stroke)</td>
<td>10</td>
<td>10</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td>Atherosclerosis</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Other major cardiovascular diseases</td>
<td>2</td>
<td>2</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Pneumonia and influenza</td>
<td>14</td>
<td>12</td>
<td>23</td>
<td>49</td>
</tr>
<tr>
<td>Chronic lower respiratory diseases</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Pneumonitis due to solids and liquids</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Peptic ulcer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chronic liver disease and cirrhosis</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Other digestive diseases</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Kidney disease (nephritis/nephrotic syndrome)</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Pregnancy complications</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Birth defects</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Conditions of perinatal period (early infancy)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sudden Infant Death Syndrome (SIDS)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>All other accidents and adverse effects</td>
<td>7</td>
<td>7</td>
<td>13</td>
<td>27</td>
</tr>
<tr>
<td>Suicide</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Homicide</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total for Selection</strong></td>
<td>238</td>
<td>209</td>
<td>268</td>
<td>713</td>
</tr>
</tbody>
</table>

Table 29 Source: Missouri Information for Community Assessment (MICA) Missouri Department of Health & Senior Services
Deaths: Residents of Washington County Year=2013
Washington County Number

- Suicide
- All other accidents and adverse effects
- Motor vehicle accidents
- Kidney disease (nephritis/nephrotic syndrome/nephrosis)
- Chronic liver disease and cirrhosis
- Other respiratory diseases
- Pneumonitis due to solids and liquids
- Chronic lower respiratory diseases
- Pneumonia and influenza
- Other major cardiovascular diseases
- Essential hypertension
- Heart disease
- Alzheimer’s disease
- Diabetes
- Cancer
- Other infections and parasites

Table 30 Source: Missouri Information for Community Assessment (MICA)
Missouri Department of Health & Senior Services
In May 2015, a public survey was conducted in Washington County to assess the general public options on the health of the community as a whole. The purpose of the survey was published in the local newspaper, information about the survey was posted on the websites of the participating agencies, paper copies of the survey were provided to area residents at each of the Washington County Rural Health Network offices and on-line via an on-line survey tool. All paper data was subsequently uploaded to the on-line survey tool for the purposes of data collection and result presentation. There were a total of 296 surveys completed. Some respondents did skip some questions. The responses are as follows.
Q1- In the following list, what do you think are the three most important factors for a "Healthy Community?" (Those factors which most improve the quality of life in a community.)

Q1A-The top three responses were **Good jobs and a health economy, Access to health care (e.g., family doctor), and Good schools.**
Q2- In the following list, what do you think are the three most important "health problems" in our community? (Those problems which have the greatest impact on overall community health.)

<table>
<thead>
<tr>
<th>Health Problem</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aging problems (e.g., brain damage)</td>
<td>27</td>
</tr>
<tr>
<td>Cancers</td>
<td>121</td>
</tr>
<tr>
<td>Child abuse/neglect</td>
<td>88</td>
</tr>
<tr>
<td>Dental problems</td>
<td>83</td>
</tr>
<tr>
<td>Diabetes</td>
<td>77</td>
</tr>
<tr>
<td>Domestic violence</td>
<td>41</td>
</tr>
<tr>
<td>Firearm-related injuries</td>
<td>1</td>
</tr>
<tr>
<td>Heart disease and stroke</td>
<td>88</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>49</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>3</td>
</tr>
<tr>
<td>Homicide</td>
<td>1</td>
</tr>
<tr>
<td>Infant death</td>
<td>1</td>
</tr>
<tr>
<td>Infectious diseases (e.g., flu)</td>
<td>19</td>
</tr>
<tr>
<td>Mental health problems</td>
<td>169</td>
</tr>
<tr>
<td>Motor vehicle crash injuries</td>
<td>47</td>
</tr>
<tr>
<td>Rape/sexual assault</td>
<td>6</td>
</tr>
<tr>
<td>Respiratory/lung disease</td>
<td>30</td>
</tr>
<tr>
<td>Sexually Transmitted disease</td>
<td>14</td>
</tr>
<tr>
<td>Suicide</td>
<td>6</td>
</tr>
<tr>
<td>Teen pregnancy</td>
<td>58</td>
</tr>
<tr>
<td>Terrorist activities</td>
<td>1</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>30</td>
</tr>
</tbody>
</table>

Q2A-The respondents listed the top three health problems of Washington County as **Cancer**, **Mental health problems**, and a tie between **Child abuse/neglect** and **Heart disease/stroke**. Heart disease and cancer do remain the leading cause of death in Washington County.
Q3- In the following list, what do you think are the three most important "risky behaviors" in our community? (Those behaviors which have the greatest impact on overall community health.)

Q3A-The top three “Risky Behaviors” identified by the survey were Drug abuse (78%), Alcohol abuse (55%) and Being overweight (at 37.5%).
Q4- How would you rate the overall health of our community?

<table>
<thead>
<tr>
<th>Rating</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very unhealthy</td>
<td>24</td>
</tr>
<tr>
<td>Unhealthy</td>
<td>99</td>
</tr>
<tr>
<td>Somewhat healthy</td>
<td>150</td>
</tr>
<tr>
<td>Healthy</td>
<td>17</td>
</tr>
<tr>
<td>Very Healthy</td>
<td>1</td>
</tr>
</tbody>
</table>

Q4A-51.5% of respondents reported that they rated the overall health of the County as “Somewhat healthy”.

Q5- Gender of Survey Participants

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>36</td>
</tr>
<tr>
<td>Female</td>
<td>254</td>
</tr>
</tbody>
</table>

Q5A-88% of the respondents were female.
Q6- Age of respondents

Q6A- 36.6% of the respondents were between the ages of 40-54.

Q7- Household income.

Q7A- Regarding household income, 34.8% of the respondents had a household income of over $50,000 followed by 27.6% who had an income below $20,000.
Q8- How do you pay for your health care?

Q8A- 61% of the respondents had private insurance, followed by 13% that had no insurance.

Q9- How would you rate your own personal health?

Q9A- Individuals in Washington County rated their overall health as Somewhat healthy (47%) and 36% reporting Healthy.
Q10- Do you have any health issues that can be attributed to (check all that apply):

- obesity: 91
- tobacco use: 46
- alcohol use: 4
- drug use: 5
- No - none of these: 159

Q10A- The majority of respondents indicated they did not have any of the listed health issues. 31% did indicate they were obese.

Q11- How often do you engage in physical activity such as exercise, walking, biking or other?

- hardly ever: 39
- sometimes: 62
- once a week: 14
- a couple times a week: 94
- daily: 68
- weekends only - due to job: 13

Q11A- 32% report that they exercise at least twice a week and 23% indicated they exercise daily.
Q12- Have you visited a physician in the past 12 months for any condition or emergency?

Q12A- 81\% reported they had seen a physician in the past 12 months.

Q13- If yes, check the one that applies:

Q13A- 35\% of respondents indicated that the visit was for a routine physical exam. Of concern is the report of only 7.5\% seeing a physician for a cancer screen and only 2.2\% seeing a physician for a cholesterol check.
Q14: If you selected "cancer screening" in the previous question, was it gender specific?

Q14A- Only 75 out of the 296 respondents answered this question. Only 31% of respondents indicated their cancer screening was gender specific (pap smears, mammogram, prostate) indicating that the respondents have had a low amount of these types of cancer screenings.

Q15- Have you visited the emergency room or urgent care in the past 12 months?

Q15A- Nearly 44% had been in the ER in the past year.

Q16- If you answered yes to the previous question, select from the reasons below:

Q16A- Of those, 32.5% were for treatable illnesses and 25.4% were for a child’s illness or injury.
Q17- Have you had to travel outside of Washington County in the past 12 months to see a health specialist physician?

Q17A- 58% of respondents had to travel outside the county to see a specialist physician.

Q18- Have you visited a dentist in the past 12 months?

Q18A- 56% of the respondents had seen a dentist in the past year

Q19- If you had to visit a dentist in the past 12 months, select the reason why:

Q19A- 61% of those visits were for routine care and cleaning.
Q20- Have you visited an eye doctor or ophthalmologist in the past 12 months?

Q20A- 57% of respondents had seen an eye doctor within the past year.

Q21- Have you visited a health care professional for any mental health or coping issues in the past 12 months?

Q21A-Nearly 87% of respondents indicated that they did not see a mental health professional in the past year.

Q22- If you answered yes to the previous question, and have visited a health care professional for a mental health or coping issue during the past 12 months, select the type of health care professional(s) you visited:

- **Psychologist**: 11 respondents
- **Counselor**: 8 respondents
- **Neurologist**: 3 respondents
- **Other (please specify)**: 7 respondents

Q22A- 42% of respondents indicated that they saw a psychologist.
Network Member Services

Q23- That Washington County Memorial Hospital has visiting specialists [internal medicine, urology, nephrology, cardiology, neurology, pulmonologist, orthopedic, gastroenterologist, psychiatrist and a general surgeon] providing such services as outpatient surgery, wound care, sleep studies, colonoscopy, and others?

Q23A- 80% of respondents knew that Washington County Memorial Hospital has visiting specialists.

Q24- That Washington County Memorial Hospital has an Inpatient Swing-bed program that provides nursing care, physical therapy, occupational therapy, wound care and IV therapy that may follow a hip replacement, coronary bypass, and illness recovery among others?

Q24A- 76% knew that the Washington County Memorial Hospital has an Inpatient Swing-bed program.

Q25- That Great Mines Health Center employs a Pediatric Nurse Practitioner?

Q25A- 69% were aware that Great Mines Health Center employs a Pediatric Nurse Practitioner.
Q26- That Great Mines Health Center offers comprehensive medical and dental services; and has an in-house pharmacy and lab?

Q26A- 75% indicated that they were aware that Great Mines Health Center offers comprehensive medical and dental services; and has an in-house pharmacy and lab.

Q27- That Washington County Health Department accepts private insurances for immunizations?

Q27A- 66% stated that they knew that Washington County Health Department accepts private insurances for immunizations.

Q28- That Washington County Health Department operates a women's health clinic for eligible women aged 35 - 64 that screens for cancers that affect women; and if diagnosed further financial assistance may be available for treatment?

Q28A- 66% of respondents reported that they were aware that Washington County Health Department operates a women's health clinic for eligible women aged 35 – 64.
Q29- That Washington County Community Partnership hosts monthly meetings to organize many community services?

Q29- 46% of respondents voiced awareness that Washington County Community Partnership hosts monthly meetings to organize many community services.

Q30- That Washington County Community Partnership provides ongoing parenting classes, adolescent responsibility classes, Cars for Careers and car seat installation training?

Q30A- 56% indicated knowledge that the Washington County Community Partnership provides ongoing parenting classes, adolescent responsibility classes, Cars for Careers and car seat installation training.

Q31: Are you aware of dialing "2-1-1" for information about community and health services for Washington County?

Q31A- Only 21% of area residents are aware of dialing "2-1-1" for information about community and health services for Washington County.
The next four questions of the survey were based on a 5 point Likert scale from 1 to 5 with 1 representing a hard “No” and 5 representing a hard “Yes”.

Q32- Are you satisfied with the quality of life in our community? (Consider your sense of safety, well being, participation in community life and associations, etc.)

Q32A- 113 of 272 respondents (42%) responded with a 3, indicating they are “Somewhat Satisfied” with the quality of life in their community.

Q33- Is this community a good place to raise children (Consider school quality, day care, after school programs, recreation, etc.)

Q33A- 98 of 272 respondents indicated they “Somewhat” (36%) or “Mostly” (32%) considered the Community a good place to raise children.
Q34- Is this a community a good place to grow old? (Consider elder-friendly housing, transportation to medical services, churches, shopping, elder day care, social support for the elderly living alone, meals on wheels, etc.)

Q34A- 36% “Somewhat” and 29% “Mostly” felt that the community was a good place to grow old.

Q35- Does the community have sufficient sidewalks, walking/hiking trails, biking trials, or other pathways for physical activity?

Q35A- 21% “Did Not Agree”, 26% “Found Insufficient” and 29% “Somewhat” feel that the community has sufficient sidewalks, walking/hiking trails, biking trials, or other pathways for physical activity.
Q36A- Is your property or your health currently impacted by a Washington County environmental issue regulated by the U.S. EPA?

Q36A- Only 12% reported that their property or their health was currently impacted by a Washington County environmental issue regulated by the U.S. EPA.

Q37- In the past 12 months, has your drinking water ever been found unsafe to drink by the Missouri Department of Natural Resources, Health Department, or municipality?

Q37A- Only 13% of respondents reported that their drinking water ever been found unsafe to drink by the Missouri Department of Natural Resources, Health Department, or municipality.

Q38- Which of the following do you currently use?

Approximately

Q38A- Approximately 67% of those who responded have private well water.
Q39- Overall, do you consider Washington County's drinking water to be of good quality?

Q39A- 38% of respondents felt the Washington County’s drinking water was of “Somewhat” good quality.

Q40- Do you consider Washington County food sources safe (such as restaurants and grocery stores)?

Q40A- 35% of Respondents reported they “Mostly” considered Washington County food sources safe and 31% felt the food was “Somewhat” safe.
Many areas of concern were identified through the Community Health Assessment and community survey. Latest data indicates that Washington County ranks 112 out of 114 counties regarding overall health factors, showing that **Washington County has some of the poorest health factors in the state** (a combination of health behaviors, clinical care, social and economic and physical environment factors). **Washington County has higher than state rates of:**

- Adult smoking
- Adult obesity
- Alcohol Impaired Driving Deaths
- Physical Inactivity
- Lower Access to Exercise Opportunities
- Sexually Transmitted Infections
- Teen Births.

Nationally, compared to peer counties of similar size and composition, **Washington County did worse than its peer counties in the areas of:**

- Coronary heart disease deaths
- Cancer deaths
- Female life expectancy
- Motor vehicle deaths
- Unintentional injuries
- Adult diabetes
- Adult depression
- Adult smoking
- Drinking water concerns
- Poverty

Additional areas of concern include:

- Rates for inadequate prenatal care among women in Washington County were 21.6, as compared to the state rate of 15.6.
- Suicide rates in the county have risen from three in 2011, to six in 2012 and 8 in 2013.
- Self-inflicted injuries are also on the rise. There were 29 incidents in 2011, 35 in 2012, and 50 in 2013.
- Washington County ranks higher for COPD, heart disease, and stroke/cerebrovascular disease when compared to overall Missouri State rates.
- Washington County’s lung cancer rates are significantly higher when compared to the state’s.
- The survey respondents’ report of low amounts of gender specific cancer screenings.
- Respondents’ reporting that only 7.5% saw a physician for a cancer screen in the past year and only 2.2% saw a physician for a cholesterol check in the past year.
- 58% of respondents had to travel outside the county to see a specialist physician.
- Only 21% of area residents are aware of dialing "2-1-1" for information about community and health services for Washington County.

### Strategic Health Priorities

#### Stakeholders Next Steps

The Washington County Rural Health Network has identified both existing and emergent health issues that affect the community as a whole. As providers of healthcare and health education, the Rural Health Network pledges to address each of these identified issues, in an effort to make a positive change in the health status of Washington County residents. A strategic planning process had begun, identifying top priorities and next steps for the Network.

One area of focus will be increased efforts with patient engagement. Despite how strong the Network is, little gains will be made unless the patient is heavily involved in their own care and wants to adopt healthy behaviors and lifestyles. Establishing the patient as a principal participant in the team approach to care is a vital component of this collaborative model. A report in the *Journal of General Internal Medicine* indicates that the national best practices of patient-centered care include:

1. Superb access to care.
2. Patient engagement in care.
3. Clinical information systems that support high-quality care.
4. Practice-based learning and quality improvement.
5. Care coordination.
6. Integrated, comprehensive care; smooth information transfer across a fixed or virtual team of providers.
7. Ongoing, routine patient feedback to a practice.
8. Publicly available information on practices.
The Network Partners will continue to provide educational resources to the community via health fairs, back to school fairs and Head Start medical and dental screenings, among other initiatives, and they will be able to provide the community the most up to date information about the health issues most affecting the county. The results of this health assessment and survey will be shared with the public via local media, on websites of Rural Health Network members, and through the Network agencies as well. Emphasis will be placed on greater compliance with cancer, cholesterol and blood pressure screenings, which also means greater compliance with keeping scheduled appointments so these tests can be performed. An educated consumer with increased health literacy can make more informed decisions on how healthy they choose to be.

Grants and other funding opportunities that address obesity, smoking and smoking cessation, funding for recreational activities or facilities, mental health services and healthy water initiatives will be some of the top priorities of the Rural Health Network as well as recruiting additional members.

For more information regarding this study or how to become involved in helping your community, please contact Greg Roeback, Chief Operating Officer of Great Mines Health Center 573-438-9355.

Acknowledgement to the Contributors

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Nicholas Hughey, Director-Washington County Health Department
Cara Sims RN, BSN, Public Health Nurse-Washington County Health Department
Theresa Golden, BSN RN Nurse Educator and IT Nurse-Washington County Memorial Hospital
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