



Carroll County Memorial Hospital

2018 Community Health Needs Assessment



Conducted on behalf of: Carroll County Memorial Hospital

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Carroll County Community Health Needs Assessment

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I. Executive Summary

The Patient Protection and Affordable Care Act, requires hospitals with a 501(c)(3) tax-exempt status to conduct a community health needs assessment [CHNA] and adopt an implementation strategy at least once every three years. The following community health needs assessment for Carroll County, Missouri has been conducted on behalf of Carroll County Memorial Hospital [CCMH]. The last community health needs assessment for CCMH was conducted in 2015. The CHNA aims to improve the health and well-being of Carroll County by identifying areas of need and then adopting an implementation strategy. Previous key findings of the 2015 CHNA were Access to Care; Chronic Diseases: Heart Disease, Cancer, and Obesity; and Mental Health/ Substance Abuse. Carroll County Memorial Hospital has made progress to improve these key findings however, they are health areas that take years to see change.

Carroll County Memorial Hospital is located in the city of Carrollton, Missouri. The city of Carrollton is located within Carroll County, Missouri. Since 1957, CCMH has been providing healthcare for Carroll County residents and surrounding rural communities. CCMH is a not-for-profit, 25-bed critical access hospital with a long-term care unit. CCMH manages two rural health clinics and a physician clinic in Carrollton.

Additionally, CCMH provides Lifestyle Fitness, a unique rehab and fitness center, which incorporates an indoor pool, sauna, hot tub, indoor 1/16-mile walking track, and state of the art fitness equipment with certified therapists and trainers providing therapy and programs to residents of Carroll County and the surrounding areas. CCMH also hosts Jefferson Park, an upscale 30-unit Independent Living Center and the Senior Center of Carroll County. This all takes place on an 11-acre campus located in Carrollton, MO

CCMH continues to partner with nationally recognized specialists to bring specialty care to the patients it serves. The programs brought to the hospital have been a direct result of patient need. The hospital outpatient clinic offers the following specialties:

- Cardiology
- Chemotherapy
- Dermatology
- Gastroenterology
- Oncology
- Orthopedics
- Pathology
- Podiatry
- Pulmonology
- Psychiatry
- Radiology
- Surgical
- Urology
- Wound Care Clinic

Other services provided include: acute care services, emergency services, laboratory services, home health, outpatient services, primary care clinics, and skilled nursing care.

CCMH's mission to improve the health of the community is exemplified by not only assuring excellent medical care, but also by providing a healthy lifestyle to the community. This concept and vision are exhibited by the reality of CCMH's campus and ongoing commitment to healthcare.

To assess the needs of Carroll County, this assessment utilized primary data and secondary data collected from the U.S. Census Bureau, *County Health Rankings*, Missouri Department of Health and Senior Services, and the Missouri Hospital Association. Along with the primary and secondary data analysis, input was gathered from healthcare service providers and key stakeholders in the community. Data collection started in 2018 with the community stakeholder meetings and ended in December 2018 upon completion of the primary data analysis. The secondary data analysis was conducted with the help of Missouri Hospital Association: Quality Works. The findings from the CHNA will be used to develop an implementation strategy aimed at improving the health and wellbeing of Carroll County residents. The key findings below will be expanded on in the implementation plan.

Key Findings

Mental Health: Youth and Adult

Lifestyle Behaviors

Access to Care

II. Community Health Needs Assessment: Community Defined

A community is defined as the geographic area from which a significant number of the patients utilize CCMH hospital service. The zip codes listed below are considered within the community defined.

i. Geography

Carroll County is located in the Northwest Region of Missouri. According to the U.S. Census Bureau (2015), Carroll County makes up approximately 694.62 square miles with a population density of 13.4 persons per square mile. Carroll County is located in a rural area. It is estimated that 64.5% of the population of Carroll County live in a rural area (U.S. Census Bureau, 2015). The county includes the following towns/cities and zip codes:

Towns/Cities and zip codes within Carroll County

Town/City	Zip Code
Bogard	64622
Bosworth	64623
Carrollton (County Seat)	64633
De Witt	64639
Hale	64643
Norborne	64668
Tina	64682
Wakenda	64687

ii. Population

According to the U.S. Census Bureau the population estimate as of July 1, 2018 was 8,743. Approximately 48.6% of the population is male and 51.4% is female. This population estimate has declined 5.9% from the 2010 population estimate of 9,295. The secondary data analysis contains more detailed information in regard to the population and unique community characteristics.

It should be noted that Carroll County has an Amish community that would be considered an at-risk population. We estimate their community to consist of approximately 200 residents, however there is no available data.

iii. Other Health Services Available in the Same Community Area

CCMH is the only hospital located in Carroll County. CCMH manages Jefferson Medical Group which houses multiple health care providers. CCMH also manages two rural health clinics in Hale and Norborne. The Carroll County Health Department does offer some health services such as: blood pressure/sugar/cholesterol clinics; family planning; in-home nursing; immunization clinics; health wellness presentation; WIC; and other public health services. Burrell Behavioral Health has a clinic in Carrollton that offers a limited range of mental health services. Carrollton also has two dental clinics that offer a variety of dental services. A federally designation for medically under served health clinic, Live Well Community Health Center, opened in January 2016. They offer a wide range of medical services for the community.

III. Community Health Needs Assessment: Process and Methodology

i. Process

Based on the findings from the 2015 CHNA, CCMH has continuously been working on community health engagement. Jenny Carter was responsible for gathering and authoring the 2018 Carroll County CHNA. Jenny obtained her Bachelor of Health Science and Master of Public Health from the University of Missouri-Columbia and her Doctor of Public Health from Loma Linda University. Carroll County Memorial Hospital, Cindy Gilman also contributed and assisted with the 2018 Carroll County CHNA.

Two community stakeholder meetings were conducted at CCMH during February and April 2018 to assess public perceptions of the county's health status and unmet needs. The stakeholders included those knowledgeable about the community, influential leaders, and health care providers/services. One-on-one meetings were also conducted with key stakeholders such as the administrator of the Carroll County Health Department.

The report followed the 2017 Guidance for *Completing A Community Health Needs Assessment* published by the Missouri Hospital Association [MHA] in addition to the most recent laws and regulations requirements for tax-exempt hospitals.

ii. Primary Research Survey Design

The 2018 Carroll County CHNA Survey was developed from the template provided by the Missouri Hospital Association. The survey had 29 questions that addressed: demographics, social and economic factors, medical care and services, and health behaviors. The majority of the questions were multiple choice or yes/no. At the end of the survey, three open-ended questions were used to help identify any health service gaps.

iii. Primary Research Methodology

The survey period was April 1st, 2018 to November 30th, 2018. The Carroll County CHNA survey was available online at the following link:

<https://www.surveymonkey.com/r/carrollcountychna>

The survey link was shared on Carroll County social media group pages; emailed to school administrators to distribute to their faculty at Hale, Norborne, Carrollton, Bosworth, and Tina public schools; and distributed in flyers to other Carroll County residents. Paper copies were also distributed in Carroll County to the following locations: CCMH Specialty Clinic and physician clinics; Premier Eye Care; Carroll County Health Department; Carrollton Public Library; Austin Assisted Living Home/Apartments; CVS Pharmacy; Hometown Pharmacy; and YMCA. The paper locations were targeted to attempt to gather information from underserved populations in Carroll County that maybe medically underserved, low-income, or chronically ill. Paper surveys (were returned and entered into the same online survey service that was used to collect online responses to better analyze the results. A total of 134 surveys were completed and analyzed. A copy of the survey is in Appendix A.

iv. Secondary Data

A secondary data analysis was conducted by Quality Works which is a division of the Missouri Hospital Association. The secondary data was compiled from a variety of local, county, and state sources to reflect the most current information available. The following sources as well as others were used to collect secondary data:

- U.S. Census Bureau
- Community Commons
- Missouri Department of Health and Senior Services
- U.S. Bureau of Labor Statistics
- Robert Wood Johnson Foundation County Health Rankings
- Missouri Hospital Association
- Missouri Division of Behavioral Health and the Substance Abuse and Mental Health Services Administration

A wide variety of health indicators, outcomes, and measures were reviewed, and some were compared to the whole population of Missouri rates/standards and other surrounding counties in order to determine significance and the overall quality of health in the population of Carroll County. This report presents a summary that highlights the data findings and presents the key needs and gaps in the health of Carroll County and surrounding counties. The full secondary analysis is in Appendix B.

IV. Community Health Needs Assessment: Findings

I. Secondary Analysis

The full secondary analysis that was conducted by Quality Works is in Appendix B.

i. Hospitalization

CCMH had 721 inpatients in 2014, 66.4% of these patients were from Carrollton and 60.2% were 65 years of age or older. The top admitting diagnoses for CCMH in 2014 were chest pain (106), other specified rehabilitation (85), pneumonia (44), dehydration (37), chronic bronchitis with/ exacerbation (31), congestive heart failure (25), anemia (20), and urinary tract infection (19).

ii. Emergency Room Utilization

CCMH is the only emergency department within Carroll County. Emergency room usage provides information on the conditions affecting the health of Carroll County residents.

Listed below are the 2018 top diagnoses for CCMH Emergency Department utilization.

Diagnosis	Total Number
Chest pain	155
Upper respiratory infection	76
Migraine	59
Urinary tract infection	57
Pneumonia	56
Influenza	56
Nausea with vomiting	54
Strep sore throat	52
Chronic bronchitis with exacerbation	48
Acute bronchitis	46
Headache	46
Sprain/strain unspecified site	43
Hypertension	42
Open wound	42
Dehydration	41
Acute pharyngitis	41
Otitis media	40
Pain in limb	39

Source: CCMH Emergency Department

II. Primary Survey Results

The results for the primary survey questions are listed below:

i. Key Participants Sociodemographic & Demographics, Characteristics (n=134)

- Location of participants' house

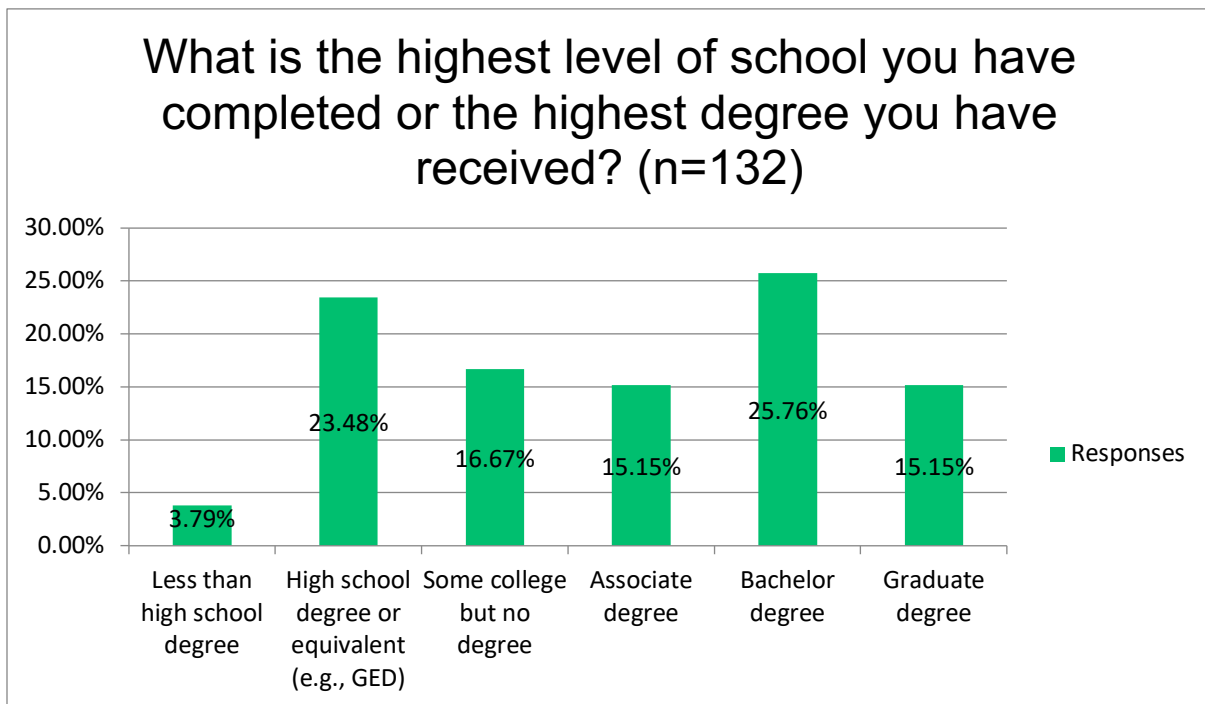
63.48% Carrollton, 10.87% Hale, 5.65% Bogard, 5.22% Norborne, 3.91% Tina, 2.17% Bosworth, 0.43% DeWitt, and 8.26% other

- Gender (n=132)

110 Female (83.33%) and 22 Male (16.67%)

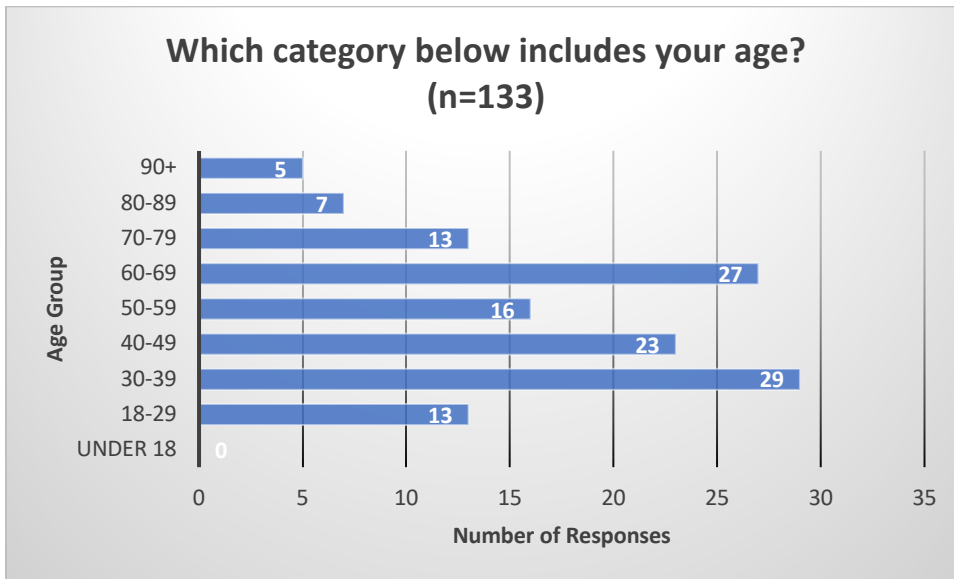
- Highest level of education completed

Bachelor degree (25.76%) and high school degree or equivalent (23.48%) were the two highest level of education completed by the participants.



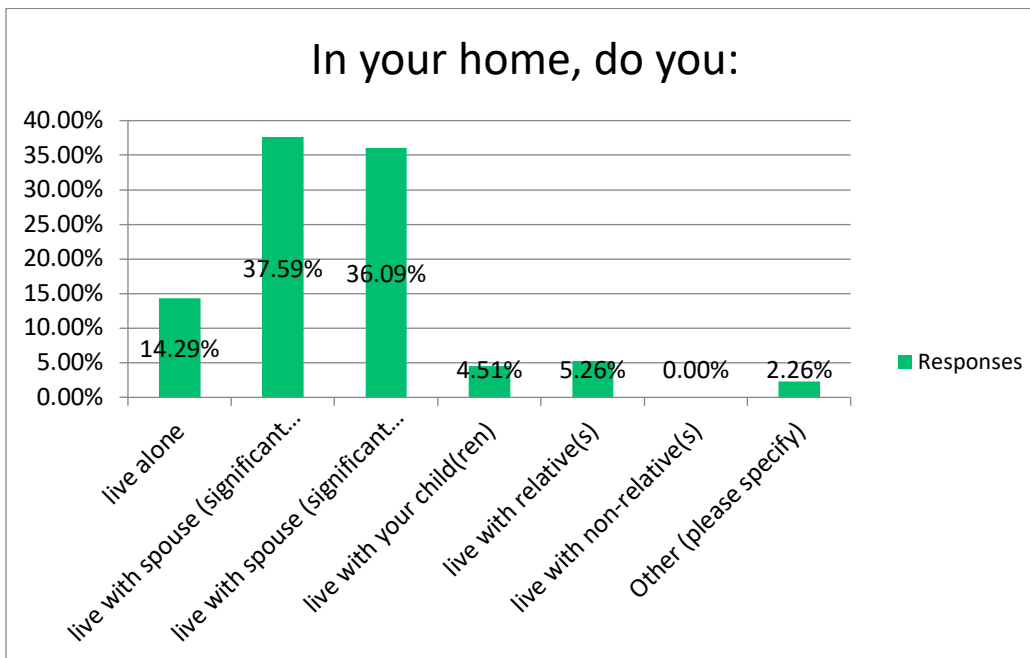
- Age group of participants

The participants were spread out among multiple groups. However, the two groups that had the most participants were 30-39 and 60-69.



- Living status

The majority of participants live with spouse/significant other (37.59%) or live with spouse/significant other and child(ren) (36.09%). n=133



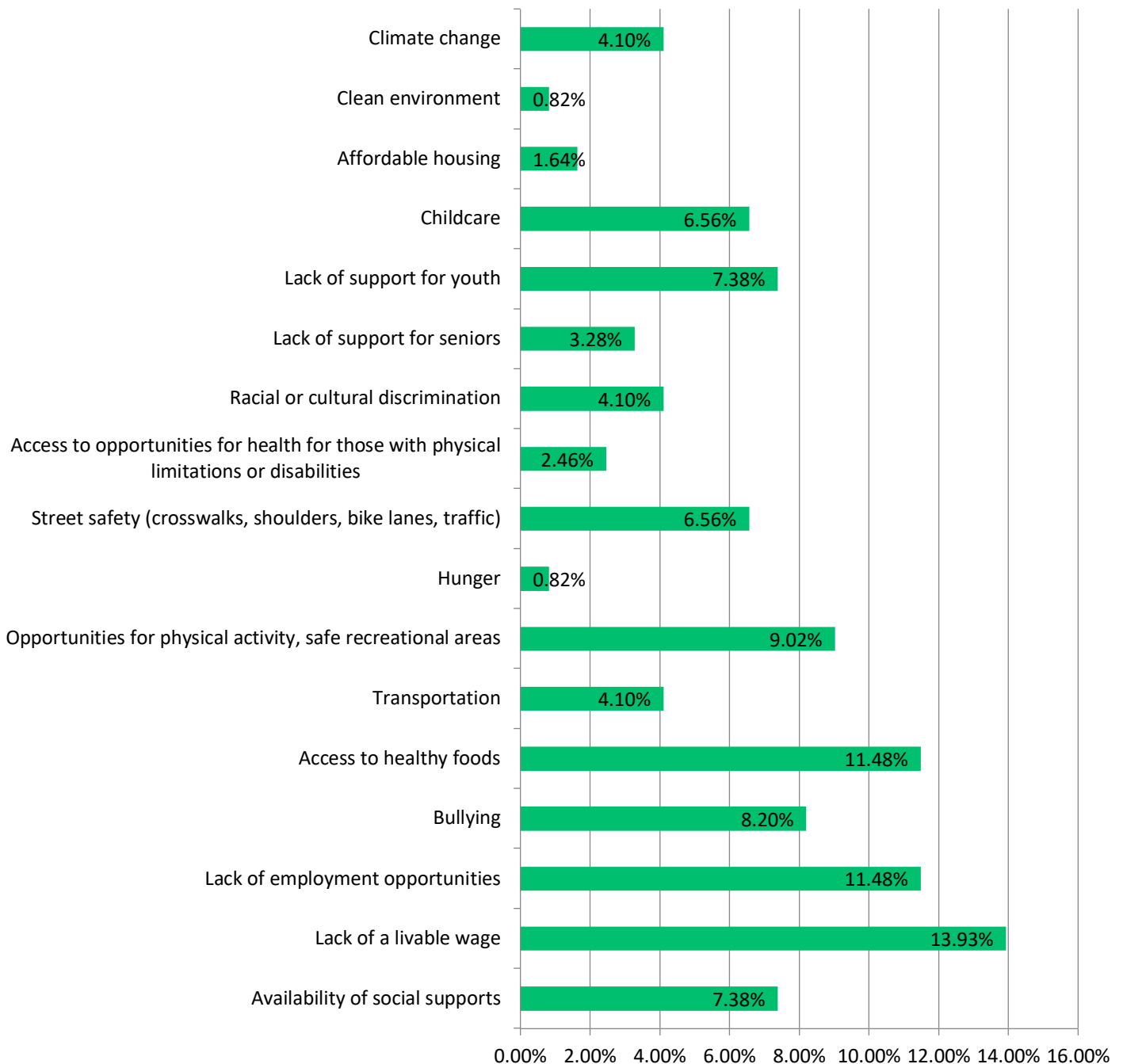
- Access to internet

Participants were asked if they had access to the internet in their home (n=130). 90% do have access to the internet and 10% do not have access to the internet in their home.

- Social or environmental challenges

53.28% of respondents answered that they have not had any social or environmental challenges in the past year. Money, access to healthy food, lack of employment opportunities and lack opportunities for physical activity/safe recreational areas were common challenges reported.

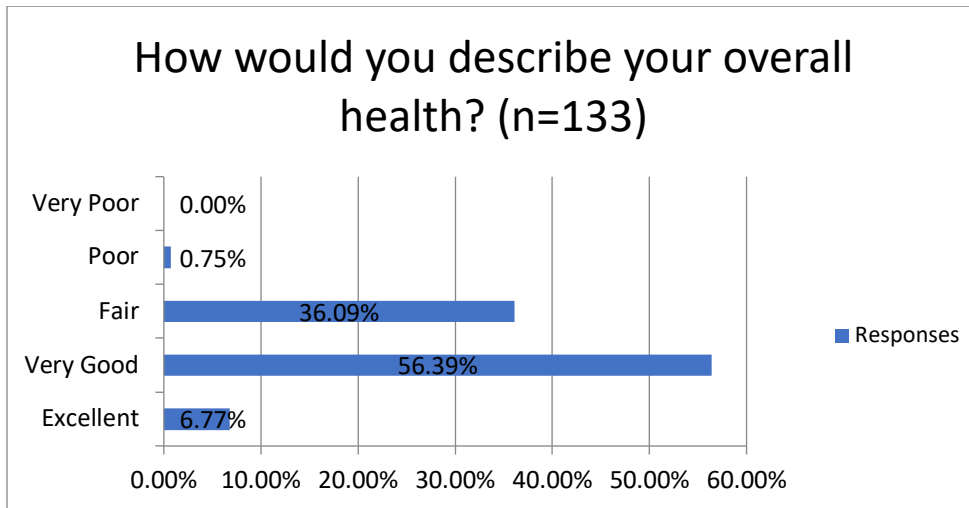
In the last year, what social or environmental challenges have you or a family member experienced? Click all that apply. (n=122)



ii. Overall Individual Health

- Overall health

The majority of respondents described their overall health as very good (56.39%).



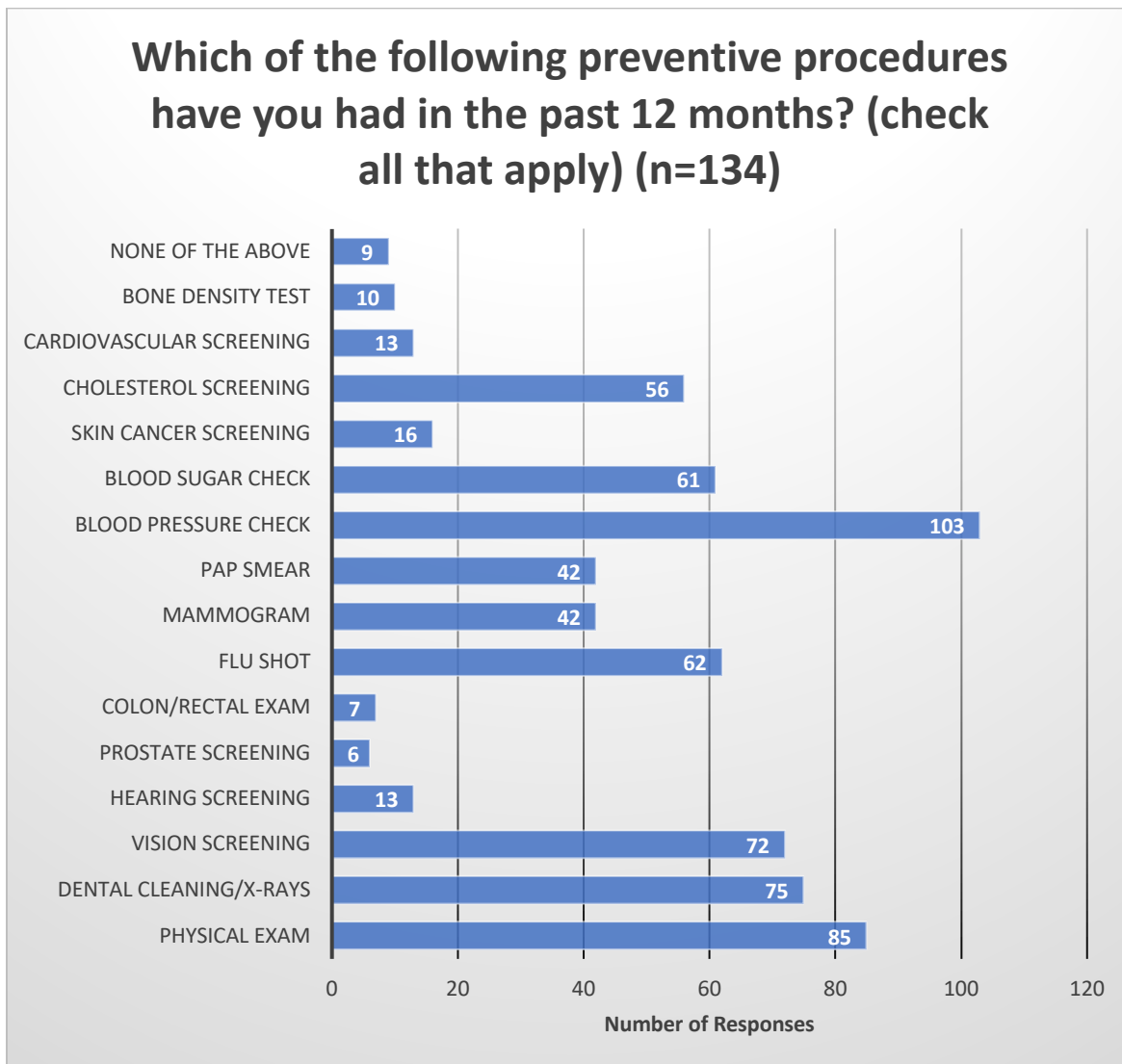
- Health challenges

Respondents were asked to select their three health challenges in which the top three across all participants were overweight/obesity, joint pain or back pain, and high blood pressure. The “other” responses are listed below the table.

Health Challenge	# of Responses (n=133)
Overweight/obesity	59
Joint pain or back pain	45
High blood pressure	44
I do not have any health challenges	25
High cholesterol	22
Mental health issues	20
Diabetes	15
Other (please specify)	10
Heart disease	8
Cancer	7
Asthma	7
COPD (chronic obstructive pulmonary disease)	3
Stroke	3
Alcohol overuse	2
Drug addiction	2

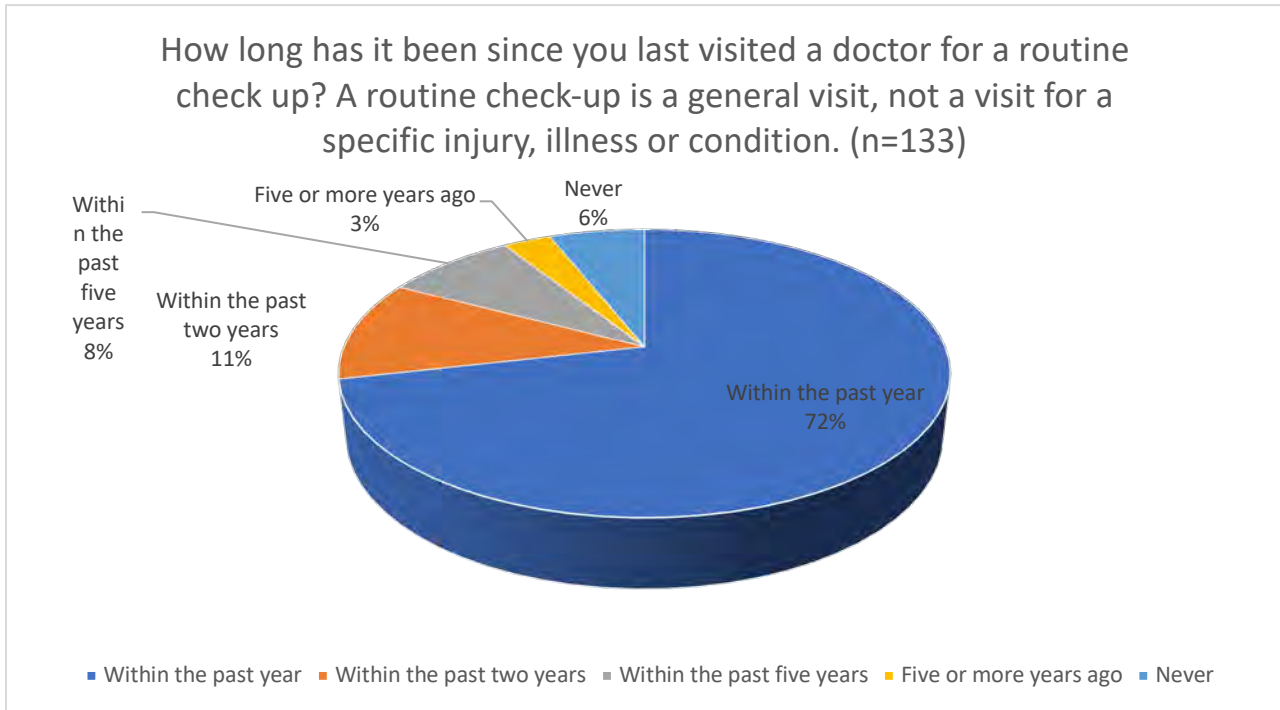
Other (please specify)
Old Age
age
triglyceride is to high
Chronic intestinal diseases
Ulcerative colitis
low blood sugar
Crohns disease
Prediabetes
Ulcerative colitis
Skin care

- Preventive procedures



- Routine doctor visits

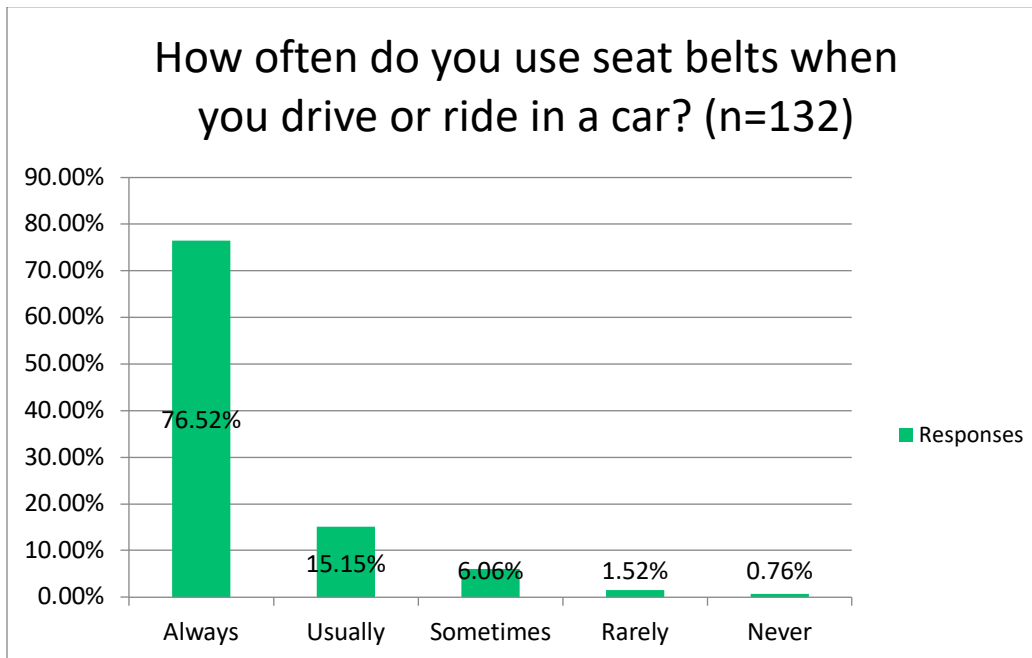
The majority of the participants (71.43%) have been to a doctor within the last year for a routine checkup. Only 12 participants have been not been to a doctor at all or its been 5 years or more for a routine checkup.



iii. Health Behaviors

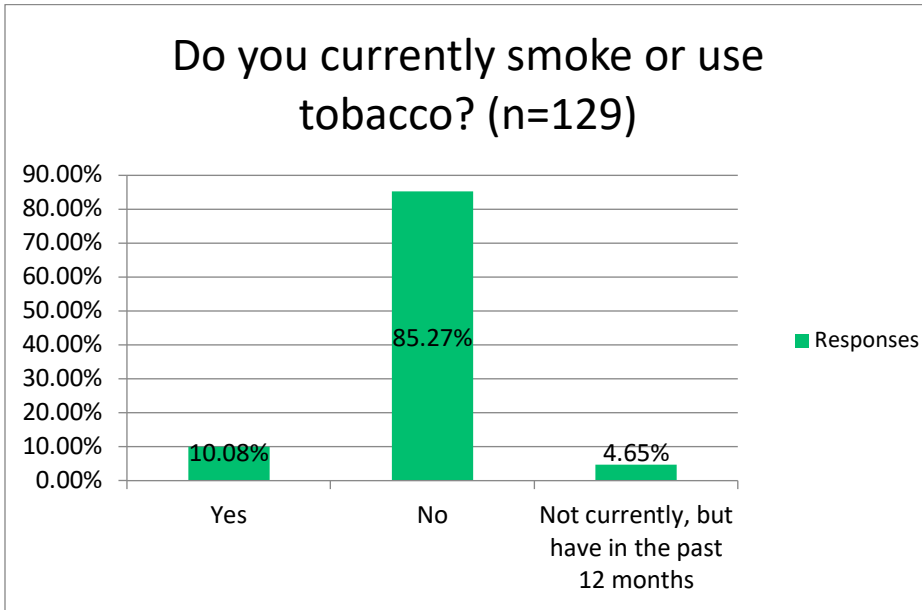
- Seat belt usages

Most participants (91.67%) always or usually use seat belts when they are in a vehicle.



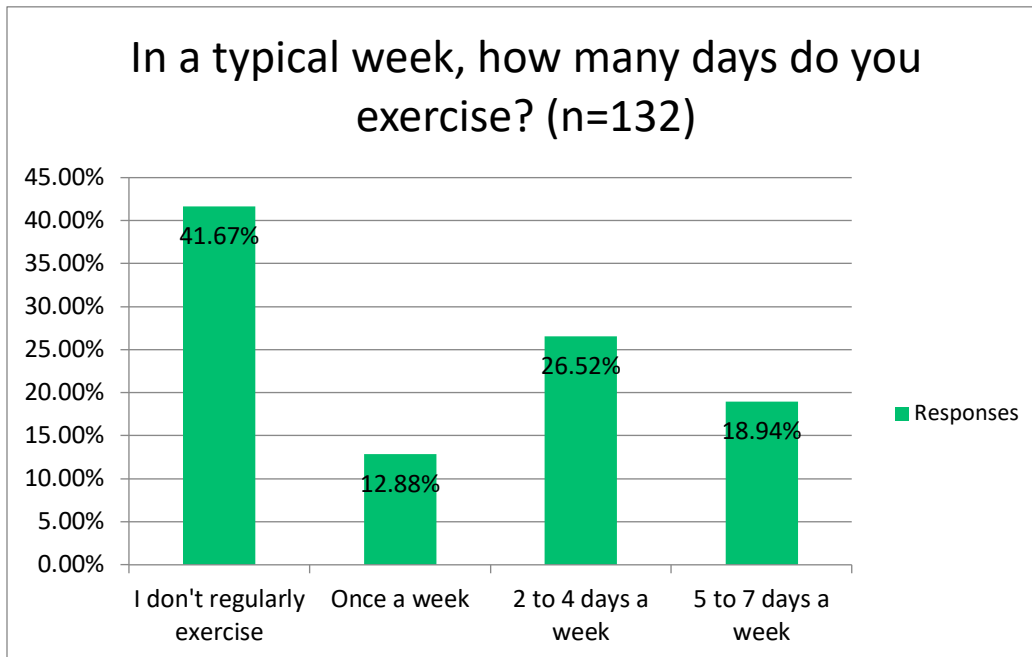
- Tobacco usage

Tobacco usage was uncommon among the participants.



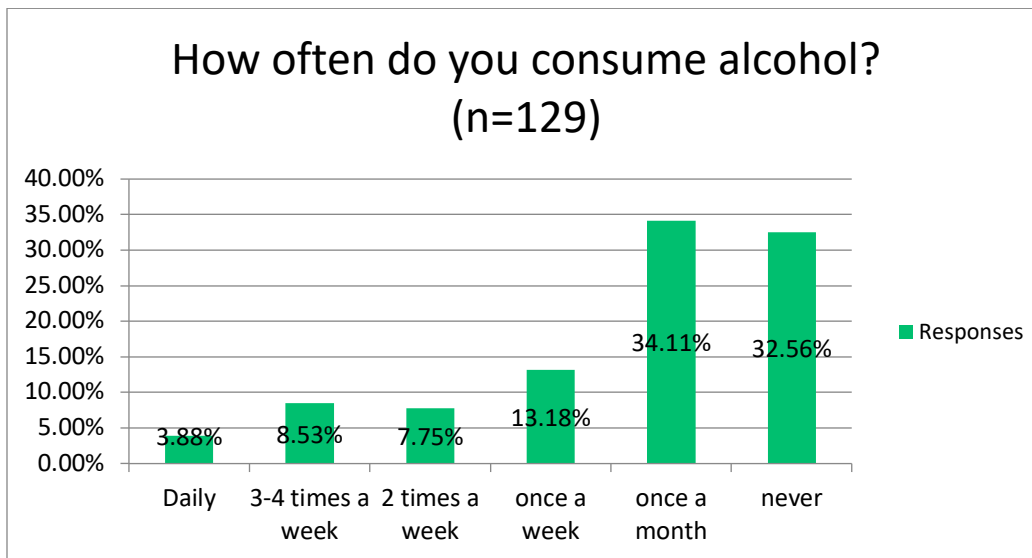
- Exercise

Slightly over 55% of participants exercise at least once a week up to 7 days a week.



- Alcohol usage

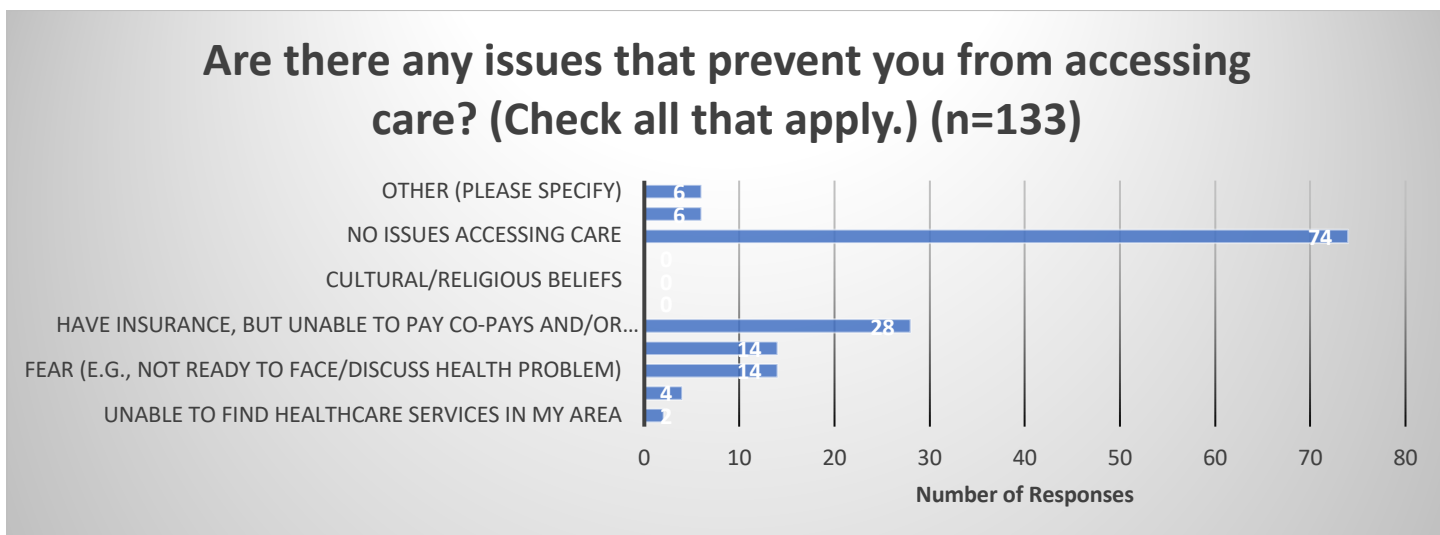
Alcohol usage was minimal (once a month) to never in over 60% the responses.



iv. Access to Care

- Issues preventing access to care

The majority (74) do not have any issues accessing care. The most common issue selected though among those who have issues was “have insurance but unable to pay co-pays and/or deductibles”. The six responses that selected other and specified are listed below the graph.



Other (Please Specify)

Psychologist/Counsellor

Have Christian Care Ministries health Discount service

time and don't want to pay co-pays

As I type one Diabetic, I got married last year and I have the most expensive health care plan I have available, and it covers none of the special need diabetic equipment I had access to at a third of the cost per month. I feel like I am back in the stone ages I my supplies and I pay three time more.

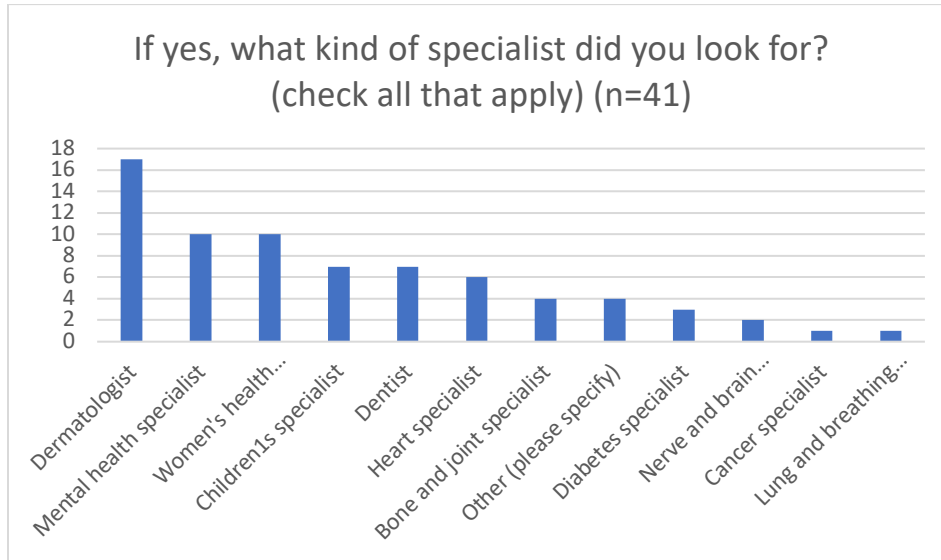
procrastination and being busy

DR'S SCHEDULE IS TOO FULL TO BE SEEN IN A TIMELY MANNER

- Specialty doctors

Participants were asked if they or anyone in household has had difficulty finding a specialist in the area within the past two years, 106 said no they have not and 28 said yes, they have had difficulties.

If respondents answered yes, they were asked to select what kind of specialist they were looking for, the most common one was dermatologist. Four “other” responses were detailed with the following responses: urologist, naturopath, infectious disease specialist, and GI specialist.



- Travel for services

Similar to previous findings, a large number of respondents are driving more than 40 miles to see a specialist. n=134

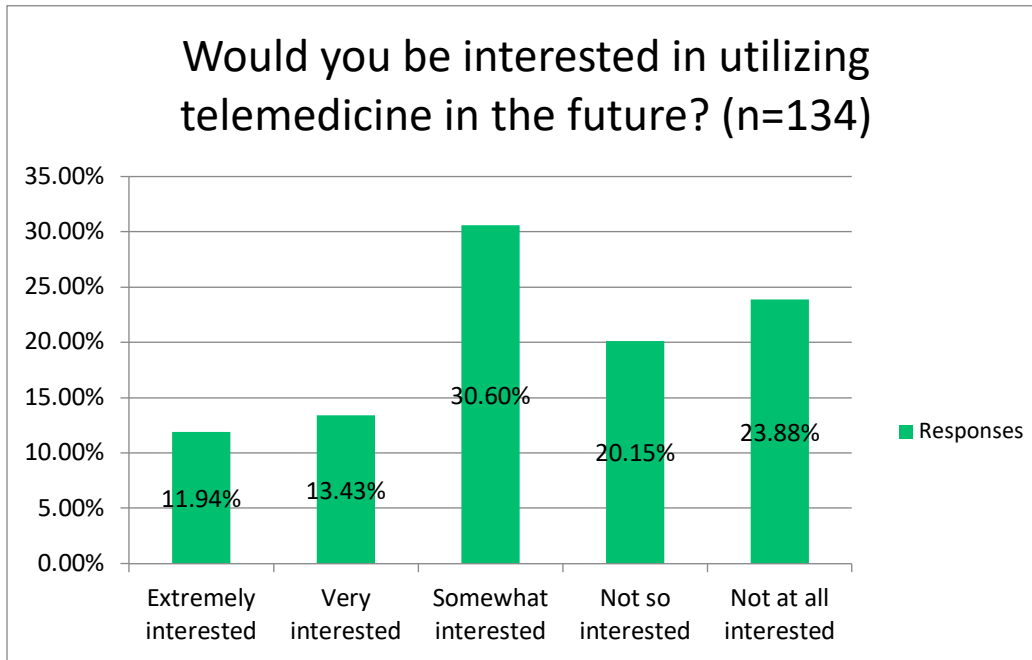
How many miles do you travel, one way:

	1-5 Miles	6-10 Miles	11-20 Miles	21-30 Miles	30-40 Miles	Greater than >40 Miles	N/A	Total
To see your regular doctor?	69	15	23	10	4	8	2	131
To see a specialist?	17	3	5	6	6	76	13	126
To a hospital?	66	11	24	5	4	14	4	128
For work?	50	9	18	5	8	5	22	117
For childcare?	24	2	7	1	1	0	78	113
To see a dentist?	60	12	24	7	10	11	4	128
To school or job training?	14	3	3	0	1	16	78	115
To buy groceries?	57	12	24	18	15	5	1	132

- Telemedicine

Participants were asked if they have every utilized telemedicine, 114 of them said no they have not and 20 of them have utilized telemedicine.

Then, participants were asked about their interest in utilizing telemedicine in the future. Over 55% were somewhat interested to extremely interested in utilizing telemedicine in the future.



v. ***Community Health***

- Overall health

When rating the overall health of the community, 50% rated the community somewhat healthy.

- Satisfaction of healthcare services

Respondents answered that they are the most satisfied with the pharmacies, primary care providers, eye doctor/optometrist, and dentist in the community. Mental health services were rated as very poor by 23 of the respondents.

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	VERY GOOD	GOOD	FAIR	POOR	VERY POOR	N/A	TOTAL
Ambulance Service	28.03% 37	35.61% 47	16.67% 22	3.79% 5	3.03% 4	12.88% 17	132
Chiropractor	17.97% 23	28.13% 36	16.41% 21	4.69% 6	0.00% 0	32.81% 42	128
Day Care	16.67% 21	22.22% 28	12.70% 16	4.76% 6	1.59% 2	42.06% 53	126
Dentist	40.91% 54	40.91% 54	12.12% 16	3.79% 5	0.76% 1	1.52% 2	132
Emergency Room	32.82% 43	35.88% 47	19.85% 26	2.29% 3	2.29% 3	6.87% 9	131
Eye Doctor / Optometrist	41.67% 55	31.06% 41	12.88% 17	4.55% 6	1.52% 2	8.33% 11	132
Home Health	28.03% 37	20.45% 27	9.85% 13	0.76% 1	0.00% 0	40.91% 54	132
Hospice	17.19% 22	14.06% 18	8.59% 11	0.78% 1	1.56% 2	57.81% 74	128
Inpatient Services	22.31% 29	31.54% 41	12.31% 16	2.31% 3	1.54% 2	30.00% 39	130
Mental Health Services	2.34% 3	10.94% 14	17.19% 22	10.16% 13	17.97% 23	41.41% 53	128
Outpatient Services	29.77% 39	35.88% 47	14.50% 19	3.82% 5	0.00% 0	16.03% 21	131
Outpatient Surgery Department	21.88% 28	23.44% 30	10.94% 14	2.34% 3	0.78% 1	40.63% 52	128
Pharmacy	46.21% 61	34.85% 46	13.64% 18	2.27% 3	0.76% 1	2.27% 3	132
Police Department	16.79% 22	41.98% 55	21.37% 28	8.40% 11	9.16% 12	2.29% 3	131
Primary Care Providers	41.98% 55	41.98% 55	6.87% 9	3.82% 5	0.76% 1	4.58% 6	131
Public Health Department	33.08% 43	40.77% 53	13.85% 18	0.77% 1	0.00% 0	11.54% 15	130
School Nurse	13.95% 18	30.23% 39	7.75% 10	3.10% 4	0.78% 1	44.19% 57	129
Specialty Physician Care	19.84% 25	22.22% 28	11.90% 15	8.73% 11	2.38% 3	34.92% 44	126
Wellness and Exercise facilities	23.62% 30	37.80% 48	21.26% 27	5.51% 7	3.15% 4	8.66% 11	127

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- Health problems in community

Participants were asked what health services the community is lacking. The top two healthcare services were mental health and Alzheimers/dementia/memory loss support. The “other” answers from respondents are below the table.

What health screenings, education, information or services are lacking in your COMMUNITY? (choose all that apply) (n=99)

Answer choices	% of Responses	# of Responses
Mental health	54.55%	54
Alzheimers/Dementia/Memory loss support	48.48%	48
Bullying	39.39%	39
Substance abuse	36.36%	36
Caregiver support & respite	34.34%	34
Pediatric care	34.34%	34
Alcohol abuse	31.31%	31
Eating healthy	31.31%	31
Health insurance	28.28%	28
Emergency preparedness	27.27%	27
Eating disorders	26.26%	26
Smoking cessation	26.26%	26
Prenatal care	24.24%	24
Sexual abuse	24.24%	24
Telemedicine	24.24%	24
Parenting	22.22%	22
Diabetes	19.19%	19
Active living	19.19%	19
Medication management assistance	18.18%	18
Home safety assessment	15.15%	15
Falls prevention	10.10%	10
Cholesterol	9.09%	9
Blood pressure	7.07%	7
Other (please specify)	4.04%	4

Other (please specify)

Help for those with insurance for the balance they are left with after insurance pays

None

Dermatology

Environmental Concerns

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Participants were then asked what the most pressing health problems in the community: access to care including cost and mental health including substance abuse were the most commonly reported health problems. These two trends were consistent in the primary and secondary analysis. The “other” answers were environmental health and suicide/mental health care tied in with ability to pay for care.

What do you think are the most pressing health problems in your community? (check all that apply) (n=119)		
Answer Choices	% of responses	# of responses
Drug abuse- illegal substances	72.27%	86
Ability to pay for care	62.18%	74
Drug abuse- prescription medications	56.30%	67
Cost of health care	55.46%	66
Obesity in adults	53.78%	64
Lack of health insurance	52.10%	62
Mental health	51.26%	61
Tobacco use/smoking among adults Tobacco use/smoking among teenagers Suicide	40.34%	48
Alcohol- dependency or abuse	36.97%	44
Alcohol- underage binge or abuse	35.29%	42
Obesity in children and teenagers Prescription medication too expensive	34.45%	41
Cancer	31.93%	38
Lack of transportation to health care services Lack of dental care	26.89%	32
Lack of wellness prevention services	26.05%	31
Lack of prenatal care	20.17%	24
Domestic violence	14.29%	17
Child abuse	13.45%	16
Teen pregnancy	12.61%	15
Other (please specify)	1.68%	2

- Open ended community health questions

In addition to the questions above, respondents were asked three open-ended questions. All answers were reported directly (no editing) from participants responses.

The first question asked about health services that participants think CCMH should provide that are not available. Fifty-nine participants answered the question. A common topic among responses was mental health.

Q28 What ideas or suggestions do you have for improving the overall health of the area community?

Answered: 50 Skipped: 84

#	RESPONSES
1	Mental health continues to be a growing concern in our community that is not being actively pursued. If people's minds are not well, our community is not well. Services need to be available for kids and adults.
2	Do not provide addictive prescriptions
3	Healthcare providers in the community doing many presentations/ guest speakers for all age school children. Support groups for teens on many health subjects. Start them young to make the community better in the future. Have peer health groups to influence friends in a positive way.
4	Offering more preventative programs and services. Life coaching, healthy eating presentations, physical fitness
5	Encouraging or recommending smoke free businesses including restaurants/cafes etc.
6	More focus on mental health
7	I'll provide trainings or facilitating supervision for LPC, LCSW, psychologist, therapist, medicine management for mental health is severely lacking!
8	Free or affordable counseling services. Free or affordable employment counseling services.
9	Mental health services
10	We NEED specialists for mental health!!
11	Add a trained counselor to the hospital specialists.
12	Individual patient responsibility Just like mental health. They have to be responsible for their own health
13	Education - teens - abuse of prescription drugs
14	See the list posted in question 25
15	Better Health insurance options that gouge the people and cover very little. I pay over \$1200 a month for my wife and my health insurance. And I have to pay full out of pocket for 2 of 5 prescriptions, because they will not cover them. Not to mention I had access to much better queipment and a better a1c when I was paying 200 a month, I can no longer pay for a dexcom monitor as it would cost me 1000 a month and my a1c was a full point lower with that. It is the only insurance available for me in Carrollton.
16	We have faced mental health issues this year(depression). We feel like our community lacks mental health professionals.
17	N-A
18	Weight loss
19	More activities
20	Education and campaigning for healthy eating habits
21	None
22	Continue fighting prescription drug abuse.
23	Helping
24	More weight management,
25	More weight management,

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27	Mental health, obesity
28	Mental health, obesity
29	Endocrinology, nephrology, dermatology,
30	Birthing Center
31	24 hour fitness center or at least extended hours to accommodate individuals who work out of town.
32	Mental health
33	Birthing center to help moms so that they don't have to travel so far to get care, especially if they don't have transportation. More community involvement such as offering free classes regarding parenting skills, healthy eating, and mental illness/ suicide prevention.
34	I wont come to you new facility again because i came there for an 'office visit' with a doctor from the city and when i recieved my bill i was billed for out patience services. So instead of paying a 45 copay i had to pay 150 for outpatient. It would have been cheaper to drive to the city...
35	Mental Health Evaluations
36	Mental health for teens and elderly (over 65). Not just telehealth
37	mental health is a huge thing in today's society and needs to be addressed better. the suicide or attempted suicides in the community is huge and it shouldn't be in such a small town.
38	Mental health care for minors
39	Transport to hospital
40	Effects of common environmental and food toxins on the body.
41	The loss of our senior center and a place for senior's to go for companionship and to be with people. Better parking for physical therapy patients and for the seniors who would like to eat. Better heart drs. Miss the outstanding Meritas doctors and NKC Hospital . Our experiences with Center point were horrible. All in all we love the direction Mr Tindall is taking us. I feel so confident in going to our medical facilities!!! We have a great hospital, just needs a little tweaking.
42	More cost effective services
43	mental health
44	Dermatology
45	NON-PRESCRIBED MENTAL HEALTH OPPORTUNITIES FOR TEENS AND YOUNG ADULTS. SUICIDE PREVENTION- HELP.
46	Full labor and delivery services.
47	N/A
48	Mental Health
49	Mental health
50	Prenatal care
51	Telemedicine
52	More psychiatry availability
53	Improve the quality of food for the home delivered meals. More variety. Ask the Seniors what they want.
54	Dermatology
55	Dermatologist
56	More dentist choices like for braces! More Prenatal doctors and facility.
57	I cannot think of one at the moment, CCMH offers almost everything through outpatie
58	Mental health
59	Dermatology Endocrinologist

The next question asked for ideas or suggestions for improving the overall health of the community. Fifty respondents answered the question. Mental health continued to be a theme among the answers provided as well as support of prevention services and health education.

Q28 What ideas or suggestions do you have for improving the overall health of the area community?

Answered: 50 Skipped: 84

#	RESPONSES
1	Mental health continues to be a growing concern in our community that is not being actively pursued. If people's minds are not well, our community is not well. Services need to be available for kids and adults.
2	Do not provide addictive prescriptions
3	Healthcare providers in the community doing many presentations/ guest speakers for all age school children. Support groups for teens on many health subjects. Start them young to make the community better in the future. Have peer health groups to influence friends in a positive way.
4	Offering more preventative programs and services. Life coaching, healthy eating presentations, physical fitness
5	Encouraging or recommending smoke free businesses including restaurants/cafes etc.
6	More focus on mental health
7	I'll provide trainings or facilitating supervision for LPC, LCSW, psychologist, therapist, medicine management for mental health is severely lacking!
8	Free or affordable counseling services. Free or affordable employment counseling services.
9	Mental health services
10	We NEED specialists for mental health!!
11	Add a trained counselor to the hospital specialists.
12	Individual patient responsibility Just like mental health. They have to be responsible for their own health
13	Education - teens - abuse of prescription drugs
14	See the list posted in question 25
15	Better Health insurance options that gouge the people and cover very little. I pay over \$1200 a month for my wife and my health insurance. And I have to pay full out of pocket for 2 of 5 prescriptions, because they will not cover them. Not to mention I had access to much better queipment and a better a1c when I was paying 200 a month, I can no longer pay for a dexcom monitor as it would cost me 1000 a month and my a1c was a full point lower with that. It is the only insurance available for me in Carrollton.
16	We have faced mental health issues this year(depression). We feel like our community lacks mental health professionals.
17	N-A
18	Weight loss
19	More activities
20	Education and campaigning for healthy eating habits
21	None
22	Continue fighting prescription drug abuse.
23	Helping
24	More weight management,
25	More weight management,

2018 Carroll County Community Health Needs Assessment

26	More Outpatient psychiatric and behavioral health services. Burrell is not accepting new patients and there is a large patient population that is not getting adequate assistance.
27	Somehow provide assistance to those who cant afford health care
28	Stricter policies for narcotic medications, mental health services that actually help kids and teens (not sending them home when they have plan to commit suicide), and additional transportation services for people who need medical treatment but can't make it to appointments.
29	Psychiatric Center would be wonderful
30	Better management of prescription opioids, mental health doctors and counselors, schools addressing the bullying instead of ignoring it
31	n/a
32	Non smoking ordinance for city of Carrollton, healthier food options at local grocery (less processed foods...I often drive to kc area for groceries) increased use of swimming pool at fitness center for exercise, is currently unusable due to children swimming, lessons and water aerobics in the evenings. Increase trails for exercise, biking. City streets and sidewalks are unsafe in some areas.
33	Support a pool
34	Hook up with a Master Gardening program to teach how to grow organic healthy foods.
35	Would love to see more mental support and activities for the elderly. We have gone backwards in our community for the elderly.
36	More community involvement for teenage children to help them from drinking and driving.
37	"bullying" is an all encompassing word for making people feel bad about themselves or their situations. I think perpetrators should be given the advantage of seeing how they hurt others by their words and actions. Don't know how to accomplish that without embarrassing the victims. It isn't sufficient to watch videos about other kids in other communities. This is a very real problem right here in our community. Educating parents on what they are teaching their children would be hugely beneficial. I find it is mostly delivered by the children of parents who were "somebody" in school as were their parents and so on.... It's time to break that cycle of teaching your children they are better than the other kids because of what's on their skin instead of looking beyond a person's outer appearance and seeing what is on the inside.
38	Low cost clinics / screenings available throughout the year
39	OUTDOOR GYM SPACE FOR ADULTS. COMMUNITY LAKE FOR SWIMMING/FISHING/KAYAKS
40	Start in the schools. More exercise. Homemade foods. Then offer diet improvement classes.
41	N/A
42	Offer trainings, workshops focused on core needs of the community.
43	Support youth programs to get them active
44	Cut back on opioids and focus on mental health
45	Telemedicine
46	Maybe community challenges to get all involved that wont be huge cost, Access to physical fitness places at an affordable price for the lower income families!
47	Not sure
48	Cheaper doctors visits for the uninsured
49	Expand even further outpatient clinics
50	More public informational meetings on individual health and how it could be changed for the better

The last question asked for any other comments or concerns about health services in the community. Thirty-one participants answered this question.

**Do you have any other comments or concerns about the health and/or health services offered in the community?
(please explain in detail)**

Answered: 26 Skipped: 108

#	RESPONSES
1	Carrollton is doing good but there is always room for improvement
2	Cost too much. Doctors and hospitals charge way to much for services.
3	More healthy activities for all ages
4	- Mental Health Services expanded - Substance abuse program (great to have PDMP program in place for our community)
5	The people living on "hamburger hill" (the apartments up the hill from mulches) can't bring these needed services to Carrollton. They don't have the mental, or financial resources to pull this off, but they're the ones who need it. The hospital does have the means and resources to pull this off...the question is, how long until they will get it done?
6	Provide transport for small fee
7	I don't believe it is the hospital or doctors job to manipulate services provided to me for their own profit.
8	Services have improved greatly. Wish joint replacement had been available in the past.
9	Why is it possible to get an appt with Live Well Clinic more quickly than the hospital's doctor complex? Why is Services so much cheaper between the two?
10	Very good
11	None
12	No
13	Not enough
14	Extended hours for the YMCA, access to drug, alcohol, and substance abuse counseling and treatment, as well as lack of disciplinary action when caught abusing them.
15	No
16	none
17	Cost factors when compared to same procedures at liberty or NKC, makes the drive worth it to save several hundred of dollars.
18	mental health and drug problems are both a problem in this community. i moves into this town 8 yrs ago and although i keep to myself this town needs cleaned up. people need help that's available. i've tried for months to get my daughter into see a counselor and nothing is available here. called burrell health and they weren't taking new patients at the time. you should never turn anyone away.
19	Illegal drug use and prescription drug abuse...is a problem most do not want to recognize
20	No
21	The most rural need more outreach programs.
22	None
23	Need a community facility with a larger indoor walking track!
24	TEEN AND YOUNG ADULT SUICIDE IS FAR TOO HIGH IN THIS COMMUNITY. MOST TEENS WILL NOT SEEK HELP. AWARENESS, PREVENTION, EDUCATION IN SCHOOL AND IN WORK PLACES FOR SUICIDE AWARENESS/ SIGNS/ HOW TO GET HELP.
25	The cost of things hampers many people from good medical care.
26	Very good health services, do believe they could take mental health more seriously but that's an overall nationwide epidemic because of the prescription drug abuse. I just believe that people with real mental illness are looked at as frequent fliers who

V. Conclusion

In order to improve the health in Carroll County a community effort that includes time, effort, and resources must take place. CCMH is continuously striving to meet the needs of the communities they serve. By completing the Community Health Needs Assessment, CCMH is able to identify the priority areas of concern. Combining primary and secondary data, provided validation of the health issues as well as gave a better understanding of the health challenges the community faces.

A review of the data from the Carroll County Community Health Assessment indicates lung disease, heart disease, cancer, obesity, accidental injuries, and mental health are health areas that account for a significant amount of disease burden in Carroll County. After reviewing the primary and secondary data for the CHNA a common health topic, mental health, became the apparent top prioritized health need. This was also a previous prioritized health need in the 2015 assessment. Given the great need for improvement in this area it is important to focus on the youth and adult population. Mental health also includes substance abuse.

The second prioritized community health need is lifestyle behaviors. This was also a Research has suggested that modification of lifestyle behaviors can impact chronic health conditions. Increased awareness of the benefit of healthy lifestyles to prevent chronic diseases is an area for continued emphasis.

Similar to the 2015 CHNA findings access to healthcare remains a barrier for Carroll County residents. Carroll County residents are traveling to see specialty doctors even though CCMH offers a great number of specialty clinics. Access to care also includes cost of care.

All of these health concerns will be addressed in the CHNA implementation plan.

Prioritized Community Health Needs

Mental Health: Youth and Adult

Lifestyle Behaviors

Access to Care

VI. Dissemination

Based on the findings of the CHNA, CCMH is in the process of developing an implementation plan to adopt. Starting December 31, 2019, the assessment report will be made available to the public online at carrollcountyhospital.org. The public may also request a paper copy at the front desk at CCMH. CCMH will also share the assessment with the Carroll County Health Department to help distribute to community members.

VII. Implementation Plan

In -Progress



VIII. Appendix A: Primary Data Survey
2018 Carroll County Community Health Needs Assessment

Carroll County Community Health Needs Assessment

Carroll County Memorial Hospital is conducting a Community Health Needs Assessment (CHNA) survey to better understand the health concerns and needs in the community. The information obtained from the CHNA will be used in the development of an action plan to help improve the health of the community. This survey is anonymous.

1. What is your zip code?

2. Gender?

- Male
 Female

3. What is the highest level of school you have completed or the highest degree you have received?

- | | |
|---|---|
| <input type="checkbox"/> Less than high school degree | <input type="checkbox"/> Associate degree |
| <input type="checkbox"/> High school degree or equivalent (e.g., GED) | <input type="checkbox"/> Bachelor degree |
| <input type="checkbox"/> Some college but no degree | <input type="checkbox"/> Graduate degree |

4. In your home, do you:

- | | |
|--|--|
| <input type="checkbox"/> live alone | <input type="checkbox"/> live with your child(ren) |
| <input type="checkbox"/> live with spouse (significant other) | <input type="checkbox"/> live with relative(s) |
| <input type="checkbox"/> live with spouse (significant other) and child(ren) | <input type="checkbox"/> live with non-relative(s) |
| <input type="checkbox"/> Other (please specify) | |

5. How would you describe your overall health?

- Excellent Very Good Fair Poor Very Poor

6. Please select the top three health challenges you face:

- | | |
|---|--|
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Stroke |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Heart disease |
| <input type="checkbox"/> Overweight/obesity | <input type="checkbox"/> Joint pain or back pain |
| <input type="checkbox"/> Asthma | <input type="checkbox"/> Mental health issues |
| <input type="checkbox"/> COPD (chronic obstructive pulmonary disease) | <input type="checkbox"/> Alcohol overuse |
| <input type="checkbox"/> High blood pressure | <input type="checkbox"/> Drug addiction |
| <input type="checkbox"/> High cholesterol | <input type="checkbox"/> I do not have any health challenges |
| <input type="checkbox"/> Other (please specify) | |

7. How often do you use seat belts when you drive or ride in a car?

- Always Usually Sometimes Rarely Never

8. Do you currently smoke or use tobacco?

- Yes
 No
 Not currently, but have in the past 12 months

9. In a typical week, how many days do you exercise?

- I don't regularly exercise
 Once a week
 2 to 4 days a week
 5 to 7 days a week

10. How often do you consume alcohol?

- Daily once a week
 3-4 times a week once a month
 2 times a week never

11. Which category below includes your age?

- | | |
|-----------------------------------|--------------------------------|
| <input type="checkbox"/> Under 18 | <input type="checkbox"/> 60-69 |
| <input type="checkbox"/> 18-29 | <input type="checkbox"/> 70-79 |
| <input type="checkbox"/> 30-39 | <input type="checkbox"/> 80-89 |
| <input type="checkbox"/> 40-49 | <input type="checkbox"/> 90+ |
| <input type="checkbox"/> 50-59 | |

12. Do you have access to the internet at your home?

- Yes
 No

13. In the last year, what health challenges have you or a family member experienced? Click all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Substance abuse (drugs, alcohol) | <input type="checkbox"/> COPD - Lung Disease |
| <input type="checkbox"/> Overweight/obesity | <input type="checkbox"/> Infectious disease (hepatitis A, B, C, influenza, etc.) |
| <input type="checkbox"/> Access to mental services | <input type="checkbox"/> Sexually Transmitted Infections |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Prenatal care/maternal and infant health |
| <input type="checkbox"/> Access to prescription medication | <input type="checkbox"/> Falls |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Immunizations |
| <input type="checkbox"/> Physical activity | <input type="checkbox"/> None of the above |
| <input type="checkbox"/> Access to healthcare services | <input type="checkbox"/> Lack of ability to pay for health services |
| <input type="checkbox"/> Access to dental care | <input type="checkbox"/> Asthma |
| <input type="checkbox"/> Tobacco use | <input type="checkbox"/> Heart disease |
| <input type="checkbox"/> Underage alcohol consumption | <input type="checkbox"/> High blood pressure |
| <input type="checkbox"/> Aging problems (arthritis, hearing/vision loss) | <input type="checkbox"/> High Cholesterol |
| <input type="checkbox"/> Suicide | <input type="checkbox"/> Stroke |
| <input type="checkbox"/> Asthma | <input type="checkbox"/> Prescription drug abuse |
| <input type="checkbox"/> Other (please specify) | |

14. Which of the following preventive procedures have you had in the past 12 months? (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Physical exam | <input type="checkbox"/> Pap smear |
| <input type="checkbox"/> Dental cleaning/X-rays | <input type="checkbox"/> Blood pressure check |
| <input type="checkbox"/> Vision screening | <input type="checkbox"/> Blood sugar check |
| <input type="checkbox"/> Hearing screening | <input type="checkbox"/> Skin cancer screening |
| <input type="checkbox"/> Prostate screening | <input type="checkbox"/> Cholesterol screening |
| <input type="checkbox"/> Colon/Rectal exam | <input type="checkbox"/> Cardiovascular screening |
| <input type="checkbox"/> Flu shot | <input type="checkbox"/> Bone density test |
| <input type="checkbox"/> Mammogram | <input type="checkbox"/> None of the above |
| <input type="checkbox"/> Other (please specify) | |

15. How long has it been since you last visited a doctor for a routine check up? A routine check-up is a general visit, not a visit for a specific injury, illness or condition.

- | | |
|---|---|
| <input type="checkbox"/> Within the past year | <input type="checkbox"/> Five or more years ago |
| <input type="checkbox"/> Within the past two years | <input type="checkbox"/> Never |
| <input type="checkbox"/> Within the past five years | |

16. Are there any issues that prevent you from accessing care? (Check all that apply.)

- Unable to find healthcare services in my area
- Transportation
- Fear (e.g., not ready to face/discuss health problem)
- No insurance and unable to pay for services
- Have insurance, but unable to pay co-pays and/or deductibles
- Language barriers
- Cultural/religious beliefs
- Don't understand when I need to see a doctor
- Lack of availability of doctors
- Other (please specify)

17. In the last year, what social or environmental challenges have you or a family member experienced? Check all that apply.

- | | |
|---|---|
| <input type="checkbox"/> Availability of social supports | <input type="checkbox"/> Domestic violence |
| <input type="checkbox"/> Lack of a livable wage | <input type="checkbox"/> Access to healthy foods |
| <input type="checkbox"/> Lack of employment opportunities | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Child abuse/neglect | <input type="checkbox"/> Opportunities for physical activity, safe recreational areas |
| <input type="checkbox"/> Bullying | <input type="checkbox"/> Homelessness |
| <input type="checkbox"/> Hunger | <input type="checkbox"/> Incarceration |
| <input type="checkbox"/> Elder abuse/neglect | <input type="checkbox"/> Racial or cultural discrimination |
| <input type="checkbox"/> Street safety (crosswalks, shoulders, bike lanes, traffic) | <input type="checkbox"/> Crime/vandalism |
| <input type="checkbox"/> Access to opportunities for health for those with physical limitations or disabilities | <input type="checkbox"/> Lack of support for seniors |
| <input type="checkbox"/> Lack of support for youth | <input type="checkbox"/> Childcare |
| <input type="checkbox"/> Climate change | <input type="checkbox"/> Affordable housing |
| <input type="checkbox"/> None of the above | <input type="checkbox"/> Clean environment |
| <input type="checkbox"/> Other (please specify) | <input type="checkbox"/> Clean water |

18. Have you or anyone in your household had any difficulty finding a doctor that treats specific illnesses or conditions in your area within the past two years?

- Yes
 No

19. If yes, what kind of specialist did you look for? (check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Bone and joint specialist | <input type="checkbox"/> Heart specialist |
| <input type="checkbox"/> Cancer specialist | <input type="checkbox"/> Lung and breathing specialist |
| <input type="checkbox"/> Children's specialist | <input type="checkbox"/> Mental health specialist |
| <input type="checkbox"/> Dentist | <input type="checkbox"/> Nerve and brain specialist |
| <input type="checkbox"/> Diabetes specialist | <input type="checkbox"/> Women's health specialist |
| <input type="checkbox"/> Dermatologist | |
| <input type="checkbox"/> Other (please specify) | |

20. How many miles do you travel, one way:

	1-5 Miles	6-10 Miles	11-20 Miles	21-30 Miles	30-40 Miles	Greater than >40 Miles	N/A
To see your regular doctor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To see a specialist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To a hospital?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
For childcare?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To see a dentist?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To school or job training?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To buy groceries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21. Have you ever utilized telemedicine? (use of telecommunication and information technology to provide clinical health care from a distance)

Yes

No

22. Would you be interested in utilizing telemedicine in the future?

Extremely interested

Not so interested

Very interested

Not at all interested

Somewhat interested

23. How would you rate the overall health of the community that you live in?

Very healthy

Healthy

Somewhat healthy

Unhealthy

Very unhealthy

24. How satisfied are you with each of these healthcare services in our community?

	Very Good	Good	Fair	Poor	Very Poor	N/A
Ambulance Service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chiropractor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Day Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dentist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergency Room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eye Doctor / Optometrist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home Health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hospice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inpatient Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mental Health Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outpatient Services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outpatient Surgery Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Police Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary Care Providers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Health Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School Nurse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Specialty Physician Care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wellness and Exercise facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify)

25. What health screenings, education, information or services are lacking in your COMMUNITY? (choose all that apply)

- | | | |
|--|--|---|
| <input type="checkbox"/> Alzheimers/Dementia/Memory loss support | <input type="checkbox"/> Parenting | <input type="checkbox"/> Emergency preparedness |
| <input type="checkbox"/> Alcohol abuse | <input type="checkbox"/> Pediatric care | <input type="checkbox"/> Falls prevention |
| <input type="checkbox"/> Blood pressure | <input type="checkbox"/> Prenatal care | <input type="checkbox"/> Home safety assessment |
| <input type="checkbox"/> Bullying | <input type="checkbox"/> Smoking cessation | <input type="checkbox"/> Medication management assistance |
| <input type="checkbox"/> Caregiver support & respite | <input type="checkbox"/> Sexual abuse | <input type="checkbox"/> Mental health |
| <input type="checkbox"/> Cholesterol | <input type="checkbox"/> Substance abuse | <input type="checkbox"/> Active living |
| <input type="checkbox"/> Diabetes | <input type="checkbox"/> Telemedicine | <input type="checkbox"/> Health insurance |
| <input type="checkbox"/> Eating disorders | <input type="checkbox"/> Eating healthy | |
| <input type="checkbox"/> Other (please specify) | | |

26. What do you think are the most pressing health problems in your community? (check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Ability to pay for care | <input type="checkbox"/> Lack of health insurance |
| <input type="checkbox"/> Alcohol- dependency or abuse | <input type="checkbox"/> Lack of transportation to health care services Lack of dental care |
| <input type="checkbox"/> Alcohol- underage binge or abuse | <input type="checkbox"/> Lack of prenatal care |
| <input type="checkbox"/> Drug abuse- prescription medications | <input type="checkbox"/> Mental health |
| <input type="checkbox"/> Drug abuse- illegal substances | <input type="checkbox"/> Obesity in adults |
| <input type="checkbox"/> Cancer | <input type="checkbox"/> Obesity in children and teenagers Prescription medication too expensive |
| <input type="checkbox"/> Child abuse | <input type="checkbox"/> Teen pregnancy |
| <input type="checkbox"/> Cost of health care | <input type="checkbox"/> Tobacco use/smoking among adults Tobacco use/smoking among teenagers Suicide |
| <input type="checkbox"/> Domestic violence | <input type="checkbox"/> Lack of wellness prevention services |
| <input type="checkbox"/> Other (please specify) | |

27. What health or community services should Carroll County Memorial Hospital provide that currently are not available?

28. What ideas or suggestions do you have for improving the overall health of the area community?

29. Do you have any other comments or concerns about the health and/or health services offered in the community? (please explain in detail)

Thank you for taking the time to complete the survey. We greatly appreciate your input.



IX. Appendix B: Secondary Data Analysis

QUALITY WORKS® Carroll County Memorial Hospital

Community Health Needs Assessment Secondary Data Analysis

March 2018



Quality Works® provided technical support in the preparation of Carroll County Memorial Hospital's community health needs assessment. Carroll County Memorial Hospital shall retain sole responsibility for the contents of its community health needs assessment and agrees to hold harmless and indemnify Quality Works from any claims, actions, administrative or legal proceedings or penalties relating to the community health needs assessment or the performance of services described herein.

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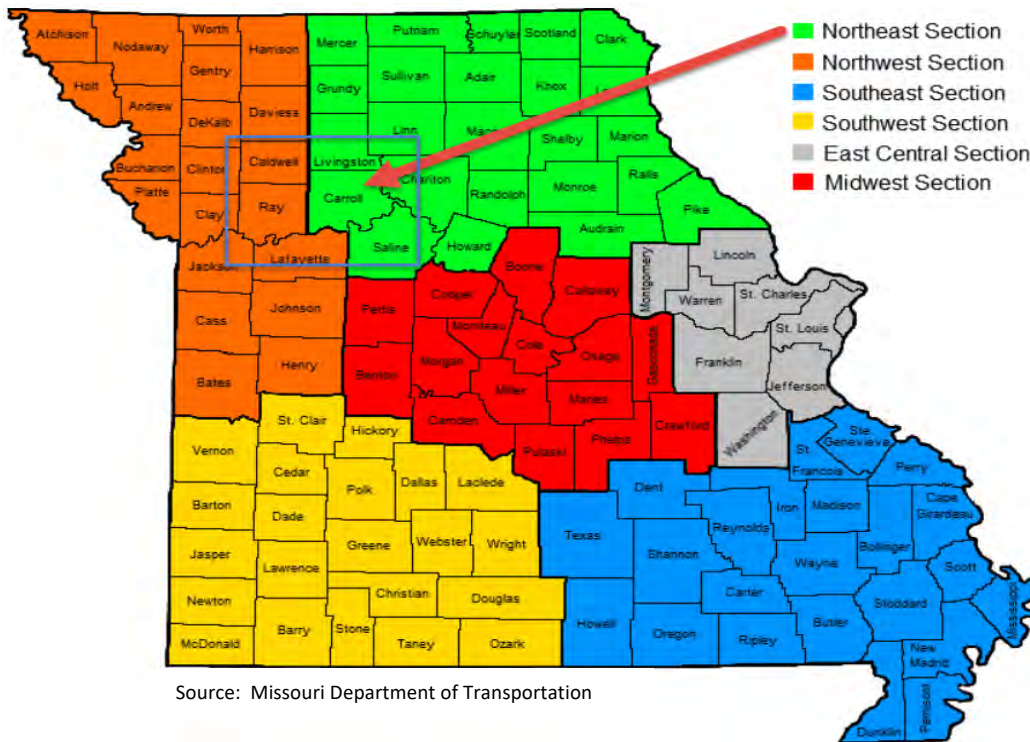
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Introduction

This report synthesizes and summarizes existing secondary data derived from multiple sources on community health indicators in Caldwell, Carroll, Chariton, Ray and Lafayette counties. Multiple indicators, such as demographics, socioeconomic factors, mortality, morbidity, vital statistics, reportable diseases and access to care, among other targeted community indicators, were used to help identify the current gaps within these communities. A central goal of the secondary data analysis was to better grasp the most significant health issues facing Carroll County and the primary service area in general. We used ZIP code-level analysis for the top issues identified in an effort to recognize the specific populations within the respective counties that were disproportionately affected. This analysis also will seek to help advance health equity and to help surgically target interventions where they are needed most. Lastly, background and context for the collection of primary survey data were provided to supplement existing data for a holistic picture of community health in the primary service area for Carroll County Memorial Hospital.

The map below shows the location of the counties within the primary market area for Carroll County Memorial Hospital. It is located in the northeast section of Missouri according to the Missouri Department of Transportation boundaries and includes the counties of Caldwell, Carroll, Chariton, Ray and Lafayette.



Executive Summary

Carroll County is located in northwest region of Missouri and has a population of 9,096 according to the 2011 to 2015 American Community Survey. Carroll County ranks 94 in population size among Missouri's 114 counties plus the City of St. Louis. The 2017 unemployment rate in the county was 3.8 percent according to the Missouri Economic Research Information Center. This was higher than the statewide unemployment rate of 3.4 percent according to [Figure 3](#). According to [Table 4](#), the poverty rate was 18.5 percent which was higher than the statewide poverty rate of 15.3 percent. The median income of the county was \$41,537.

As shown on [Graph 1](#), Carroll County has a slightly higher percent of its population in the age group of 5-17 and above 65 years, which mirrored that of the adjoining counties in the primary service area. [Table 2](#) reveals that 64.54 percent of its population lives in the rural areas which is substantially higher than the current state and national rates of 29.56 percent and 19.11 percent, respectively. Compared to the other counties in the primary service area, Carroll County has about the same percent of white population at 95.57 percent, which is significantly higher than that of the state and the nation. A review of demographic and socioeconomic data shown in [Table 4](#) reveals that Carroll County had the lowest percent of high school graduates and higher at 85.9 percent compared to the other counties, state and the nation.

The top five occupations by projected growth in the region per [Table 5](#) were as follows:

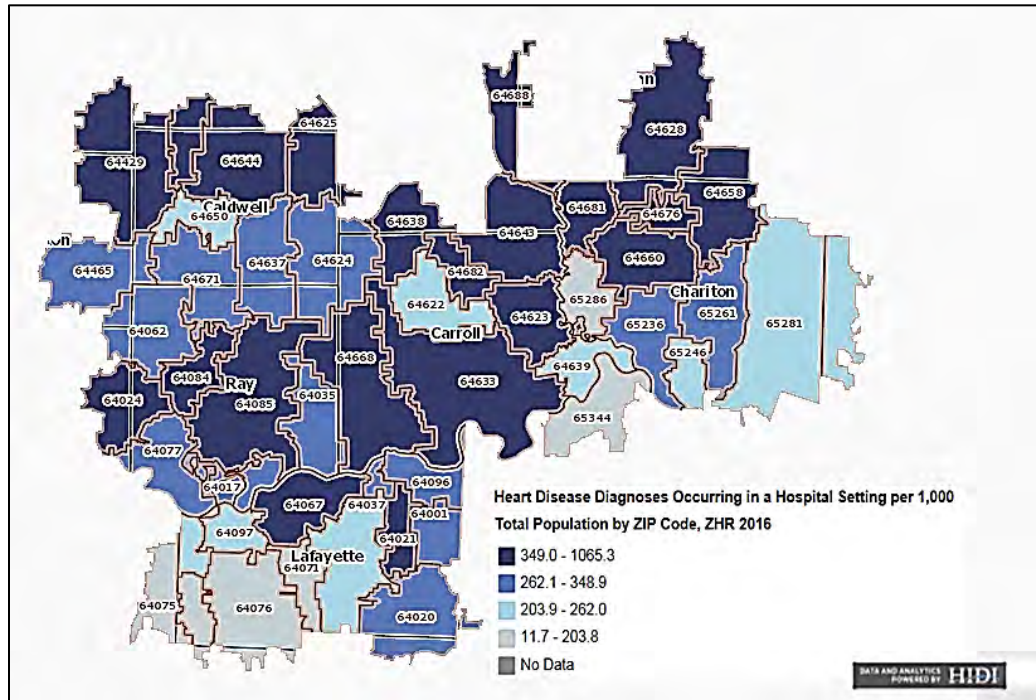
- Cashiers
- Combined food preparation and serving workers
- Nursing assistants
- Retail sales persons
- Personal care aides

A review of the 114 Missouri counties and the City of St. Louis in [Figure 4](#) reveals Carroll County had the same ranking on health outcomes and factors according to the Robert Wood Johnson Foundation, County Health Rankings data published in 2017. Per [Graph 2](#), the percent of obese adults in Carroll County with BMI > 30 was higher than the state and nation per the data gathered from 2004 to 2012. [Table 7](#) reveals that Carroll County had a higher percent of adults with no leisure activity at 27.2 percent compared to the state and national rates of 24.1 percent and 21.8 percent, respectively. The leading causes of death in Carroll County are:

- Heart disease (489 actual cases)
- Cancer (272 actual cases)
- Chronic lower respiratory disease (COPD) (78 actual cases)

Using the ZIP code-level analysis, the following ZIP codes were identified as hot spots for each of the top categories identified during the secondary data analysis.

HEART DISEASE

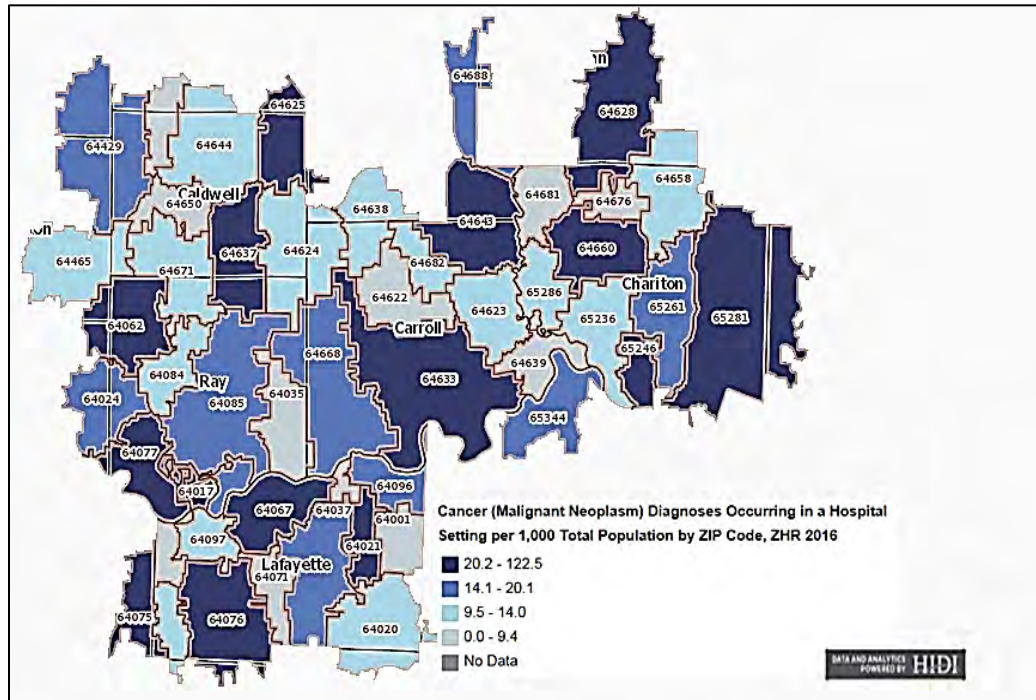


Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

Here are the specific ZIP codes of Carroll County identified to have higher than the Missouri's hospital-diagnosed heart disease. Refer to [Figure 8](#) for more ZIP codes in the primary service area with higher than the state average rates.

- 64633 — Carrollton
- 64623 — Bosworth
- 64668 — Norborne
- 64682 — Tina
- 64638 — Dawn
- 64643 — Hale

CANCER

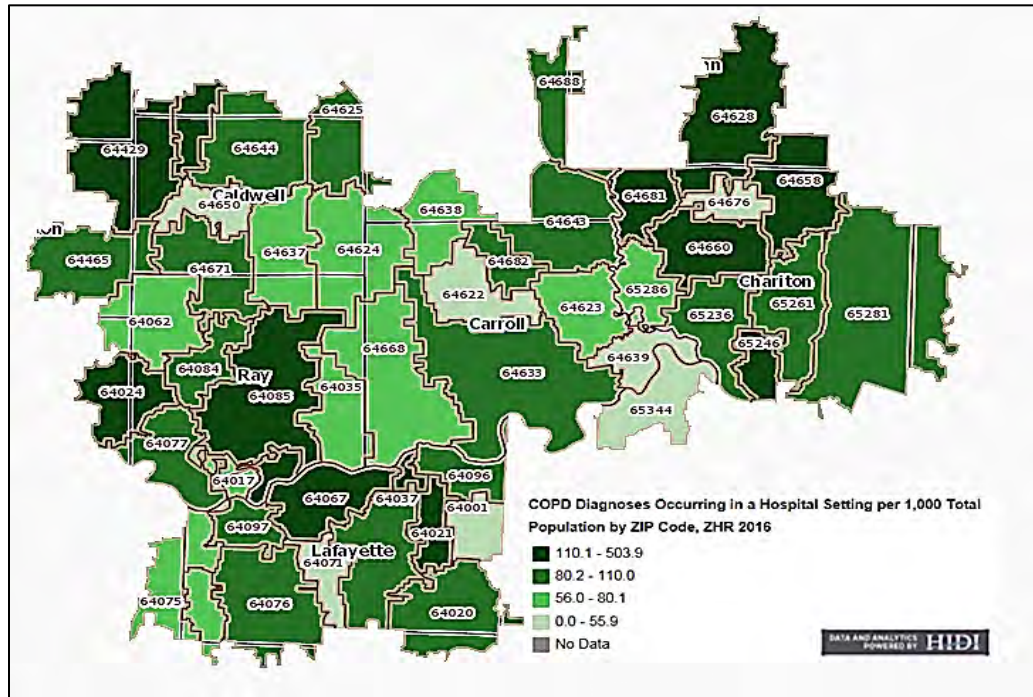


Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

Listed below are the specific ZIP codes of Carroll County identified to have higher than the Missouri's hospital-diagnosed cancer. Refer to [Figure 7](#) for more ZIP codes in the primary service area with higher than the state average rates.

- 64633 — Carrollton
- 64643 — Hale

COPD



Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

Specific ZIP codes of Carroll County identified to have higher than the Missouri's hospital-diagnosed COPD are found below. Refer to [Figure 9](#) for more ZIP codes in the primary service area with higher than the state average rates.

- 64633 — Carrollton
- 64682 — Tina
- 64643 — Hale

OPPORTUNITIES

The following areas are potential opportunities for community health improvement in Carroll County as the data has demonstrated an increase in rate over time:

- COPD hospitalizations excluding asthma
- Arthritis/lupus ER visits
- Motor vehicle traffic ER visits
- Motor vehicle traffic hospitalizations
- Falls ER visits higher than state
- Cesarean sections higher than state and comparison counties
- High risk not delivered in OB level II/III higher than state and comparison counties
- Non-hospital live birth higher than state and comparison counties
- Heart disease death among women higher than state and comparison counties

STRENGTHS

The following areas are community health strengths in Carroll County as the data has demonstrated a decrease in rates over time:

- Heart disease hospitalizations
- Heart disease deaths
- Ischemic heart disease hospitalizations
- Ischemic heart disease deaths
- Total unintentional injuries ER visits
- Fall hospitalizations
- Lead testing for children under six years old is highest in the region
- Children living in poverty
- Number of families receiving food stamps
- Number of families receiving cash assistance
- Number of kids under 19 years being hospitalized for mental/behavioral issues
- Lower percent of tested housing units with elevated radon compared with the state

According to the tables provided in the [Child Health](#) section, Carroll County has seen a decrease in the number of families receiving cash assistance, food stamps, children in poverty, students enrolled in free/reduced lunch, eligible for MO HealthNet for Kids, mental/behavioral hospitalizations for children under 19 years old, and food insecurity for children. They had the highest number of children participating in the Women Infants and Children (WIC) program compared to the other counties in the region per the data gathered in 2015.

According to the 2016 Missouri Students Survey on substance abuse, [Table 23](#) reveals Carroll County with the highest percent of students using alcohol and tobacco within the last 30 days compared to the state. On the same survey, a lower percent of students reported using electronic cigarettes, RX not prescribed to them by a doctor, using marijuana, hookahs or water pipes, used OTC drugs for non-medical reasons and inhalants compared with the state. [Table 24](#) on depression showed that they performed better than the state on all the six categories assessed.

[Figure 11](#) shows that Carroll County saw an increase in the number of individuals who received psychiatric services with a diagnosis of adjustment, anxiety, developmental, impulse control, psychotic and in the other diagnosis categories respectively.

As shown on [Graph 39](#), the number of people living and new HIV cases have increased gradually from 2007 to 2016 according to the data derived from the 2016 epidemiologic profiles of HIV, STDs and hepatitis. HIV related deaths have decreased during the same timeframe for the region. White females and males between 20-29 years old had the highest number of reported gonorrhea cases diagnosed in the Northwest HIV Care Region. According to [Graphs 41](#) and [42](#), males had higher cases of hepatitis B and C diagnoses in the region compared to females.

[Table 28](#) demonstrates that the percentage of houses tested for radon in Carroll County was lower than the state average. For the houses tested, Carroll County had less units with elevated radon levels. Continued testing is recommended to ensure that the individuals living

in this region are protected from environmental factors that might affect their health in the long run.

The results of this secondary data analysis show that Carroll County and the other counties in the primary service area have similar issues warranting a collaborative, well-coordinated, multifaceted approach to address the common problems together. They share almost similar demographics, socioeconomic factors, chronic disease, leading causes of death, preventable hospitalizations, substance abuse, infectious diseases, maternal and child health factors, among other factors considered in this analysis. Sharing these results with them and looking for areas of collaboration will help address the underlying problems required to ensure healthy communities. Reviewing the secondary data closely and capturing the missing elements in the primary data collection process will assist Carroll County Memorial Hospital and the community at large to identify opportunities and current gaps to be addressed. Identifying the key partners that should be engaged earlier in the process will be critical in ensuring a successful prioritization and implementation of the Community Health Needs Assessment.

Secondary Research Process

Secondary data derived from various local, state and national data sources and was reviewed and analyzed. Findings will be key in helping to identify the gaps needing attention in these communities. Data from the U.S. Census, Missouri Department of Health and Senior Services (DHSS) Missouri Information for Community Assessment (MICA), Community Commons, Centers for Disease Control and Prevention and the University of Wisconsin's Robert Wood Johnson Foundation County Health Rankings are a few examples of secondary data sources that were used in this process. Data from the primary service areas will be benchmarked against state and national data whenever possible to identify emerging trends. Findings from these results will be the basis for any decision-making and will ensure that resources will be allocated where they are needed most. Carroll County Memorial Hospital has contracted with Quality Works to complete their 2018 community health needs assessment secondary data collection and analysis.

The following sources were used in the analysis:

- Agency for Healthcare Research and Quality
- Centers for Disease Control and Prevention
- Community Commons
- Feeding America
- Hospital Industry Data Institute
- Missouri Cancer Registry and Research Center
- Missouri Department of Elementary and Secondary Education
- Missouri Department of Health and Senior Services
- Missouri Department of Mental Health
- Missouri Department of Social Services
- Missouri Department of Transportation
- Missouri Division of Behavioral Health and the Substance Abuse and Mental Health Services Administration
- Missouri Economic Research and Information Center
- Missouri Environmental Public Health
- Missouri Kids Count Data Center
- Missouri Office of Administration, Division of Budget and Planning
- U.S. Bureau of Labor Statistics
- U.S. Census Bureau
- University of Wisconsin's Robert Wood Johnson Foundation County Health Rankings

Demographics

According to the U.S. Census Bureau American Community Survey 2011 to 2015 five year estimates, a total of 81,776 people live in the 3,069 square mile report area that encompasses five counties, namely Caldwell, Carroll, Chariton, Ray and Lafayette. The population density for this area, estimated at 26.64 persons per square mile, is less than the national average population density of 89.61 persons per square mile. Carroll County has a total population of 9,096 covering a total land area of 694.62 square miles with a population density of 13.09 persons per square mile which is lower than all the other counties besides Chariton County. Both Lafayette and Ray counties have higher populations compared to the other three counties as well as their population density. However, it is still lower than the state and national trends.

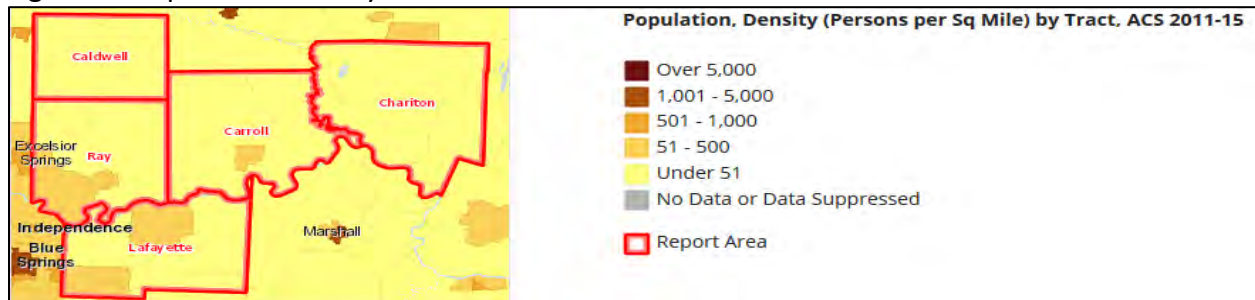
Table 1: U.S. Census Bureau Population Density

Report Area	Total Population	Total Land Area (Square Miles)	Population Density (Per Square Mile)
Report Area	81,776	3,069.43	26.64
Caldwell County, MO	9,083	426.39	21.3
Carroll County, MO	9,096	694.62	13.09
Chariton County, MO	7,650	751.18	10.18
Lafayette County, MO	32,916	628.44	52.38
Ray County, MO	23,031	568.81	40.49
Missouri	6,045,448	68,746.50	87.94
United States	316,515,021	3,532,070.45	89.61

Source: U.S. Census Bureau, American Community Survey. 2011-15. Source: Tract

The map provided in Figure 1 below shows the population density for the five counties assessed during this study by tract. On the most part, the population density for all the counties is sparsely distributed. Compared to the other counties in the primary service area, both Ray and Lafayette counties have a higher population density which is anywhere from 50-1,000 persons per square mile.

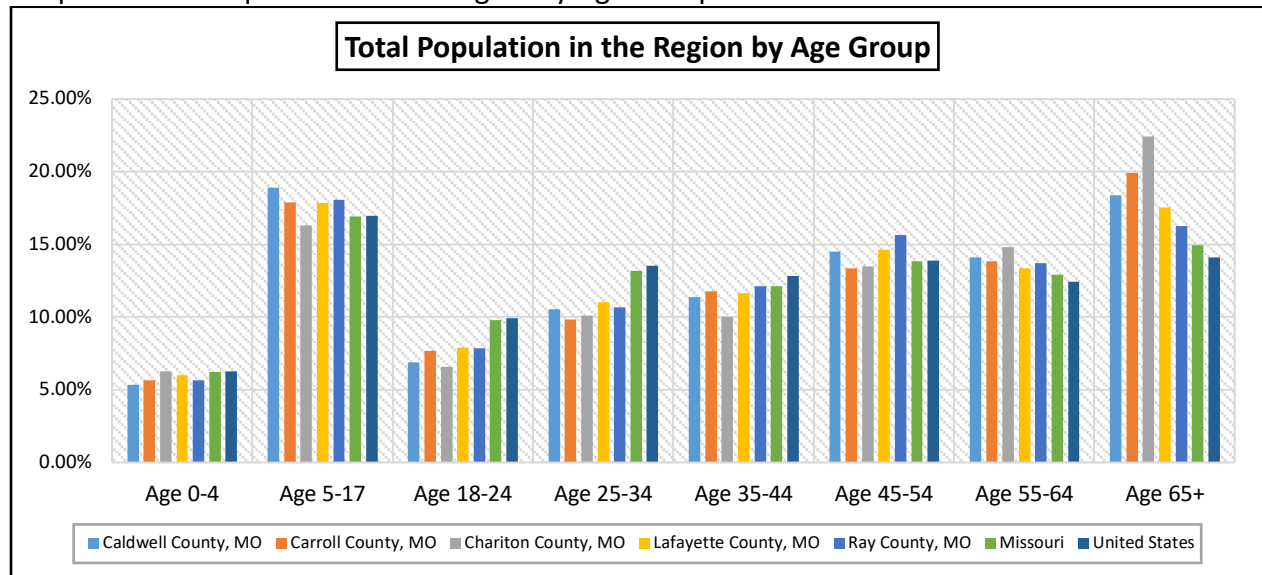
Figure 1: Population Density



Source: U.S. Census Bureau, American Community Survey. 2011-15. Source geography: Tract

Graph 1 shows the population distribution by region in Caldwell, Carroll, Chariton, Ray and Lafayette counties compared to the state and national trends. It is evident that the 5-17 age group has the highest population across the board for all the counties. Both Carroll and Chariton counties have the highest percent of their population above 65 years. It is also quite clear that age groups 0-4 and 18-24 are the lowest across the board for all the counties.

Graph 1: Total Population in the Region by Age Group



Source: Community Commons – U.S. Census Bureau, [Decennial Census](#). 2010. Source geography: Tract

Table 2 depicts the percentage of population living in urban and rural areas. Urban areas are identified using population density, count and size thresholds. Urban areas also include territory with a high degree of impervious surface (development). Rural areas are all areas that are not urban. Per Table 2, all the counties in the primary service area for Carroll County Memorial Hospital have a substantially higher percent of its population living in rural areas compared to the state and national rates according to the U.S. Census Bureau, Decennial Census. 2010. One hundred percent of the populations in both Caldwell and Chariton counties are considered to be living in a rural area. Lafayette County has the highest percent considered to be living in the urban areas at 43.05 percent followed by Carroll County at 35.46 percent. Both these rates are significantly below the state and national rates of 70.44 percent and 80.89 percent, respectively.

Table 2: Urban and Rural Populations

Report Area	Total Population	Urban Population	Rural Population	Percent Urban	Percent Rural
Report Area	83,425	23,489	59,936	28.16%	71.84%
Caldwell County, MO	9,424	0	9,424	0%	100%
Carroll County, MO	9,295	3,296	5,999	35.46%	64.54%
Chariton County, MO	7,831	0	7,831	0%	100%
Lafayette County, MO	33,381	14,371	19,010	43.05%	56.95%
Ray County, MO	23,494	5,822	17,672	24.78%	75.22%
Missouri	5,988,927	4,218,371	1,770,556	70.44%	29.56%
United States	312,471,327	252,746,527	59,724,800	80.89%	19.11%

Source: Community Commons – U.S. Census Bureau, Decennial Census, 2010. Source geography: Tract

According to the Table 3, all these counties have a substantially higher white population which is anywhere from 94.3 percent to 96.62 percent and is considerably higher than the state and national trends of 82.63 percent and 73.6 percent. That said, the black population is significantly lower than the state and national rates of 11.53 percent and 12.61 percent, respectively.

Table 3: Population By Race

Report Area	White	Black	Asian	Native American / Alaska Native	Native Hawaiian / Pacific Islander	Some Other Race	Multiple Races
Report Area	95.29%	1.62%	0.2%	0.33%	0.01%	0.28%	2.27%
Caldwell County, MO	96.62%	0.76%	0.25%	0.19%	0%	0.31%	1.87%
Carroll County, MO	95.57%	1.22%	0.09%	0.02%	0%	0.59%	2.51%
Chariton County, MO	96.31%	2.27%	0.12%	0.17%	0%	0.01%	1.11%
Lafayette County, MO	94.3%	2.01%	0.23%	0.44%	0.01%	0.22%	2.79%
Ray County, MO	95.74%	1.35%	0.2%	0.4%	0.02%	0.33%	1.96%
Missouri	82.63%	11.53%	1.76%	0.41%	0.1%	1.12%	2.44%
United States	73.6%	12.61%	5.13%	0.81%	0.17%	4.7%	2.98%

Source: U.S. Census Bureau, American Community Survey, 2011-15. Source geography: Tract

Per the demographic and socioeconomic factors outlined in Table 4, the median age for residents living in Caldwell, Carroll, Chariton, Ray and Lafayette counties is slightly higher than the state (38.3) and nation (37.6). Chariton County has the highest median age at 45.4 followed by Carroll and Caldwell counties at 42.8 years. Carroll County has the lowest percent of residents who are a high school graduate and higher at 85.9 percent compared to the other counties, state and nation. Carroll County also has the lowest median household income at \$41,537 compared to the other counties in the primary service area, state and nation. Current data also reveals that Carroll County has the highest percent of individuals living below the poverty level compared to the other counties, state and the nation.

Table 4: Demographics and Socio-Economic Factors

DEMOGRAPHICS AND SOCIO-ECONOMIC FACTORS							
	Caldwell County	Carroll County	Chariton County	Lafayette County	Ray County	Missouri	United States
Median Age	42.8	42.8	45.4	42.1	41.6	38.3	37.6
Number of Companies	772	613	814	3,019	1,770	491,606	27,626,360
Percent high school graduate or higher	90%	85.9%	87.7%	88.9%	88%	88.8%	87%
Total Housing Units	4,605	4,610	4,143	14,696	9,967	2,738,774	134,054,899
Median Household Income	\$44,722	\$41,537	\$41,773	\$50,830	\$53,459	\$49,593	\$55,322
Individuals below poverty level	13.2%	18.5%	15.4%	12.2%	16.1%	15.3%	15.1%

Source: U.S. Census, 2012-2016 American Community Survey Five-Year Estimates; U.S. Census, 2012 Survey of Business Owners

Occupations by Projected Growth

The Missouri Department of Economic Development identifies the area shown in Figure 2 as the west central region of Missouri. Economic data is gathered to gain insight and provide key information necessary to understand the economic status of the region. Community members, employers, and policy makers can use this information to identify gaps and address them as needed to ensure economic stability.

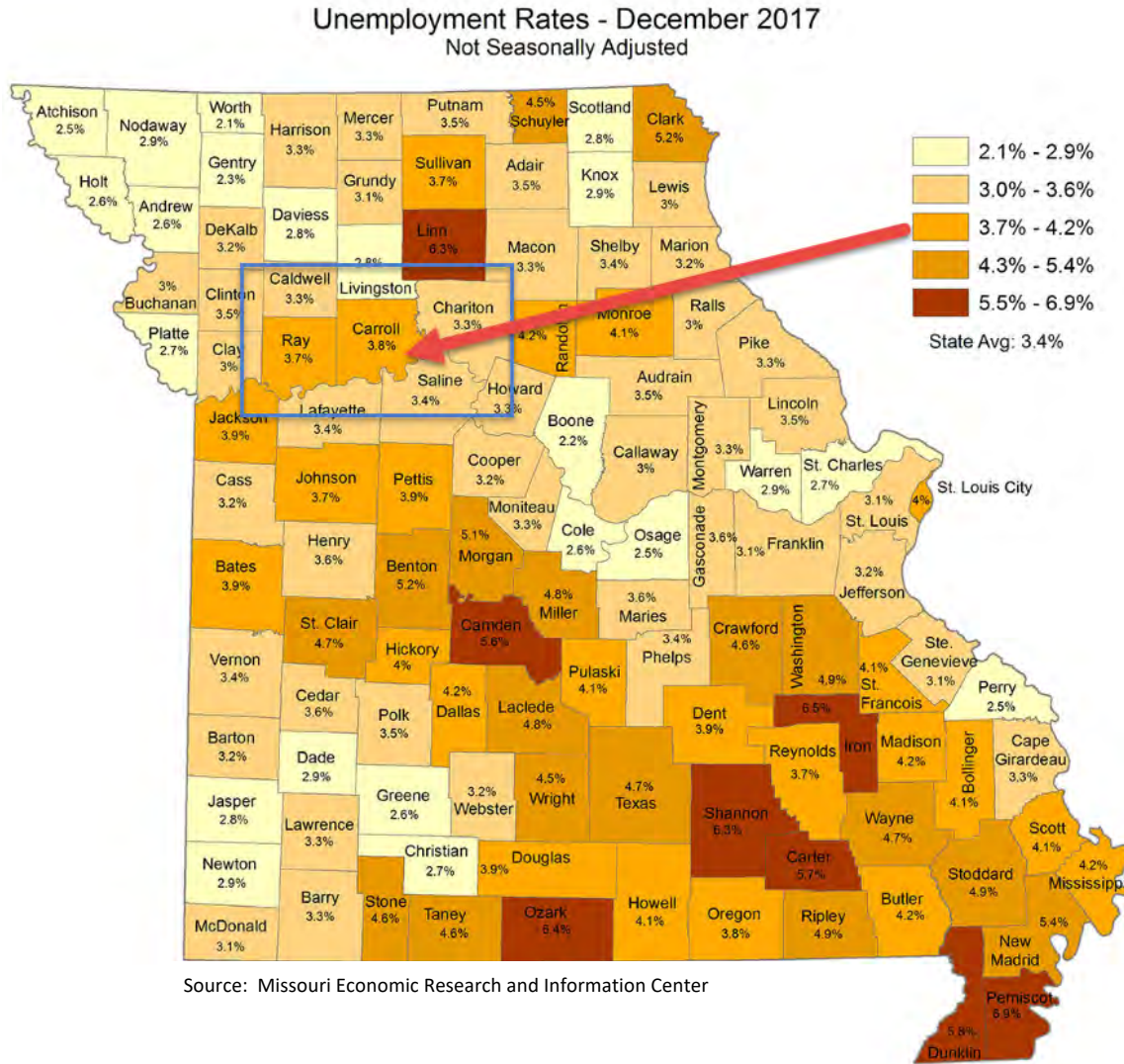
Figure 2: West Central Region



Source: Missouri Economic Research and Information Center

According to the map in Figure 3 below, both Carroll and Ray counties had the highest unemployment rates at 3.8 percent and 3.7 percent respectively compared to the other counties in the primary service area of the hospital. These rates were evidently higher than the current state unemployment rate of 3.4 percent.

Figure 3: Unemployment Rates




Source: Missouri Economic Research and Information Center

Table 5 shows the top ten occupations by projected growth in the West Central region of Missouri. Cashiers, combined food preparation and serving workers, nursing assistants, retail salesperson and personal care aides are the top five occupations with highest total openings in the region according to the Missouri Economic Research and Information Center (MERIC).

Table 5: Occupations by Projected Growth

West Central Region Top Openings					2014-2024	
<p>The West Central region is expected to have over 20,000 total job openings between 2014 and 2024. This includes openings created by new job growth, as well as those created through the need for replacement workers. Replacement openings occur due to retirement, turnover, or transferring to another occupation.</p> <p>During this projection period, the 20 occupations with the greatest number of total openings includes 3 Sales Occupations, 3 Food Preparation Occupations, 3 Office and Administrative Support Occupations, and 3 Education Occupations. "Cashiers" and "Combined Food Preparation and Serving Workers" are the occupations that are expected to have the most total openings, with over 1,000 total openings for each.</p>						
Occupation	2014 Est. Employment	2024 Proj. Employment	Growth Openings	Replacement Openings	Total Openings	Average 2015 Wage
Cashiers	3,098	3,163	65	1,318	1,383	\$19,202
Combined Food Preparation and Serving Workers	2,885	3,070	185	932	1,117	\$18,221
Nursing Assistants	2,881	3,029	148	651	799	\$19,919
Retail Salespersons	1,983	2,079	96	687	783	\$24,696
Personal Care Aides	1,780	2,250	470	144	614	\$18,960
Registered Nurses	1,502	1,743	241	354	595	\$54,081
Waiters and Waitresses	1,076	1,069	0	518	518	\$19,288
Office Clerks, General	2,022	2,046	24	436	460	\$26,661
Elementary School Teachers, Except Special Education	1,524	1,619	95	337	432	\$50,760
Laborers and Freight, Stock, and Material Movers, Hand	1,370	1,375	5	408	413	\$25,457
Maintenance and Repair Workers, General	1,222	1,291	69	320	389	\$32,357
Childcare Workers	902	1,024	122	266	388	\$20,198
General and Operations Managers	1,151	1,223	72	291	363	\$75,128
First-Line Supervisors of Retail Sales Workers	1,332	1,392	60	298	358	\$32,923
Stock Clerks and Order Fillers	1,107	1,071	0	351	351	\$22,125
Licensed Practical and Licensed Vocational Nurses	1,022	1,057	35	291	326	\$34,765
Cooks, Institution and Cafeteria	1,064	1,108	44	282	326	\$19,879
Secretaries and Admin Assistants, Except Legal, Medical, and Executive	2,432	2,497	65	256	321	\$27,827
Secondary School Teachers	996	1,054	58	236	294	\$45,418
Teacher Assistants	894	959	65	214	279	\$22,930

Data Sources: Missouri Economic Research and Information Center (MERIC), Long-Term Occupational Projections, Occupational Employment and Wage Survey, and U.S. Bureau of Labor Statistics. Product funded by the U.S. Employment and Training Administration, Workforce Information Grant.



Source: Missouri Economic Research and Information Center

According to 2017 Robert Wood Johnson Foundation County Health Rankings data the maps shown in Figure 4 provide the prevalence of health factors and outcomes in the primary service area of Carroll County Memorial Hospital. Of the 114 Missouri counties and the City of St. Louis, Carroll County was ranked 59 to 86 in health factors and outcomes. Lafayette, Ray, Chariton and Caldwell counties ranked better on health factors. A review of health outcomes data shows that Lafayette and Chariton counties were ranked in the top 29 best performing counties while Caldwell was ranked in the 87 to 115 category. Health outcomes and factors include:

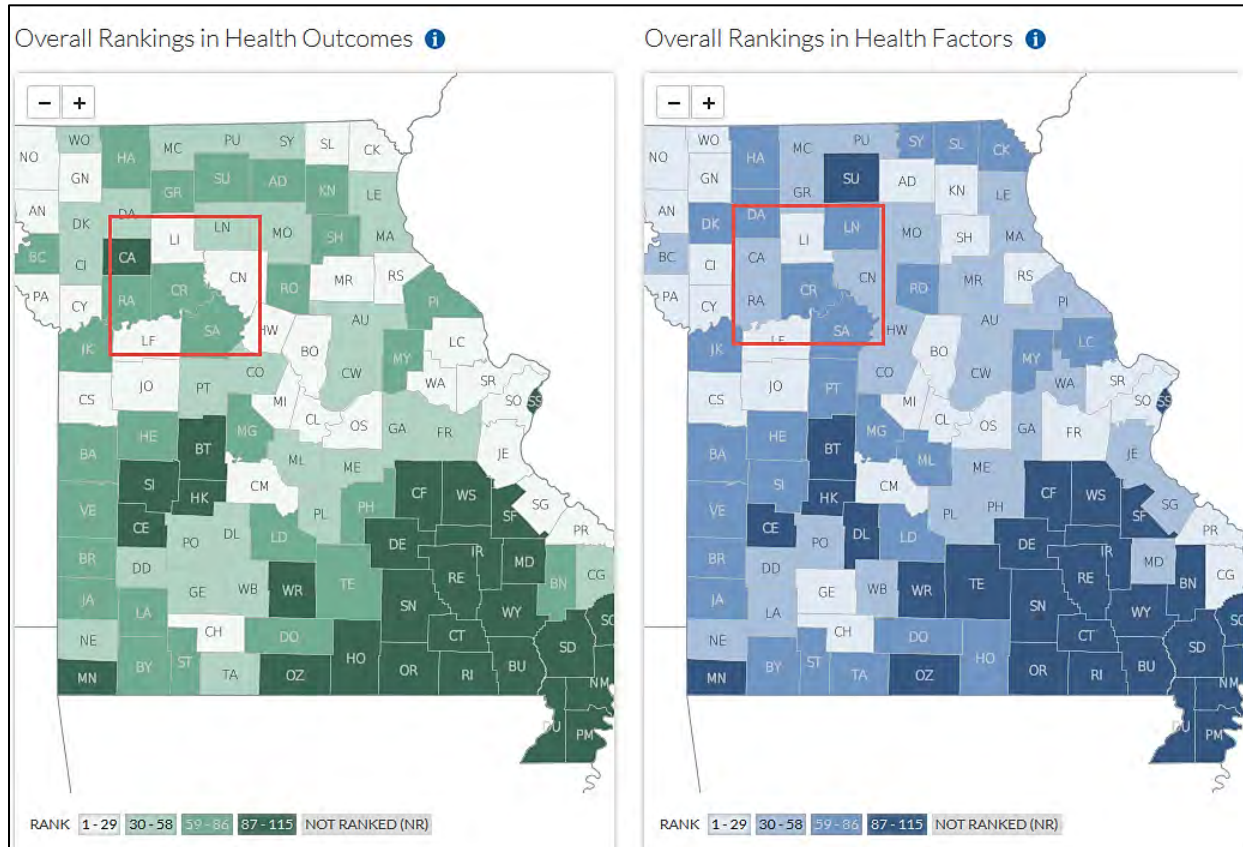
Health Outcomes

- Premature death
- Poor or fair health
- Poor physical health days
- Poor mental health days
- Low birth weight

Health Factors

- Adult smoking
- Adult obesity
- Food environment index
- Physical inactivity
- Access to exercise opportunities
- Excessive drinking
- Alcohol impaired driving deaths
- Sexually transmitted infections
- Teen births

Figure 4: Health Outcomes and Factors



Source: RWJF County Health Rankings, 2017

Behavioral Risk Factors

According to data from the Missouri Information for Community Assessment county level study conducted in 2011 on the prevalence of key behavioral risk factors, Carroll County had the highest number of people who believe that smoking cigarettes causes heart attacks, low birth weight and stroke compared to Caldwell, Chariton, Lafayette and Ray counties.

Table 6: Behavioral Risk Factors

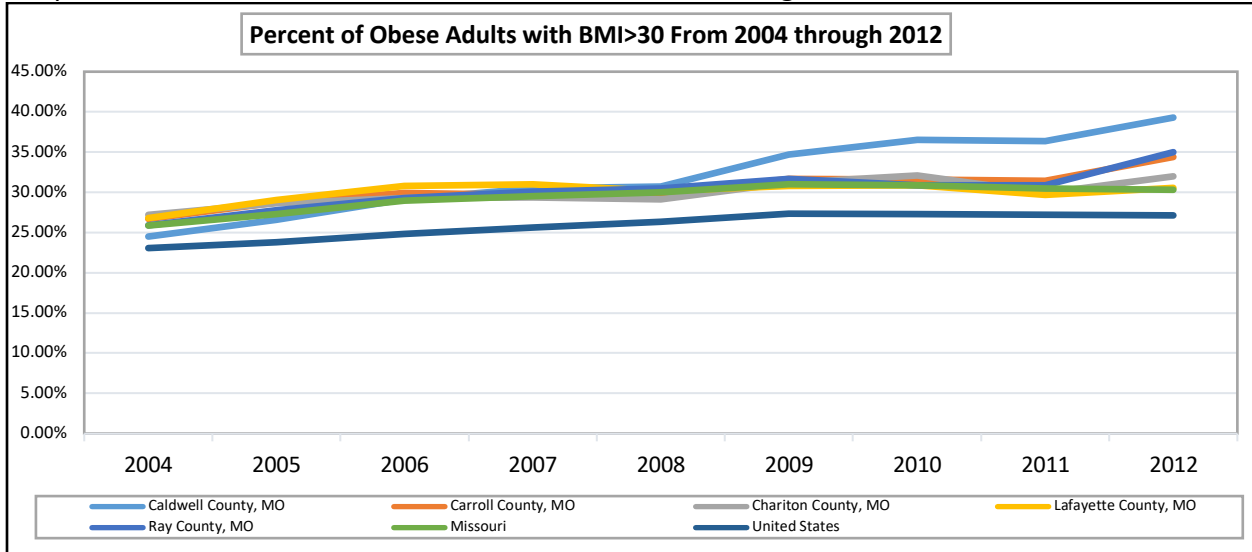
BEHAVIORAL RISK FACTORS					
	2011 Prevalence (%)				
	Caldwell County	Carroll County	Chariton County	Lafayette County	Ray County
Believe smoking cigarette causes					
Heart Attack	72.08%	80.16%	71.32%	78.05%	78.15%
Colon Cancer	31.57%	33.12%	33.90%	38.56%	32.66
Stroke	73.61%	77.52%	68.00%	71.38%	74.41%
Low Birth Weight	83.40%	88.85%	86.44%	84.30%	85.00%
Impotence	48.63%	52.39%	48.82%	51.48%	54.96%

Source: MICA County Level Study 2011

Health Behaviors

Health behaviors such as poor diet, lack of exercise and substance abuse contribute to poor health status. Graph 2 demonstrates that since 2008, the percent of adult obese individuals with a BMI of over 30 in Caldwell County has been trending above all the other counties in the region. It is also clear that it is trending above the state and national trends. Excess weight may indicate an unhealthy lifestyle and puts individuals at risk for further health issues. Carroll County has been trending higher than the nation but well within the same rate as the state.

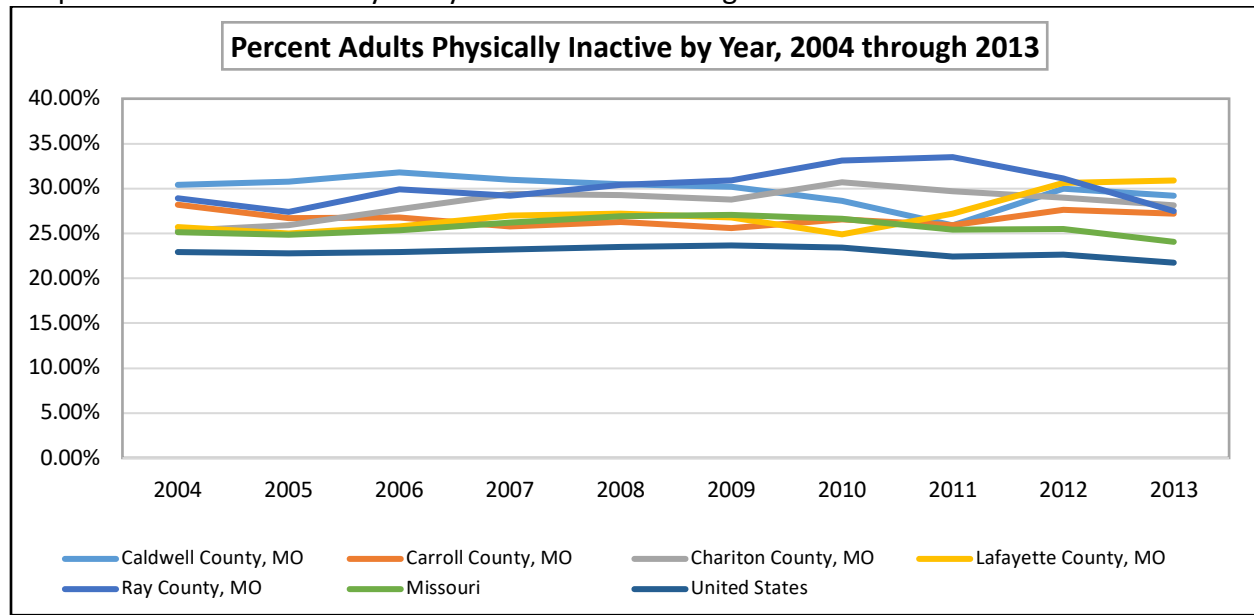
Graph 2: Percent of Obese Adults with BMI >30 2004 through 2012



Source: Centers for Disease Control and Prevention, [National Center for Chronic Disease Prevention and Health Promotion](#). 2013

As shown in Graph 3, the percent of adults inactive by year in Carroll County has been trending above the state and national trends since 2011. While Ray County had the highest percent of inactive adults from 2008 to 2012, it has seen a steady decrease since 2011, trending closer to the desired state and national rates. Lack of exercise contributes to poor health status.

Graph 3: Percent Adults Physically Inactive 2004 through 2013



Source: Centers for Disease Control and Prevention, Diabetes Data and Trends: Methods and References for County-Level Estimates and Ranks (2012)

Per Table 7, Lafayette County has the highest percent of the population with no leisure time physical activity at 30.9 percent followed by Caldwell and Carroll counties at 29.2 percent and 27.2 percent, respectively. All other counties in the region also have rates higher than those of the state and nation which are 24.1 percent and 21.8 percent, respectively.

Table 7: Leisure Time Physical Activity

Report Area	Total Population Age 20+	Population with no Leisure Time Physical Activity	Percent Population with no Leisure Time Physical Activity
Report Area	60,701	18,819	29.1%
Caldwell County, MO	6,684	2,092	29.2%
Carroll County, MO	6,816	2,004	27.2%
Chariton County, MO	5,818	1,786	28.1%
Lafayette County, MO	24,373	7,970	30.9%
Ray County, MO	17,010	4,967	27.5%
Missouri	4,486,311	1,120,890	24.1%
United States	234,207,619	52,147,893	21.8%

[Download Data](#)

Source: Centers for Disease Control and Prevention, [National Center for Chronic Disease Prevention and Health Promotion](#) 2013.

Preventable Hospitalization 2014

According to DHSS MICA, preventable hospitalizations (also called ambulatory care sensitive conditions) are "diagnoses for which timely and effective outpatient care can help to reduce the risks of hospitalization by either preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition."

According to Table 8 below, the overall preventable hospitalization rates per 10,000 residents under the age of 65 adjusted to the U.S. 2000 standard population reveals that Carroll County had the highest rate at 138.69 per 10,000 residents compared to the other counties in the region from 2004 to 2015.

Table 8: Overall Preventable Hospitalization Rates

Preventable Diagnosis: Angina, Asthma, Bacterial Pneumonia, Chronic Obstructive Pulmonary, Congestive Heart Failure, Diabetes, Hypertension, Immunization										
Year:	2004-2006	2004-2006	2007-2009	2007-2009	2010-2012	2010-2012	2013-2015	2013-2015	Total for selection	Total for selection
Statistics:	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Caldwell	186	73.06	184	71.75	151	58.56	134	49.67	655	63.51
Carroll	448	169.20	522	207.13	236	94.40	203	78.71	1,409	138.69
Chariton	140	66.53	131	60.34	118	53.24	114	49.53	503	57.81
Lafayette	758	80.94	714	75.38	679	70.68	761	81.04	2,912	76.85
Ray	532	77.00	534	75.18	481	69.21	463	69.08	2,010	72.43
Missouri	107,684	67.77	110,982	67.40	111,321	65.74	103,989	61.02	433,976	65.43

Source: DHSS - MOPHIMS - Preventable Hospitalization MICA

Note: Preventable hospitalization rates are annualized per 10,000 residents under the age of 65 and are age adjusted to the U.S. 2000 standard population.

The chronic disease comparison profile information in Table 9 compares deaths, hospitalizations and emergency room visits for major categories of chronic diseases and conditions by county. Comparisons can be made across counties for a single indicator or across indicators within a county or local geographic area. Profile statistics include the number of events, county/city rate, statistical significance, quintile ranking and the state rate. Chronic diseases are among the most common, costly and preventable of all health problems in the nation, according to the Centers for Disease Control. The CDC reports four modifiable health risk behaviors — lack of physical activity, poor nutrition, tobacco use and excessive alcohol consumption — are responsible for much of the illness, suffering, and early deaths related to chronic diseases.

The chronic disease comparison table depicts that between 2005 to 2015 heart disease death was the greatest challenge facing the region and state. Compared to the other counties in the region, Carroll County had the highest rate at 305.20 per 100,000 population adjusted to the U.S. 2000 standard population. This heart disease death rate was substantially higher than the

state average of 206.15 per 100,000 population. Compared to the other counties in the region and the state, Carroll County had the highest heart disease-ED visits from 2010 to 2014. Carroll County had the highest COPD hospitalizations at 44.07 per 10,000 population age-adjusted to the U.S. 2000 standard population compared to the other counties and the state. Carroll County had the lowest rate of cancer death compared to the other counties and the state at 176.51 per 100,000 population and are age-adjusted to the U.S. 2000 standard population.

Table 9: Chronic Disease Comparison Profile

CHRONIC DISEASE COMPARISON PROFILE						
Chronic Disease Comparisons Profile	Caldwell County	Carroll County	Chariton County	Lafayette County	Ray County	Missouri
Heart Disease-Death (2005-2015)	203.9	305.20	202.26	233.37	218.24	206.15
Heart Disease-Hospitalizations (2010-2014)	127.76	127.41	96.36	119.90	132.32	115.92
Heart Disease-ED Visits (2010-2014)	14.17	22.21	11.06	16.84	17.25	14.95
Ischemic Heart Disease-Deaths (2005-2015)	113.69	140.37	116.52	153.65	121.08	133.54
Ischemic Heart Disease-Hospitalizations (2010-2014)	39.68	38.02	41.39	38.40	33.22	35.23
Prostate Cancer-Hospitalizations (2010-2014)	2.54*	5.71*	2.79*	1.92	2.35	2.01
COPD-Hospitalizations (2010-2014)	25.14	44.07	23.41	39.31	33.89	21.60
COPD-ED Visits (2010-2014)	5.25	5.50	4.34	10.14	3.97	5.57
Asthma-ER Visits (2010-2014)	2.90*	2.89	1.96	3.24	3.28	5.38
Asthma-Hospitalization (2010-2014)	7.70	14.02	6.09	8.62	10.13	12.03
Arthritis/Lupus-ED Visits (2010-2014)	9.09	10.85	6.76	10.58	9.45	10.59
Arthritis/Lupus-Hospitalizations (2010-2014)	52.64	58.12	35.75	49.75	46.67	42.67
Cancer-Death (2005-2015)	206.82	176.51	190.31	183.86	200.68	184.22
Cancer-Hospitalizations (2010-2014)	39.68	30.94	23.00	29.20	38.21	31.50

Source: Missouri Department of Health & Senior Services' MICA 2005-2015 data.

* Fewer than 20 events in numerator; rate is unreliable.

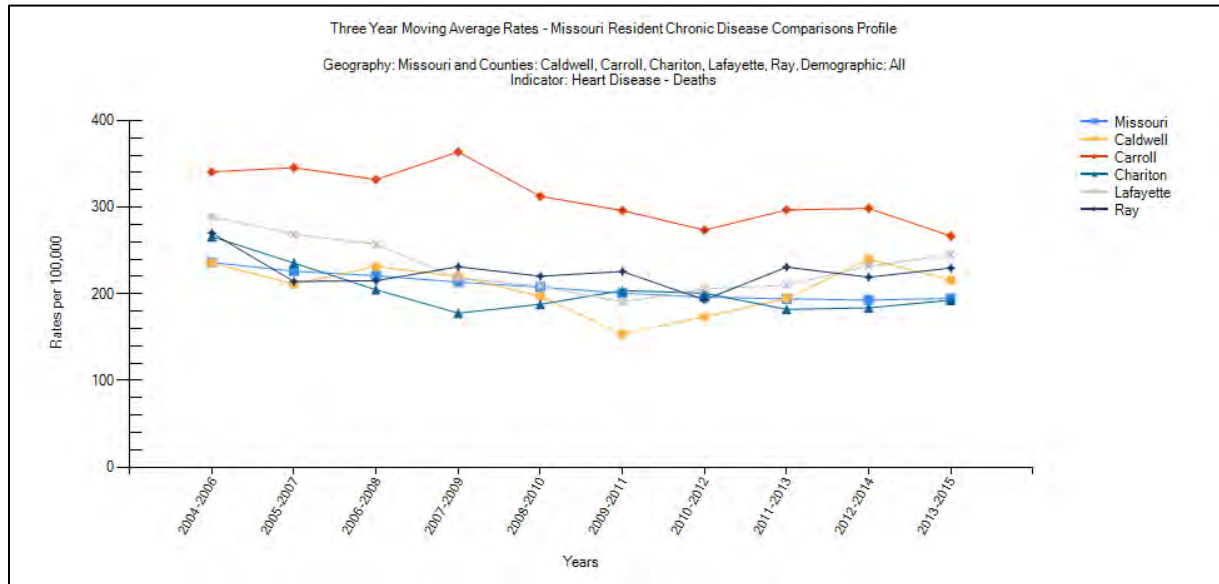
Death rates are per year per 100,000 population and are age-adjusted to the U.S. 2000 standard population.

Hospitalization rates are per year per 10,000 population and are age-adjusted to the U.S. 2000 standard population.

ED visit rates are per year per 1,000 population and are age-adjusted to the U.S. 2000 standard population.

Graph 4 depicts the three-year moving average rates of chronic disease comparison profiles for heart disease deaths per 100,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties. These rates are benchmarked with the state rate.

Graph 4: Heart Disease Deaths



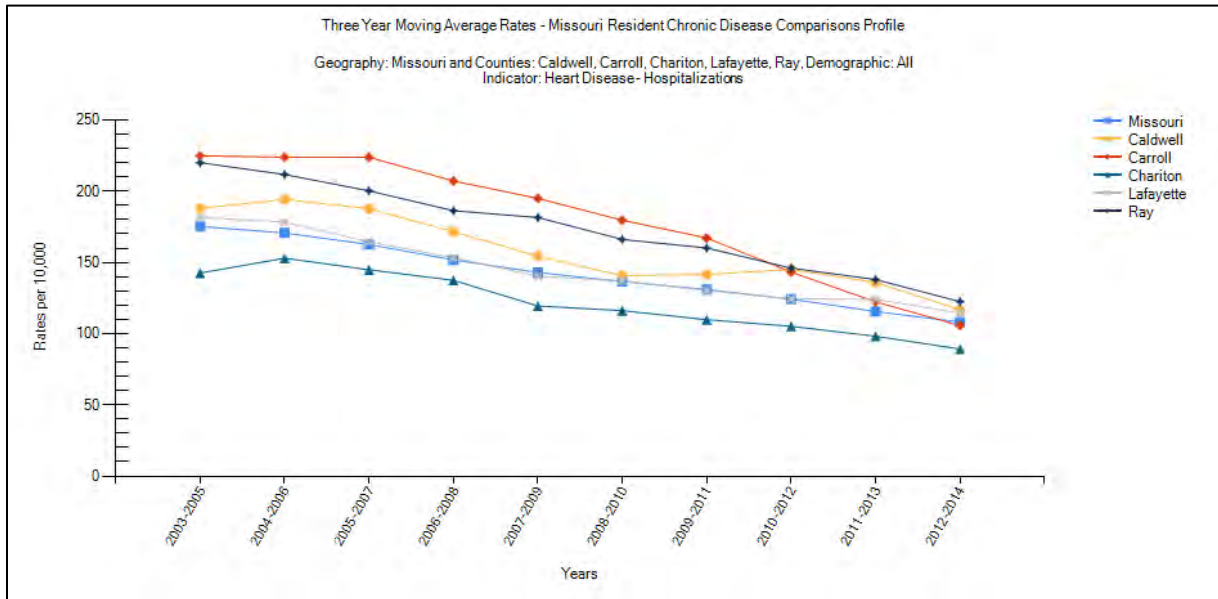
Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trends Analysis:

- Missouri — statistically significant decrease
- Caldwell — no statistically significant trend
- Carroll — statistically significant decrease
- Chariton — statistically significant decrease
- Lafayette — no statistically significant trend
- Ray — no statistically significant change

Three-year moving average rates of chronic disease comparison profiles for heart disease hospitalizations per 10,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties are shown in Graph 5. These rates are benchmarked with the state rate.

Graph 5: Heart Disease Hospitalizations



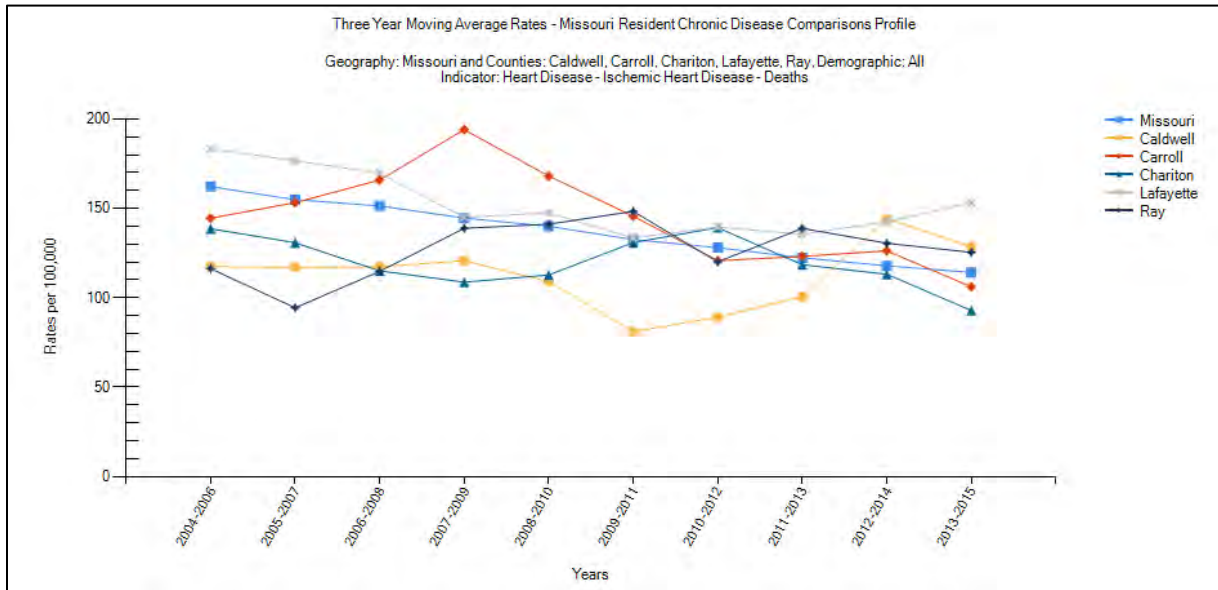
Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — statistically significant decrease
- Chariton — statistically significant decrease
- Lafayette — statistically significant decrease
- Ray — statistically significant decrease

Graph 6 provides the three-year moving average rates of chronic disease comparison profiles for ischemic heart disease deaths per 100,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties. These rates are benchmarked with the state rate.

Graph 6: Ischemic Heart Disease Deaths



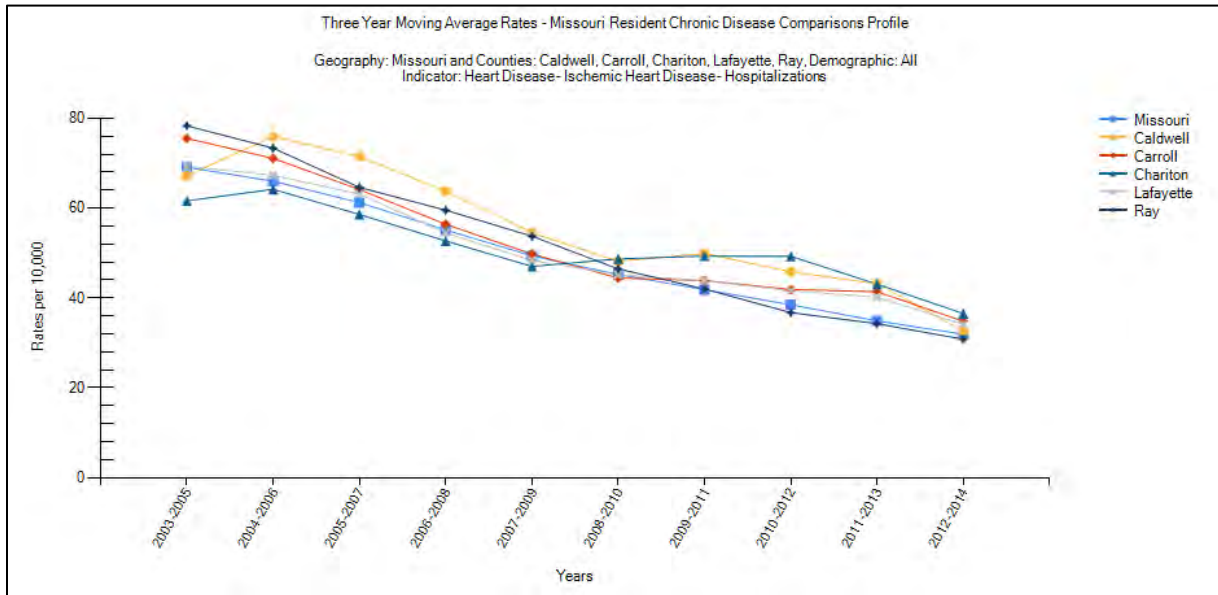
Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — no statistically significant trend
- Carroll — statistically significant decrease
- Chariton — no statistically significant trend
- Lafayette — statistically significant decrease
- Ray — no statistically significant trend

Graph 7 provides three-year moving average rates of chronic disease comparison profiles for ischemic heart disease hospitalizations per 10,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties. These rates are benchmarked with the state rate.

Graph 7: Ischemic Heart Disease Hospitalizations



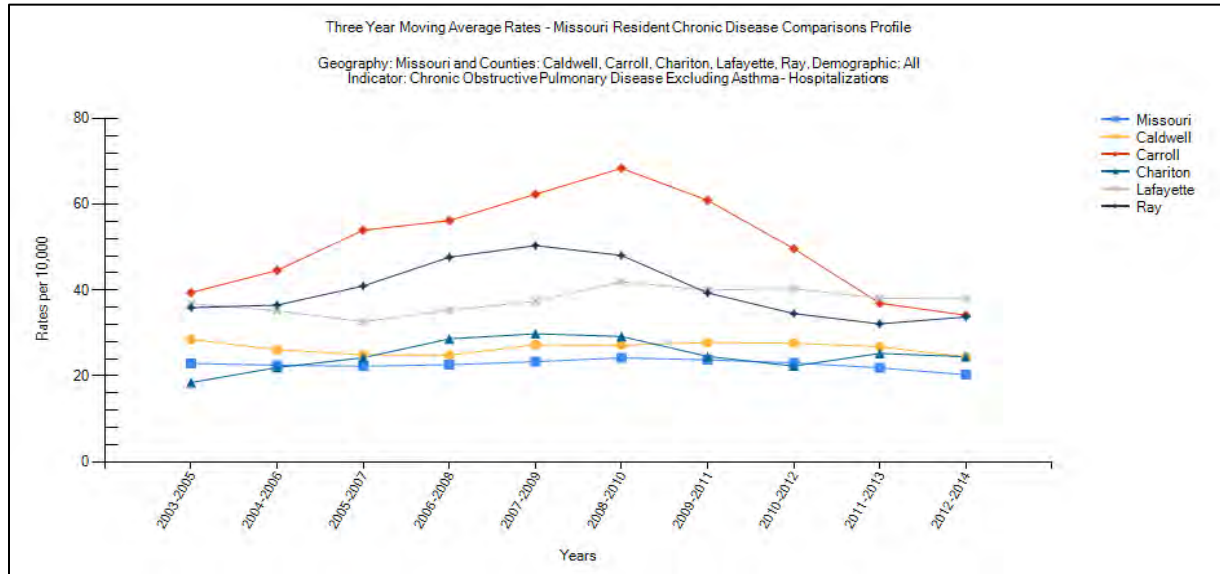
Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — statistically significant decrease
- Chariton — statistically significant decrease
- Lafayette — statistically significant decrease
- Ray — statistically significant decrease

Three-year moving average rates of chronic disease comparison profiles for chronic obstructive pulmonary disease excluding asthma hospitalizations per 10,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties is found in Graph 8. These rates are benchmarked with the state rate.

Graph 8: Chronic Obstructive Pulmonary Disease, Excluding Asthma, Hospitalizations



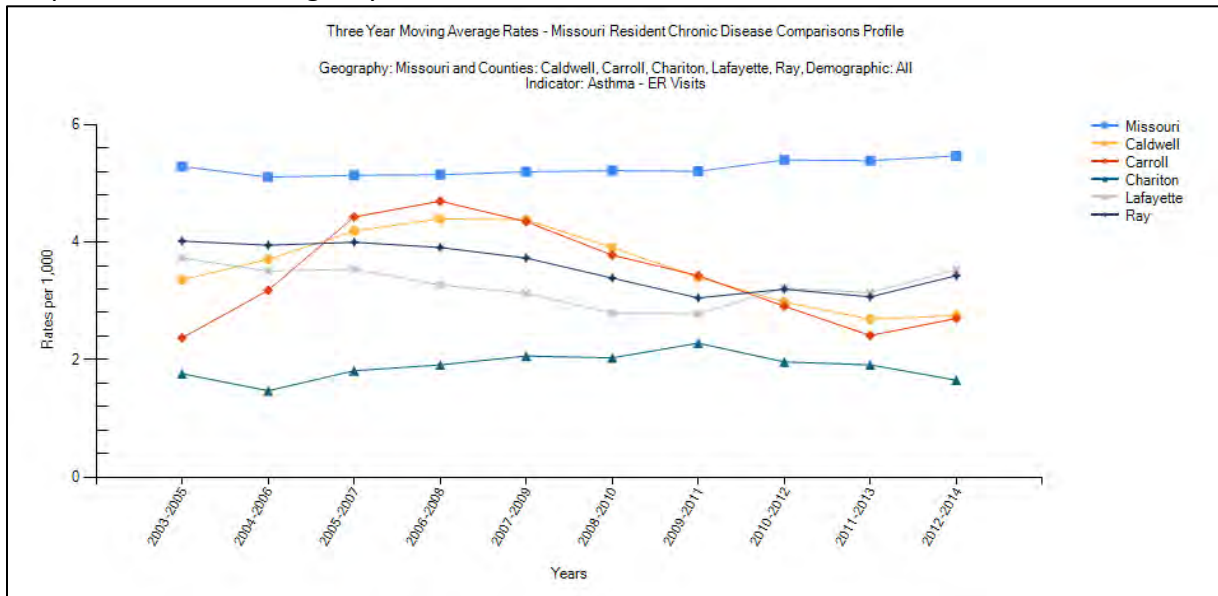
Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trend Analysis

- Missouri — no statistically significant trend
- Caldwell — no statistically significant trend
- Carroll — no statistically significant trend
- Chariton — no statistically significant trend
- Lafayette — no statistically significant trend
- Ray — no statistically significant trend

The next graph shows three-year moving average rates of chronic disease comparison profiles for asthma ER visits per 1,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties. These rates are benchmarked with the state rate.

Graph 9: Asthma Emergency Room Visits



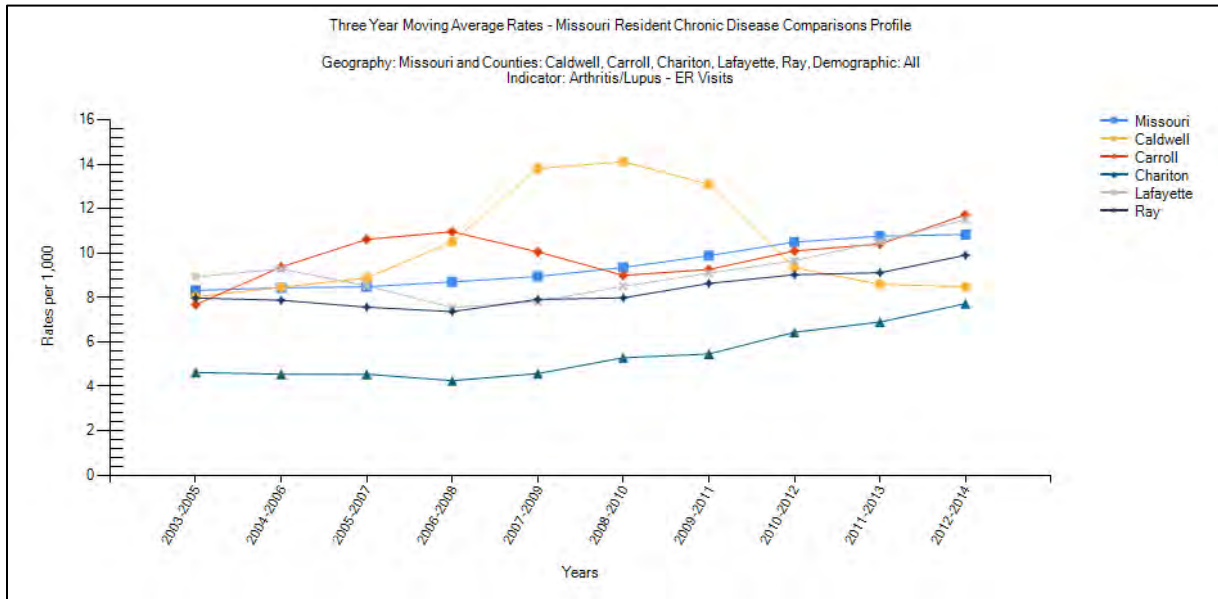
Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trend Analysis

- Missouri — statistically significant increase
- Caldwell — statistically significant decrease
- Carroll — no statistically significant trend
- Chariton — no statistically significant trend
- Lafayette — no statistically significant trend
- Ray — statistically significant decrease

Three-year moving average rates of chronic disease comparison profiles for arthritis/lupus ER visits per 1,000 population for Caldwell, Carroll, Chariton, Lafayette and Ray counties is shown in Graph 10. These rates are benchmarked with the state rate.

Graph 10: Arthritis/Lupus Emergency Room Visits



Source: DHSS - MOPHIMS Community Data Profiles - Chronic Disease Comparisons

Trend Analysis

- Missouri — statistically significant increase
- Caldwell — no statistically significant trend
- Carroll — no statistically significant trend
- Chariton — statistically significant increase
- Lafayette — statistically significant increase
- Ray — statistically significant increase

Leading Causes of Death

According to Table 10, the leading causes of death in Carroll County are heart disease at 305.20 (489 actual cases), cancer — 176.51 (272 actual cases) and chronic lower respiratory disease at 49.88 (78 actual cases) per 100,000, age-adjusted to the U.S. 2000 standard population. The total number of unintentional injuries was the fourth indicator with a total of 73 cases and a rate of 62.44 per 100,000 population. Note: The actual number of cases occurring from 2005 to 2015 were considered heavily in the analysis and in the determination of the leading causes of death.

Table 10: Leading Causes of Death Profile, Rate Per 100,000 Population

Profile: Missouri Resident Death - Leading Causes Profile							
Indicator Name	Data Year	Caldwell County	Carroll County	Chariton County	Lafayette County	Ray County	Missouri
Leading Causes of Death - Heart Disease	2005 - 2015	203.96	305.20	202.26	233.37	218.24	206.15
Leading Causes of Death - All Cancers (Malignant Neoplasms)	2005 - 2015	206.82	176.51	190.31	183.86	200.68	184.22
All Cancers (Malignant Neoplasms) - Lung Cancer	2005 - 2015	61.80	56.80	50.68	54.25	69.76	56.68
Leading Causes of Death - Chronic Lower Respiratory Disease	2005 - 2015	67.38	49.88	38.79	57.32	62.05	51.27
Leading Causes of Death - Stroke/Other Cerebrovascular Disease	2005 - 2015	38.71	39.71	39.73	43.79	33.50	44.92
Leading Causes of Death - Total Unintentional Injuries	2005 - 2015	71.44	62.44	52.22	46.01	58.10	48.29
Leading Causes of Death - Diabetes Mellitus	2005 - 2015	26.38	16.60	19.64	18.69	18.51	20.94
Leading Causes of Death - Pneumonia and Influenza	2005 - 2015	20.80	33.32	19.91	14.21	27.20	19.20

Source: DHSS - MOPHIMS Community Data Profiles - Death - Leading Causes
Rate per 100,000 population

According to a recent study conducted by the Missouri Cancer Registry and Research Center with county level data captured from 2010 to 2014, lung cancer, female breast cancer, prostate, colon and rectum cancer, kidney and renal pelvis cancers were the most common and can provide some insights of areas to target to reduce the incidence and prevalence of these cancers in Carroll County. Similar reports for the other counties in the region will be in the appendices section of this report.

Table 11: Carroll County Cancer Prevalence

Carroll County		
All Sexes	Cancer Site	Percent
	Lung and Bronchus	20.28
	Female Breast	11.89
	Prostate	10.14
	Colon and Rectum	9.44
	Kidney and Renal Pelvis	6.99
	Melanoma of the Skin	4.90
	Non-Hodgkin Lymphoma	4.55
	Oral Cavity and Pharynx	4.55
	Urinary Bladder	4.20
	Leukemia	3.15
Females	Cancer Site	Percent
	Female Breast	28.33
	Lung and Bronchus	19.17
	Colon and Rectum	9.17
	Kidney and Renal Pelvis	8.33
	Corpus and Uterus, NOS	5.83
Males	Cancer Site	Percent
	Lung and Bronchus	21.08
	Prostate	17.47
	Colon and Rectum	9.64
	Oral Cavity and Pharynx	7.23
	Kidney and Renal Pelvis	6.02
	Melanoma of the Skin	6.02
	Urinary Bladder	5.42
	Non-Hodgkin Lymphoma	4.82
	Leukemia	4.22
	Pancreas	3.61

Source: Missouri Cancer Registry and Research Center, Missouri County Level Data 2010 to 2014

ZIP Code Health Rankings — Enhanced Analytics

Where we live, work, learn and play affects our health. Access to data regarding health factors and health outcomes in the places where Missourians live helps provide communities and organizations with the information necessary to take action and create and sustain a healthy state. Effectively engaging communities to address the social, economic, environmental, clinical and behavioral factors that affect health is critical for improving population health outcomes.

In collaboration with the Washington University School of Medicine, Robert Wood Johnson Foundation and County Health Rankings and Roadmaps, researchers at Hospital Industry Data Institute, Missouri Hospital Association's data company, developed the Missouri ZIP Health Rankings model that provides detailed data on health factors and outcomes at the ZIP code-level in Missouri. Based on the county health rankings population health framework, this data offers community health practitioners a rich set of information to explore sub-county variation in health and formulate targeted intervention strategies to deliver limited population health improvement resources to areas in most need. This same methodology has been applied in the Carroll County Memorial Hospital service area for the top three health issues identified, namely heart disease, cancer and COPD. Unintentional injuries were also identified as an area in need of attention as the total number of cases were identified as the fourth highest according to the Missouri Public Health Information Management System leading causes of death profiles.

The map shown in Figure 5 shows the ZIP codes that should be prioritized in terms of interventions because the Missouri ZIP Health Rankings ranks them among the worst performing hotspots in key health outcomes identified in the region.

Carroll County

- 64623 — Bosworth
- 64624 — Braymer
- 64638 — Dawn

Ray County

- 64085 — Richmond

Caldwell County

- 64671 — Polo
- 64637 — Cowgill

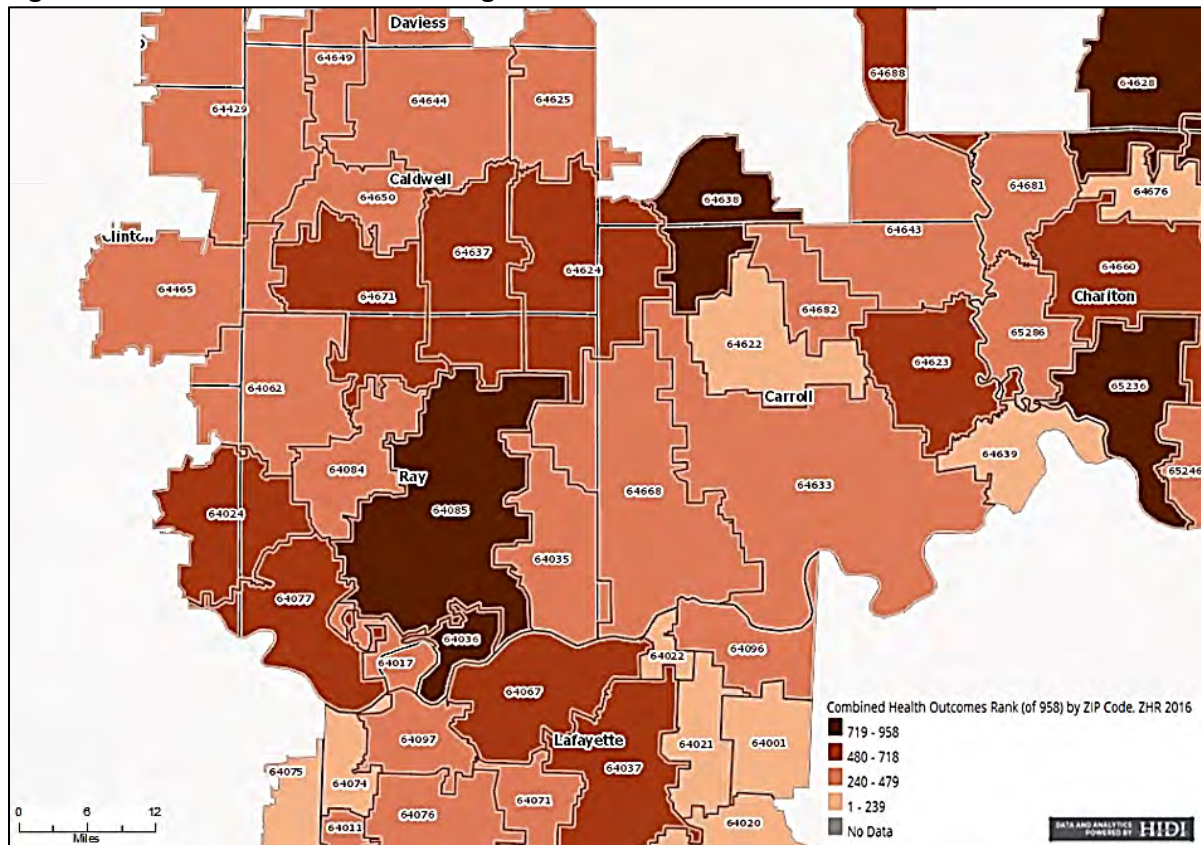
Chariton County

- 65236 — Brunswick
- 64628 — Brookfield

Lafayette County

- 64037 — Higginsville
- 64067 — Lexington

Figure 5: Missouri ZIP Health Rankings — Health Outcomes



Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

Figure 6 shows the following ZIP codes have been ranked unfavorably on health factors in the five counties in the primary service area for Carroll County Memorial Hospital out of the 958 counties in the state.

Carroll County

- 64623 — Bosworth
- 64633 — Carrollton
- 64638 — Dawn
- 64682 — Tina
- 64624 — Braymer
- 64643 — Hale

Chariton County

- 64681 — Sumner
- 64658 — Marceline
- 65236 — Brunswick

Caldwell County

- 64644 — Hamilton
- 64625 — Breckenridge

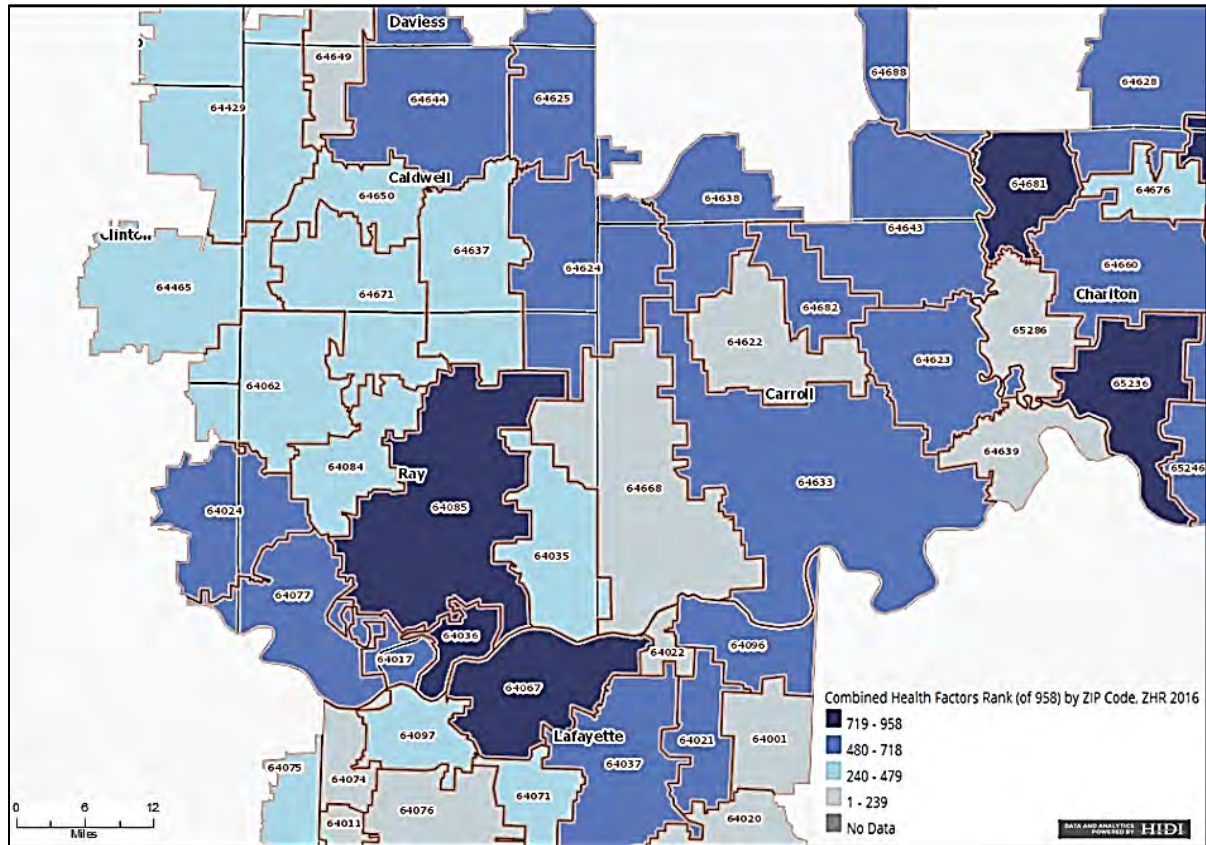
Ray County

- 64085 — Richmond
- 64036 — Henrietta
- 64077 — Orrick
- 64024 — Excelsior Springs

Lafayette County

- 64037 — Higginsville
- 64067 — Lexington
- 64021 — Corder
- 64096 — Waverly
- 64017 — Camden

Figure 6: Missouri ZIP Health Rankings — Health Factors



Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

As shown in Figure 7, the following ZIP codes have higher than the state average for cancer diagnosis in the five counties in the primary service area for Carroll County Memorial Hospital.

Carroll County

- 64633 — Carrollton
- 64643 — Hale

Other ZIP codes within the region that might be in need of attention include:

Caldwell County

- 64637 — Cowgill
- 64625 — Breckenridge

Ray County

- 64077 — Orrick
- 64062 — Lawson

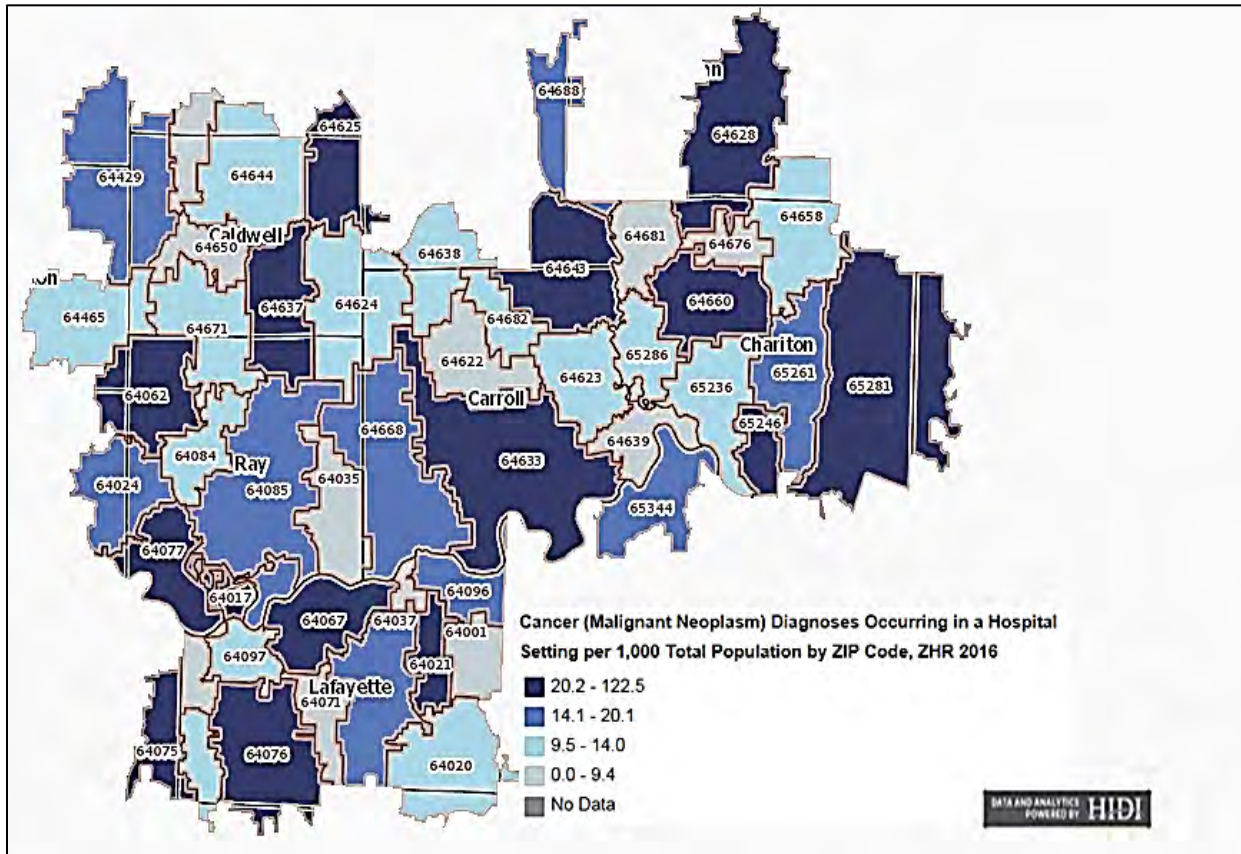
Chariton County

- 65281 — Salisbury
- 65246 — Dalton
- 64660 — Mendon
- 64628 — Brookfield

Lafayette County

- 64067 — Lexington
- 64076 — Odessa
- 64021 — Corder
- 64017 — Camden

Figure 7: Missouri ZIP Health Rankings — Cancer



Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

According to the map shown in Figure 8, the following ZIP codes have higher than the state average for heart disease diagnosis in the primary service area for Carroll County Memorial Hospital.

Carroll County

- 64633 — Carrollton
- 64623 — Bosworth
- 64668 — Norborne
- 64682 — Tina
- 64638 — Dawn
- 64643 — Hale

Other ZIP codes within the region that might be in need of attention include:

Caldwell County

- 64429 — Cameron
- 64644 — Hamilton
- 64625 — Breckenridge

Chariton County

- 64660 — Mendon
- 64628 — Brookfield
- 64681 — Sumner
- 64658 — Marceline
- 64676 — Rothville

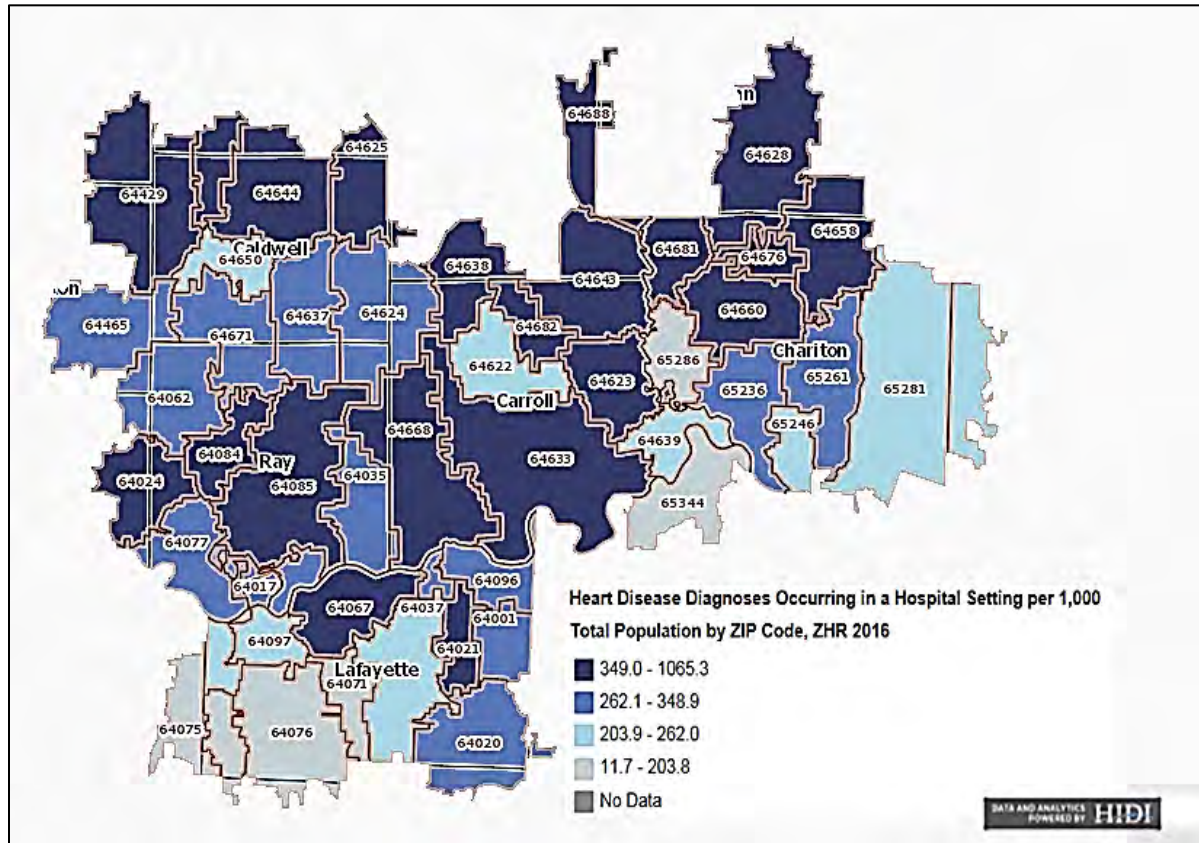
Ray County

- 64085 — Richmond
- 64084 — Rayville
- 64024 — Excelsior Springs

Lafayette County

- 64021 — Corder
- 64067 — Lexington

Figure 8: Missouri ZIP Health Rankings — Hospital-Diagnosed Heart Disease



Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

Figure 9 reveals the following ZIP codes have higher than the state average for COPD diagnosis in the primary service area for Carroll County Memorial Hospital.

Carroll County

- 64633 – Carrollton
- 64682 – Tina
- 64643 – Hale

Other ZIP codes within the region that might be in need of attention include:

Caldwell County

- 64429 — Cameron
- 64649 — Kidder

Lafayette County

- 64021 — Corder
- 64022 — Dover
- 64067 — Lexington

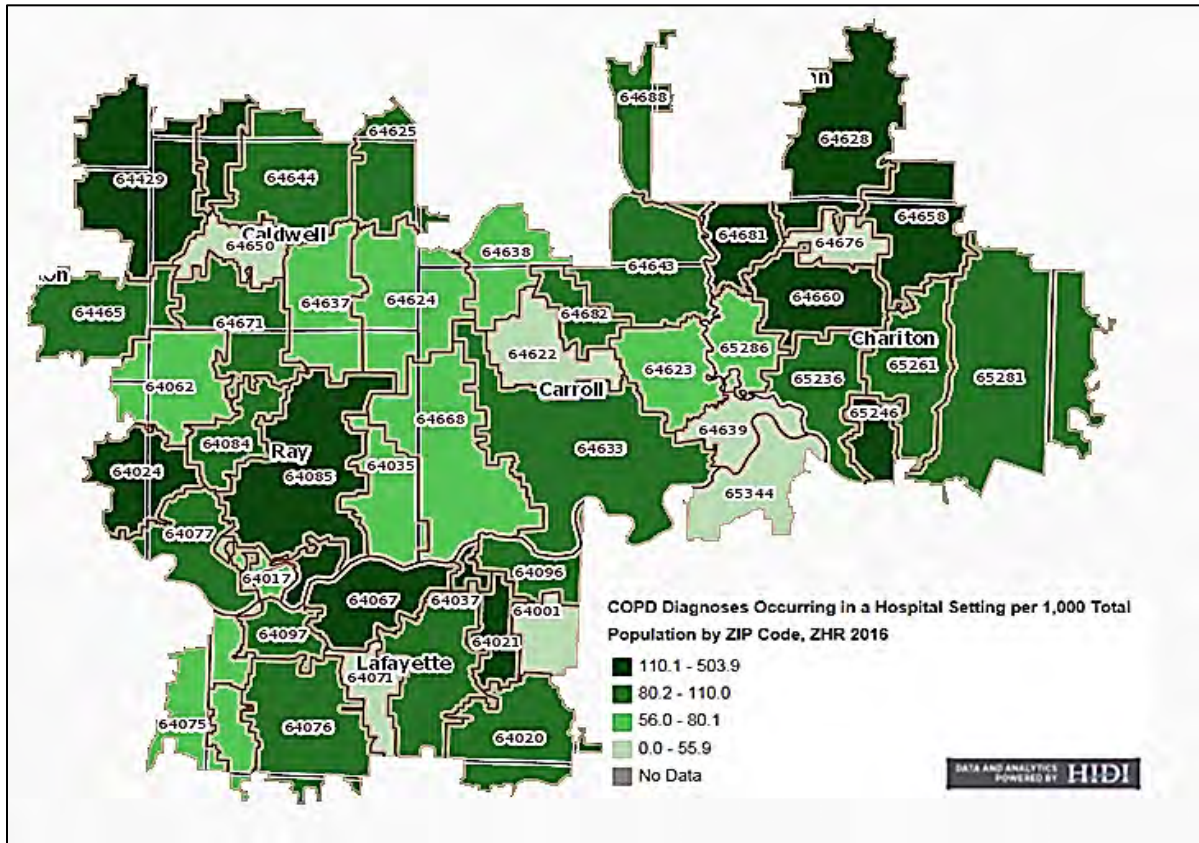
Chariton County

- 65246 — Dalton
- 64660 — Mendon
- 64628 — Brookfield
- 64681 — Sumner
- 64658 — Marcelline

Ray County

- 64085 — Richmond
- 64024 — Excelsior Springs
- 64036 — Henrietta

Figure 9: Missouri ZIP Health Rankings — COPD

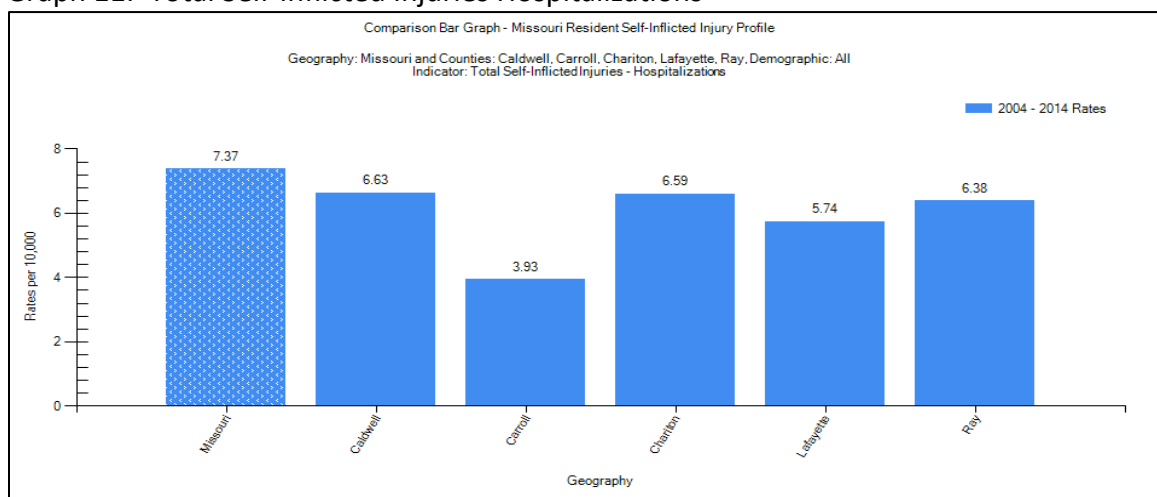


Source: Hospital Industry Data Institute, 2016 ZIP Health Rankings

Injuries

According to data gathered from the Missouri Public Health Information Management System data base for the time period 2004 to 2014, the total self-inflicted injury hospitalizations for Carroll County was 3.93 per 10,000 population. As shown in Graph 11, this was lower than the state average of 7.37 per 10,000 population. As compared to the other counties in the region, Carroll County had the lowest rate across the board.

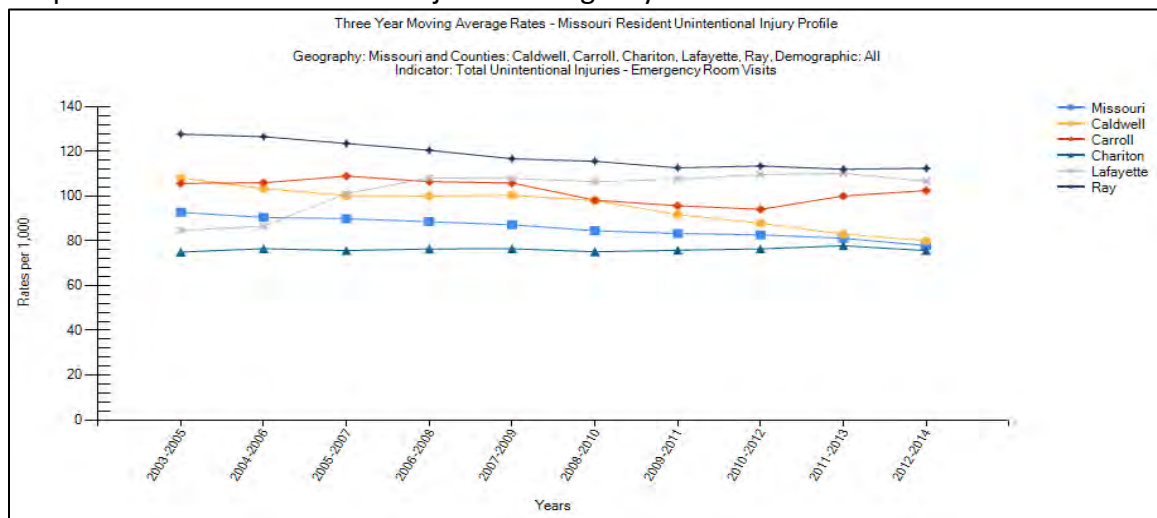
Graph 11: Total Self-Inflicted Injuries Hospitalizations



Source: DHSS - MOPHIMS Community Data Profiles - Self Inflicted Injury

Graph 12 depicts three-year moving average rates for unintentional injury profile emergency room visits per 1,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties. These rates are benchmarked with the state rate.

Graph 12: Total Unintentional Injuries Emergency Room



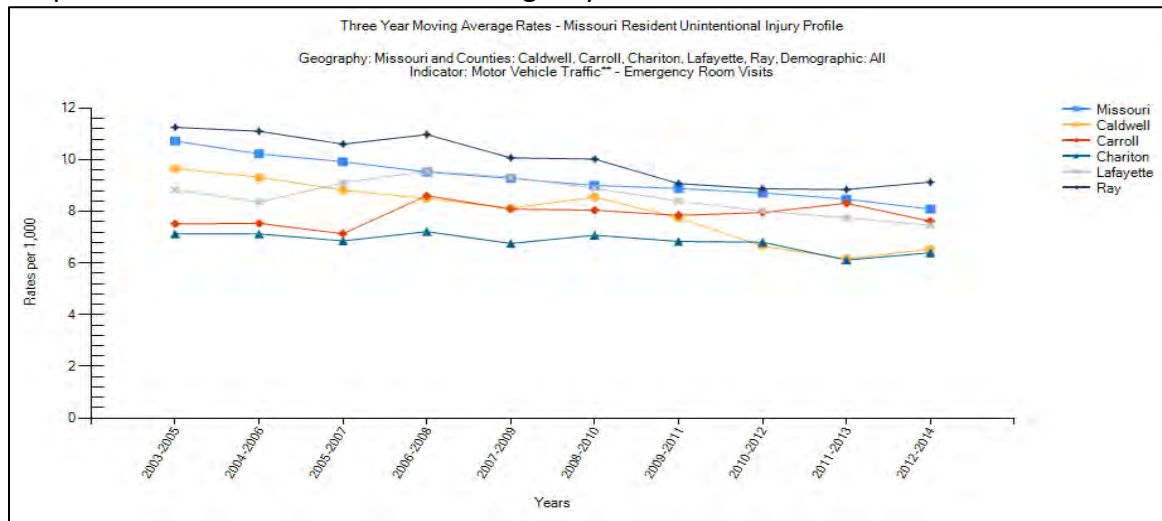
Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — statistically significant decrease
- Chariton — no statistically significant trend
- Lafayette — statistically significant increase
- Ray — statistically significant decrease

Three-year moving average rates for unintentional injury profile for motor vehicle traffic emergency room visits per 1,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties are shown in Graph 13. These rates are benchmarked with the state rate.

Graph 13: Motor Vehicle Traffic – Emergency Room Visits



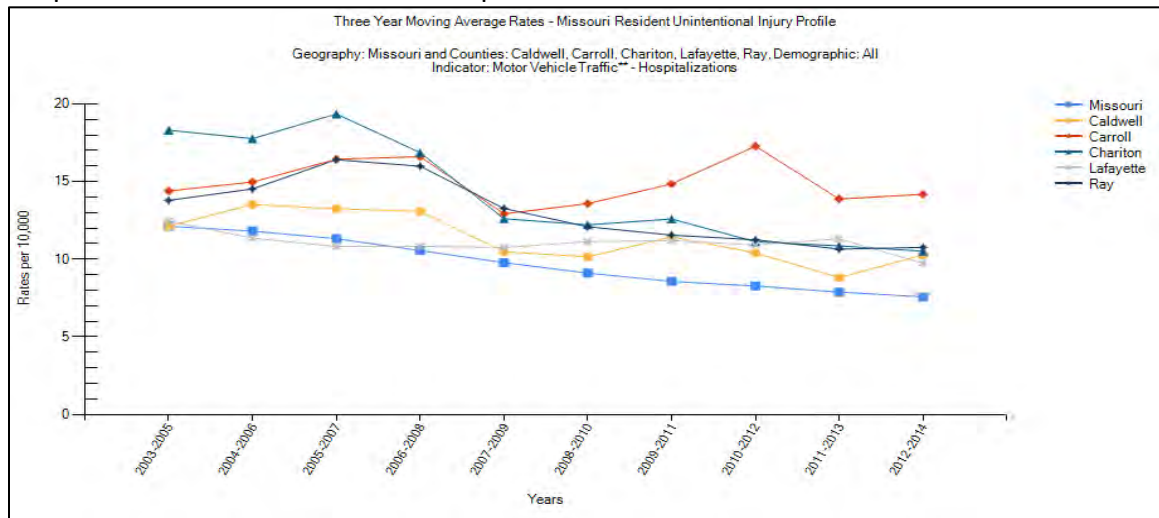
Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — no statistically significant trend
- Chariton — statistically significant decrease
- Lafayette — statistically significant decrease
- Ray — statistically significant decrease

Graph 14 provides the three-year moving average rates for unintentional injury profile for motor vehicle traffic hospitalizations per 10,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties. These rates are benchmarked with the state rate.

Graph 14: Motor Vehicle Traffic Hospitalizations



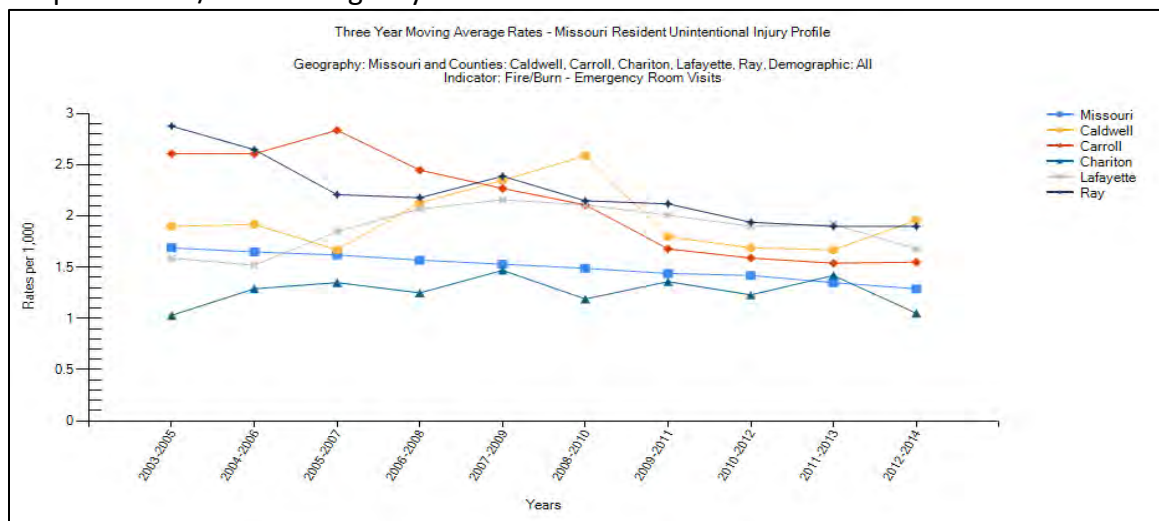
Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — no statistically significant trend
- Chariton — statistically significant decrease
- Lafayette — no statistically significant trend
- Ray — statistically significant decrease

Three-year moving average rates for unintentional injury profile for fire/burn emergency room visits per 1,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties is displayed in Graph 15. These rates are benchmarked with the state rate.

Graph 15: Fire/Burn Emergency Room Visits



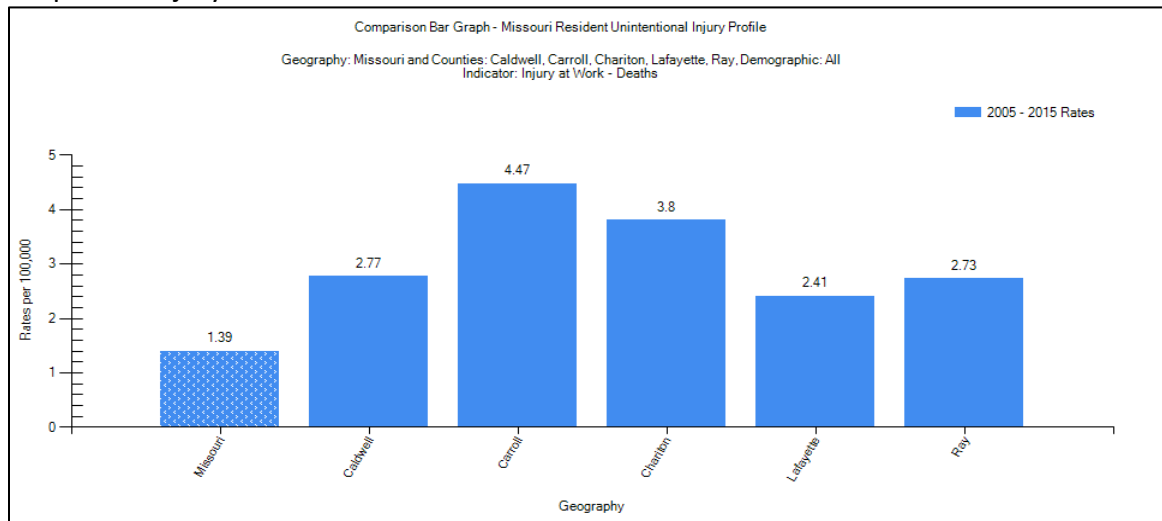
Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — no statistically significant trend
- Carroll — statistically significant decrease
- Chariton — no statistically significant trend
- Lafayette — no statistically significant trend
- Ray — statistically significant decrease

Graph 16 shows cumulative ten-year rates for unintentional injury profile for injury at work deaths per 100,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties. Compared to the other counties and the state, Carroll County had the highest rate at 4.47 per 100,000 population. All the counties in this region had a higher rate than the state across the board from 2005 to 2015.

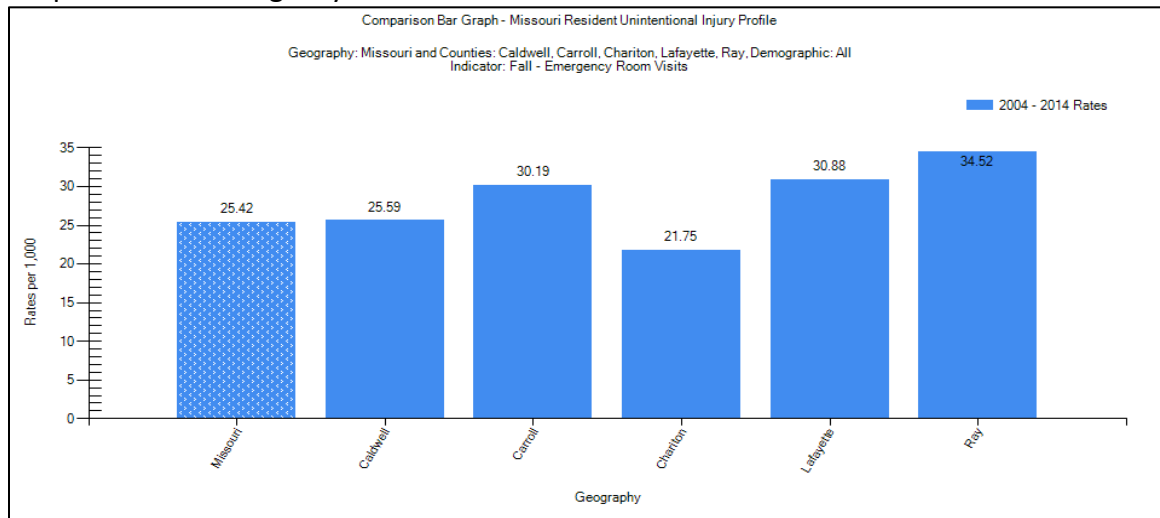
Graph 16: Injury at Work Deaths



Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Review of Graph 17 provides the cumulative ten-year rates for unintentional injury profile for the indicator of falls - emergency room visits per 1,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties. From 2004 to 2014, Carroll County had higher emergency room fall visits than the state at 30.19 compared to the state rate of 25.42 per 1,000 population.

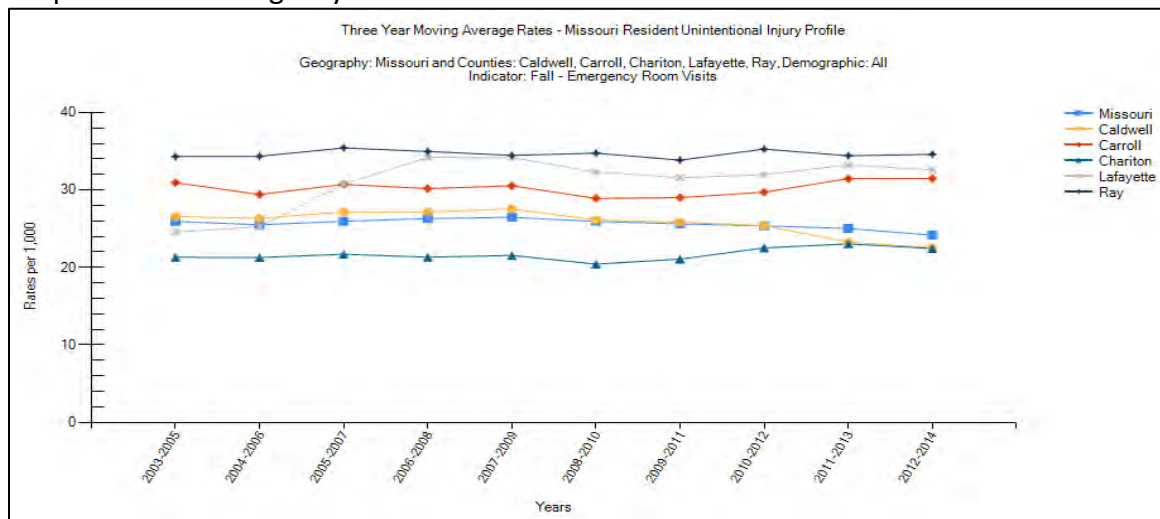
Graph 17: Fall Emergency Room Visits



Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Shown in Graph 18 are three-year moving average rates for unintentional injury profile for falls emergency room visits per 1,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties.

Graph 18: Fall Emergency Room Visits



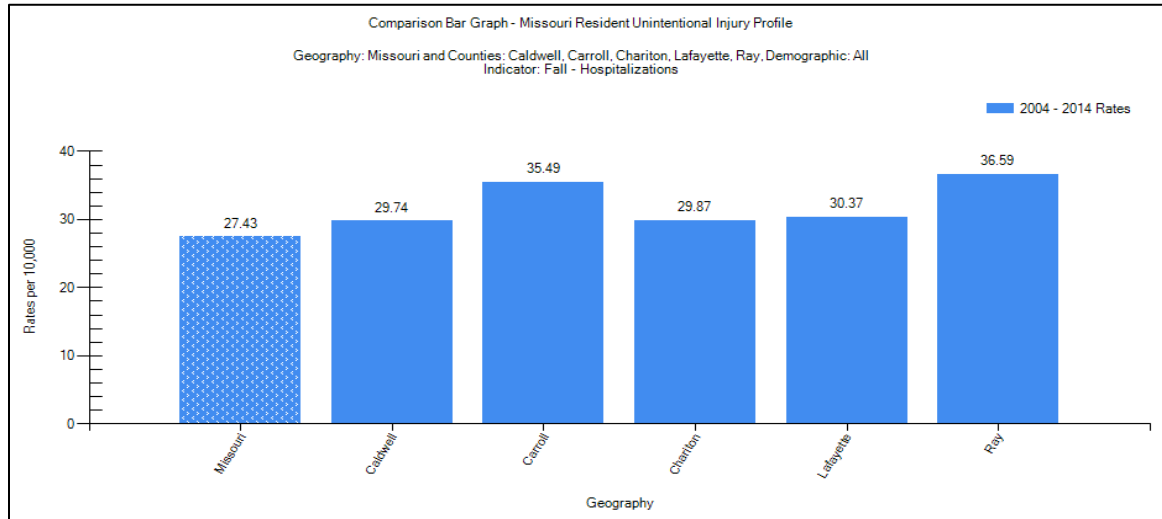
Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — no statistically significant trend
- Chariton — no statistically significant trend
- Lafayette — statistically significant increase
- Ray — no statistically significant trend

Ten-year cumulative rates for unintentional injury profile for falls hospitalization visits per 10,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties are shown in Graph 19. These rates are benchmarked with the state rate. From 2004 to 2014, Carroll County had 35.49 hospitalizations resulting from falls which was second highest from Ray County at 36.59. The state had a lower rate at 27.43 per 10,000. All the other counties in the primary service area had higher rates of falls hospitalization visits per 10,000 population.

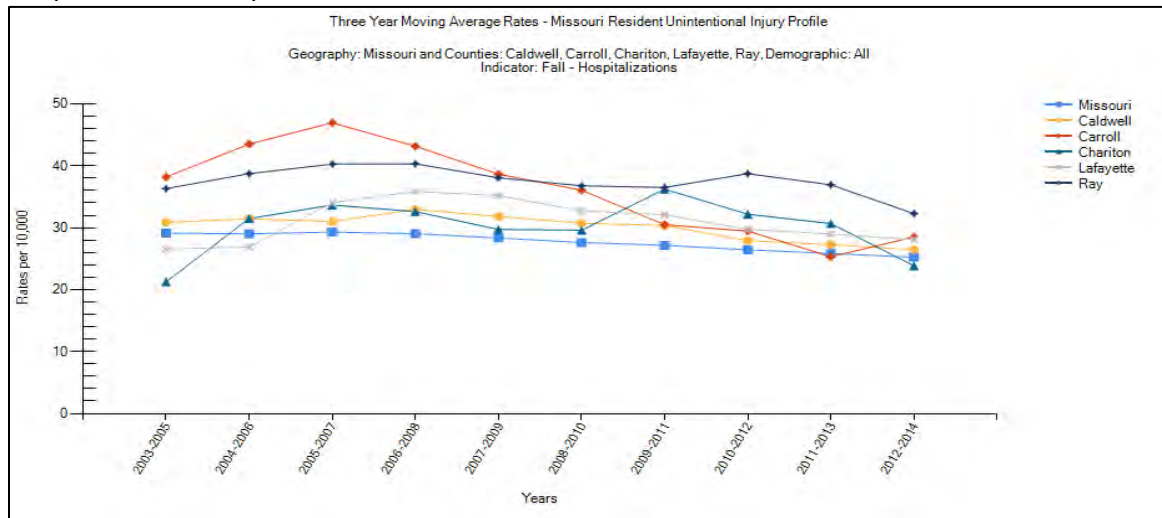
Graph 19: Fall Hospitalizations



Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Graph 20 depicts three-year moving average rates for unintentional injury profile for falls hospitalization visits per 10,000 population for Caldwell, Carroll, Chariton, Ray and Lafayette counties respectively. These rates are benchmarked with the state rate.

Graph 20: Fall Hospitalizations



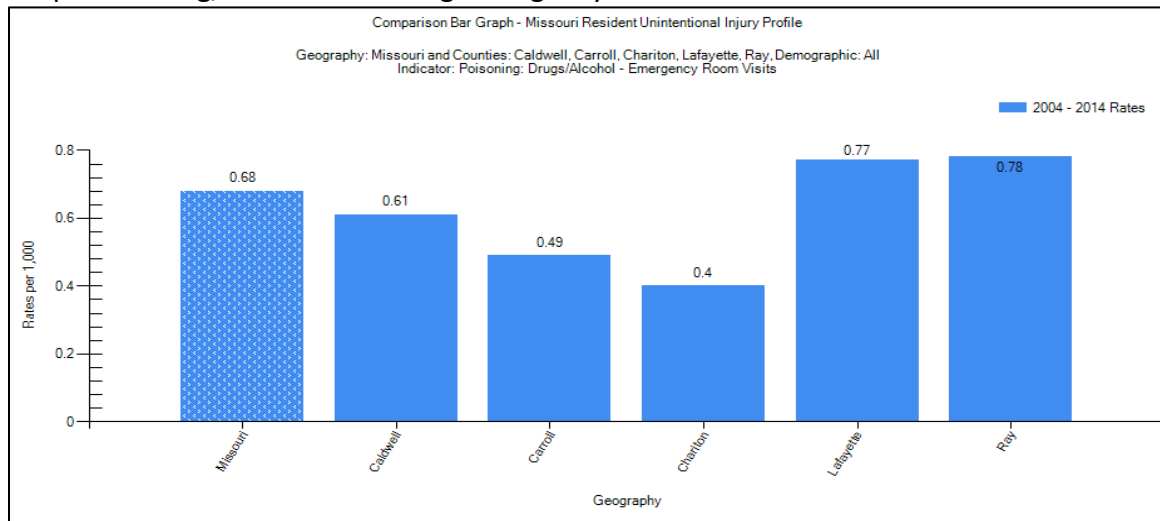
Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Trend Analysis

- Missouri — statistically significant decrease
- Caldwell — statistically significant decrease
- Carroll — statistically significant decrease
- Chariton — no statistically significant trend
- Lafayette — no statistically significant trend
- Ray — no statistically significant trend

As shown in Graph 21, Carroll County had a rate of 0.49 per 1,000 population drug/alcohol related emergency room visits for the 2004 to 2014 time period. This was the second lowest to Chariton County with a rate of 0.4 per 1,000 population. These rates were well below the state rate of 0.68 per 1,000 population.

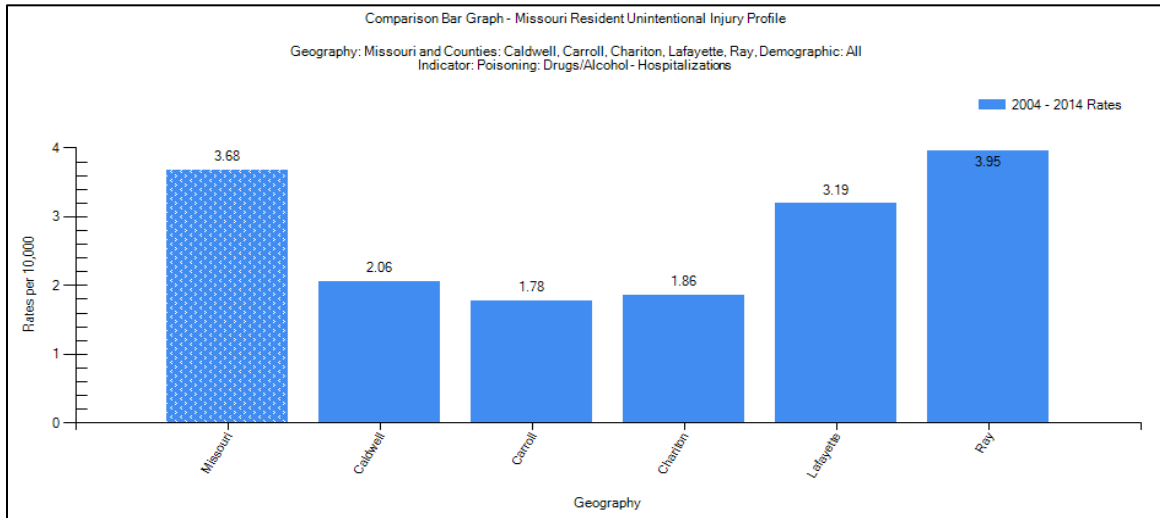
Graph 21: Drug/Alcohol Poisoning Emergency Room Visits



Source: DHSS - MOPHIMS Community Data Profiles – Unintentional Injury

The last unintentional injury profile graph looks at drug/alcohol-related hospitalizations. As shown in Graph 22, Carroll County had the lowest rate of drug/alcohol related hospitalizations at 1.78 per 10,000 population from 2004 to 2014. This rate was significantly lower than the state rate of 3.68 per 10,000 population. Ray County had the highest rate at 3.95 followed by Lafayette County with 3.19 per 10,000 population.

Graph 22: Drug/Alcohol Poisoning Hospitalizations



Source: DHSS - MOPHIMS Community Data Profiles - Unintentional Injury

Maternal and Child Health Indicators

As shown in Table 12, Carroll County had the highest non-hospital live births at 76.92 per 1,000 population compared to the other counties in the primary service area. This rate was higher than the current state rate of 19.65 per 1,000 population. It is also evident that Carroll County had the highest cesarean sections and fetal deaths. They had the lowest VBAC at 1.45 compared to the state rate of 13.66 per 1,000 population. Rates are considered unreliable when based on less than 20 events and are denoted by an asterisk.

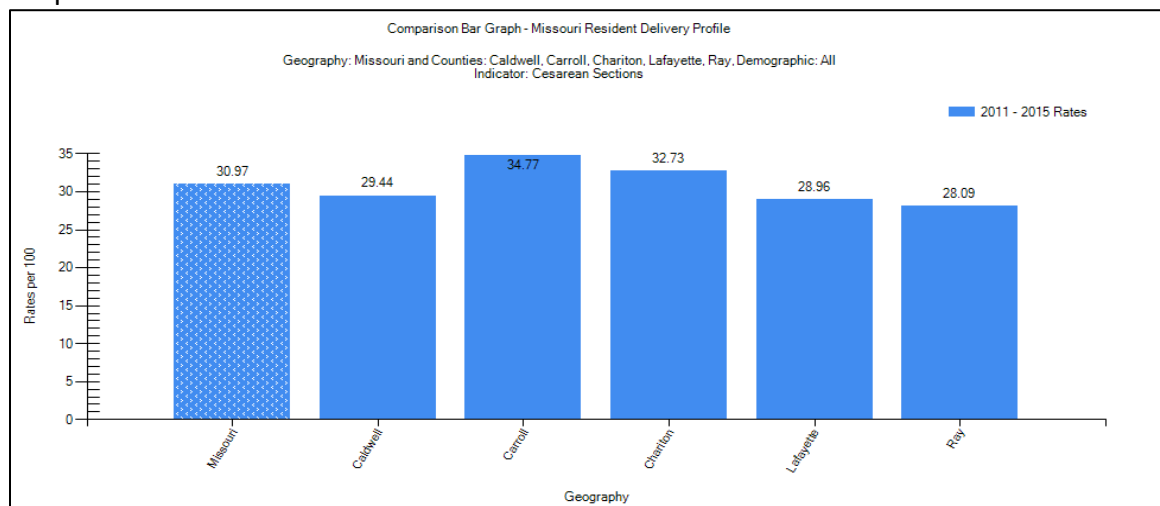
Table 12: Maternal Delivery Indicators

Maternal Delivery Indicators							
	Data Years	Caldwell	Carroll	Chariton	Lafayette	Ray	State Rate
Non-hospital Live Births per 1000	2011 - 2015	23.61*	76.92	40.91*	10.69	9.74*	19.65
High Risk Not Delivered in OB Level II/III	2011 - 2015	23.08*	23.53*	23.08*	4.08*	9.30*	9.51
Cesarean Sections	2011 - 2015	29.44	34.77	32.73	28.96	28.09	30.97
VBAC	2011 - 2015	8.51*	1.45*	11.54	10.28	12.9	13.66
Fetal Deaths per 1000	2005 - 2015	3.43*	9.26*	4.05*	4.35*	5.03*	5.61
Known Pregnancies	2015	100	100	100	100	100	100
Healthy Live Births/(Known Pregnancies)	2015	88.33	86.32	86.17	82.89	84.97	81.79
Healthy Live Births/(Live Births + Fetal Deaths)	2015	91.38	91.11	90	88.07	89.67	89.89
Abortions/Known Pregnancies	2015	3.33*	5.26*	4.26*	5.88	5.24	9.01

Source: DHSS - MOPHIMS Community Data Profiles - Delivery

The comparison for delivery profile for select counties provided in Graph 23 reveals that Carroll County had the highest cesarean section rates at 34.77 per 100. This rate was slightly higher than the current state rate of 30.97 per 100 deliveries according to the data collected from 2011 to 2015. Caldwell, Lafayette and Ray counties all had rates lower than that of the state.

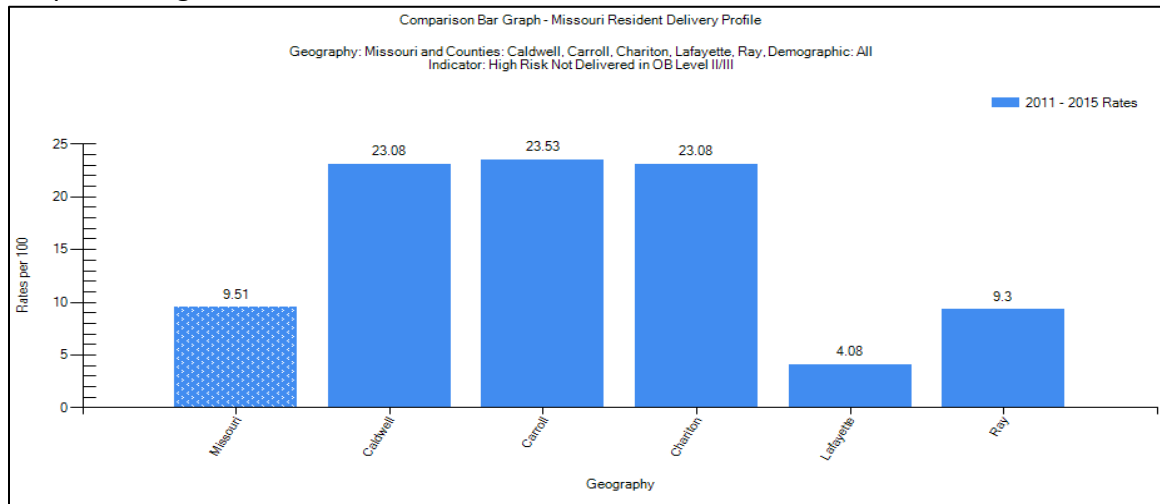
Graph 23: Cesarean Sections



Source: DHSS - MOPHIMS Community Data Profiles - Delivery

As shown in Graph 24 depicting data captured from 2011 to 2015, Carroll County had a substantially higher rate of high risk not delivered in OB Level II/III at 23.53 per 100 compared to the state rate of 9.51. When reviewed against the other counties in the comparison area, both Caldwell and Chariton counties had a lower rate than Carroll County at 23.08 per 100 population. Both Lafayette and Ray counties had rates lower than the state average at 4.08 and 9.3 per 100 population, respectively.

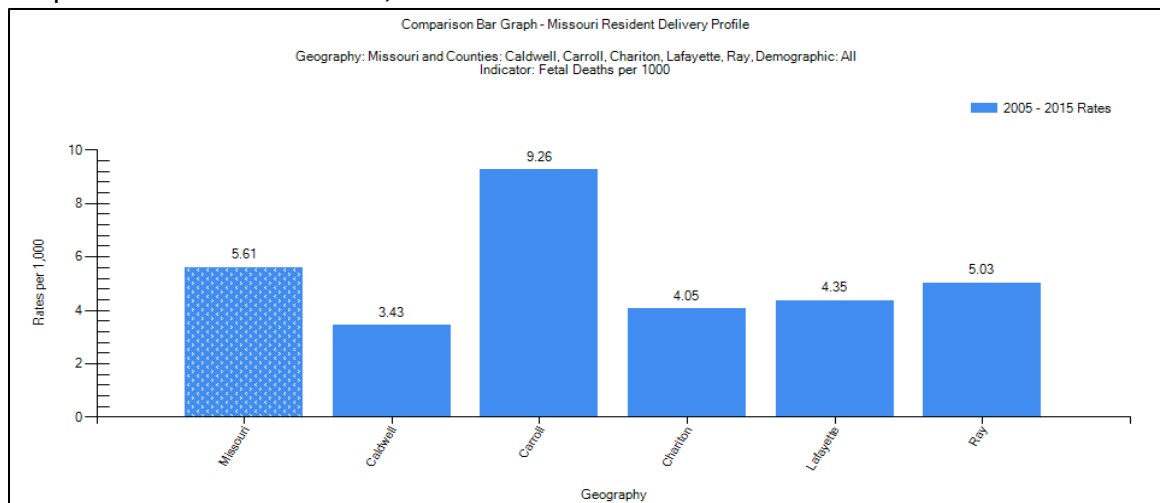
Graph 24: High Risk Not Delivered in OB Level II/III



Source: DHSS - MOPHIMS Community Data Profiles - Delivery

Graph 25 shows the delivery profile for fetal deaths for select counties adjoining Carroll County as well as the state. Data reveals that Carroll County had the highest fetal deaths at 9.26 compared to the state at 5.61 per 1,000 population. All the other counties in the primary service area had rates lower than the state rate.

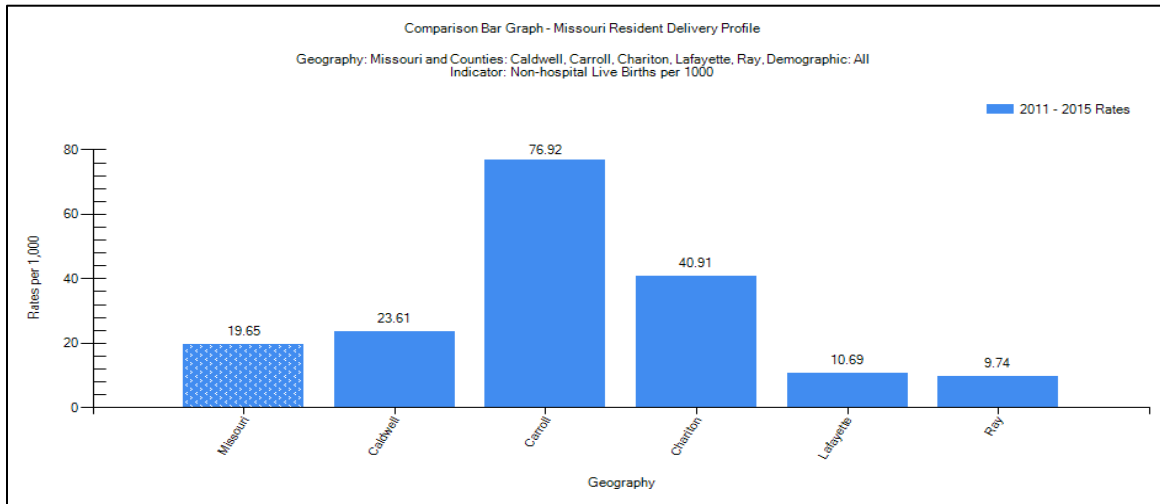
Graph 25: Fetal Deaths Per 1,000



Source: DHSS - MOPHIMS Community Data Profiles - Delivery

Non-hospital live births per 1,000 is reviewed in Graph 26. Per the data, Carroll County had the highest rate at 76.92 per 1,000 population followed by Chariton and Caldwell counties at 40.91 and 23.61, respectively. The state rate was 19.65 per 1,000 population per the data collected from 2011 to 2015. Both Lafayette and Ray counties had rates lower than the state at 10.69 and 9.74 per 1,000, respectively.

Graph 26: Non-Hospital Live Births Per 1,000



Source: DHSS -MOPHIMS Community Data Profiles - Delivery

Women's Health

Table 13, which depicts data gathered from 2005 to 2015, shows heart disease was the number one cause of death among women in Carroll County and the adjoining counties in the region; statewide data showed the same trend. Stroke/other cerebrovascular, chronic lower respiratory and lung cancer disease deaths also top the list for the leading causes of death for women in Carroll County. All death rates are per 100,000 population and age-adjusted to the U.S. 2000 standard population.

Table 13: Women's Health Profile — Deaths

WOMENS HEALTH PROFILE - DEATHS							
	Data Years	Caldwell	Carroll	Chariton	Lafayette	Ray	State Rate
Heart Disease - Deaths	2005 - 2015	176.41	266.73	164.97	194.95	189.57	166.8
Lung Cancer - Deaths	2005 - 2015	47.22	44.19	39.84	48.4	57.4	44.95
Breast Cancer - Deaths	2005 - 2015	27.2	19.03*	32.76	24.28	25.19	23.53
Cervical Cancer- Deaths	2005 - 2015	4.96*	0	2.85*	2.06	3.32*	2.59
Stroke/Other Cerebrovascular Disease - Deaths	2005 - 2015	35.52	44.06	35.58	45.97	27.73	44.37
Chronic Lower Respiratory Disease- Deaths	2005 - 2015	52.13	37.89	30.14	44.55	50.48	46.21
Diabetes Mellitus- Deaths	2005 - 2015	25.86*	11.21*	17.83*	16.17	13.16	17.8
Pneumonia and Influenza - Deaths	2005 - 2015	12.41*	39.5	15.29*	12.82	33.07	17.1

Source: DHSS - MOPHIMS Community Data Profiles - Women Health

As shown on Table 14, heart disease hospitalization among women in Carroll County was the highest, followed by pneumonia and influenza, chronic lower respiratory, musculoskeletal-osteoarthritis and stroke/other cerebrovascular diseases. This trend was very evident compared with the state and adjoining counties for the most part. On the same note, the conditions with high hospitalizations are aligned with the death profile shown on Table 13. Hospitalization rates are reported per 10,000 population and age-adjusted to the U.S. 2000 standard population.

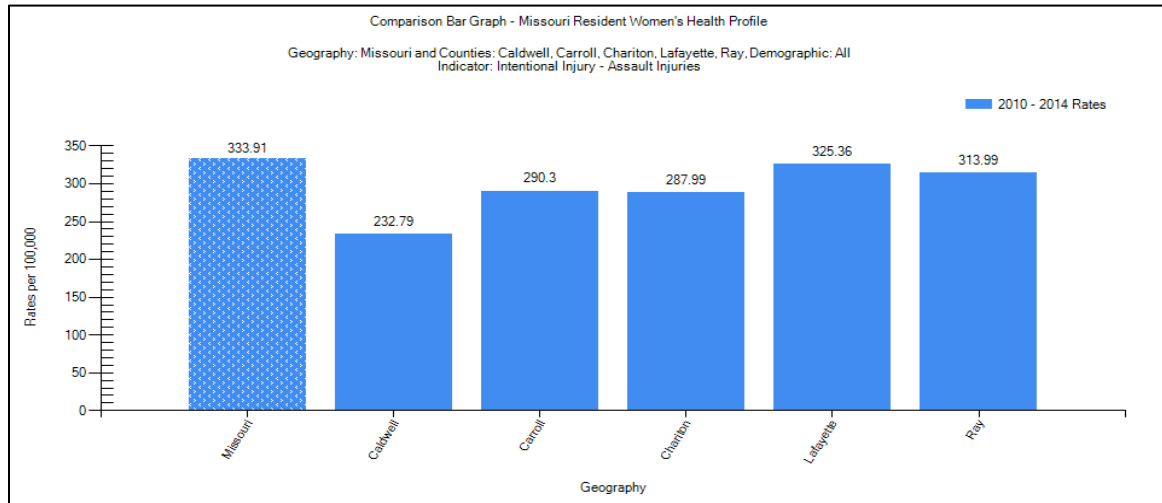
Table 14: Women's Health Profile — Hospitalizations

WOMENS HEALTH PROFILE - HOSPITALIZATIONS							
	Data Years	Caldwell	Carroll	Chariton	Lafayette	Ray	State Rate
Heart Disease - Hospitalizations	2004- 2014	104.61	123.36	78.79	95.48	120.51	98.74
Stroke/Other Cerebrovascular Disease - Hospitalizations	2004- 2014	22.85	28.22	20.95	28.09	27	26.42
Chronic Lower Respiratory Disease- Hospitalizations	2004- 2014	24.63	50.19	23.19	48.14	41.53	23.01
Musculoskeletal - Hip Fracture Hospitalizations	2004- 2014	9.52	8.23	11.39	10.49	11.21	10.97
Musculoskeletal - Osteoarthritis Hospitalizations	2004- 2014	44.47	46.94	29.49	43.5	35.75	34.78
Diabetes Mellitus - Hospitalizations	2004- 2014	6.03*	17.69	12.6	16.42	14.6	17.05
Pneumonia and Influenza - Hospitalization	2004- 2014	44.55	60.35	35.49	42.22	48.32	37.72

Source: DHSS - MOPHIMS Community Data Profiles - Women Health

Per the data in Graph 27, Carroll County had a lower rate of intentional assault injuries among women at 290.3 injuries per 100,000 population compared to the state rate of 333.91 per 100,000 population. All the counties had rates lower than the current state rate in general.

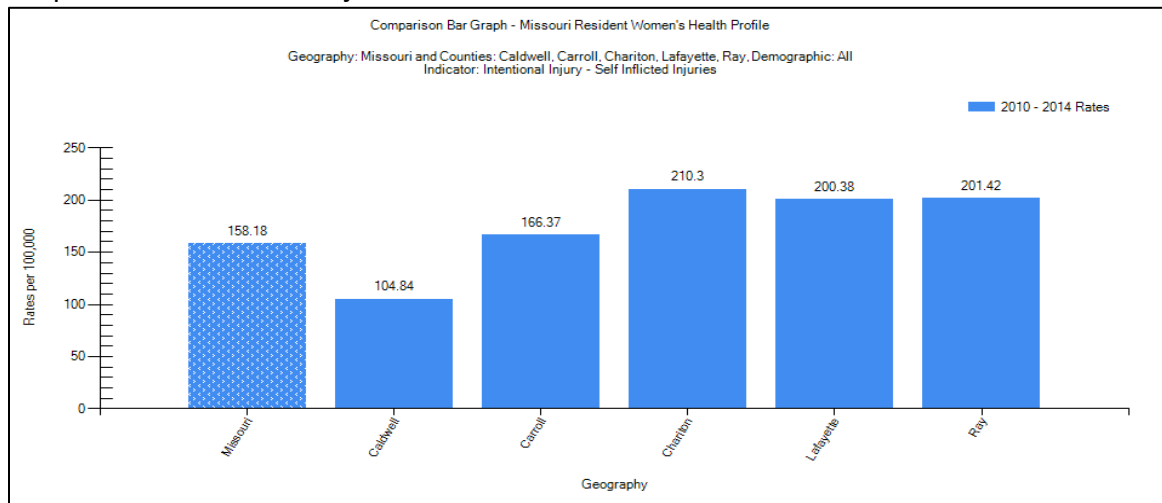
Graph 27: Assault Injuries



Source: DHSS - MOPHIMS Community Data Profiles - Women Health

Graph 28 demonstrates that self-inflicted injuries among women in Carroll County was higher at 166.37 per 100,000 population than the state rate of 158.18. Caldwell County had the lowest self-inflicted rate at 104.84 per 100,000 population. All the other counties in the primary service region had rates higher than the current state rate.

Graph 28: Self-Inflicted Injuries



Source: DHSS - MOPHIMS Community Data Profiles - Women Health

Maternal Health

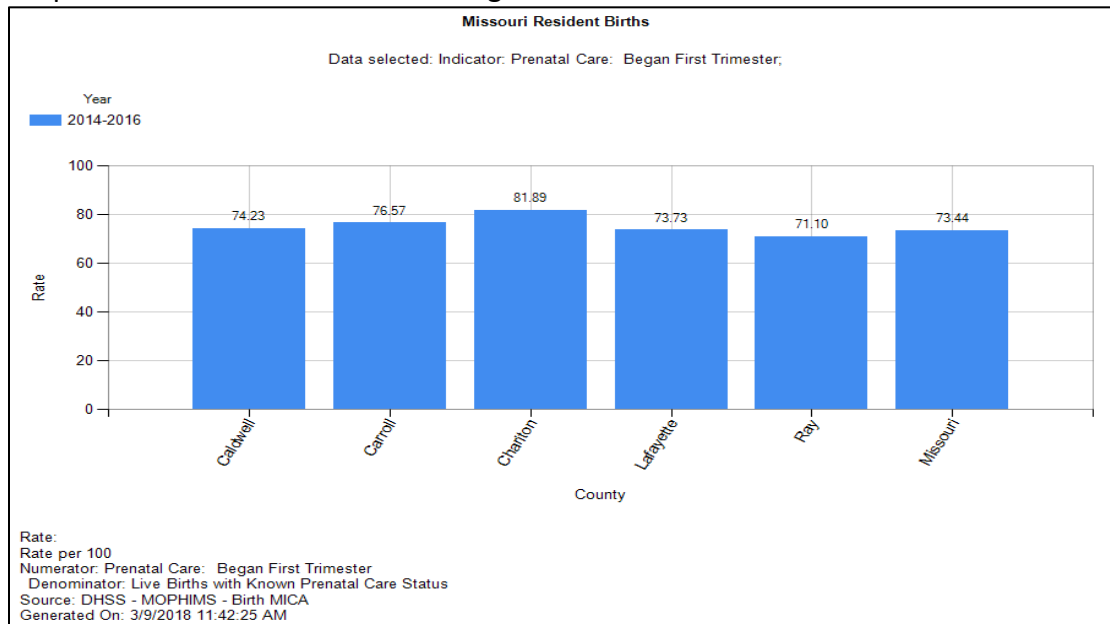
According to the data published by the Missouri Department of Health and Senior Services, Public Health Information Management System database, for the time period 2012 to 2015, the age group identified to have had the highest pregnancy rate was between the ages of 20-34 for the counties and the state. Carroll County had a slightly higher pregnancy rate of 132.76 compared to the state rate of 110.34 per 1,000 population. Conversely, Carroll County had the lowest pregnancy rate for the age group 15-19 at 21.70 per 1,000 population compared to the state and counties included in the analysis.

Table 15: 2015 Pregnancy Rates; Crude Rate Per 1,000

Title: Missouri Resident Fertility and Pregnancy Rates												
Data selected in addition to rows and columns below:												
Indicator: Pregnancy Rate; Multi-Year Groups: 2012-2015;												
County:	Caldwell	Caldwell	Carroll	Carroll	Chariton	Chariton	Lafayette	Lafayette	Ray	Ray	Missouri	Missouri
Statistics:	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Age												
10 - 14	0	0.00	1	0.83 *	0	0.00	3	0.70 *	1	0.33 *	306	0.40
15 - 19	33	27.66	27	21.70	34	40.38	145	35.45	116	39.34	26,089	33.64
20 - 34	341	126.91	372	132.76	310	137.53	1,300	119.63	862	118.86	270,849	110.34
35 - 44	29	14.49	33	15.22	34	21.85	142	18.22	85	15.37	38,156	25.91
45 - 64	1	0.19 *	0	0.00	1	0.24 *	0	0.00	0	0.00	383	0.12
Crude Rate per 1000												
Rate: Numerator: Pregnancy Rate												
Denominator: Age-Specific Pregnancy Rate is the number of Live Births born to mothers of a given age per 1,000 females of that age group for a given year.												
Source: DHSS - MOPHIMS - Fertility and Pregnancy Rate MICA												

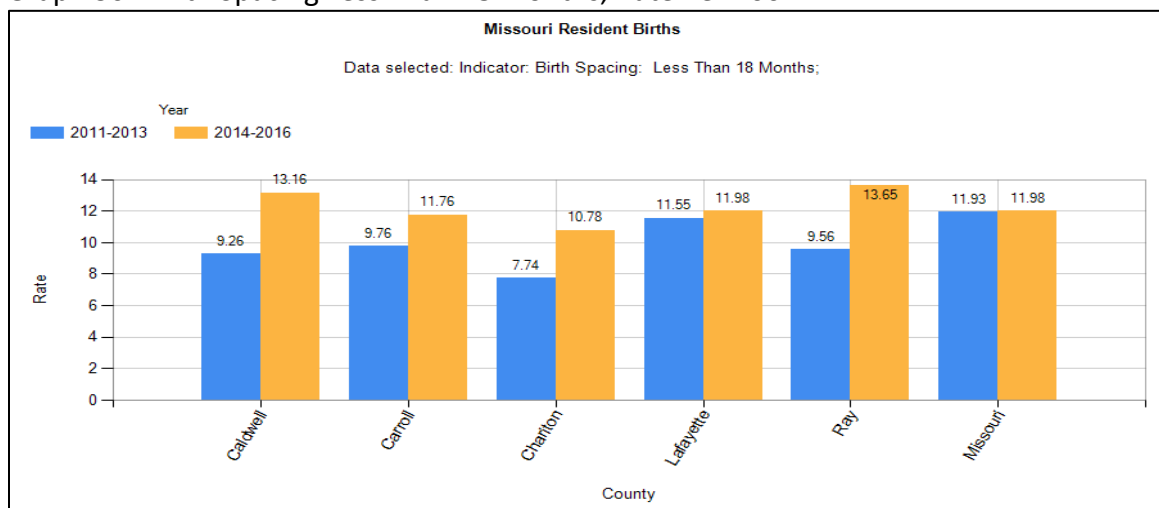
The rate and count of prenatal care that began during the first trimester in select counties neighboring Carroll County based on the 2014 to 2016 MICA birth profiles data is provided in Graph 29. Carroll County had a higher rate at 76.57 per 100 population with known prenatal status compared to the state rate of 73.44. Chariton County had the highest rate at 81.89 per 100 population. Only Ray County had a rate lower than the current state rate.

Graph 29: Prenatal Care Commencing in First Trimester



The graph below shows that the birth spacing less than 18 months for all the counties and the state has increased when data collected from 2011 to 2013 is compared against 2014 to 2016 data. Carroll County’s rate of birth spacing less than 18 months from 2014 to 2016 is slightly lower when compared to the state. Only Ray and Caldwell counties have rates higher than those of the state.

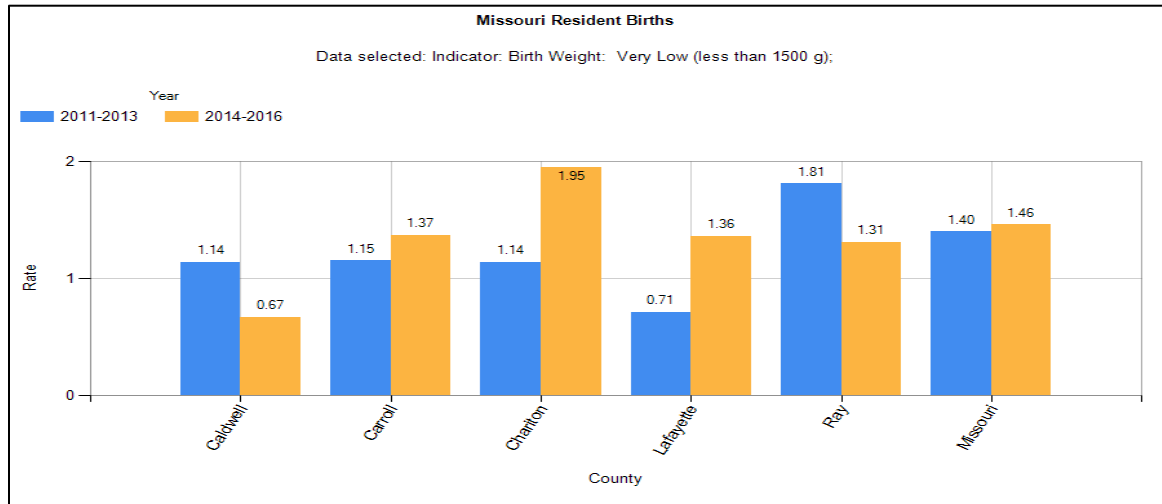
Graph 30: Birth Spacing Less Than 18 Months, Rate Per 100



Source: DHSS - MOPHIMS – Birth MICA
Rate per 100

Data reflected in Graph 31 shows that for the time period 2014 to 2016, Carroll County had a slightly lower rate of cases with very low birth weight of less than 1500g when compared to the state. Chariton County saw the highest increase in its rate between the two time periods analyzed in the data. With the exception of Ray County, all counties and the state saw an increase in the rate of cases of very low birth weight of less than 1500g.

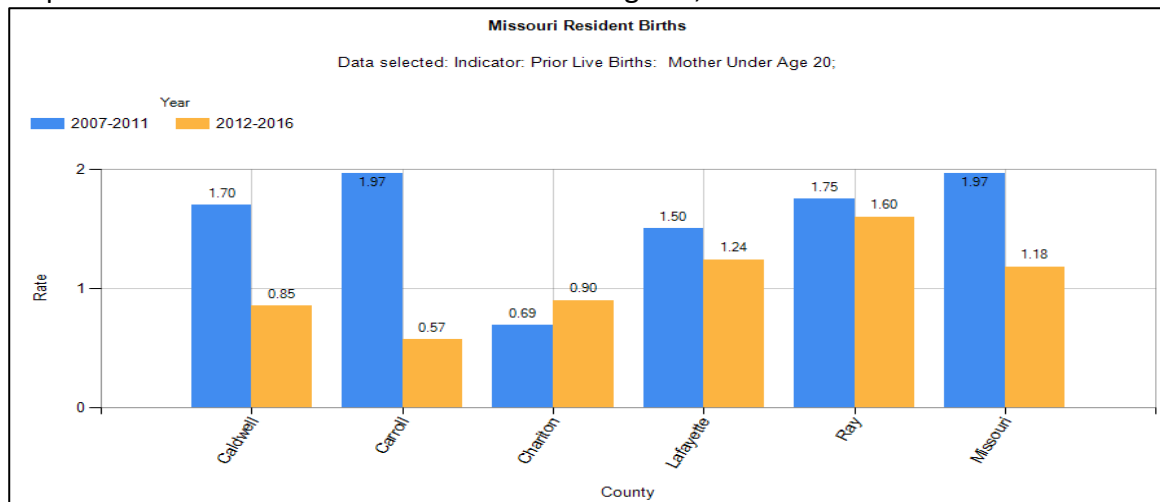
Graph 31: Low Birth Weight Rate Per 100



Source: DHSS - MOPHIMS – Birth MICA
Rate per 100

Prior live births for mothers under the age of 20 for Carroll and adjoining counties is depicted in Graph 32. Carroll County’s rate at 0.57 per 100 population was lower than the current state rate of 1.18 per 100 population. Only Chariton County experienced an increase during the two reporting time periods from 0.69 to 0.90 per 100 population.

Graph 32: Prior Live Births for Mothers Under Age 20, Rate Per 100



Source: DHSS - MOPHIMS - Birth MICA
Rate per 100

Child Health

Table 16 demonstrates the number of children in families receiving cash assistance in Carroll County decreased from 96 in 2011 to 68 in 2015 according to the data derived from the Kidscount database. The same trend is evident for all the other counties and the state.

Table 16: Children in Families Receiving Cash Assistance

Children In Families Receiving Cash Assistance (Number & Percent)						
Location	Data Type	2011	2012	2013	2014	2015
Missouri	Number	68,593	65,857	59,806	51,856	47,116
	Percent	4.8%	4.7%	4.3%	3.7%	3.4%
Caldwell	Number	90	84	62	42	51
	Percent	3.9%	3.8%	2.8%	1.9%	2.4%
Carroll	Number	96	105	101	97	68
	Percent	4.4%	4.9%	4.8%	4.7%	3.4%
Chariton	Number	53	52	47	46	40
	Percent	3.1%	3.0%	2.8%	2.7%	2.3%
Lafayette	Number	341	323	274	204	173
	Percent	4.3%	4.1%	3.6%	2.7%	2.3%
Ray	Number	265	274	269	166	137
	Percent	4.7%	4.9%	4.9%	3.1%	2.6%

Sources: Missouri Department of Social Services; U.S. Census Bureau; Missouri Office of Administration, Division of Budget and Planning

According to Table 17, the number of children in families receiving SNAP (Food Stamps) decreased in Carroll County from 822 in 2011 to 602 in 2015. This trend is true for other counties and the state.

Table 17: Children in Families Receiving Food Stamps

Children In Families Receiving SNAP (Food Stamps) (Number & Percent)						
Location	Data Type	2011	2012	2013	2014	2015
Missouri	Number	534,534	548,542	515,576	483,741	475,684
	Percent	37.8%	39.0%	36.9%	34.7%	34.2%
Caldwell	Number	755	788	633	592	602
	Percent	32.8%	35.7%	28.9%	27.4%	27.9%
Carroll	Number	822	811	737	672	602
	Percent	37.3%	38.2%	35.2%	32.5%	29.7%
Chariton	Number	499	551	533	504	483
	Percent	28.9%	32.2%	31.7%	29.3%	27.5%
Lafayette	Number	2,864	3,028	2,653	2,352	2,322
	Percent	35.7%	38.4%	34.5%	31.0%	30.6%
Ray	Number	1,778	1,926	1,789	1,628	1,493
	Percent	31.3%	34.6%	32.5%	30.4%	28.7%

Sources: Missouri Department of Social Services; U.S. Census Bureau; Missouri Office of Administration, Division of Budget and Planning

As depicted in Table 18, the number of children in poverty has decreased from 499 in 2011 to 449 in 2015 in Carroll County. The same trend is evident for all the other counties and the state. This analysis is based on the number of related children under age 18 who live in families with incomes below the U.S. poverty threshold, as defined by the U.S. Census Bureau.

Table 18: Children in Poverty

Children In Poverty (Number & Percent)						
Location	Data Type	2011	2012	2013	2014	2015
Missouri	Number	308,390	310,382	303,923	289,287	277,687
	Percent	22.3%	22.6%	22.2%	21.3%	20.4%
Caldwell	Number	462	471	480	466	417
	Percent	20.4%	21.9%	22.3%	22.0%	19.7%
Carroll	Number	499	505	528	489	449
	Percent	23.3%	24.4%	26.2%	24.4%	22.7%
Chariton	Number	345	341	370	345	325
	Percent	20.2%	20.3%	22.4%	20.3%	18.8%
Lafayette	Number	1,473	1,598	1,450	1,487	1,329
	Percent	18.9%	21.0%	19.3%	20.1%	18.0%
Ray	Number	1,006	923	1,123	1,047	822
	Percent	17.9%	16.9%	20.8%	19.9%	16.1%

Source: U.S. Census Bureau

Children from households with incomes less than 130 percent of poverty are eligible for free lunches; those from households below 185 percent of poverty are eligible for reduced price lunches. Table 19 shows the number of students who were enrolled in the free or reduced lunch programs. The number of students in Carroll County decreased from 798 in 2012 to 673 in 2016. While Ray and Caldwell also saw a decrease, Chariton and Lafayette counties, as well as the state, saw an increase from 2012 to 2016.

Table 19: Students Enrolled in Free/Reduced Price Lunch Programs

Students Enrolled In Free/Reduced Price Lunch (Number & Percent)						
Location	Data Type	2012	2013	2014	2015	2016
Missouri	Number	427,246	431,759	433,804	446,727	446,780
	Percent	49.4%	49.8%	50.0%	51.5%	51.5%
Caldwell	Number	825	807	803	779	795
	Percent	53.4%	52.8%	53.0%	52.0%	52.0%
Carroll	Number	798	775	732	706	673
	Percent	54.1%	53.6%	51.7%	50.9%	48.7%
Chariton	Number	495	505	515	512	506
	Percent	50.6%	51.5%	52.5%	50.9%	50.4%
Lafayette	Number	2,241	2,263	2,394	2,340	2,317
	Percent	43.8%	45.0%	47.4%	46.4%	46.3%
Ray	Number	1,317	1,332	1,365	1,256	1,224
	Percent	39.3%	40.1%	41.1%	39.2%	38.7%

Source: Missouri Department of Elementary and Secondary Education

A child under 18 years of age is defined as being food insecure if he or she lives in a household having problems meeting basic food needs, as measured by the Core Food Security Module of the Census Bureau's Current Population Survey. Table 20 demonstrates that Carroll County saw a decrease in the number of children reported to have food insecurity from 530 in 2010 to 450 in 2014. This has been the same trend for the other comparison counties and the state.

Table 20: Food Insecurity for Children

Food Insecurity For Children (Number & Percent)						
Location	Data Type	2010	2011	2012	2013	2014
Missouri	Number	316,450	312,440	308,110	304,810	289,210
	Percent	22.7%	22.5%	22.0%	21.6%	20.8%
Caldwell	Number	600	560	510	510	470
	Percent	24.8%	23.7%	21.9%	22.2%	20.8%
Carroll	Number	530	450	440	440	450
	Percent	23.5%	20.6%	20.2%	20.1%	20.7%
Chariton	Number	390	360	350	360	380
	Percent	22.0%	20.6%	20.3%	21.0%	21.9%
Lafayette	Number	1,810	1,630	1,530	1,520	1,490
	Percent	22.4%	20.0%	18.9%	19.0%	18.9%
Ray	Number	1,340	1,190	1,200	1,220	1,260
	Percent	22.3%	20.0%	20.5%	21.4%	22.5%

Source: Feeding America, Map the Meal Gap 2016

Table 21 demonstrates the number of children who are eligible for participation in MO HealthNet for Kids, Missouri's health insurance program for children in low-income families, either through managed care or traditional fee-for-service providers. Carroll County saw a decrease from 877 in 2011 to 765 in 2015. All the other counties of comparison and the state have seen an increase during this time period.

Table 21: Children Eligible for MO HealthNet for Kids

Children Eligible For Mo Healthnet For Kids (Number & Percent)						
Location	Data Type	2011	2012	2013	2014	2015
Missouri	Number	529,029	524,953	514,569	502,158	584,285
	Percent	37.4%	37.4%	36.8%	36.0%	42.0%
Caldwell	Number	730	725	623	743	1,069
	Percent	31.7%	32.8%	28.5%	34.4%	49.5%
Carroll	Number	877	777	724	665	765
	Percent	39.8%	36.6%	34.6%	32.2%	37.7%
Chariton	Number	638	618	624	610	727
	Percent	37.0%	36.1%	37.1%	35.4%	41.4%
Lafayette	Number	2,902	2,851	2,561	2,474	2,915
	Percent	36.2%	36.2%	33.3%	32.6%	38.4%
Ray	Number	1,739	1,769	1,746	1,629	1,920
	Percent	30.6%	31.8%	31.7%	30.4%	36.8%

Sources: Missouri Department of Social Services; U.S. Census Bureau; Missouri Office of Administration, Division of Budget and Planning

Table 22 shows the number of outpatient hospitalizations for mental/behavioral conditions (that are not substance abuse-related conditions) for children and youth ages 1-19, per 10,000 of that age group. Conditions include affective disorders, anxiety disorders, personality disorders, schizophrenia and related conditions, autism spectrum disorders and adjustment-related disorders. From 2010 to 2014, Carroll County has a lower rate of mental/behavioral hospitalizations compared to the state. Both Lafayette and Ray counties are trending above the state at 112.6 and 97.5 per 10,000 population, respectively.

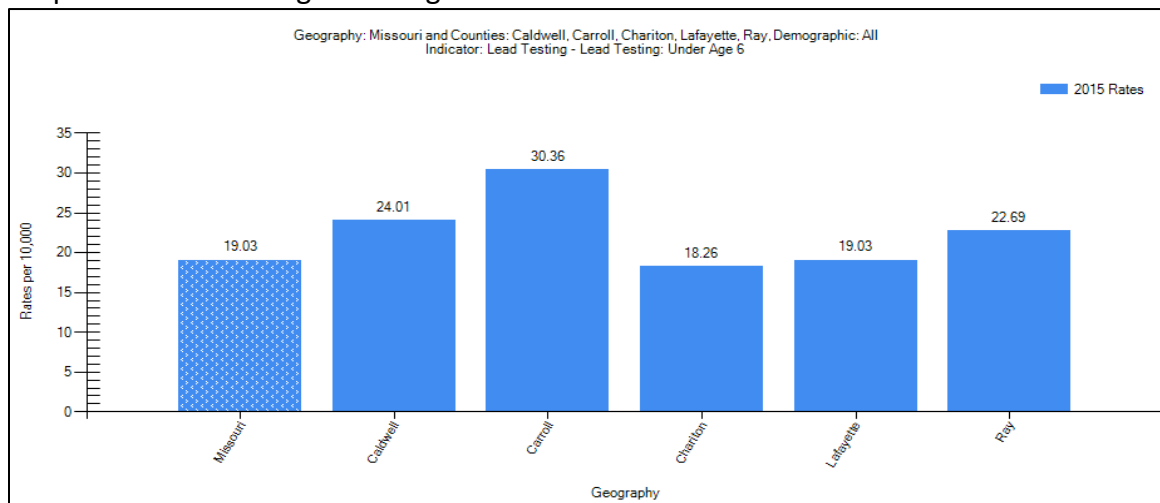
Table 22: Mental/Behavioral Hospitalizations, Ages 1-19

Mental/Behavioral Hospitalizations (Not Substance Abuse), Ages 1-19, Per 10,000 (Rate)						
Location	Data Type	2006 - 2010	2007 - 2011	2008 - 2012	2009 - 2013	2010 - 2014
Missouri	Rate	83.1	87.5	90.6	93.8	97.2
Caldwell	Rate	65.7	68.0	65.4	57.0	50.2
Carroll	Rate	102.5	86.2	72.4	78.0	80.0
Chariton	Rate	55.8	45.9	37.8	45.7	52.3
Lafayette	Rate	103.0	107.6	109.5	116.2	112.6
Ray	Rate	90.6	86.7	90.4	100.3	97.5

Sources: DHSS; U.S. Census Bureau; Missouri Office of Administration, Division of Budget and Planning

The graph below demonstrates the current lead testing rate of 30.36 for children under age six in Carroll County is significantly higher than the current state rate of 19.03 per 10,000 population. Both Caldwell and Ray counties have rates higher than those of the state while only Chariton has a current rate lower than the state at 18.26 per 10,000 population.

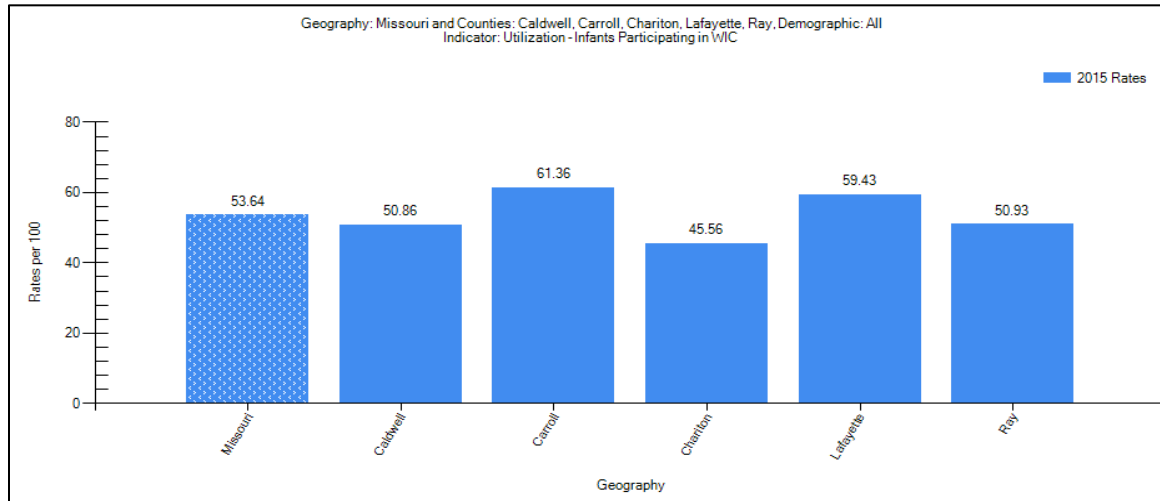
Graph 33: Lead Testing Under Age Six



Source: DHSS - MOPHIMS Community Data Profiles - Child Health

According to Graph 34, Carroll County had the highest number of infants participating in the WIC program in 2015 when compared to other counties and the state.

Graph 34: Infants Participating in WIC



Source: DHSS - MOPHIMS Community Data Profiles - Infant Health

Graph 35 shows that from 2005 to 2015, Carroll County had four cases of neonatal deaths resulting in a rate of 3.40 per 1,000 which was lower than the state rate of 4.39 per 1,000 population. All county rates were below 20 events and should be interpreted with caution as the rates would be considered unstable. Only Lafayette had over 20 cases and a rate slightly higher than the current state rate.

Graph 35: Neonatal Deaths Per 1,000



Source: DHSS - MOPHIMS Community Data Profiles - Infant Health

Perinatal deaths from 2005 to 2015 are depicted in Graph 36. Carroll County had 15 cases during this time period, resulting in a rate of 12.74 per 1,000 which is slightly higher than the state rate of 10.04. With the exception of Lafayette and Ray, all counties had less than 20 events and should therefore be interpreted with caution as the rates would be considered unstable.

Graph 36: Perinatal Deaths Per 1,000



Source: DHSS - MOPHIMS Community Data Profiles - Infant Health

Per Graph 37, Carroll and Caldwell counties had seven cases of infant deaths per 1,000 from 2005 to 2015. Both Lafayette and Ray counties had rates above the current state rate. All counties with less than 20 events per the table should be interpreted with caution as the rates would be considered unstable.

Graph 37: Infant Deaths Per 1,000



Source: DHSS - MOPHIMS Community Data Profiles - Infant Health

Adolescent Health

According to the 2016 Missouri student survey data collected by the Missouri Institute of Mental Health shown in Table 23, Carroll County had the highest percent of students who reported they used alcohol within the last 30 days compared to the other counties in the primary service areas and the state. Compared to the state, Carroll County had a lower number of students who reported to have used electronic cigarette, RX not prescribed to them by a doctor, marijuana, hookahs or water pipes, OTC drugs for non-medical reasons and inhalants. Most of the rates for Carroll County were comparable to those of the comparison counties and the state in general. Both Ray and Caldwell counties had a significantly higher percent of students who reported to have used marijuana and hookahs or water pipes compared to the other counties and the state.

Table 23: Substance Use

2016 Missouri Student Survey						
Substance used with the past 30 days (N=1201)						
	Caldwell	Carroll	Chariton	Lafayette	Ray	Missouri
Used alcohol	16.9%	20.9%	**	6.3%	16.0%	14.2%
Electronic cigarette	10.3%	6.3%	**	4.8%	12.4%	10.6%
Used Rx not prescribed for you by a doctor	8%	7.5%	**	7.9%	8.9%	10%
Used tobacco (cigarettes or chew)	16.9%	13.8%	**	4.4%	16.2%	9.9%
Used marijuana	9.6%	1.9%	**	1.0%	6.9%	7%
Used hookahs or water pipes	5.8%	1.9%	**	1.2%	7.6%	3.4%
Used "OTC" drugs for non-medical reasons	2.2%	0.6%	**	1%	1.8%	2.2%
Used inhalants	2.9%	0%	**	2%	1.5%	1.1%
Used synthetic drugs	1.5%	0.6%	**	0%	1%	0.3%

Source: Missouri Institute of Mental Health, 2016 Missouri Student Surveys

** - 2016 Missouri Student Survey data are not available for this county due to small sample size.

As shown in Table 24, Carroll County had rates lower than those of the state for all the measures on the 2016 student survey on depression within the past month, such as was very sad, was grouchy or irritable, or in a bad mood, felt hopeless about the future, felt like not eating or eating more than usual, felt like sleeping a lot more or a lot less than usual, and lastly had difficulty concentrating on school work.

Table 24: Depression

2016 Missouri Student Survey Depression: Past Month (N=1201)						
	Caldwell	Carroll	Chariton	Lafayette	Ray	Missouri
Was very sad	20.6%	15.7%	**	10.7%	21.8%	22.7%
Was grouchy or irritable, or in a bad mood	34.6%	25.2%	**	15.0%	32.7%	33.6%
Felt hopeless about the future	12.5%	6.9%	**	7.6%	9.9%	13.5%
Felt like not eating or eating more than usual	21.2%	18.2%	**	9.2%	19.6%	21.7%
Felt like sleeping a lot more or a lot less than usual	22.2%	17%	**	11.1%	21.1%	24.8%
Had difficulty concentrating on school work	27.7%	23.1%	**	17.6%	28.9%	29.6%

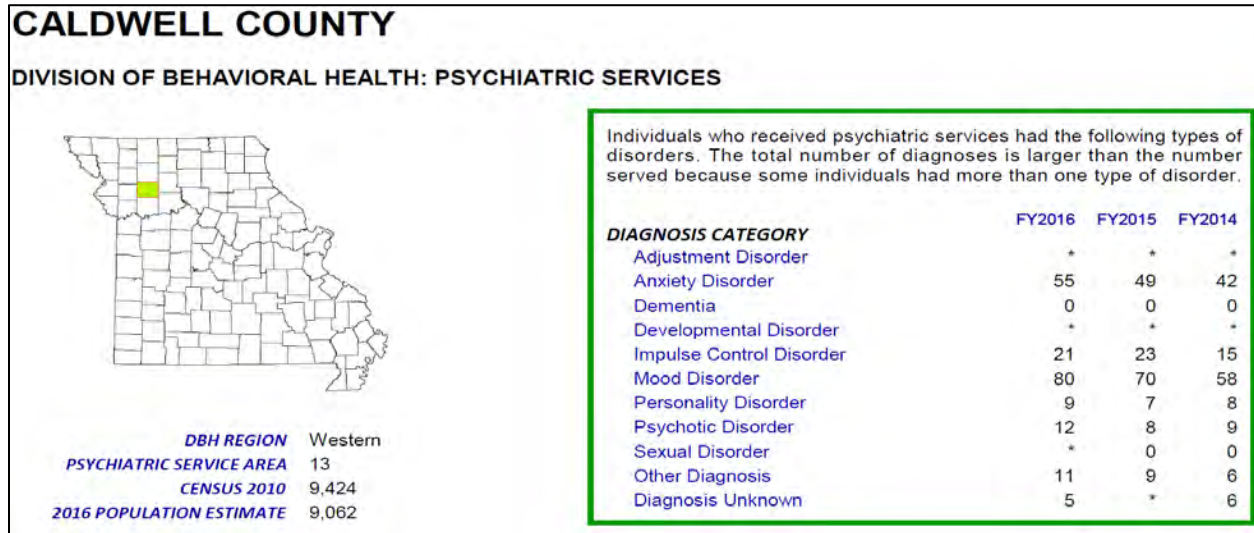
Source: Missouri Institute of Mental Health, 2016 Missouri Student Surveys

** - 2016 Missouri Student Survey data are not available for this county due to small sample size

Mental Health

Caldwell County has seen an increase in the number of individuals being diagnosed with anxiety, impulse control, mood, personality, psychotic and other diagnosis disorders from 2014 to 2016 according to the data derived from the Missouri Department of Mental Health.

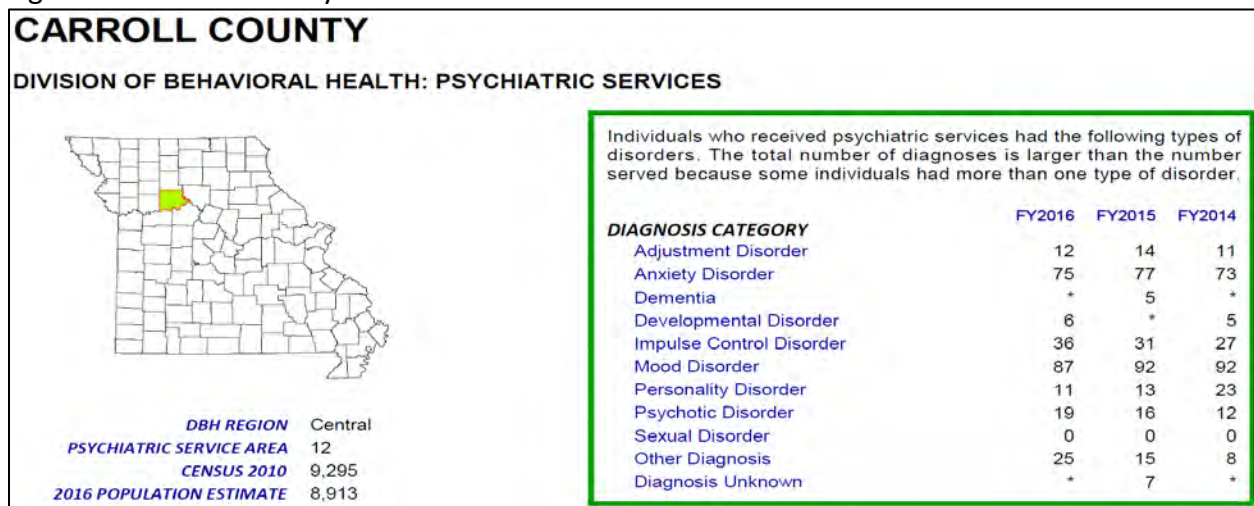
Figure 10: Caldwell County



Source: Missouri Department of Mental Health, 2016

As shown in Figure 11, Carroll County saw an increase in the number of individuals being diagnosed with adjustment, anxiety, developmental, impulse control, psychotic and in the other diagnosis category from 2014 to 2016 according to Missouri Department of Mental Health data. The number of individuals who have been diagnosed with mood disorder has gone down from 92 to 87 during the same time period.

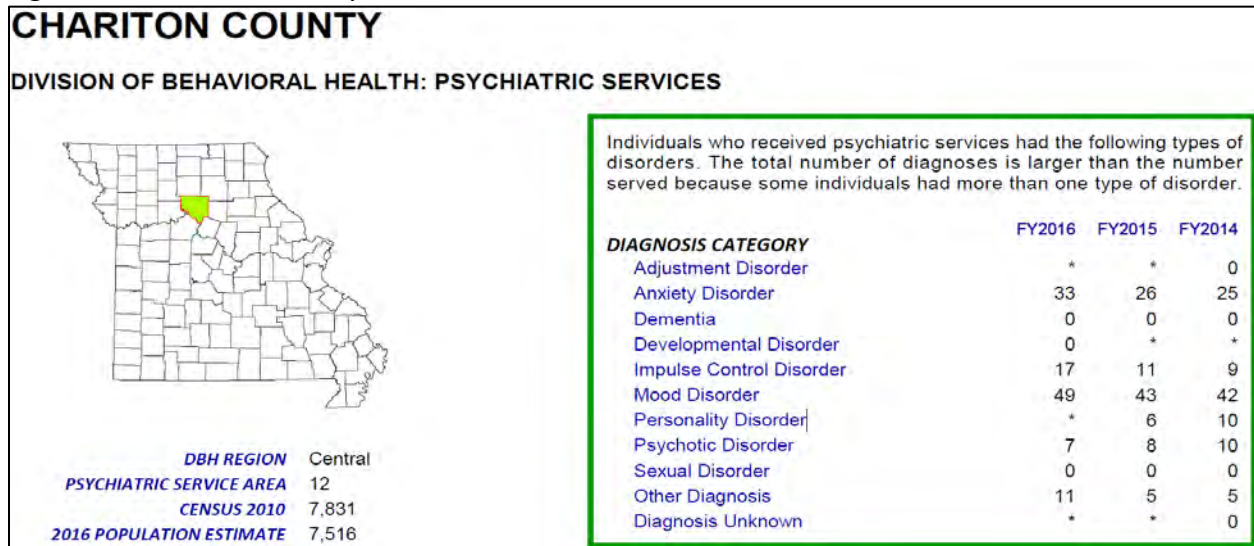
Figure 11: Carroll County



Source: Missouri Department of Mental Health, 2016

Missouri Department of Mental Health data for the time period 2014 to 2016 shows that Chariton County has seen an increase in the number of individuals being diagnosed with anxiety, impulse control, mood and other diagnosis disorders. The number of individuals who have been diagnosed with psychotic disorder has decreased during the same time period.

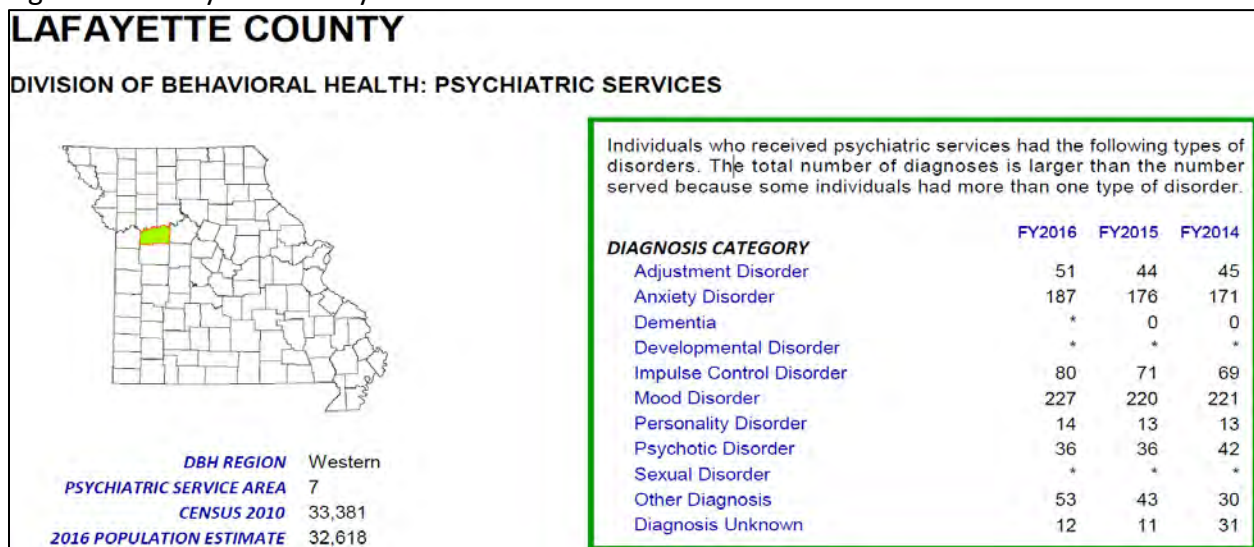
Figure 12: Chariton County



Source: Missouri Department of Mental Health, 2016

Lafayette County has also seen an increase in the number of individuals being diagnosed with adjustment, anxiety, impulse control, mood, personality and other diagnosis from 2014 to 2016 according to the same Department of Mental Health data. There has been a slight decrease in the number of individuals diagnosed with psychotic disorders during the same time period.

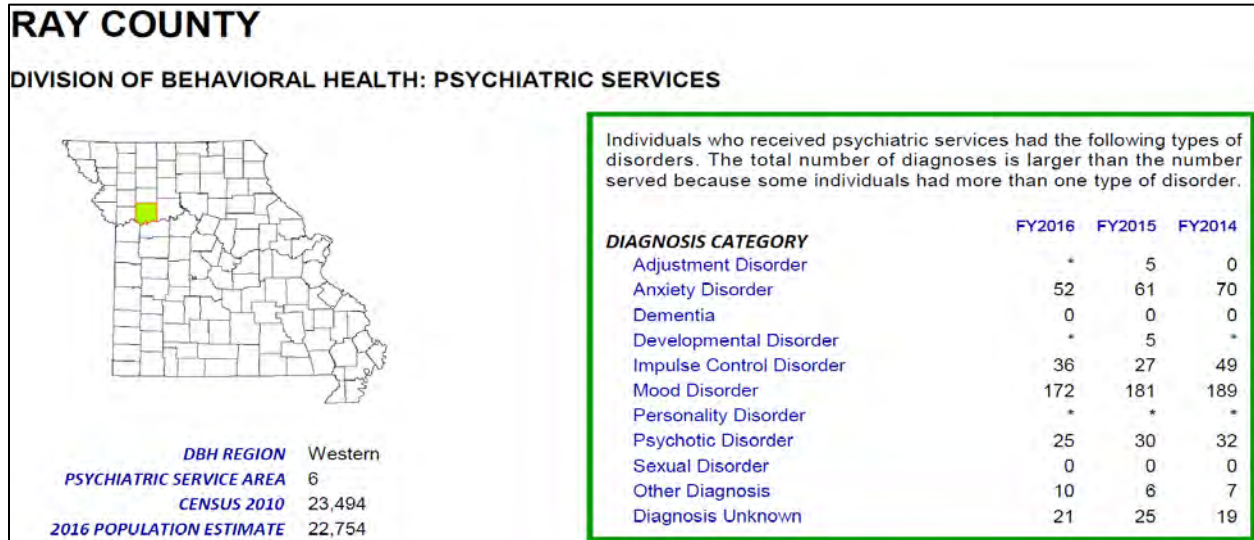
Figure 13: Lafayette County



Source: Missouri Department of Mental Health, 2016

Ray County has seen a decrease in the number of individuals being diagnosed with anxiety, impulse control, mood, psychotic disorders from 2014 to 2016. The number of individuals who have been diagnosed with the other diagnosis category has increased during the same time period.

Figure 14: Ray County



Source: Missouri Department of Mental Health, 2016

Prevalence of Infectious Diseases

Communicable disease surveillance is a multi-component system that monitors and analyzes data that includes, but is not limited to, demographic, geographic and disease/condition-specific information. Accurate identification and timely reporting are integral parts of successful disease control, enabling public health agencies to: identify contacts who may be infected or other individuals at risk for infection; determine the incidence and prevalence of disease in a specific area of the state; assist physicians and hospitals in evaluating illnesses in their patients and communities; and assist the public in making better decisions regarding their health and lifestyle.

According to Table 25 below, Lafayette County had the highest number of chlamydia cases with 90 cases compared to 22 in Chariton, 19 in Carroll, 16 in Caldwell, and 59 in Ray County. Lafayette County also had the highest cases of gonorrhea followed by Ray. The top two reported sexually transmitted diseases in the region were chlamydia and gonorrhea.

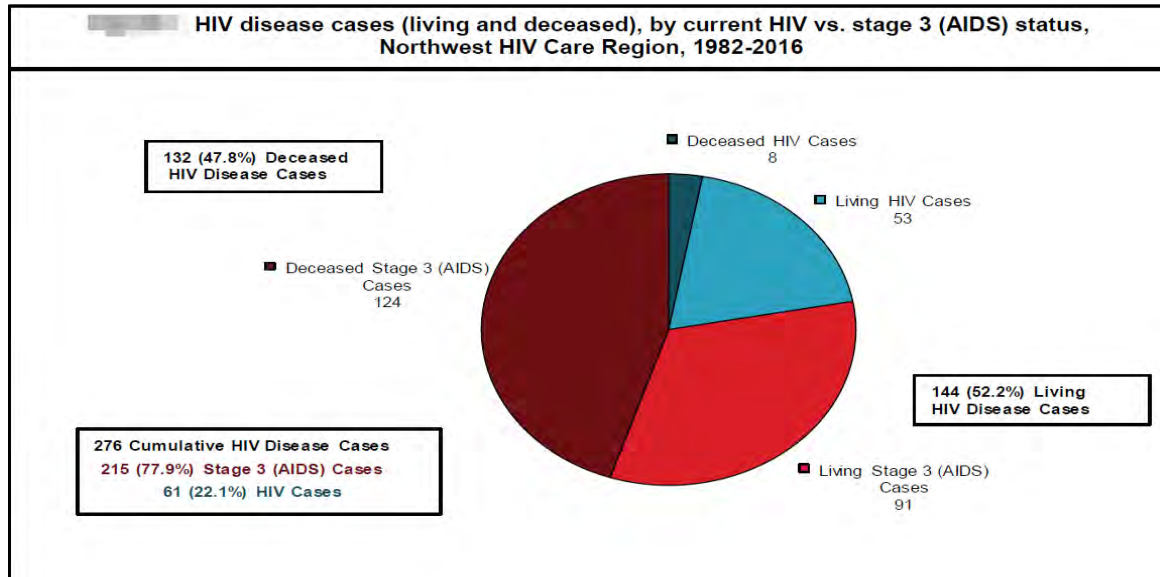
Table 25: Reportable Sexually Transmitted Diseases, by County, for 2017

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
Caldwell	Chlamydia	1	1	2	1	4		1	3		2	1	16
	Gonorrhea			1	2		1		1			1	6
Carroll	Chlamydia	3	1	1	1	2	2	1	1	1	4	2	19
	Gonorrhea	1					2		2		1		6
	Syphilis									1			1
Chariton	Chlamydia	6	2	1	4	3	1		2	1	2		22
	Gonorrhea	1	1		1								3
Lafayette	Chlamydia	6	9	13	7	6	7	9	8	7	6	12	90
	Gonorrhea	5	2	3		3	2	3	2		1	1	22
	Syphilis				1	1			1				3
Ray	Chlamydia	4	6	3	8	8	4	8	6	3	4	5	59
	Gonorrhea	2	2	2		2			2	1	1	2	14
	Syphilis							1					1

Source: Missouri Bureau of Reportable Disease Informatics, 2017

According to Graph 38 from 1982 to 2016, there have been 276 HIV disease cases diagnosed in the Northwest HIV Care Region and reported to DHSS. Of the cumulative cases reported, 52 percent were still presumed to be living with HIV disease at the end of 2016. Among those living with HIV disease, 53 were classified as HIV cases at the end of 2016 and 91 classified as stage 3 (AIDS) cases.

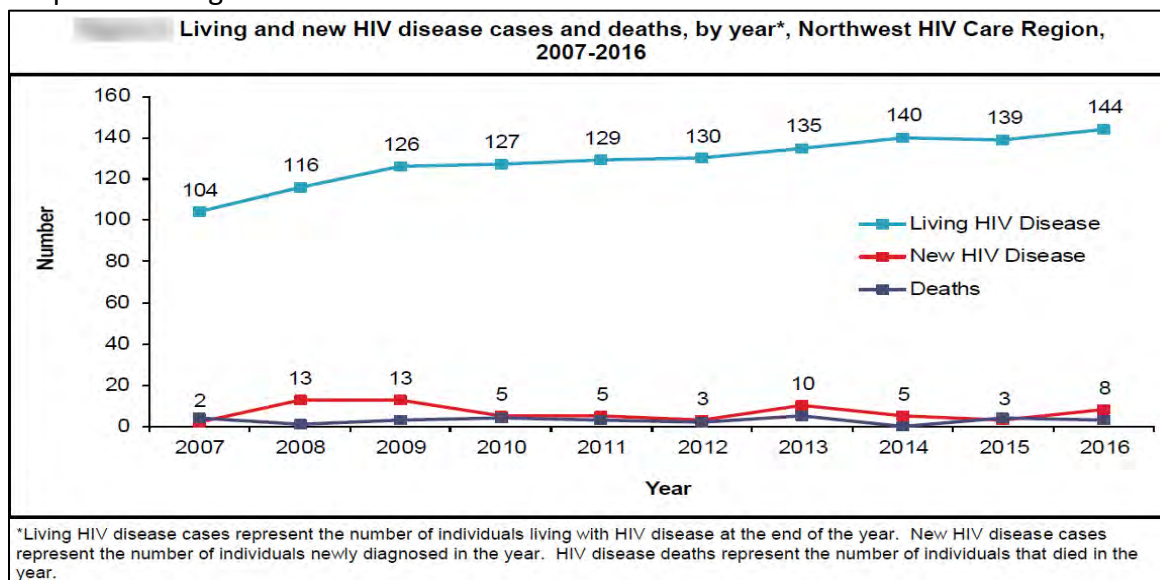
Graph 38: HIV Diagnosed Cases



Source: 2016 Epidemiologic Profiles of HIV, STD and Hepatitis in Missouri

Graph 39 shows that by the end of 2016, there were 144 persons living with HIV disease whose most recent diagnosis occurred in the Northwest HIV Care Region. The number of people living with HIV disease generally increased over time. There were eight new HIV disease diagnoses in 2016. The number of new diagnoses remained generally stable since 2007 with the exception of increases observed from 2007 to 2009 and from 2012 to 2013. The number of deaths among persons with HIV disease remained stable.

Graph 39: Living and New HIV Disease Cases and Deaths

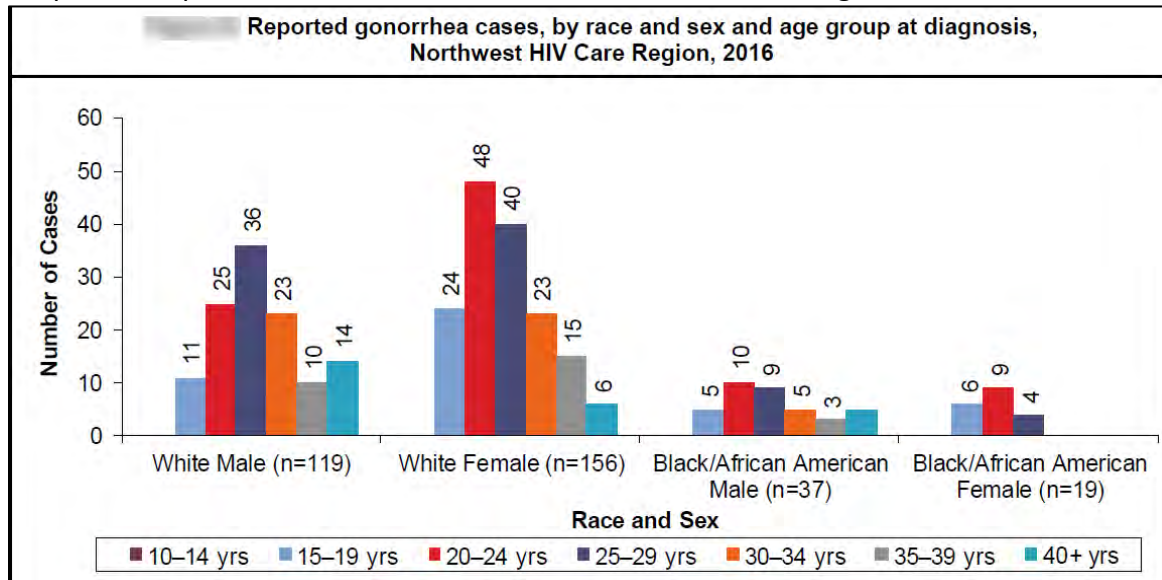


Source: 2016 Epidemiologic Profiles of HIV, STD and Hepatitis in Missouri

Per Graph 40, the largest numbers of gonorrhea cases reported were among white females (156), followed by white males (119). Among white males, the largest number of reported cases were diagnosed between 25-29 years of age. The largest numbers of reported cases were

diagnosed between 20-24 years of age among white females, black/African American females and black males.

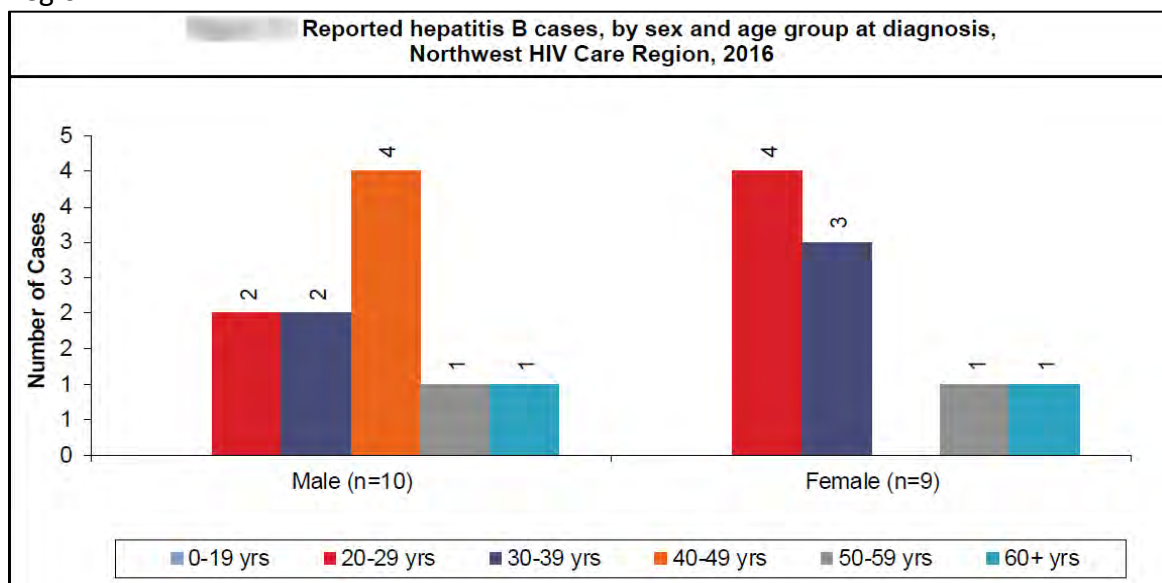
Graph 40: Reported Gonorrhea Cases in Northwest HIV Care Region



Source: 2016 Epidemiologic Profiles of HIV, STD and Hepatitis in Missouri

Graph 41 depicts 19 reported cases of hepatitis B in the Northwest HIV Care Region during 2016. Males represented 53 percent of reported hepatitis B cases, the largest number between 40-49 years of age. The largest numbers of reported cases among females were between 20-29 years of age.

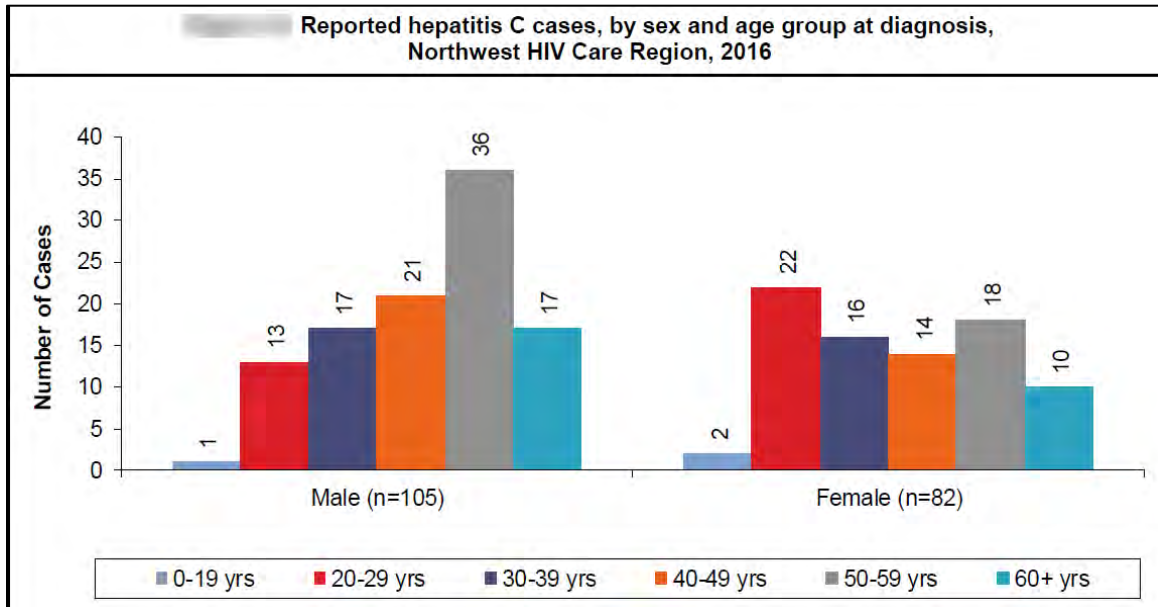
Graph 41: Reported Hepatitis B Cases by Sex and Age Group at Diagnosis in Northwest HIV Care Region



Source: 2016 Epidemiologic Profiles of HIV, STD and Hepatitis in Missouri

As represented in Graph 42, there were 187 hepatitis C cases reported in the Northwest HIV Care Region in 2016. Of these cases, 56 percent were male. The largest numbers of reported cases were between 50 and 59 years of age among males and between 20 and 29 years of age among females.

Graph 42: Reported Hepatitis C Cases by Sex and Age Group at Diagnosis in Northwest HIV Care Region



Source: 2016 Epidemiologic Profiles of HIV, STD and Hepatitis in Missouri

According to table below showing the most recently published communicable disease report, the top five cases of disease and conditions reportable in Missouri are animal bites, hepatitis C chronic infection, TB infection, campylobacteriosis and salmonellosis.

Table 26: Current Cases of Diseases and Conditions Reported in Missouri

Missouri Department of Health and Senior Services Current Cases of Diseases and Conditions Reportable in Missouri* Quartile Analysis of Year-to-date Counts for Week 44 Week Ending November 4, 2017									
Disease or Condition	Week 44 YTD1	Week 43 YTD1	Week 42 YTD1	Five Year 1st Quartile	Five Year Median	Five Year 3rd Quartile	Change from Week 43 to Week 44	Change from Week 44 to 5- Year Median	Rate per 100,000 Week 44
Anaplasma phagocytophilum	15	15	15	13	15	22	0.00%	0.00%	0.25
Animal Bites	6,724	6,671	6,544	No Data	5,545	No Data	0.80%	21.30%	110.53
Brucellosis	1	1	1	1	1	2	0.00%	0.00%	0.02
Campylobacteriosis	1,261	1,248	1,222	513	576	1,064	1.00%	118.90%	20.75
Coccidioidomycosis	13	13	13	13	16	16	0.00%	-18.80%	0.21
Creutzfeldt-Jakob Disease (CJD)	7	7	7	7	10	12	0.00%	-30.00%	0.12
Cryptosporidiosis	282	277	261	186	214	362	1.80%	31.80%	4.64
Cyclosporiasis	24	24	24	2	5	5	0.00%	380.00%	0.39
Dengue Fever	1	1	1	3	4	4	0.00%	-75.00%	0.02
E Coli Shiga Toxin Positive	170	167	164	139	140	162	1.80%	21.40%	2.79
E. Coli O157 H7	83	83	80	61	118	123	0.00%	-29.70%	1.36
Ehrlichia chaffeensis	289	289	289	227	227	334	0.00%	27.30%	4.75
Ehrlichia ewingii	18	18	18	9	9	10	0.00%	100.00%	0.3
Ehrlichiosis or Anaplasmosis, Undetermined	10	10	10	No Data	12	No Data	0.00%	-16.70%	0.16
Giardiasis	197	196	195	206	219	286	0.50%	-10.00%	3.24
Haemophilus Influenzae, Invasive	106	106	104	76	87	100	0.00%	21.80%	1.74
Hemolytic Uremic Syndrome	10	10	10	12	14	17	0.00%	-28.60%	0.16
Hepatitis A Acute	7	7	7	9	13	18	0.00%	-46.20%	0.12
Hepatitis B (Pregnancy) Prenatal	129	129	127	124	125	128	0.00%	3.20%	2.12
Hepatitis B Acute	27	27	27	29	34	46	0.00%	-20.60%	0.44
Hepatitis B Chronic Infection	355	344	338	328	369	371	3.20%	-3.80%	5.84
Hepatitis C Acute	39	37	37	4	5	8	5.40%	680.00%	0.64
Hepatitis C, Chronic Infection	4,142	4,137	4,037	4,091	4,410	5,045	0.10%	-6.10%	68.08
Hepatitis E Acute	2	2	2	1	1	1	0.00%	100.00%	0.03
Hepatitis Other Or Unspecified	1	1	1	1	1	1	0.00%	0.00%	0.02
Influenza	570	472	348	174	242	265	20.80%	135.50%	9.37
Influenza Death < 18 Years	3	3	3	1	1	1	0.00%	200.00%	0.05
Legionellosis	127	127	127	66	84	136	0.00%	51.20%	2.09
Listeriosis	6	6	6	3	3	6	0.00%	100.00%	0.1
Lyme	17	17	17	3	4	8	0.00%	325.00%	0.28
Malaria	22	22	22	13	17	17	0.00%	29.40%	0.36
Meningococcal Disease	8	8	7	7	8	10	0.00%	0.00%	0.13
Mumps	430	430	428	6	8	19	0.00%	5275.00%	7.07
Pertussis	332	326	319	225	410	418	1.80%	-19.00%	5.46
Q Fever, Acute	3	3	3	2	2	4	0.00%	50.00%	0.05
Q Fever, Chronic	1	1	1	1	2	2	0.00%	-50.00%	0.02
Rabies Animal	19	19	19	26	28	28	0.00%	-32.10%	0.31
Rabies Post Exposure Prophylaxis	525	515	503	No Data	394	No Data	1.90%	33.40%	8.63
Rocky Mountain Spotted Fever	617	616	612	253	308	313	0.20%	100.30%	10.14
Salmonellosis	898	884	858	765	870	898	1.60%	3.20%	14.76
Shiga Toxin + (Non E. Coli/Unknown Organism)	7	7	7	5	7	13	0.00%	0.00%	0.12
Shigellosis	342	327	321	71	762	853	4.60%	-55.10%	5.62
Staph Aureus VISA	24	24	23	24	52	107	0.00%	-53.80%	0.39
Staph Aureus, VRSA	1	1	1	No Data	0	No Data	0.00%	0.00%	0.02
Strep Disease, Group A Invasive	46	46	45	106	118	150	0.00%	-61.00%	0.76
Strep Pneumoniae Invasive	471	466	459	101	101	101	1.10%	366.30%	7.74
T2 Mycotoxins	1	1	1	No Data	0	No Data	0.00%	0.00%	0.02
Tb Infection	1,976	1,954	1,930	2,554	2,778	2,800	1.10%	-28.90%	32.48

Source: DHSS - Bureau of Communicable Disease Control and Prevention, 2017

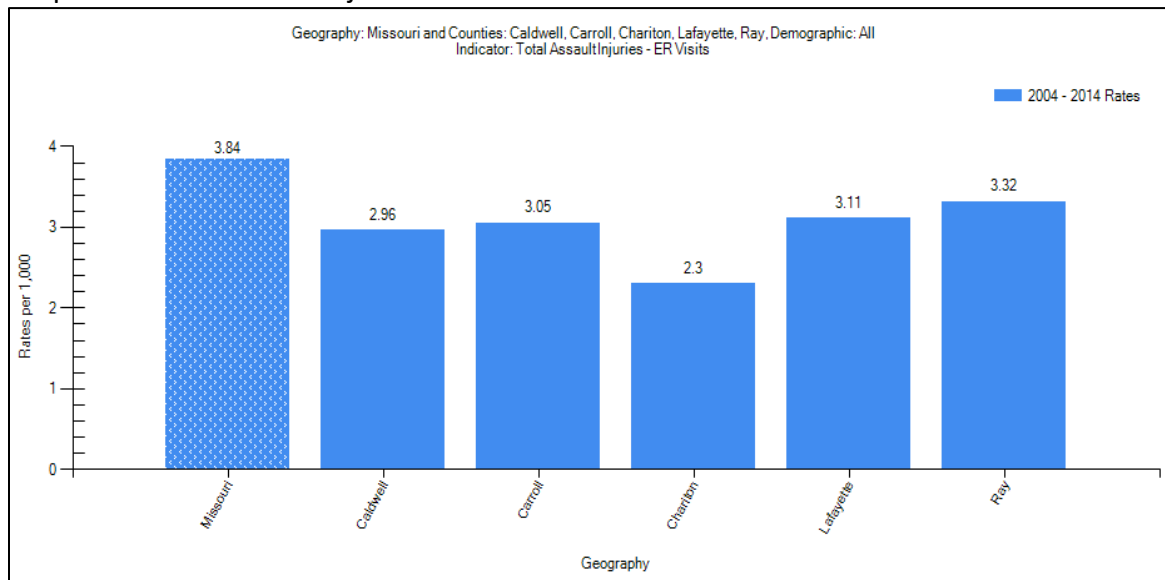
*Excludes sexually transmitted diseases and environmental conditions

Note: It is recommended that each county look at its internal data and prioritize the top items on their case of communicable diseases and conditions profile.

Public Safety/Domestic Violence

Per the Missouri Public Health Information Management System information shown in Graph 43, the rate of the total assault injury emergency room visits in Carroll County was 3.05 per 1,000 from 2004 to 2014. When compared to the adjoining counties, both Caldwell and Chariton counties had lower rates at 2.96 and 2.3 per 1,000, respectively, while Ray and Lafayette had slightly higher rates at 3.32 and 3.11 per 1,000 emergency room visits. The state rate was higher than that of all the counties at 3.84 per 1,000 ER visits resulting from assaults. The injuries in this Missouri Information for Community Assessment are those recorded by hospitals for their emergency room patients and inpatients, as reported by the Missouri Department of Health and Senior Services Patient Abstract System (PAS). The MICA data included here are based on patient abstract records reported to the DHSS by in-state ambulatory surgery centers and hospitals in Missouri and some surrounding states. The hospital records used are those from non-federal and non-state acute care (average length of stay less than 30 days) general and specialty hospitals whose facilities are open to the general public. Excluded are discharge records from long-term care facilities, as well as those from long-term care units within general hospitals (i.e., swing bed, skilled nursing, and intermediate care units). Also excluded are discharges from residential care facilities and residential care units within licensed hospital facilities.

Graph 43: Total Assault Injuries – ER Visits



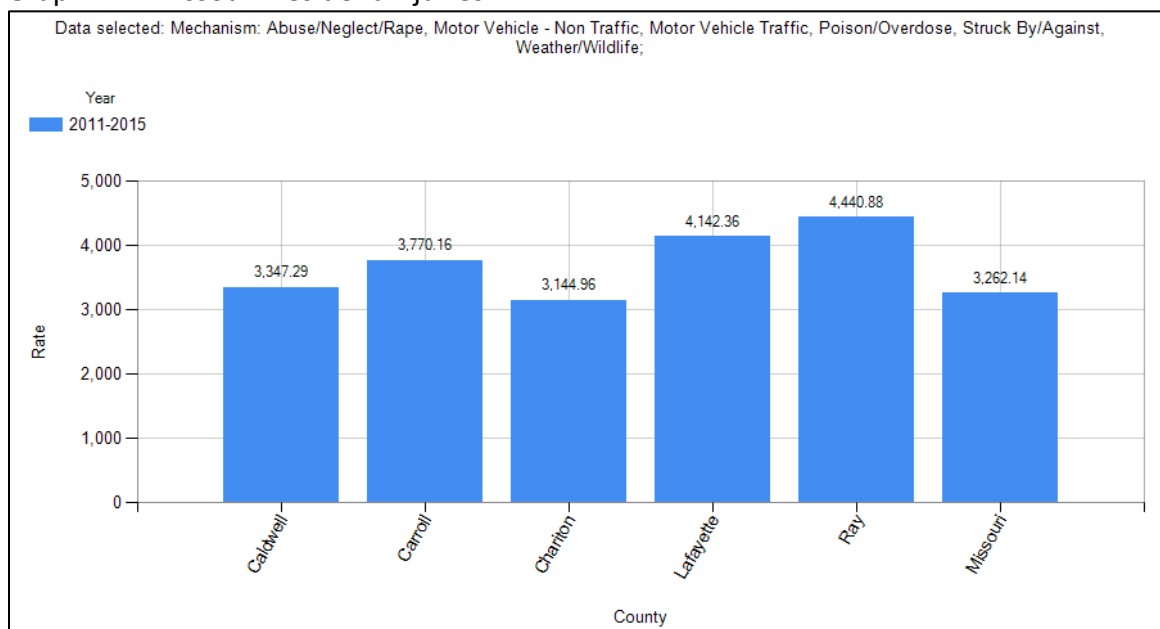
Source: DHSS - MOPHIMS Community Data Profiles - Assault Profiles

Graph 44 shows that Ray County had the highest rate of hospitalization at 4,440.88 per 100,000 residents resulting from a combination of the following injury mechanisms:

- Abuse and/neglect
- Motor vehicle-non traffic
- Motor vehicle traffic
- Poison/overdose
- Struck by/against
- Weather/wildlife injuries

The state rate was 3,262.14 per 100,000 population. Both Caldwell and Chariton counties had rates lower than those of Carroll County while Lafayette and Ray counties had higher rates respectively.

Graph 44: Missouri Resident Injuries



Source: DHSS - MOPHIMS - Injury MICA

Substance Use Consequences in Carroll County

According to the Missouri Division of Behavioral Health and the Substance Abuse and Mental Health Services Administration report published in 2017, 49 individuals were admitted into substance abuse treatment programs. A total of 20 were primarily due to alcohol, 11 were primarily due to marijuana, and less than five were due to prescription drugs. Carroll County had 30 DWI arrests, 12 liquor law violations and 45 drug-related arrests, and zero methamphetamine laboratory seizures in 2016. Alcohol-related traffic crashes decreased in the last year (from 14 in 2014 to 10 in 2015). Data collected and reported over time shows that alcohol-related crashes are more likely to produce fatalities and injuries compared to non-alcohol-related crashes.

According to the World Health Organization, “Psychoactive substance use can lead to dependence syndrome — a cluster of behavioral, cognitive and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state”.

It is important for each jurisdiction to review and adopt policies which influence the levels and patterns of substance use and related harm to help reduce the problems attributable to substance use. This multifaceted approach should also include interventions at the health care system level that addresses the restoration of health for the affected individuals.

Table 27 shows the deaths occurring due to heroin overdoses by county of residence from 2012 to 2016. Cardwell, Carroll, Chariton and Lafayette counties had no deaths from heroin overdose. Ray County had one death due to heroin overdose. The following jurisdictions had the highest rates of overdose in Missouri: St. Louis City, Jefferson County, Franklin County, St. Louis County and Pulaski County. Per the table, the regions with the highest rates are all located around the St. Louis metropolitan area.

Table 27: Deaths Due to Heroin Overdoses by County of Residence, Crude Rate Per 100,000 Population

Deaths Due to Heroin Overdoses by County of Residence 2012-2016											
County	Counts	Rate	County	Counts	Rate	County	Counts	Rate	County	Counts	Rate
St. Louis City	365	23.07	Barton County	1	1.65*	Caldwell County	0	0.00*	Macon County	0	0.00*
Jefferson County	131	11.78	Bollinger County	1	1.63*	Carroll County	0	0.00*	Madison County	0	0.00*
Franklin County	49	9.60	Washington County	2	1.60*	Carter County	0	0.00*	McDonald County	0	0.00*
St. Louis County	478	9.55	Wayne County	1	1.50*	Cedar County	0	0.00*	Mercer County	0	0.00*
Pulaski County	25	9.38	Osage County	1	1.46*	Chariton County	0	0.00*	Miller County	0	0.00*
Lincoln County	24	8.84	Ripley County	1	1.44*	Clark County	0	0.00*	Moniteau County	0	0.00*
St. Charles County	138	7.27	Mississippi County	1	1.42*	Clinton County	0	0.00*	Monroe County	0	0.00*
St. Francois County	21	6.34	Jackson County	46	1.34	Cooper County	0	0.00*	Morgan County	0	0.00*
Crawford County	7	5.70*	Callaway County	3	1.34*	Dallas County	0	0.00*	Nodaway County	0	0.00*
Marion County	7	5.63*	Platte County	6	1.26*	Daviess County	0	0.00*	Ozark County	0	0.00*
Montgomery County	3	5.07*	Christian County	5	1.22*	DeKalb County	0	0.00*	Pemiscot County	0	0.00*
Warren County	8	4.81*	Benton County	1	1.06*	Douglas County	0	0.00*	Polk County	0	0.00*
Maries County	2	4.12*	Perry County	1	1.04*	Dunklin County	0	0.00*	Putnam County	0	0.00*
Gasconade County	3	4.03*	Clay County	12	1.03*	Gentry County	0	0.00*	Ralls County	0	0.00*
Phelps County	8	3.57*	Pettis County	2	0.95*	Grundy County	0	0.00*	Reynolds County	0	0.00*
Ste. Genevieve County	3	3.35*	Ray County	1	0.87*	Harrison County	0	0.00*	Saline County	0	0.00*
Cole County	12	3.13*	Randolph County	1	0.80*	Henry County	0	0.00*	Schuyler County	0	0.00*
Scott County	6	3.08*	Cass County	4	0.79*	Holt County	0	0.00*	Scotland County	0	0.00*
Greene County	39	2.73	Newton County	2	0.68*	Howard County	0	0.00*	Shannon County	0	0.00*
Dade County	1	2.63*	Barry County	1	0.56*	Howell County	0	0.00*	Shelby County	0	0.00*
Dent County	2	2.56*	Webster County	1	0.54*	Iron County	0	0.00*	St. Clair County	0	0.00*
Butler County	5	2.33*	Cape Girardeau County	2	0.51*	Johnson County	0	0.00*	Stoddard County	0	0.00*
Camden County	5	2.27*	Buchanan County	2	0.45*	Knox County	0	0.00*	Stone County	0	0.00*
New Madrid County	2	2.19*	Jasper County	2	0.34*	Laclede County	0	0.00*	Sullivan County	0	0.00*
Pike County	2	2.16*	Adair County	0	0.00*	Lafayette County	0	0.00*	Taney County	0	0.00*
Hickory County	1	2.16*	Andrew County	0	0.00*	Lawrence County	0	0.00*	Texas County	0	0.00*
Boone County	17	1.97*	Atchison County	0	0.00*	Lewis County	0	0.00*	Vernon County	0	0.00*
Oregon County	1	1.83*	Audrain County	0	0.00*	Linn County	0	0.00*	Worth County	0	0.00*
			Bates County	0	0.00*	Livingston County	0	0.00*	Wright County	0	0.00*

* Rate is unreliable; numerator is less than 20
Crude Rate per 100,000 population
Source: Bureau of Vital Statistics, Missouri Department of Health and Senior Services

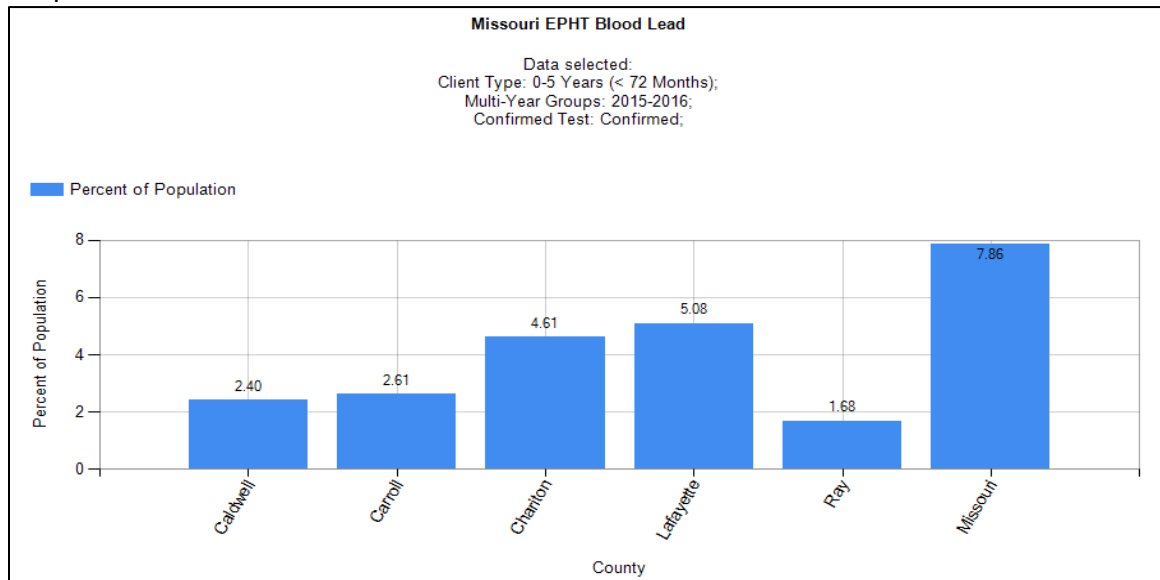
Environmental Health

The Environment and Community Profiles report provides useful statistics and public health information for the most populated cities and all counties in the state of Missouri. Each profile includes key indicators of community and infrastructure outcomes, health and environment which describe the health status of the local community and provide a snapshot of current living conditions within the area.

Lead is a heavy metal that occurs naturally in rocks and soil. It is soft and blueish grey in color with no distinctive taste or smell. It is currently used in consumer products like batteries, ammunition, pipes, tank linings, solder, casting metals, building materials, electronic equipment, medical devices and products to shield x-rays and radiation. It is also used in ceramic glazes and crystal glassware. Due to various health concerns, lead and lead compounds were banned from household paint in 1978; solder used on water pipes in 1986; gasoline in 1995; solder used on food cans; and from tin-coated foil on wine bottles in 1996. The central nervous system is most susceptible to lead. This is especially true in children who are more vulnerable to lead poisoning due to their rapidly developing bodies. The primary lead hazard to children in Missouri is deteriorated lead-based paint. Occupational-related and target shooting are the primary lead hazards to Missouri adults.

Graph 45 shows that the confirmed blood lead testing for Carroll County was 2.61 percent of the qualifying population of children 0-5 years. This is significantly lower than the current state rate of 7.86 percent according to data collected by the Missouri Environmental Public Health tracking program for data collected from 2015 to 2016. Both Chariton and Lafayette counties had higher rates compared to Carroll County, while Ray and Caldwell counties had lower rates. All the counties in the primary service area had lower rates compared to the state.

Graph 45: Missouri EPHT Blood Lead



Source: Missouri Environmental Public Health Tracking, 2016


Birth Defects

Birth defects are abnormalities that may cause physical and/or mental disabilities. Most birth defects are discovered during an infant’s first year of life and most commonly occur during the first trimester when the baby’s organs are forming. Birth defects can vary from mild to severe; some may even be fatal. Birth defects may result from a variety of factors including environmental factors. Ensuring that our environment is safe for everyone is the first step to reducing the incidence of birth defects.

Air Quality

Table 28 shows that Carroll County had a lower percent of houses that were tested for radon at 0.19 percent compared to the state rate of 0.76 percent. Data for the housing units tested for radon further reveal that more houses in Carroll County had lower levels of elevated radon at 11.11 percent compared to the state rate of 31.82 percent.

Table 28: Carroll County Profile

 Carroll County Health, Environment, and Community Profile			
<i>Air</i>			
<u>Indicator</u>	<u>Year</u>	<u>Local</u>	<u>Statewide Range</u>
Annual average ambient concentrations of PM _{2.5} in mg/m ³	2011	9.7	9 - 13.5
Number of days with maximum 8-hour average ozone concentration over the National Ambient Air Quality Standard	2011	1	0 - 15
Number of person-days with maximum 8-hour average ozone concentration over the National Ambient Air Quality Standard	2011	9,255	0 - 8,992,539
Percent of days with PM _{2.5} levels over the National Ambient Air Quality Standard	2011	0.0%	0 - 0.5%
Number of person-days with PM _{2.5} levels over the National Ambient Air Quality Standard	2011	0	0 - 999,171
<i>Indoor Air</i>			
<u>Indicator</u>	<u>Year</u>	<u>Local</u>	<u>Statewide</u>
Percent of housing units tested for Radon	2005-2015	0.19%	0.76%
Percent of tested housing units that are elevated for Radon	2005-2015	11.11%	31.82%

Source: Missouri Environmental Public Health Tracking (EPHT), 2015

Agricultural Activities

Per Table 29, Carroll County had more land area in square miles treated with chemicals to control insects, nematodes, weeds, grass, brush, and disease in crops when compared to the statewide rate.

Table 29: Environment

Environment			
<i>Agriculture</i>			
<i>Indicator</i>	<i>Year</i>	<i>Local</i>	<i>Statewide</i>
Percent of land area (in square miles) treated to control insects	2012	22.57%	7.82%
Percent of land area (in square miles) treated to control nematodes	2012	2.62%	1.16%
Percent of land area (in square miles) treated to control weeds, grass, or brush	2012	53.05%	22.54%
Percent of land area (in square miles) treated to control diseases in crops and orchards	2012	1.63%	1.57%
Percent of land area (in square miles) treated with commercial fertilizer, lime, and soil conditioners	2012	38.94%	22.21%
Percent of land area (in square miles) treated as fertilized cropland (except cropland pasture)	2012	36.31%	16.79%
Percent of land area (in square miles) treated with manure	2012	0.69%	1.46%
Percent of land area (in square miles) treated as fertilized pastureland and rangeland	2012	2.64%	4.84%
Percent of land area (in square miles) treated with chemicals used to control growth, thin fruit, ripen or defoliate	2012	(D)	0.84%

Source: Missouri Environmental Public Health Tracking, 2015

Missouri currently has almost 100,000 farms that cover approximately two-thirds of the state’s total land acreage. Missouri is among the top producers of beef cattle, hogs, turkeys, soybeans, corn, grain, sorghum, cotton, hay and wheat. Today, the Missouri Department of Agriculture sets agriculture policy and provides assistance to farmers throughout the state.

Fact about Missouri farmland:

- There are 97,700 farms in Missouri.
- The average farm is 290 acres.
- Farmland accounts for 63 percent of Missouri’s total land.



Source: Missouri Department of Agriculture

References

- Centers for Disease Control and Prevention: <https://www.cdc.gov/nccdphp/dnpao/index.html>
- Community Commons: <https://www.communitycommons.org/maps-data/>
- Department of Mental Health: <https://dmh.mo.gov/ada/countylinks/>
- Department of Mental Health: <https://dmh.mo.gov/ada/mobhew/profileindex.html>
- Feeding America: <http://map.feedingamerica.org/>
- Hospital Industry Data Institute, 2016 ZIP Health Rankings
- Kids Count: <http://datacenter.kidscount.org/>
- MDHSS – Bureau of Communicable Disease Control and Prevention: <http://health.mo.gov/living/healthcondiseases/communicable/communicabledisease/index.php>
- MDHSS Missouri Public Health Information Management System <https://webapp01.dhss.mo.gov/MOPHIMS/MOPHIMSHome>
- MDHSS: 2016 Epidemiologic Profiles of HIV, STD, and Hepatitis in Missouri <http://health.mo.gov/data/hivstdaids/data.php>
- Missouri Cancer Registry and Research Center, <http://mcr.umh.edu/mcr-county-level-data.php>
- Missouri Environmental Public Health: <https://webapp01.dhss.mo.gov/MOPHIMS/EPHTHome>
- Missouri Department of Elementary and Secondary Education: <https://dese.mo.gov/>
- Missouri Economic Research and Information Center: <https://www.missourieconomy.org/>
- Missouri MICA County Level Study: <http://health.mo.gov/data/cls/>
- Missouri Department of Social Services: <https://dss.mo.gov/>
- Missouri Office of Administration, Division of Budget and Planning: <https://oa.mo.gov/budget-planning>
- RWJF County Health Rankings: <http://www.countyhealthrankings.org/>
- U.S. Census Bureau: <https://www.census.gov/>

Appendices

- Missouri Cancer Registry and Research Center Top Ten Cancer Incidence Sites
 - Carroll County
 - Caldwell County
 - Chariton County
 - Lafayette County
 - Ray County

- Behavioral Health Profiles
 - Carroll County
 - Caldwell County
 - Chariton County
 - Lafayette County
 - Ray County

- Diseases and Conditions Reportable in Missouri