


# Missouri Opioid Overdose and Bloodborne Infection Vulnerability Assessments

## Supplementary Data

# Greene County



Greene County is located in southwest Missouri and between years 2013 to 2017 had an estimated population of 286,759. Greene County ranks 5 in population size among Missouri’s 114 counties plus the independent city of St. Louis. The 2013-2017 unemployment rate in the county was 5.0%. This was lower than the statewide unemployment rate of 5.8%. In 2013-2017, the poverty rate was 18.5%, which was higher than the statewide poverty rate of 14.6%. The 2013-2017 median income of the county was \$43,175. The population distribution is as follows:

**Figure 1: Greene County Population  
2013-2017 5-Year Estimates**

Demographics – Total Population					
Sex	Count	Percent	Age Group	Count	Percent
Male	139,733	48.7	0 – 9 years	34,008	11.9
Female	147,026	51.3	10 – 14 years	16,654	5.8
<b>Race</b>			15 – 19 years	19,030	6.6
Black/African American alone	9,408	3.3	20 – 24 years	30,528	10.6
White alone	259,407	90.5	25 – 39 years	57,046	19.9
Other	17,944	6.3	40 – 59 years	68,505	23.9
<b>Ethnicity</b>			Over 60 years	60,988	21.3
Hispanic	10,061	3.5	<b>Median Age</b>	35.7 years	
Non-Hispanic	276,698	96.5			

The Department of Health and Senior Services conducted two vulnerability assessments of Missouri counties. The indicators used for these assessments are included in the table below.

**Figure 2: Comparison of Indicators for Missouri Vulnerability Assessments**

	Opioid Overdose	Both	Bloodborne Infection
<b>Individual Outcomes (Weight x 3)</b>	Opioid-related Substance Use Disorder Treatment (SUDT) Admissions	Drug Overdose Deaths†‡¥	Bloodborne Illnesses (HIV, Acute and Chronic Hepatitis B, and Acute and Chronic Hepatitis C)†‡
	Self-reported Frequent (>14 Per Month) Poor Mental Health Days	Opioid Misuse Emergency Room (ER) Visits	Hepatitis C Virus Among Ages 18 to 40
		Drug-related Arrests	Injection Drug Use (IDU) Among Persons Receiving SUDT
<b>Community Factors (Weight x 1)</b>		Median Income†‡	
		Poverty†	
		Lack of a High School Education†	
		Unemployment†‡	
		Uninsured†	

† These indicators were considered for the National Vulnerability Assessment.  
 ‡ Analysis completed for the National Vulnerability Assessment found these indicators to be more strongly associated with acute hepatitis C virus infection, which was considered a proxy for unsafe injection drug use.  
 ¥ Drug Overdose Deaths = (0.5 weight x county of residence rate) + (0.5 weight x county of record rate).

Figure 3: Distribution of Final Ranks

Final Ranks	Quintile Points	Vulnerability Level
1-23	1	
24-46	2	
47-69	3	
70-92	4	
93-115	5	More vulnerable

Figure 3 shows the distribution of the final ranks among five quintiles. In the Missouri vulnerability assessments, Greene County ranked 91 (4th quintile) for vulnerability to opioid overdoses. Greene County ranked 100 (5th quintile) for vulnerability to bloodborne infections. In the Missouri assessments, counties in the fifth quintile are considered to be more vulnerable. Please note that Figure 3 shows the distribution when no ties occur. When a tie occurs on a break point, a shift in the distribution may occur.

Figure 4 Missouri Opioid Overdose Vulnerability Assessment

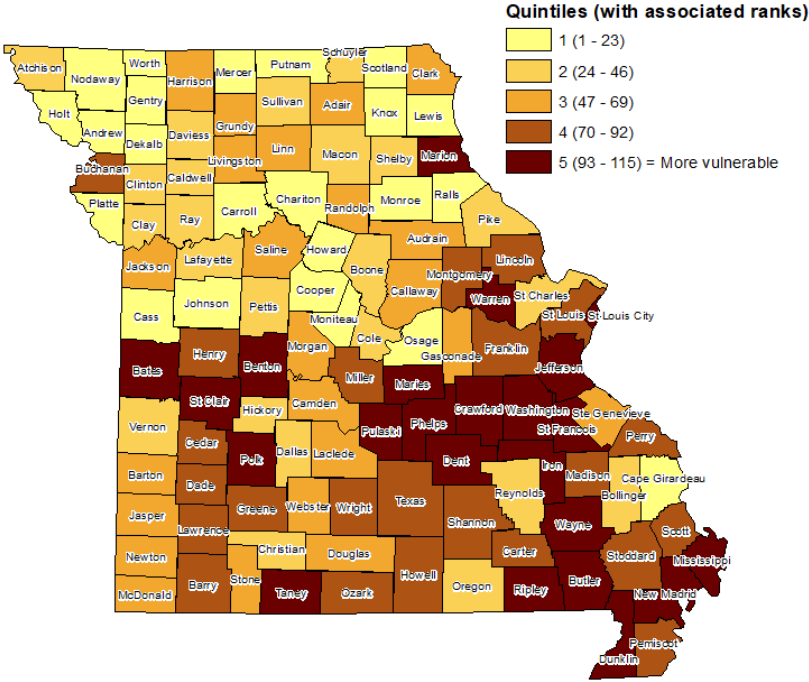


Figure 5: Individual Outcome Indicators

Opioid Overdose Vulnerability Assessment Indicators											
County	Count: Drug Overdose (OD) Deaths by Residence County	Rate: Drug OD Deaths by Residence County	Count: Drug OD Deaths by County of Record	Rate: Drug OD Deaths by County of Record	Count: Opioid Misuse ER Visits	Rate: Opioid Misuse ER Visits	Count: Opioid-related SUDT	Rate: Opioid-related SUDT	Count: Drug-related Arrests	Rate: Drug-related Arrests	Rate: Self-reported Frequent Poor Mental Health Days
Greene	244	28.2	298	34.4	1,229	1.4	272	93.9	1,819	627.7	14.1
Missouri	3,784	20.7	3,868	21.1	25,889	1.4	6,754	110.5	43,232	707.2	13.7

Figure 6  
Missouri Bloodborne Infection  
Vulnerability Assessment

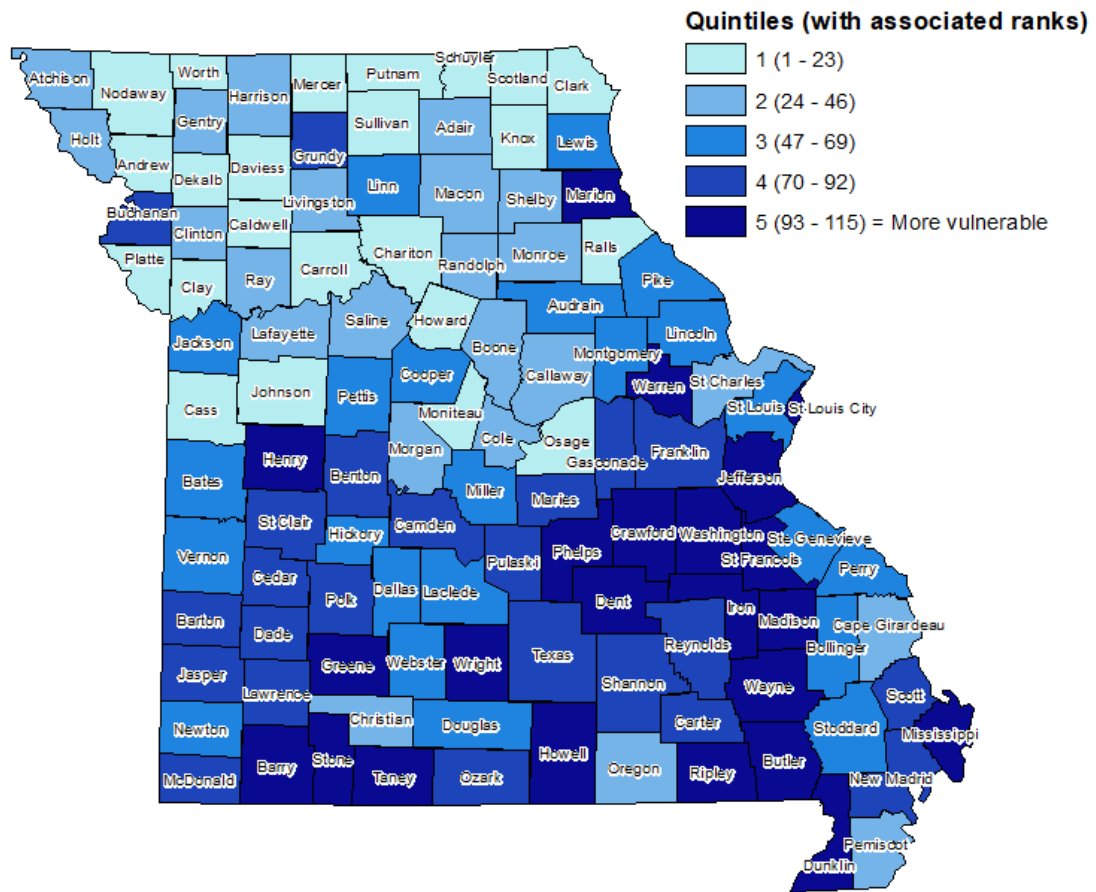


Figure 7: Individual Outcome Indicators

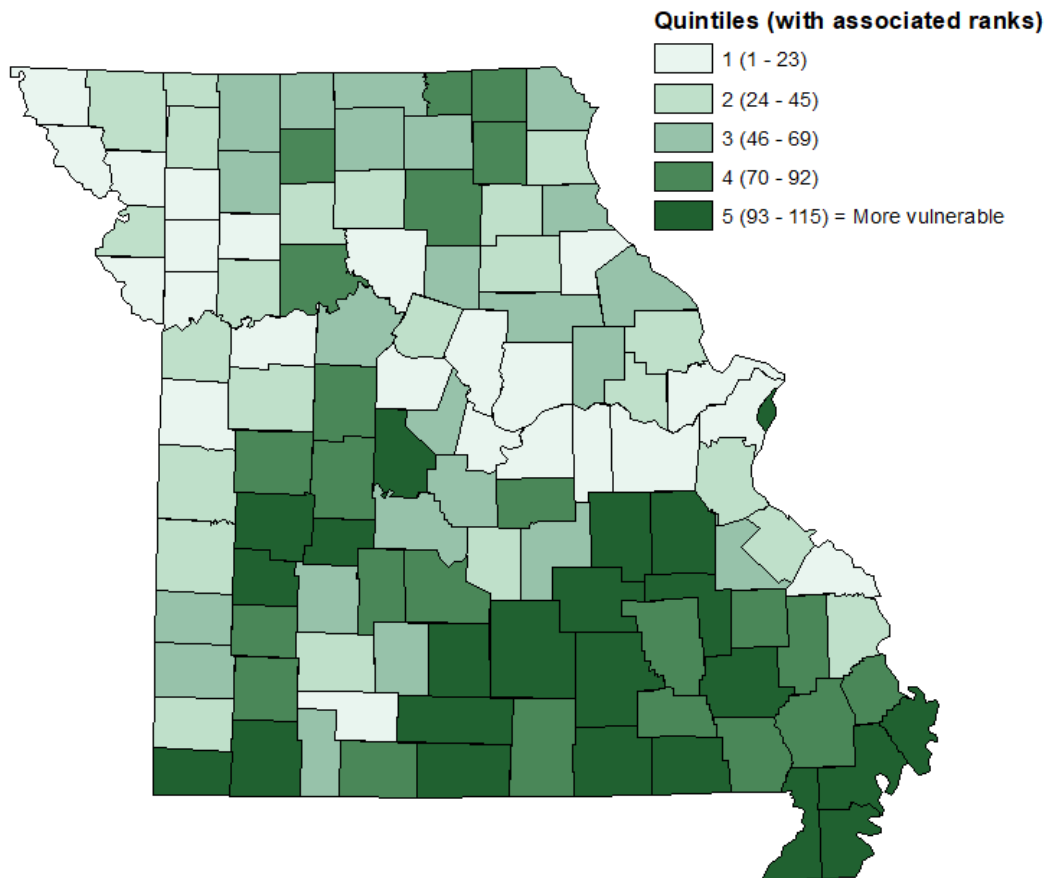
Bloodborne Infection Vulnerability Assessment Indicators														
County	Count: Drug OD Deaths by Residence County	Rate: Drug OD Deaths by Residence County	Count: Drug OD Deaths by County of Record	Rate: Drug OD Deaths by County of Record	Count: HIV, HBV, HCV	Rate: HIV, HBV, HCV	Count: HCV Among Ages 18 to 40	Rate: HCV Among Ages 18 to 40	Count: Opioid Misuse ER Visits	Rate: Opioid Misuse ER Visits	Count: IDU Among SUDT Recipients	Rate: IDU Among SUDT Recipients	Count: Drug-related Arrests	Rate: Drug-related Arrests
Greene	244	28.2	298	34.4	1,169	134.9	444	145.8	1,229	1.4	443	152.9	1,819	627.7
Missouri	3,784	20.7	3,868	21.1	17,628	96.4	5,532	100.0	25,889	1.4	6,958	113.8	43,232	707.2

**Figure 8: Community Factors**

Greene County			
ACS Data 2013-2017	Rate	Rank	Quintile
Lack of a High School Education	8.5%	11	1st
Median Income	\$43,175	55	3rd
Poverty	18.5%	76	4th
Unemployment	5.0%	41	2nd
Uninsured	11.7%	53	3rd

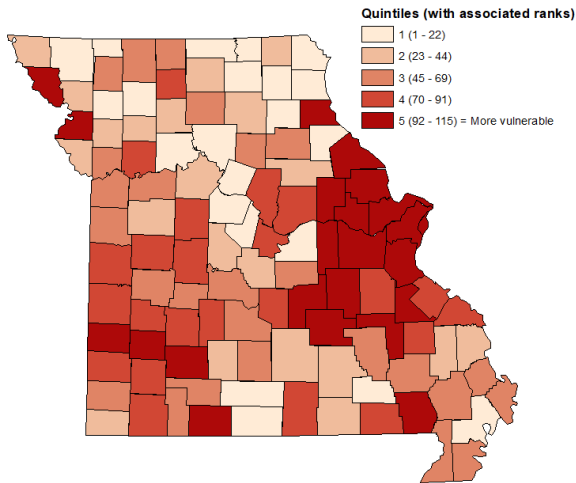
Social and economic factors within a community may impact available resources and influence vulnerability to opioid overdoses and bloodborne infections. Many of these indicators are interrelated. Data are from the U.S. Census Bureau's 2013-2017 American Community Survey (ACS).

**Figure 9  
Community Factors  
2013-2017**



**Selected Individual Outcome Indicators**

Figure 10  
Opioid Misuse ER Visits  
2015-2017



The 2015-2017 number of emergency room visits due to opioid misuse was 1,229, at a rate of 1.4 visits per 1,000 residents. This is rank 99 (5th quintile) for this indicator.

Greene County ranks 111 (5th quintile) on the 2015-2017 combined drug overdose death rate indicator. This indicator considers both the decedent’s county of residence and the decedent’s county of record, which can be considered a proxy for the location of death.

By county of residence, the 2015-2017 number of Greene County drug overdose deaths was 244, at a rate of 28.2 per 100,000 population.

By county of record, the 2015-2017 number of Greene County drug overdose deaths was 298, at a rate of 34.4 deaths per 100,000 population.

Figure 11  
Drug Overdose Death Ranks  
County of Residence 2015-2017

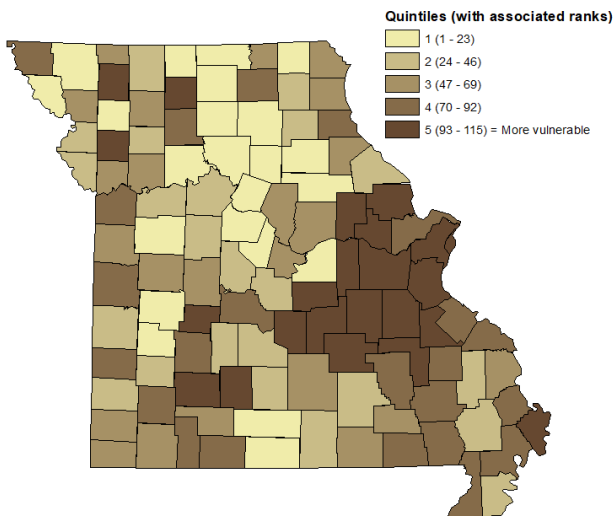
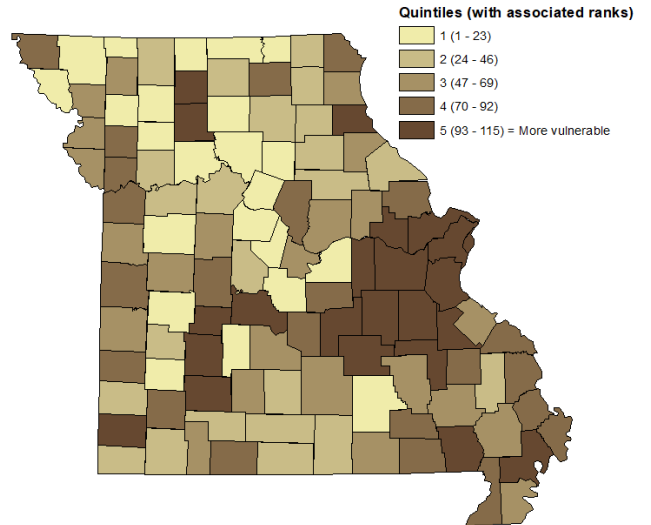


Figure 12  
Drug Overdose Death Ranks  
County of Record 2015-2017



New cases of reported bloodborne illnesses (acute and chronic hepatitis B virus (HBV), acute and chronic hepatitis C virus (HCV), and human immunodeficiency virus (HIV)) in Greene County totaled 1,169 for 2016-2018, at a rate of 134.9 cases per 100,000 residents. This is rank 104 (5th quintile) for this bloodborne illnesses.

Per the Centers for Disease Control and Prevention (CDC), “adults under 40 have the highest rate of new infections, largely because of the opioid crisis.”<sup>†</sup> In Greene County 444 new cases of acute and chronic HCV were identified among the 18- to 40-year-old age group in 2016-2018, for a rate of 145.8 cases per 100,000 residents. Greene County ranks 82 (4th quintile) for this indicator.

Figure 13  
Bloodborne Illnesses  
2016-2018

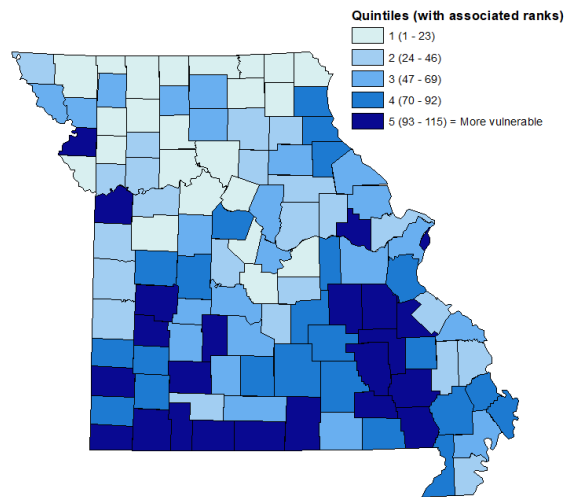
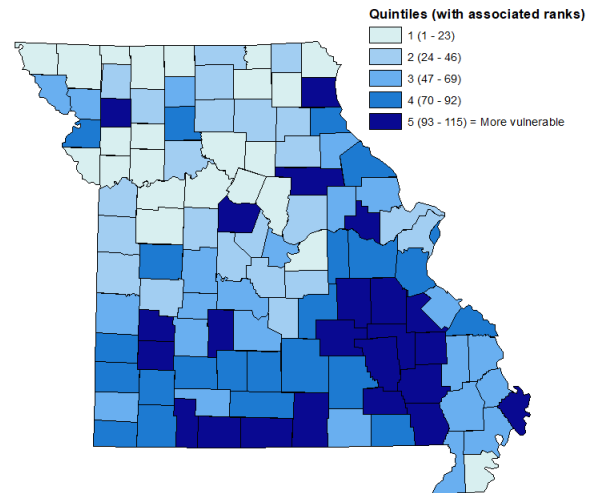


Figure 14  
HCV Among Ages 18 to 40  
2016-2018



Acute and chronic hepatitis C also significantly impact the 41- to 65-year-old age group. In 2016-2018, there were 540 new cases of acute and chronic hepatitis C identified in this age group, at a rate of 214.4 cases per 100,000 residents.

Out of 1,043 acute and chronic HCV cases in Greene County, 695 (66.6%) were male. For the cases in which race was identified, 37 (5.6%) were African American. However, please interpret race data for HCV with caution, as race was not identified in 378 (36.2%) of all 2016-2018 HCV cases in Greene County.

<sup>†</sup> Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. CDC Estimates Nearly 2.4 Million Americans Living with Hepatitis C. (November 6, 2018). Accessed October 8, 2019, from <https://www.cdc.gov/nchhstp/newsroom/2018/hepatitis-c-prevalence-estimates-press-release.html>.

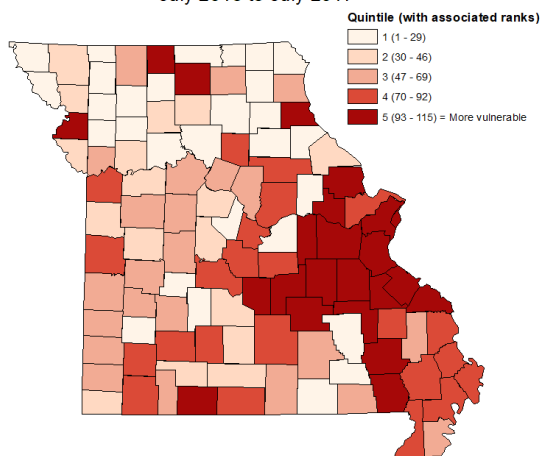
AIDS = Acquired Immunodeficiency Syndrome

STD = Sexually Transmitted Disease

TB = Tuberculosis

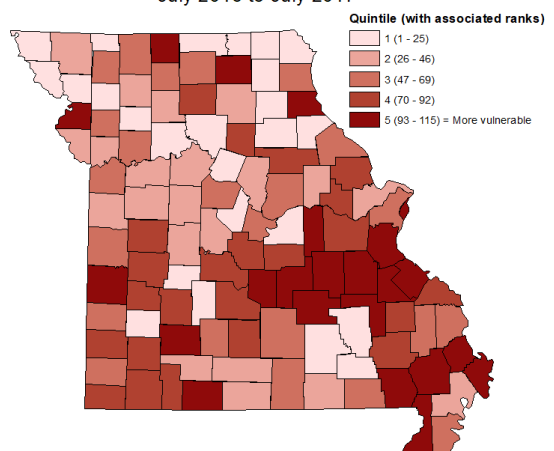
The number of people who received opioid-related substance use disorder treatment from July 1, 2016 to June 30, 2017 was 272, a rate of 93.9 persons per 100,000 population, placing this county in rank 88 (4th quintile). This indicator was used only in the opioid overdose vulnerability assessment.

Figure 15  
Opioid-related Substance Use  
Disorder Treatment Admissions  
July 2016 to July 2017



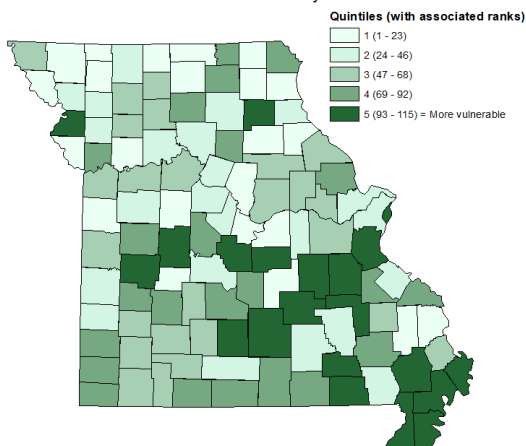
The number of persons receiving substance use disorder treatment and prior to treatment reported injecting drugs was 444, a rate of 145.8 persons per 100,000 population, placing this county in rank 96 (5th quintile). This indicator was used only in the bloodborne infection vulnerability assessment.

Figure 16  
Injection Drug Use Among Persons  
Receiving Substance Use Disorder Treatment  
July 2016 to July 2017



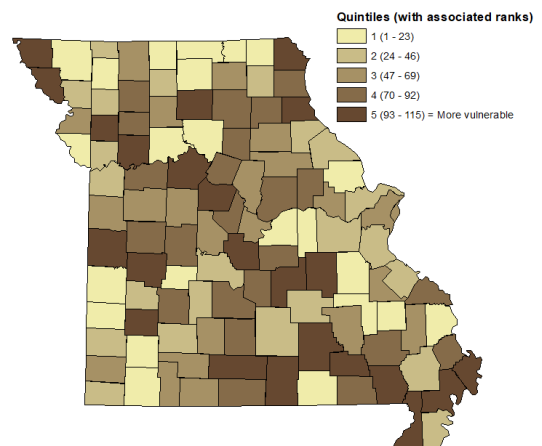
In 2016, 14.1 percent of Greene County adults 18 years of age or older reported more than 14 poor mental health days per month. This placed Greene County in rank 61 (3rd quintile) for this indicator in the opioid overdose vulnerability assessment.

Figure 17  
Self-reported (>14 Per Month)  
Poor Mental Health Days 2016



Between July 1, 2016 and June 30, 2017, a total of 1,819 drug-related arrests occurred in Greene County, at a rate of 627.7 per 100,000. This placed Greene County in rank 46 (2nd quintile) for this indicator, which was used in both assessments.

Figure 18  
Drug-related Arrests  
July 1, 2016 to June 30, 2017



## References

- Bloodborne Illnesses (HIV, HBV, HCV): Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics (BRDI). Calculated using 2017 hepatitis B and C data from the WebSurv (Missouri's Communicable Disease Registry) dataset, 2017 HIV and AIDS (stage 4 HIV) data from the eHARS (enhanced HIV/AIDS Reporting System) dataset, and 2017 population data. Rates reported per 100,000 population.
- Drug Overdose Deaths: Missouri DHSS, Bureau of Health Care Analysis and Data Dissemination (BHCADD). Calculated from 2015-2017 death certificate data and 2015-2017 population data. Rates reported per 100,000 population.
- Drug-related Arrests: Missouri Department of Mental Health. Calculated from a data file of FY 2017 arrests (as of December 2018) provided by the Division of Behavioral Health on December 3, 2019, and population data from 2017. Rates reported per 100,000 population.
- Hepatitis C Virus (HCV) Among Ages 18 to 40: Missouri DHSS, BRDI. Calculated from 2017 WebSurv data and 2017 population data. Rates reported per 100,000 population.
- Injection Drug Use (IDU) Among Persons Receiving Substance Use Disorder Treatment (SUDT): Missouri Department of Mental Health. Calculated from FY 2017 Alcohol and Drug Use Treatment Data and 2017 population data. Rates reported per 100,000 population. Accessed March 9, 2020, from <https://seow.dmh.mo.gov/TREATMENTADA/TREATMENTADAIndicators.aspx?PATH=Indicators&SID=NEW>.
- Lack of a High School Education: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S1501 Education Attainment. Accessed March 12, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Median Age: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. B01002 Median Age by Sex. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Median Income: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S1903 Median Income in the Past 12 Months (in 2017 Inflation-adjusted Dollars). Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Missouri Vulnerability Assessments: Missouri DHSS, BRDI. *Missouri Opioid Overdose and Bloodborne Infection Vulnerability Assessments – 2020*. Available at <https://health.mo.gov/data/opioids/assessments.php>.
- National Vulnerability Assessment: Van Handel, M, et al. County-level Vulnerability Assessment for Rapid Dissemination of HIV or HCV Infections Among Persons Who Inject Drugs, United States. *J Acquir Immune Defic Syndrom*. November 1, 2016; 73(3): 323-331. Accessed February 6, 2019 from the CDC Stacks website at <https://stacks.cdc.gov/view/cdc/46647>.
- Opioid Misuse Emergency Room Visits: Missouri DHSS, BHCADD. Calculated from 2015-2017 Patient Abstract System data and 2015-2017 population data. Rates reported per 1,000 population.
- Opioid-related Substance Use Disorder Treatment Admissions: Missouri Department of Mental Health. Calculated from FY 2017 Alcohol and Drug Use Treatment Data and 2017 population data. Rates reported per 100,000 population. Accessed March 9, 2020, from <https://seow.dmh.mo.gov/TREATMENTADA/TREATMENTADAIndicators.aspx?PATH=Indicators&SID=NEW>.
- Population – Age: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S0101 Age and Sex. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Population – Ethnicity: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates. B03003 Hispanic or Latino Origin. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Population – Race: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. B02001 Race. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Population – Sex: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S0101 Age and Sex. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Population – Totals: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. B01003 Total Population. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Poverty: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S1701 Poverty Status in the Past 12 Months. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Self-reported Frequent (<14 Per Month) Poor Mental Health Days: Missouri DHSS, Bureau of Epidemiology and Vital Statistics. 2016 Missouri County-Level Study data. Rates reported as a percentage of the adult population.
- Unemployment: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S2301 Employment Status. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.
- Uninsured: U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates. S2701 Selected Characteristics of Health Insurance Coverage in the United States. Accessed March 10, 2020, from American FactFinder at <https://factfinder.census.gov/>.

## Suggested Citation:

Missouri Department of Health and Senior Services, Bureau of Reportable Disease Informatics. Missouri Opioid Overdose and Bloodborne Infection Vulnerability Assessments Supplementary Data: Greene County. Available at <https://health.mo.gov/data/opioids/assessments.php>. Accessed Month Day, Year.