



Missouri Opioid Overdose and Bloodborne Infection Vulnerability Assessments

Supplementary Data

Warren County



Warren County is located in eastern Missouri and between years 2013 to 2017 had an estimated population of 33,554. Warren County ranks 34 in population size among Missouri’s 114 counties plus the independent city of St. Louis. The 2013-2017 unemployment rate in the county was 6.1%. This was higher than the statewide unemployment rate of 5.8%. In 2013-2017, the poverty rate was 12.8%, which was lower than the statewide poverty rate of 14.6%. The 2013-2017 median income of the county was \$56,193. The population distribution is as follows:

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

Demographics – Total Population						
Sex	Count	Percent		Age Group	Count	Percent
Male	16,773	50.0		0 – 9 years	4,530	13.5
Female	16,781	50.0		10 – 14 years	2,219	6.6
				15 – 19 years	1,951	5.8
				20 – 24 years	1,758	5.2
				25 – 39 years	6,047	18.0
				40 – 59 years	9,008	26.8
				Over 60 years	8,041	24.0
				Median Age	40.9 years	

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
Individual Outcomes (Weight x 3)	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
Community Factors (Weight x 1)		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, Warren County ranked 93 (5th quintile) for vulnerability to opioid overdoses. Warren County ranked 101 (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

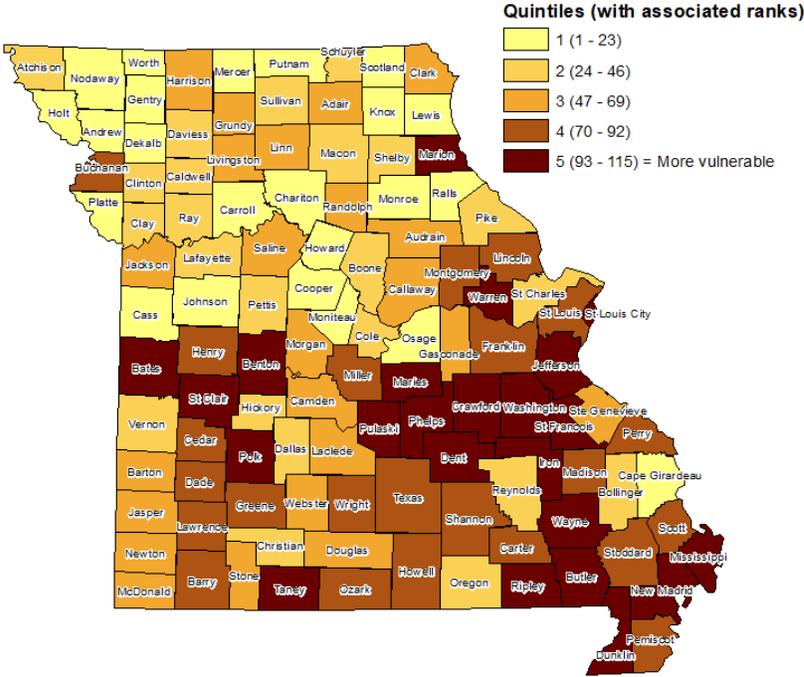


Figure 5: Individual Outcome Indicators

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
Warren	26	25.6	20	19.7	232	2.3	45	130.9	293	852.4	13.3
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

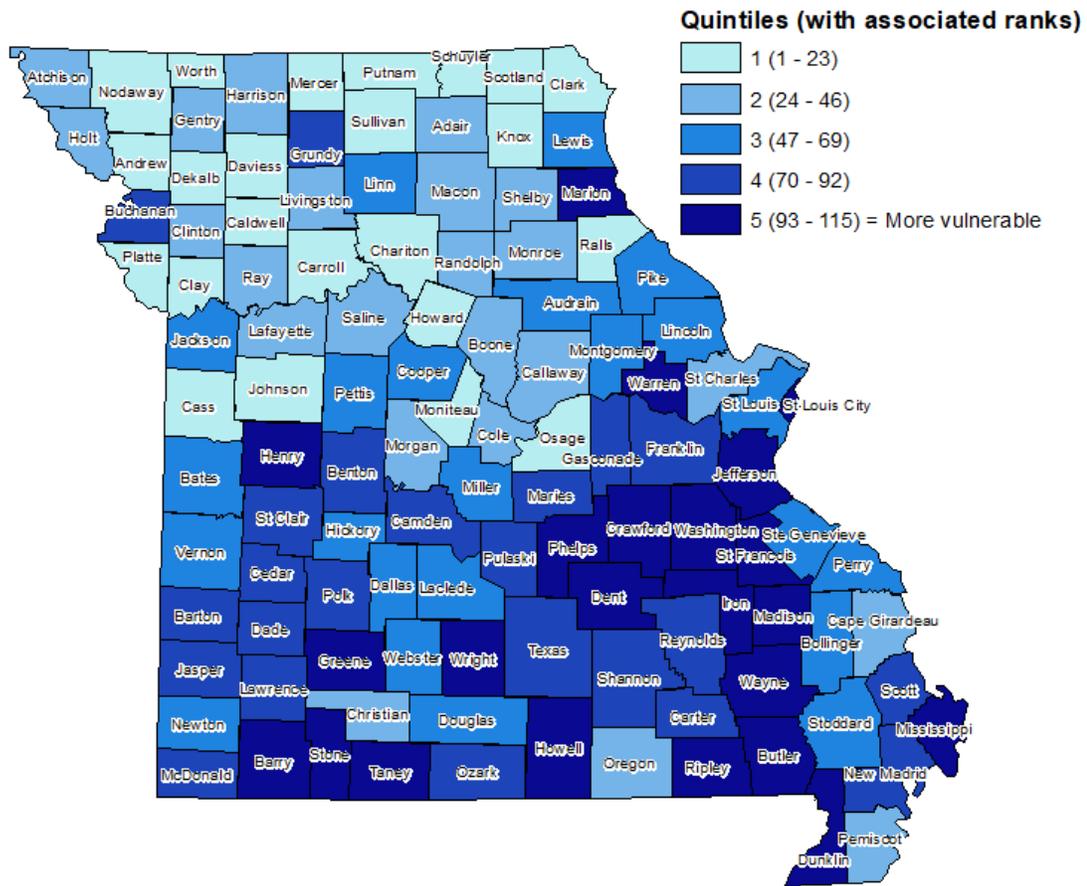


Figure 7: Individual Outcome Indicators

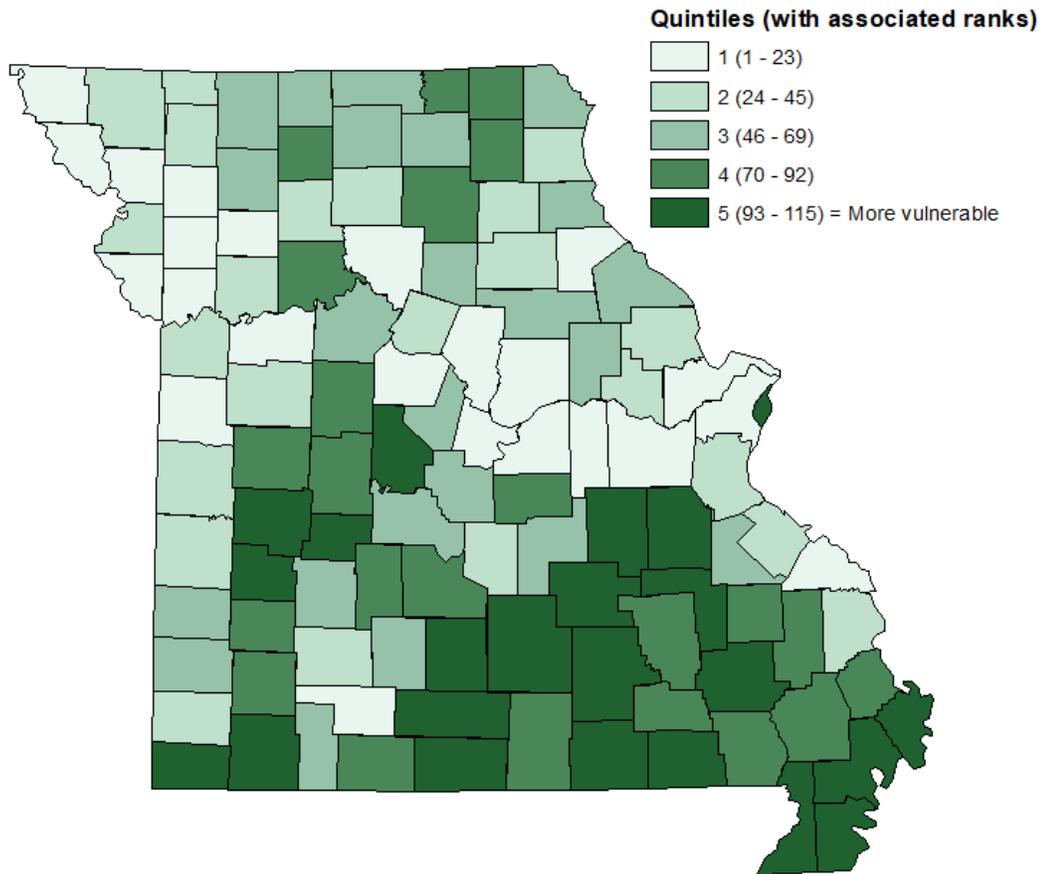
Bloodborne Infection Vulnerability Assessment Indicators														
County	Count: Drug OD Deaths by Residence County	Rate: Drug OD Deaths by Residence County	Count: Drug OD Deaths by County of Record	Rate: Drug OD Deaths by County of Record	Count: HIV, HBV, HCV	Rate: HIV, HBV, HCV	Count: HCV Among 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
Warren	26	25.6	20	19.7	105	103.3	49	183.6	232	2.3	50	145.5	293	852.4
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

Warren County			
ACS Data 2013-2017	Rate	Rank	Quintile
Lack of a High School Education	12.1%	45	2nd
Median Income	\$56,193	11	1st
Poverty	12.8%	21	2nd
Unemployment	6.1%	67	3rd
Uninsured	9.6%	34	2nd

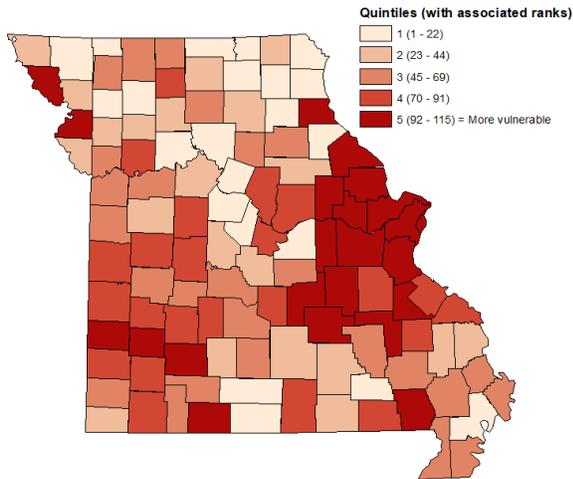
Social and economic factors within a community may impact available resources and influence vulnerability to opioid overdoses and bloodborne infections. Many of these indicators are interrelated. Data are from the U.S. Census Bureau's 2013-2017 American Community Survey (ACS).

**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 232, at a rate of 2.3 visits per 1,000 residents. This is rank 111 (5th quintile) for this indicator.

Warren County ranked 100 (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 Warren County drug overdose deaths was 26, at a rate of 25.6 deaths per 100,000 population.

By county of record, the 2015-2017 number of Warren County drug overdose deaths was 20, at a rate of 19.7 deaths per 100,000 population.

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

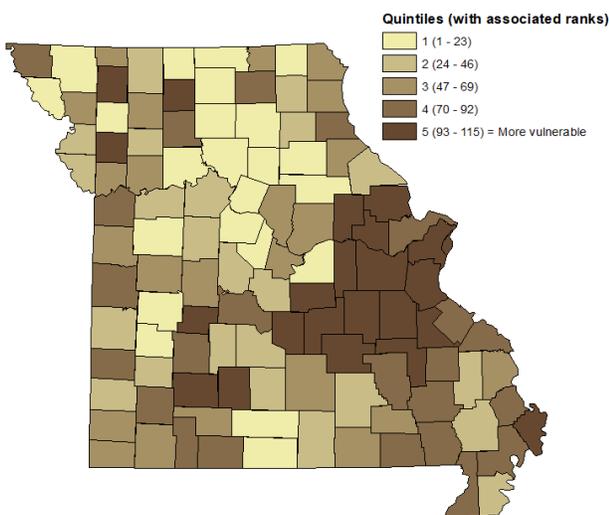
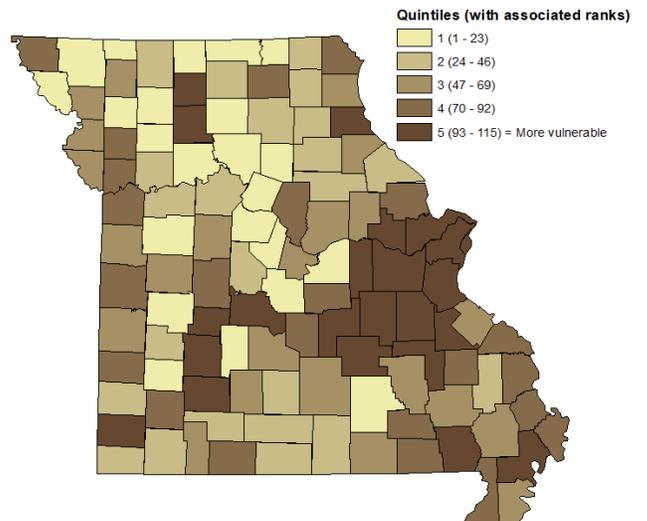


Figure 12
Drug Overdose Death Ranks
County of Record 2015-2017



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 Warren County totaled 105 for 2016-2018, at a rate of 103.3 cases per 100,000 residents. This is rank 93 (5th quintile) for 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.”[†] In Warren County, 49 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 183.6 cases per 100,000 residents. Warren County ranks 95 (5th quintile) for this indicator.

Figure 13
Bloodborne Illnesses
2016-2018

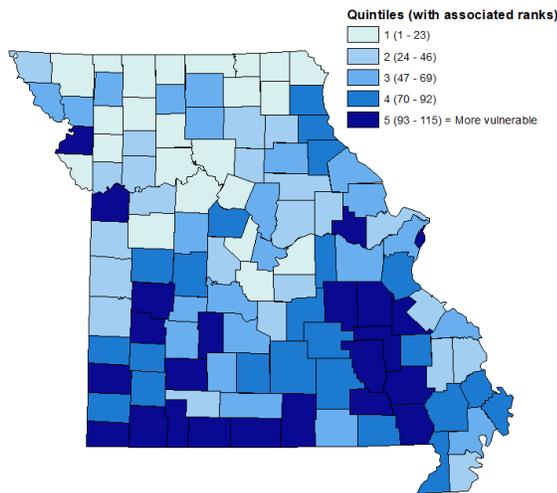
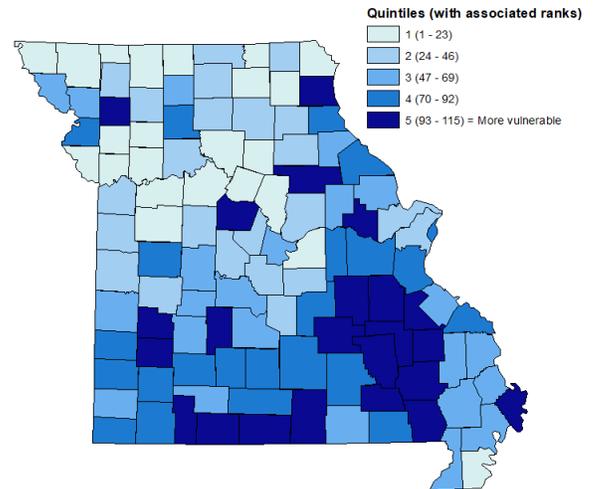


Figure 14
HCV Among Ages 18 to 40
2016-2018



Acute and chronic hepatitis C also significantly impact the 41- to 65-year-old age group. In 2016-2018, there were 47 new cases of acute and chronic hepatitis C identified in this age group, at a rate of 137.3 cases per 100,000 residents.

Out of 100 acute and chronic HCV cases in Warren County, 51 (51.0%) were male. For the cases in which race was identified, <5 (<4.2%) were African American. However, please interpret race data for HCV with caution, as race was not identified in 52 (52.0%) of all 2016-2018 HCV cases in Warren County.

[†] 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>.

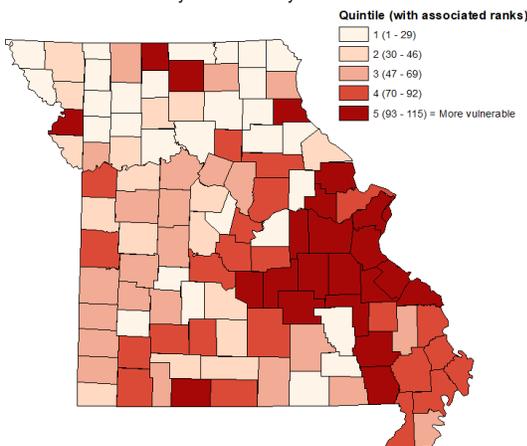
AIDS = Acquired Immunodeficiency Syndrome

STD = Sexually Transmitted Disease

TB = Tuberculosis

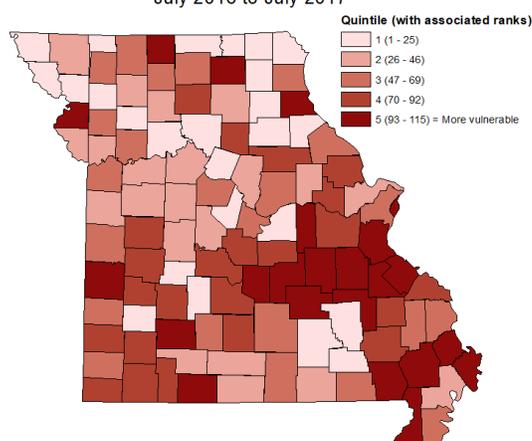
The number of people who received opioid-related substance use disorder treatment from July 1, 2016 to June 30, 2017 was 45, a rate of 130.9 persons per 100,000 population, placing this county in rank 99 (5th quintile). This indicator was used only in the opioid overdose vulnerability assessment.

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



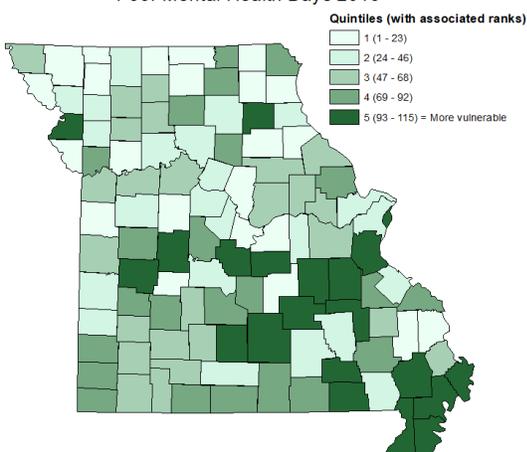
The number of persons receiving substance use disorder treatment and prior to treatment reported injecting drugs was 50, a rate of 145.5 persons per 100,000 population, placing this county in rank 91 (4th quintile). This indicator was used only in the bloodborne infection vulnerability assessment.

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



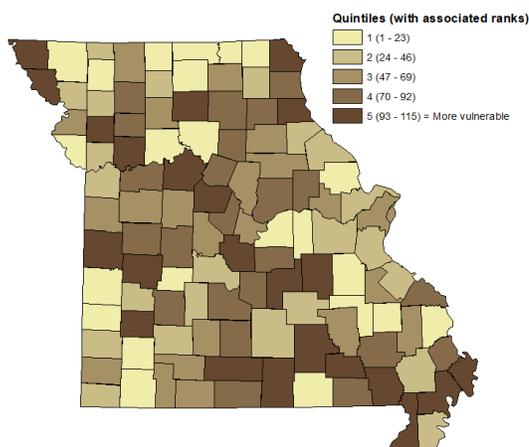
In 2016, 13.3 percent of Warren County adults 18 years of age or older reported more than 14 poor mental health days per month. This placed Warren County in rank 50 (3rd quintile) for this indicator in the opioid overdose vulnerability assessment.

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



Between July 1, 2016 and June 30, 2017, a total of 293 drug-related arrests occurred in Warren County, at a rate of 852.4 arrests per 100,000 population. Warren County ranks 69 (3rd quintile) for this indicator, which was used in both assessments.

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



References

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- 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.
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- 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>.
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- 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/>.
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Suggested Citation:

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