Community Mental Health and Substance Abuse Assessment

April 2019

Contents

1.0 Background and Goals 1

How to Use This Report 2

2.0 Methodology and Community Engagement 3

Major Research Components and Limitations 4

Environmental Scan 4

Secondary Research and Demographic Analysis 4

Geocoded Map of Community Resources 5

Analysis of Service Use Data from Major Providers 5

Digital / Social Media Data Analysis 5

Primary Research 6

National Behavioral Health System Executive Interviews 6

Key Stakeholder Interviews 6

Focus Group Discussions 7

Stakeholder Meetings 7

3.0 Community Partners Leadership Group 8

Research Findings 9

4.0 Secondary Research and Demographic Analysis 9

Demographics of the Service Area 10

Demographic Composition and Population Change Projections 10

Greene County Data Compared to City of Springfield 11

Age Group Trends – Medicare Population with Chronic Diseases 12

Social and Physical Environment 14

Unemployment – Civilian Population 16 and Older 14

Poverty 14

Housing 17

Education 18

Crime 18

Vulnerable Populations and Disparities 19

Health Status Profile 21

Most Common Causes of Death 21

Chronic Disease Incidence 22

General Health and Access 24

Risk and Protective Lifestyle Characteristics 27
Healthy Eating 27
Physical Activity, and Overweight/Obesity 29
Communicable Diseases 30
Tobacco Use 32
Mental Health 33
Overview of Mental Health Incidence 34
State Mental Health Service Trends for Select Counties 36
Inpatient Mental Health Admissions 37
Diagnosis Incidence and Trends 38
Suicide 40
Substance Use Disorders Trends 43
Mental Health and Substance Use Disorder Treatment at Major Providers 47
Inpatient Diagnoses 48
Outpatient Diagnoses 49
Child Abuse and Neglect 51
School Mental Health and Substance Use Disorder Data 52
Business Community Mental Health Concerns 59
5.0 Community Resources 60
Systems of Care and Recovery Continuum – General 60
Schematic of Major Types of Services 60
Community Resources Maps including Community Mental Health Locations 61
6.0 Digital / Social Media Data Analysis 62
Goal and Approach: 62
Mental Health Search Interest Overview 63
Suicide 67
Digital Analysis Summary 70
7.0 Primary Mixed Method Research 71
Focus Group Discussions and Key Stakeholder Interviews 71
Behavioral Health System Executive Interviews 72
National Issues and Challenges 72
Approaches and Processes Led by Hospitals or Public Health Departments: 73
National Topics Research Summary 73

Information Synthesis and Results 74
Initial Core Themes & Observations 74
8.0 Domains, Impacts and Interventions 84
Domain 1: Awareness and Early Intervention 85
Definition and Description: Stigma 85
Community Impact and Supporting Research: Stigma 85
Definition and Description: Awareness and Early Intervention: 86
Community Impact and Supporting Research: Awareness and Early Intervention 86
Community Identified Interventions: Awareness and Early Intervention and Stigma 87
Domain 2: Crisis Stabilization 89
Community Impact and Supporting Research: Crisis Stabilization 89
Community Identified Interventions: Crisis Stabilization 90
Domain 3: Access to Appropriate Care 91
Community Impact and Supporting Research: Access to Appropriate Care 91
Community Identified Interventions: Access to Appropriate Care 94
9.0 Prioritization Process Results 95
Strategic Grid of Prioritized Needs / Service Gaps 97
Ongoing activities 101
10.0 Potential Concepts and Measures for Collaborative Dashboard 103
Background 103
Fundamental Concepts 103
Consistency, Simplicity and Relevance 103
A Few, Broad, Co-equal Measures Reported Quarterly 103
Link The Dashboard to Community Research Observations and Action Items 103
Use The Dashboard Elements Across the Full System of Care and Recovery 103
Dashboard Elements 104
Appendices 107
CSTAR Patient Service Use 107
Stigma and Mental Health First Aid (MHFA) Support 109
Strategic Grid Detailed Tables 113
Priority Initiatives and Best Practices Synthesis 117
Selected Citations 117

1.0 Background and Goals

In 2016, community partners from across the community came together to assess the health needs in the Springfield region and collectively address those needs. One issue that emerged, both as a priority and as a common thread among other prioritized health issues, was mental health.

For that assessment, the data used to set mental health as a priority was limited—but it was a topic of great concern among care providers, frontline workers, caretakers, media and the broader community. Springfield leaders knew mental health and substance abuse needed to be addressed—but with little understanding of underlying causes, the breadth of these issues in the community, or how to best address them, the path forward was unclear. More comprehensive understanding, better data, deeper conversations and more collaboration were necessary to truly address and improve mental health and substance abuse.

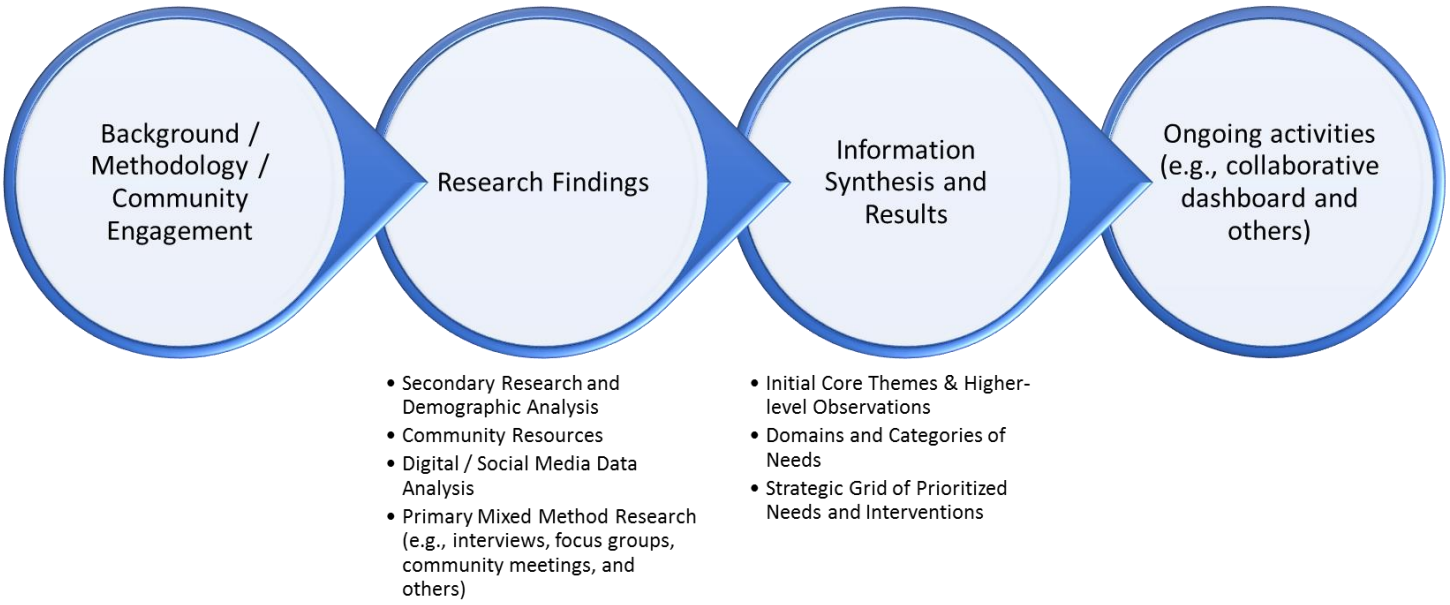
The Missouri Foundation for Health awarded a $252,500 grant for a comprehensive study and action plan for mental health and substance abuse in Greene County in 2017. As reflected by Substance Abuse and Mental Health Services Administration (SAMHSA), the U.S. Centers for Disease Control (US CDC), and others, there is a strong connection between mental health and substance abuse.[1] Crescendo Consulting Group served as the consultant to bring outside expertise, perspective, and guidance to the project.

Overseeing this project was the Healthy Living Alliance, a local organization aimed at making healthier living a priority in Springfield by bringing together representatives from local business, government, nonprofit, and healthcare industries. This advisory council provided direction and feedback to Crescendo as they worked to collect information from various stakeholders, focus groups, and area organizations. From the work of Crescendo, data was collected and assembled, trends were analyzed, and presentations were made to community groups in an effort to garner the best understanding possible of the mental health and substance abuse landscape in Greene County.

[1] Source: SAMHSA, 2018. Available at https://store.samhsa.gov/system/files/sma19-5052.pdf.
"The link between substance misuse and mental health issues is well established. The 2017 NSDUH shows that adults ages 18 or older with past-year mental health issues were more likely than other adults in that age group to have used illicit drugs in the same period (34.3 versus 15.8 percent), to have engaged in drinking in the past month (56.9 versus 55.6 percent), to have smoked cigarettes (28.2 versus 17.3 percent), and to have illicit drug or alcohol disorders (18.3 versus 5.1 percent). Similar links exist between depression and substance misuse. Adults ages 18 or older with MDE in the past year were more likely than those without MDE to have used an illicit drug (39.5 versus 17.7 percent), to have smoked cigarettes daily (17.5 versus 10.7 percent), to have used alcohol heavily in the past month (10.2 versus 6.5 percent), and to have had a substance use disorder in the past year (21.5 versus 6.5 percent). The risk of substance misuse as a companion of mental health issues is especially pronounced among college students as they negotiate a tricky transition from adolescence to adulthood, an age when mental health issues often surface for the first time and in a new environment where substance use is common. College-age individuals are especially vulnerable to mental health issues, in part because many such problems first emerge in the late teens or early twenties. Drug misuse and mental health counselors confirm that students who seek mental health treatment often report symptoms of substance misuse, while college students who use alcohol or other drugs often display signs of depression or anxiety."

How to Use This Report

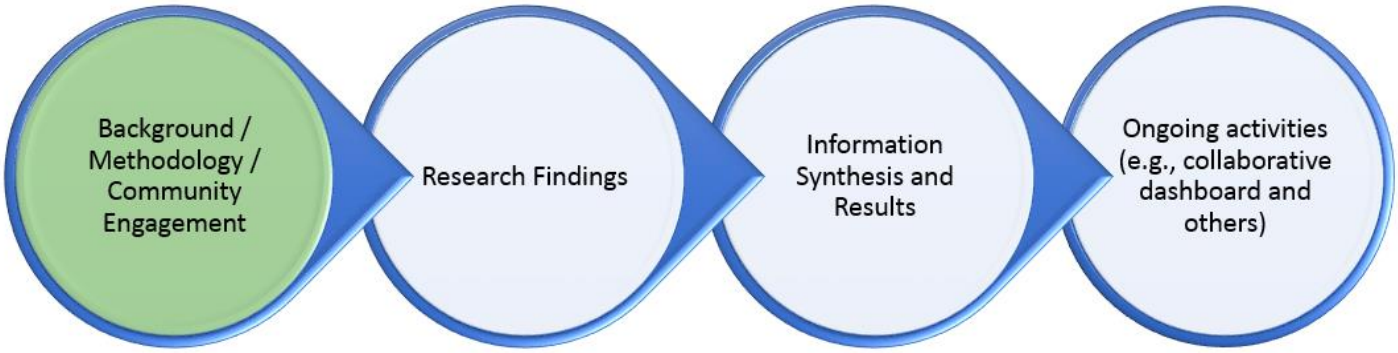
This report provides information about the approach and findings from the Community Mental Health and Substance Abuse Assessment including a comprehensive review of the related issues. The assessment covers a wide range of topics with community input to help foster on-going community discussion. We invite the reader to investigate and use the information in this report to help create goals, implement activities leading to an improved community, and move toward solutions. The following graphic provides a high-level "roadmap" of major activities conducted in the project and helps describe the layout of the report. Similar graphics will be found at several other points in the report in order to guide and orient the reader.



At a high level, the report includes the four primary sections shown above. Starting in the beginning of the project, information was gathered and analyzed to provide guidance for subsequent sections of the work – each piece informing and directing the next set of activities. For example, community engagement led to research activities (e.g., focus groups, interviews, etc.) that provided in-depth understanding of key issues. Research findings from the multiple methods were synthesized to create a set of initial themes and then (with the help of the Healthy Living Alliance[2] (HLA) members and others) a strategic grid of prioritized needs and interventions. Ongoing activities were designed to help address the prioritized needs and interventions.

[2] The Healthy Living Alliance is a local organization comprised of a diverse set of stakeholders and community leaders aimed at making healthier living a priority in Springfield by bringing together representatives from local business, government and nonprofit and healthcare industries.

The following part of the report is the first of the four primary sections.



2.0 Methodology and Community Engagement

The project methodology was designed to be data-driven and to provide an inclusive understanding of the area's strengths, capabilities, healthcare assets, service gaps, and ideas.

The approach was to engage community members that represent diverse perspectives and core sectors within the area – especially in regard to ways to meet service gaps and related needs. A diversity of opinion and insight allowed the research to explore the breadth of mental health and substance use disorder treatment needs at many levels across the community.

For example, the needs identified by people experiencing homelessness were divergent (in some respects) from those noted by providers and a more general cross-section of the community. Needs noted by recipients of Drug Court services differ from prosecutors and defense attorneys. Having a highly inclusive approach allowed the project to "cast a wide net" in order to identify needs, as well as insightful ideas and strategies.

There were several co-occurring by-products to this approach:

- Service providers were informed about other, synergistic efforts in the community.
- Activities that involved collaboration between multiple providers were quickly and clearly communicated; thus, strengthening the ability of organization to collectively address common needs.
- Duplicative initiatives were more quickly identified.
- The profile, or importance, of the project highlighted the urgent status of mental health and substance use disorder treatment needs in the community to the general population (via the local news media, the Springfield Business Journal articles, word of mouth, and other channels).

> *"I'm interested in seeing where the project goes and the direction of the strategies that come out of it. I've got to say, though, the simple process of keeping the topic [i.e., mental health and substance use disorders] top-of-mind and sharing ideas in a meeting with other [service providers] has been helpful. I had no idea that Burrell, for example, had enacted so many changes over the last few months. Knowing, too, kind of where they are going is going to help me figure out how I can best 'sing harmony' and not duplicate services as much."*
>
> - Leader at mid-sized community service provider site.

Major Research Components and Limitations

The project methodology included both the environmental scan (e.g., secondary research) and primary research components. The secondary data included in the environmental scan and other phases helped to substantiate key research findings and to develop well-supported strategies to address community needs.

The primary research sections provided in-depth understanding of core mental health and substance use disorder, solicited insight regarding causal factors, service gaps, possible interventions (or solutions), and other information. Primary research techniques such as focus groups and stakeholder interviews facilitated the inclusion of diverse perspectives from various sectors (e.g., business, education, criminal justice system, and healthcare providers). This research included individuals or groups with unique perspectives such as students, the homeless community, LGBTQ community members, family members of people with mental health issues, people convicted of substance use-related crimes, people currently wrestling with mental health and/or substance use disorder issues, first responders, direct care providers, and many others.

Together, the secondary and primary research techniques were used to identify a prioritized set of mental health and substance use disorder-related needs and to establish categories of interventions and other work. The following provides a detailed description of the environmental scan and primary research techniques used in the development of the report.

Environmental Scan

The environmental scan is essentially a data-driven profile of the community. It includes secondary research data, as well as information contained in other existing sources of information. This data was used to do several things:

- Provide a framework of demographic and statistical data that defines structural components of the service area.
- Use county-level prevalence data to establish a better understanding of health needs and the relative size of service gaps.
- Examine service use data from large providers of inpatient and outpatient behavioral health and substance use disorder treatment services in order to quantitatively identify health need concentrations, trends, prevalence, and service gaps.
- Establish a data-driven basis from which to guide development of strategies to better meet mental health and substance use disorder treatment needs.

The environmental scan analyzes and organizes other health aspects of the community. This multi-phase research process included subcomponents that help confirm existing demographic and lifestyle trends and help open traditional perceptions to new insights.

Secondary Research and Demographic Analysis

The structure of the secondary data is based upon the approved table of health-related measures in comparable geographic areas. [See Behavioral Health Assessment Research Topics and Measures in the Appendix.] The goal of presenting this analysis is to establish a data-based foundation for additional in-depth research activities and, relatedly, to better understand behavioral health data in the context of broader community health.

The secondary data collection process was used to compile existing community profile information from local, state, and federal government sources, and from national organizations. Data collected and compiled included, but is not limited to metrics that include measures in the following Research Topics:

- Demographics
- Social and physical environment factors
- Health status measures
- Risk and protective lifestyle behavior ratings

Due to the breadth and the periodicity of data requirements, several data sources were included in order to develop a geo-demographic database of health status measures such as lifestyle, demographic, general health trends, morbidity and mortality data. It should be noted that:

- The secondary health metrics and measures outline the basic framework for thinking about health in a group of people - any group of people.
- The first "Research Topic" references the demographics – which don't change quickly – and the final one is health statistics related to individual choices about health.
- The purpose of the document is to create a frame of reference and an outline which is used to discuss the health status of a population.

Sources include the U.S. Census Bureau, Community Commons, the Missouri Department of Mental Health, and others. Crescendo's internal statistical analysis expertise was used to provide additional insight to the data for analysis and forecasting purposes.

Geocoded Map of Community Resources

Based on feedback directly from service providers and similar sources, the Appendices include a map of responding providers of mental health and substance use disorder treatment services. The electronic version of this report includes an interactive map and a searchable database of services.

Analysis of Service Use Data from Major Providers

Service use data was collected from inpatient facilities (Mercy Hospital and CoxHealth) and outpatient facilities (Jordan Valley Community Health Center and Burrell Behavioral Health). The data – the number of encounters by zip code by diagnosis (ICD-10 code) – was aggregated and analyzed to identify community mental health service use characteristics. Outpatient data was similarly evaluated. Comparisons between inpatient and outpatient service use characteristics were noted and incorporated into the overall community analysis.

Digital / Social Media Data Analysis

The digital and social media (DSM) data analysis was used to quantify urgent or emergent mental health and substance use disorder treatment issues reflected in online discussions and other contemporary media. Crescendo deployed data analysis and reporting techniques based on digital communications resources such as the following:

- Facebook Business Manager
- Meltwater Social Media Insight
- Google Analytics and Trend Analysis

Primary Research

Solid mixed-modality qualitative and quantitative primary research components were also used as fundamental building blocks in the assessment.

The qualitative primary research included an in-depth process that engaged over 200 individuals from the general population, as well as sectors such as the Criminal Justice System (CJS), schools, employers, and healthcare providers. Where possible, some qualitative research (e.g., interview comments, etc.) was annotated and analyzed in order to develop a quantitative picture of select interview topics.

The general population research included interviews or group discussions with neighborhood leaders, members of the homeless community, people struggling with healthcare issues (e.g., mental health, substance use disorders, chronic disease, etc.), men and women participating in Drug Court or Mental Health Court programs, parents of school children, employers, church representatives, school teachers and counselors, service industry workers, and others.

National Behavioral Health System Executive Interviews

Some of the strengths and challenges seen in Springfield / Greene County were similar to those found in other parts of the U.S. In order to review insights and strategies being used elsewhere, interviews were conducted with several (N=15) of the nation's leading providers of mental health and substance use disorder treatment services.

The interviews helped identify mental health and substance use disorder treatment trends, innovative solutions, emerging needs, service "choke points," insight regarding the impact of mental health issues on community groups, and the impact of community groups on mental health issues.

Key Stakeholder Interviews

One-on-one interviews with over 60 individuals were used to provide depth of understanding to issues that emerged from the environmental scan, focus group discussions, and leadership conversations. Interviews were conducted in-person (N=30) and by telephone (N=32) throughout the project timeline. Initial research in 2018Q1 and 2018Q2 provided insight and helped construct the corpus of the community needs. Latter-stage interviews were used to provide specialized insight and fill information gaps. Interviews were conducted with the following categories of respondents:

- General community members
- Homeless community members
- Healthcare providers
- Other community service providers
- Drug Court and Mental Health Court participants
- Community leaders

To support the interview process, Crescendo worked with SGCHD and others to identify individuals and venues where interviews may take place (if done in person) or provided contact information (if done telephonically). Interview guides were jointly developed by Crescendo and SGCHD. In addition, guides were modified, when needed, in order to delve more deeply into particular insight possessed by individuals. Interviews were designed to gain detailed insight regarding perceptions of community needs; implementation strategies; interrelation among needs, subpopulations, and community sectors; barriers to success; and, possible solutions. The interviews also identified important community trends affecting discrete populations within the service area.

Focus Group Discussions

Focus groups added unique insight and depth to community needs perceptions – especially among diverse sectors of the population. The research approach included 18 focus groups discussions with consumers, community service providers, and others as indicated in the table below.

Focus Group Audiences and Number of Groups

Criminal Justice System (CJS) (Drug Court participants, Judge Davis and team, CJS adjudicators)	3
Schools (Parents, teachers, school counselors, students, university healthcare providers)	4
Employers (and the business sector) (Chamber of Commerce members, career center, and others)	3
Community groups (Neighborhood Advisory Council, Bissett neighborhood group, homeless community, LGBTQ community)	4
Service providers (Ozark Mental Health Network, faith-based service providers, hospital surgeons, and others)	4

The purpose of these focus groups was to solicit consumers' and stakeholders' opinions, feelings, and expectations regarding the following:

- The current availability of services and identification of unmet needs.
- Access to services.
- The interrelation of mental health needs, subpopulations, and community sectors (employers, health, criminal justice, education).
- Resources and strengths to capitalize on opportunities to improve health and the fabric of the community.

Stakeholder Meetings

Crescendo conducted several meetings with the Good Community, Ozarks Fighting Back, the Neighborhood Advisory Council, and similar groups. The purpose of the meetings was to collect project process-related insight from a wide range of community leaders, engage service provider leaders who could facilitate research efforts, and build consensus for future activities to improve community health. The stakeholders involved in the group meetings also helped provide insight to the larger set of needs identified in the research.

3.0 Community Partners Leadership Group

The Healthy Living Alliance (HLA) and select other community leaders provided project oversight and guidance. Their contribution to the execution of this project included, but was not limited to, the following activities:

- Identify, and make introductions to, stakeholders and diverse sets of community members to include in the primary research.
- Provide access to service use and other types of environmental scan data.
- Offer meeting places and logistical support for research and other project activities.
- Participate in stakeholder interviews.
- Share insight around service gaps and interventions to address gaps.
- Facilitate logistics around focus group discussions.
- Provide direction and insight regarding health-related policies, reimbursement criteria, and regulatory issues impacting behavioral health and substance use disorder issues.
- Offer to develop strategies to address local service gaps; several implemented them during the project.
- Participate in the needs prioritization process.
- Provide support and other ongoing assistance.

The Springfield / Greene County Health Department and Crescendo are grateful for the support of HLA. HLA members include a broad spectrum of community members representing business, school / academic, criminal justice system, healthcare, community develop, philanthropy, economic development, and other sectors. Members include the following:

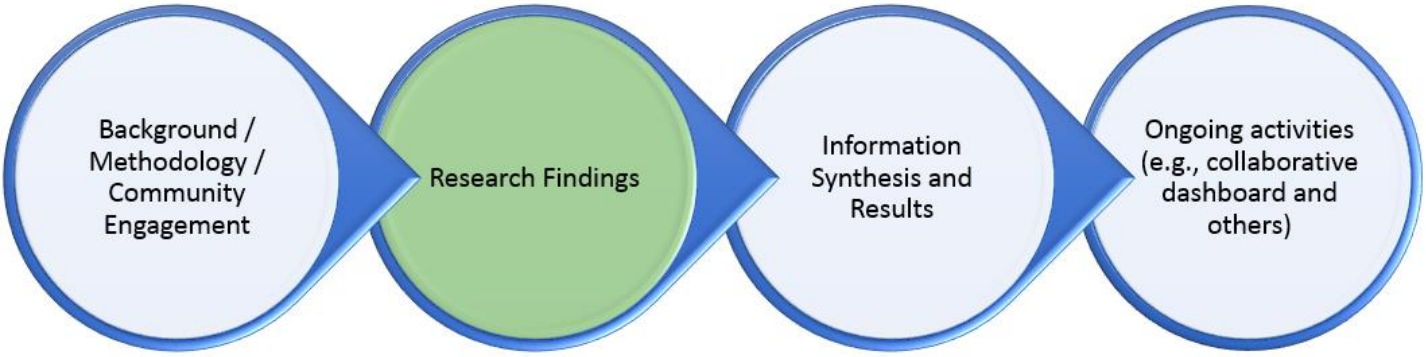
HLA Advisory Council Members

Paul Adler, KY3	Clay Goddard, Springfield - Greene County Health Department	Richard Ollis, Ollis and Company
Harold Bengsch, Greene County Commission	Brent Hubbard, Mercy Hospital	Anthony Roberts, Community Blood Center of the Ozarks
Greg Burris (Co-chair), United Way of the Ozarks	John Jungmann, Springfield Public Schools	Howard Shayne, Greater Springfield Dental Society
Janet Dankert, Community Partnership of the Ozarks	Debi Meeds, United Way of the Ozarks	Clif Smart, Missouri State University
C.J. Davis, Burrell Behavioral Health	Brooks Miller, Jordan Valley Community Health Center	Maura Taylor, Catholic Charities of Southern Missouri
Steve Edwards, CoxHealth	Megan Morris, Bass Pro Shops	John Twitty, 835 Consulting
Brian Fogle (Co-chair), Community Foundation of the Ozarks	Matt Morrow, Springfield Area Chamber of Commerce	

Research Findings

Environmental Scan

As noted, the environmental scan serves as a lens through which other health aspects of the community were analyzed and organized**.** This multi-phase research process included subcomponents that help confirm existing demographic and lifestyle trends and help open traditional perceptions to new insights.



4.0 Secondary Research and Demographic Analysis

Section 4.0 begins the second of four major parts of the report.

As noted, data collected and compiled included, but is not limited to, metrics that include measures in the following data research topics:

- Demographics (including neighborhood-level data, where available)
- Social and physical environment factors
- Health status measures
- Risk and protective lifestyle behavior ratings

Sources include the U.S. Census Bureau, Community Commons, the Missouri Department of Mental Health, and others. Crescendo's internal statistical analysis expertise was used to provide additional insight to the data for analysis and forecasting purposes.

Demographics of the Service Area

Demographic Composition and Population Change Projections

As seen in the following tables, compared to Missouri and the United States as a whole, Greene County is younger, less racially diverse, and is growing at a rate nearly twice that of the state of Missouri.

Table 1: Total Population

	Total Population	White (not Hispanic)	Black	Hispanic	Median Age (age adjusted)	% Male	% Female
Greene County	283,206	91.04%	3.14%	3.35%	35.6	48.7%	51.3%
Missouri	6,045,448	82.63%	11.53%	3.85%	38.2	49.03%	50.97%
United States	316,515,021	73.6%	12.61%	17.13%	37.6	49.2%	50.8%

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

- Greene County has a predominately white population (91.0%) when compared to Missouri (82.63%) and the United States (73.6%) as a whole.

Table 2: Population Change

	Total Population	% Population Change, 2000-2010	Estimated Total Population, 2030	% Population Growth, 2030
Greene County	283,206	15.1%	329,825	21.1%
Missouri	6,045,448	7.1%	6,746,762	12.8%
United States	316,515,021	9.75%		

Source: US Census Bureau, Decennial Census. 2000 - 2010. Source geography: Tract

Source: Missouri Office of Administration, Population Projections by Age.

- Greene County is experiencing rapid population growth at rates almost twice that of the state. This growth is expected to continue through 2030.
- Christian County to the south of Greene County is also experiencing significant growth, much of it due the attractiveness of the area for retirees.

Table 3: Population by Age Group

	Under 18	18-24	25-44	45-64	65+
Greene County	21.05%	14.01%	25.81%	24.17%	14.96%
Missouri	23.17%	9.8%	25.31%	26.76%	14.96%
United States	23.28%	9.91%	26.32%	26.32%	14.10%

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

- Due to the large number of colleges and universities located in Greene County, there are a significantly higher number of residents in the 18-24 age group when compared to state totals.

Table 4: Households with Children under Age 18

	Total Households	Total Family Households	Families w/ Children Under Age 18	Families w/Children Under Age 18), Percent of Total Households
Greene County	117,732	69,698	32,562	27.66%
Missouri	2,364,688	1,530,006	720,666	30.48%
United States	116,926,305	77,260,546	37,419,210	32.00%

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

- Greene County has slightly fewer (27.66%) of households with children under the age of 18 than Missouri (30.48%) and the United States (32%).

Greene County Data Compared to City of Springfield

The City of Springfield more than half (57.8%) of the Greene County population, but demographics and select other measures differ.

Table 5: Households with Children under Age 18

Site	Springfield (City)	Greene County Excluding City of Springfield
Population	163,763	119,443
Population change 2010 to 2018	6.1%	9.1%
2018 Median Household Income	$37,614	$57,500
2018 Median Age	35.1	40.1
2018 Percent Ages 65+	16.6%	17.1%
Population Age Percent Ages 65+ Percent Change since 2010	21.8%	38.6%
2000 Renter Occupied Housing Units (%)	45.0%	24.6%
2018 Renter Occupied Housing Units (%)	53.8%	27.8%
2012-2016 ACS Households Below the Poverty Level (%)	24.1%	9.0%
2012-2016 ACS Households Receiving Food Stamps/SNAP (%)	14.5%	6.8%
2018 Medical Services - Annual Expenditures per Capita	$311	$413

Sources: American Community Survey, 2011-2015; ESRI, 2018.

- Compared to non-Springfield Greene County residents, Springfield residents tend to be slightly younger (median age 35.1 compared to 40.1) and have lower median household income. They also tend to have higher use of SNAP support.
- The median age of people living outside of Springfield (but in Greene County) is higher than those living in Springfield. In a related measure, more than half of City of Springfield housing units are occupied by renters – approximately twice the rate of those living outside the city, and a notable increase since 2010.
- Medical expenditures for people living outside of the City of Springfield are about 30% higher than City of Springfield residents – highlighting the importance of access to care for those residents.

Age Group Trends – Medicare Population with Chronic Diseases

The Greene County Medicare population has slightly lower incidence of some chronic conditions than both Missouri and the United States totals

Table 6: Medicare Population with High Blood Pressure

	Total Medicare Beneficiaries	Beneficiaries with High Blood Pressure	Percent with High Blood Pressure
Greene County	30,905	15,415	49.88%
Missouri	767,306	419,133	54.62%
United States	34,118,227	18,761,681	54.99%

Source: Centers for Medicare and Medicaid Services. 2015. Source geography: County

- The percentage of Medicare recipients with high blood pressure is about 4% points less than Missouri and the U.S.

Table 7: Medicare Population with Heart Disease

	Total Medicare Beneficiaries	**Beneficiaries with Heart Disease**	**Percent with Heart Disease**
Greene County	30,905	6,451	20.87%
Missouri	767,306	204,290	26.62%
United States	34118,227	9,028,604	26.46%

Source: Centers for Medicare and Medicaid Services. 2015. Source geography: County

- Residents receiving Medicare benefits in Greene County are less likely to have heart disease than other Medicare beneficiaries in Missouri and the United States

Table 8: Medicare Population with Diabetes

	Total Medicare Beneficiaries	Beneficiaries with Diabetes	Percent with Diabetes
Greene County	30,905	6,938	22.45%
Missouri	767,306	198,285	25.84%
United States	34118,227	9,110,725	26.55%

Source: Centers for Medicare and Medicaid Services. 2015. Source geography: County

- The percentage of Medicare recipients with diabetes is slightly lower (about 3% points) than Missouri and the United States (about 4% points)
- Ambulatory care sensitive (ACS) conditions refer to pneumonia, dehydration, asthma, diabetes and other conditions that affect people and may have been prevented if adequate primary care resources were available. This data focusses on the discharge rate per 1,000 Medicare enrollees which are ambulatory care sensitive (ACS).

Table 9: Preventable Hospital Events (Medicare)

	Total Medicare Part A Enrollees	Ambulatory Care Sensitive Condition Hospital Discharges	Ambulatory Care Sensitive Condition Discharge Rate
Greene County	23,896	1,090	45.7
Missouri	628,274	35,569	56.6
United States	29,649,023	1,479,545	49.9

Data Source: Dartmouth College Institute for Health Policy Clinical Practice, Dartmouth Atlas of Health Care. 2014. Source geography: County

- The Ambulatory Care Sensitive (ACS) Conditions Discharge Rate for Greene County (45.7) is much lower than Missouri (56.6) and the United States (49.9).
- The lower rate in Greene County suggests seniors have access to primary care.

Social and Physical Environment

Social determinants have a significant impact on the health outcomes of individuals and communities. Factors such as socioeconomic status, the physical environment, employment, and more are all important social and physical factors in determining the health of a community.

In Greene County, unemployment rates are lower than the state (and the U.S.) while poverty rates are higher.

Unemployment – Civilian Population 16 and Older

Total unemployment in the report area is relevant because unemployment creates financial instability and barriers to access including insurance coverage, mental and physical health services, healthy food, and other necessities that contribute to poor health status.

Table 10: Unemployment Rate

	Labor Force	Employed	Unemployed	Unemployment Rate
Greene County	150,579	145,860	4,719	3.1%
Missouri	3,091,875	2,977,005	114,870	3.7%
United States	160,059,369	152,893,934	7,165,435	4.5%

Source: US Department of Labor, Bureau of Labor Statistics. 2017 - November. Source geography: County

- Greene County has a slightly lower unemployment rate (3.1%) compared to Missouri (3.7%) and the U.S. (4.5%).

Poverty

While Greene County has a low employment rate, it has a higher rate of poverty than the Missouri or U.S. average. This indicator is particularly important because poverty can create and exacerbate barriers to accessing health services, nutritious or healthy foods, and many other indicators that contribute to poor overall health status. In addition, rates of mental illness are, is some instances, correlated with poverty levels. This is a fundamental issue requiring sensitivity and insight.

Table 11: Individuals living below 50%, 100%, 185% and 200% of the Federal Poverty Level

	Percent of Population (At or Below 50% FPL)	Percent of Population in Poverty (Below 100% FPL)	Percent of Population in Poverty (At or Below 185% FPL)	Percent of Population (at or Below 200% FPL)
Greene County	8.38%	18.98%	37.50%	40.71%
Missouri	6.85%	15.62%	32.28%	35.18%
United States	6.85%	15.47%	31.58%	34.26%

Source: US Census Bureau, American Community Survey. 2011-2015. Source geography: Tract

- The percent of residents living at all levels of the Federal Poverty Level in Greene County is higher than Missouri and the U.S.
- The percent of residents living at or below 200% of the Federal Poverty Level in Greene County is 15.7% higher than the state as a whole – that is, 40.71% compared to 35.18% of the total population.

Table 12: Poverty Segmented by Race and Ethnicity – 100% FPL

	White	Black or African American	Asian	Some Other Race	Multiple Race	Hispanic/ Latino
Greene County	17.93%	35.62%	30.39%	34.42%	23.59%	30.98%
Missouri	13.20%	29.31%	17.15%	31.97%	24.53%	27.09%
United States	12.70%	27.00%	12.57%	26.53%	19.94%	24.3%

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

- Most racial minority groups are more than twice as likely to be impacted by poverty than whites in Greene County.
- Poverty affects all races and ethnicities in Greene County. However, poverty among African Americans tends to be high compared to other races, as fewer than one in five Caucasians live in poverty and approximately twice as many (by percentage) African Americans live in poverty.

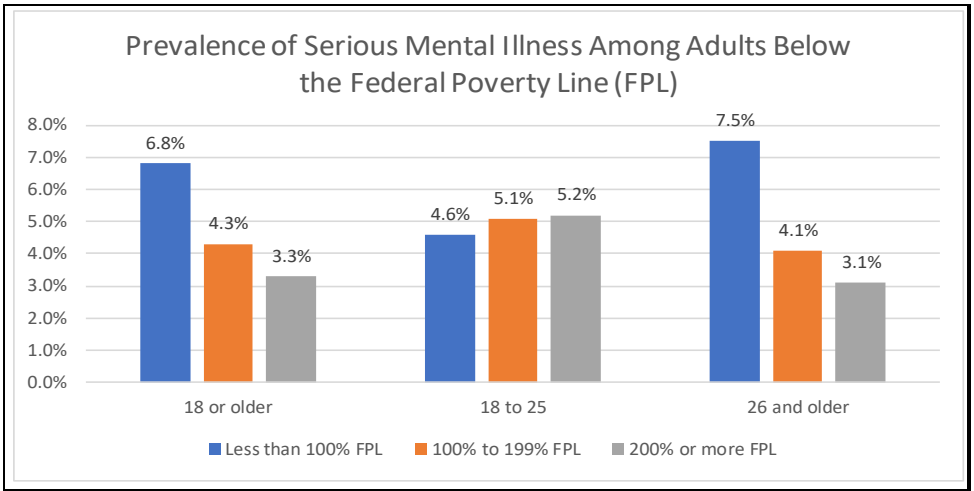
Table 13: Percentage of children under age 18 in poverty

Children Under Age 18 in Poverty	% Children Below 100% FPL	% Children at or Below 200% FPL	Children in single parent households
Greene County	24.39%	49.16%	33%
Missouri	21.66%	44.44%	34%
United States	21.73%	43.96%	34%

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

- Nearly one of four (24.39%) Greene County children live below the poverty level – a slightly higher percentage than state and U.S. totals.

Table 14: Percentage of children under age 18 in poverty



Annual Household Income / Poverty Level	18 or older	18 to 25	26 and older
Less than 100% FPL	6.8%	4.6%	7.5%
100% to 199% FPL	4.3%	5.1%	4.1%
200% or more FPL	3.3%	5.2%	3.1%

- Nationally, there is a strong correlation between poverty and the incidence of severe mental illness.
- Among adults 18 or older, the likelihood of having severe mental illness is more than twice as likely for people in poverty (i.e., less than 100% of the FPL).[3]
- People age 26 and older are particularly susceptible to the impact of poverty and mental illness. This suggests that prevention and early intervention may be especially helpful and provide long-term benefits for people under 18.

[3] SAMHSA, "The CBHSQ Report," November 2016. Available at https://www.samhsa.gov/data/sites/default/files/report_2720/Spotlight-2720.html

Housing

As one of the best-documented social determinants of health, housing and selected housing interventions for low-income people have been found to improve health outcomes and decrease health care costs[4]. Recent meta-research[5] suggests the impact of housing and health "can be understood as supporting the existence of four pathways: 1) the health impacts of not having a stable home (the stability pathway); 2) conditions inside the home (the safety and quality pathway); 3) financial burdens resulting from high-cost housing (the affordability pathway); and 4) the health impacts of neighborhoods, including both the environmental and social characteristics of where people live (the neighborhood pathway.)

Table 15: Occupied Housing Units by Type

		Owner Occupied		Renter Occupied	
	Total	**Number**	**Percent**	**Number**	**Percent**
Greene County	119,141	69,465	58.3%	49,676	41.7%
Missouri	2,372,362	1,584,735	66.8%	787,627	33.2%
United States	117,716,237	74,881,068	63.6%	42,835,169	36.4%

Source: US Census Bureau, American Community Survey, 2012-2016 Survey 5-Year Estimates.

- Renter-occupied Housing percentages rose from 33.1% in 2000 to 38.9% in 2010, and 41.7% in the five-year period 2012-2016.[6]
- Home ownership in Greene County is less common than the Missouri state average. Declining home ownership trends can correlate with more challenging economic conditions.
- There is broad-based research that indicates that correlation between poverty and housing[7], as well as between poverty and reduced access to health services.

[4] See Taylor, et al. https://bluecrossmafoundation.org/sites/default/files/download/publication/Social_Equity_Report_Final.pdf, Accessed Nov 2018

[5] "Housing And Health: An Overview Of The Literature, " Health Affairs Health Policy Brief, June 7, 2018. https://www.healthaffairs.org/do/10.1377/hpb20180313.396577/full/ Accessed Nov 2018

[6] US Census Bureau, American Community Survey, 2000, and 2010 data. Available at https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_QTH3&prodType=table

[7] Joseph Roundtree Foundation, "The Links Between Housing and Poverty: an Evidence Review." Available at https://www.york.ac.uk/media/chp/documents/2013/poverty-housing-options-full.pdf

Education

Tracking educational attainment and especially the percentage of those without high school education or equivalency is relevant because educational attainment is linked to positive health outcomes. [8]

Table 16: Educational Attainment 25 and Older

	Less than 9th grade	9th - 12th grade, no diploma	High school graduate and equivalency	Some college, no degree	Associate's degree	Bachelor's degree	Graduate or Professional degree
Greene County	2.4%	5.4%	29.0%	25.4%	8.1%	19.2%	10.5%
Missouri	3.3%	7.1%	30.7%	22.5%	7.9%	17.7%	10.8%
United States	5.4%	7.2%	27.2%	20.6%	8.4%	19.3%	11.9%

Source: U.S. Census Bureau, 2016 American Community Survey 1-Year Estimates

- Educational attainment in Greene County is similar to the state and national levels with slightly more residents falling in the "some college, no degree" category. Since Greene County has a high number of colleges and universities, a high number of adults with some college would be expected.
- Greene County college completion totals are similar to U.S. totals while the percent of population at the lowest level of educational attainment (no high school diploma or less) is less than half of the U.S. total.

Crime

The link between substance use and mental health disorders and crime is well-documented. The Bureau of Justice Statistics (BJS) of the U.S. Department of Justice indicates that "about 1 in 7 state and federal prisoners (14%) and 1 in 4 jail inmates (26%) reported experiences that met the threshold for serious psychological distress (SPD) in the 30 days prior to being administered a survey. Similarly, 37% of prisoners and 44% of jail inmates had been told in the past by a mental health professional that they had a mental disorder. [9]

However, there is also good data suggesting that increasing community access to treatment for substance use and mental health disorders may be both a compassionate and cost-effective way to reduce crime rates.

An extensive literature review by Bondurant, Lindo and Swensen[10] has evaluated the relationship between substance-abuse treatment programs and criminal activities, including some that use "the gold standard" for empirical research,

[8] Freudenberg N, Ruglis J. Reframing school dropout as a public health issue. Prev Chronic Dis 2007;4(4). http://www.cdc.gov/pcd/issues/2007/oct/07_0063.htm. Accessed November 2018.

[9] Bronson, Jennifer; Indicators of Mental Health Problems Reported by Prisoners and Jail Inmates, Special Report June 2017. https://www.bjs.gov/content/pub/pdf/imhprpji1112.pdf. Accessed November 2018.

[10] Substance Abuse Treatment Centers and Local Crime, Samuel R. Bondurant, Jason M. Lindo, and Isaac D. Swensen, NBER Working Paper No. 22610, September 2016. https://www.nber.org/papers/w22610 Accessed November 2018.

randomized control trials (RCTs). They noted that the meta-analysis by Pendergast, et al. (2002) had reviewed 78 studies of Substance Use Disorder Treatment more than half of which used random or quasi-random assignment to treatment.

"The authors found an average 13 percent decline in criminal involvement as a result of treatment. More recent reviews of specific treatment approaches provide consistent evidence that criminal involvement declines during treatment and provide mixed evidence when considering longer-run crime outcomes (Amato et al., 2005; Holloway et al., 2006; Egli et al., 2009; Mattick et al., 2014).)

Table 17: Number of Reported Violent Crimes

	Total Population	Violent Crimes	Violent Crime Rate (Per 100,000 Pop.)
Greene County	282,371	1,948	689.9
Missouri	6,040,967	26,745	442.8
United States	311,082,592	1,181,036	379.7

Source: Federal Bureau of Investigation, FBI Uniform Crime Reports. Additional analysis by the National Archive of Criminal Justice Data. Accessed via the Inter-university Consortium for Political and Social Research. 2012-14. Source geography: County

- The number of violent crimes per 100,000 population is higher in Greene County compared to Missouri and the U.S. total. This suggests that violent crime, such as homicide, rape, robbery, and aggravated assault are relatively large challenges in Greene County.

Vulnerable Populations and Disparities

This report adopts the Social Vulnerability Index (SVI) developed by the US CDC to gain insight on vulnerable populations and to help confirm or refine efforts designed to provide services to them. SVI measures the resilience of communities when confronted by negative life events such as natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss. Specifically, analysis of the SVI can help ensure that vulnerable and at-risk populations are considered when identifying and addressing community health needs. For example, vulnerable populations, such as people in poverty, minorities, and the elderly, often experience higher rates of chronic illness and poorer healthy outcomes creating health disparities between various socioeconomic classes and/or demographic groups

The SVI uses 15 U.S. census variables to help local officials identify communities that may need support in preparing for hazards; or recovering from disaster. A summary of the Springfield community's SVI from the Springfield Community Health Needs Assessment (2016)[11] is shown below:

[11] In the 2016 Community Health Needs Assessment, the "Springfield community" is defined as Greene, Webster, and Christian Counties. Available at http://ozarkshealthcommission.org/2016-reports/springfield/

Basing the determination of vulnerable populations on the CDC's Social Vulnerability Index, the Ozarks Health Commission (OHC) identified nine key factors, or populations, that communities should take into consideration when developing actions to improve prioritized health needs. The table below includes percentile rankings (values range from 0 – 1) for each population and highlights populations that are 80%, 85%, and 90% more vulnerable than the same population in other counties in Missouri.

Populations of Interest Table for the Springfield Community[12]

COUNTY	Land Area in Square Miles	Total Population	Population Density	Poverty	Unemployed	Per Capita Income	No High School Diploma
Christian	562.64	82,053	145.83	0.21	0.42	0.42	0.22
Greene	675.32	285,449	422.69	0.69	0.35	0.47	0.21
Webster	592.56	37,075	62.57	0.69	0.33	0.80	0.56
Springfield Community	1830.53	404,577	221.02	0.53	0.37	0.56	0.33
OHC Region	18459.54	1,270,868	68.85	0.67	0.54	0.75	0.57

COUNTY	Age 65+	Age 17 or younger	Older than 5 years of Age with a Disability	Minority	Non-English Speaking	Substandard Housing
Christian	0.21	0.89	0.19	0.22	0.38	25.15
Greene	0.29	0.30	0.34	0.41	0.49	30.51
Webster	0.23	0.92	0.41	0.17	0.68	26.06
Springfield Community	0.24	0.70	0.31	0.27	0.52	27.24
OHC Region	0.57	0.58	0.69	0.32	0.44	27.63

Red highlight	The population in this county is more vulnerable than 90% of all other counties in its respective state
Orange highlight	The population in this county is more vulnerable than 85% of all other counties in its respective state
Yellow highlight	The population in this county is more vulnerable than 80% of all other counties in its respective state

- The Springfield community (especially Christian and Webster Counties) are shown to be more vulnerable to negative life events such as natural or human-caused disasters, or disease outbreaks than Greene County.
- Relatively large percentages of people age 17 or younger in Christian and Webster Counties correlate most highly to the Springfield Community vulnerability.

[12] Springfield – Greene County Regional Health Assessment.

Health Status Profile

Most Common Causes of Death

Consistent with the state, the most common causes of death in Greene County are heart disease and cancer (malignant neoplasms). However, unintentional injuries, which includes accidental poisoning (e.g., drug overdose) and motor vehicle accidents, are approximately 13% higher in Greene County than in Missouri as a whole.

Injuries are a substantial and preventable public health problem. In the United States injuries account for 57% and 78% of all deaths among persons aged 1–34 and 15–24 years. The term "injury" in the CDC Framework for Presenting Injury Mortality Data includes unintentional injuries, suicides, and homicides.[13]

Unintentional Injuries, which include suicide, are the third leading cause of death in the county and are associated with poor mental health.

Mental disorders are strong independent risk factors for accidental death which is substantially more common than suicide. [14]

Table 18: Total Deaths by Cause, 2005-2015 (Rate Per 100,000)

Cause of Death by Frequency	Greene County	Missouri
Heart Disease	191.59	206.15
Cancer (Malignant Neoplasms)	171.92	184.22
Total Unintentional Injuries	54.43	48.29
Chronic Lower Respiratory Disease	53.01	51.27
Stroke/Other Cerebrovascular Disease	42.61	44.92
Alzheimer's Disease	32.06	26.99
Pneumonia and Influenza	17.16	19.20
Kidney Disease	17.1	18.52
Suicide	15.31	14.49
Diabetes Mellitus	15.17	20.94

Source: Missouri Department of Health & Senior Services. Missouri Resident Death – Leading Causes Profile, 2005-2015.

- Combined, suicide (which is assessed later in this report) and accidental injuries are the third greatest cause of death in the county. Also (as noted later) the association between poor mental health and unintentional injuries is highlighted by many researchers. [15]

[13] Centers for Disease Control and Prevention. Recommended framework for presenting injury mortality data. MMWR 1997;46(No. RR-14). ftp://ftp.cdc.gov/pub/Publications/mmwr/rr/rr4614.pdf Accessed December 2018.

[14] Crump, C., Sundquist, K., Winkleby, M., & Sundquist, J. (2013). Mental disorders and risk of accidental death. British Journal of Psychiatry, 203(4), 297-302. doi:10.1192/bjp.bp.112.123992. Published online: 02 January 2018. Accessed November 2018

[15] See additional tables in the subsequent section on suicide and unintentional injury.

Chronic Disease Incidence

The CDC and others have long-noted that chronic diseases are the most common and costly of all health problems, but they are also the most preventable.

Even though many in Greene County are afflicted with chronic diseases such as diabetes, asthma, high cholesterol, hypertension, obesity or other conditions, the percentage of people with these conditions in Greene County is below the Missouri state average in each case.

However, it is likely that the rates of serious psychological stress are much higher among low-income people with chronic and behavioral health problems (29%) compared to higher-income people with similar health conditions (7%).[16]

Table 19: Percent of Adults with Heart Disease

	Adult Pop. 18+	Total Adults with Heart Disease	% of Adults with Heart Disease
Greene County	188,857	6,008	3.2%
Missouri	4,527,296	218,318	4.8%
United States	236,406,904	10,407,185	4.4%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES. 2011-12. Source geography: County

- The percentage of adults with chronic heart disease in Greene County (3.2%) is 50% less than Missouri (4.8%).

Table 20: Percent of Adults with High Cholesterol

	Adult Pop. 18+	Total Adults with High Cholesterol	% Adults with High Cholesterol
Greene County	138,960	53,890	38.78%
Missouri	3,449,710	1,394,360	40.42%
United States	180,861,326	69,662,357	38.52%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES. 2011-12. Source geography: County

- The percentage of adults with high cholesterol is similar to the national percentage and slightly lower than the state of Missouri.

[16] P. J. Cunningham, T. L. Green, and R. T. Braun, "Income Disparities in the Prevalence, Severity, and Costs of Co-Occurring Chronic and Behavioral Health Conditions," Medical Care, Feb. 2018 56(2):139–45. https://www.commonwealthfund.org/publications/journal-article/2018/feb/income-disparities-prevalence-severity-and-costs-co-occurring. Accessed November 2018

Table 21: Percent of Adults with High Blood Pressure

	Adult Pop. 18+	Total Adults with High Blood Pressure	Percent Adults with High Blood Pressure
Greene County	215,291	57,267	26.60%
Missouri	4,532,155	1,336,986	29.50%
United States	232,556,016	65,476,522	28.16%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System.
Additional data analysis by CARES. 2006-12. Source geography: County

- The percentage of adults with high blood pressure is slightly lower than Missouri as a whole.

Table 22: Percent of Adults with Asthma

	Adult Pop. 18+	Total Adults with Asthma	Percent Adults with Asthma
Greene County	190,244	24,330	12.8%
Missouri	4,553,696	644,403	14.2%
United States	237,197,465	31,697,608	13.4%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES. 2011-12. Source geography: County

Greene County residents are less likely to have asthma than residents of Missouri as a whole.

Table 23: Percent of Population with Diagnosed Diabetes

	Total Population Age 20	Population with Diagnosed Diabetes	Population with Diagnosed Diabetes, Crude Rate	Population with Diagnosed Diabetes, Age-Adjusted Rate
Greene County	214,114	18.842	8.8%	8.3%
Missouri	4,478,513	486,462	10.9%	9.7%
United States	236,919,508	23,685,417	10.0%	9.2%

Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. 2013. Source geography: County

- The age-adjusted percentage of Greene County residents with diagnosed diabetes is 14.4% lower than Missouri and 9.8% lower than the national rate.

Table 24: Infant Mortality

Infant mortality rates for Greene County are similar to state and national levels.

	Total Births	Total Infant Deaths	Infant Mortality Rate (Per 1,000 Births)
Greene County	18,180	122	6.7
Missouri	399,460	2,876	7.2
United States	20,913,535	136,369	6.5

Source: US Department of Health and Human Services, Health Resources and Services Administration, Area Health Resource File. 2006-10.

- Greene County infant mortality rates are slightly below the Missouri rate (7.2 per 1,000 live births) but very similar to the U.S. rate (6.5 per 1,000 live births).
- Greene County rates decreased slightly (to 6.1 per 1,000 live births in Greene County) in the five-year span 2012-2016.

General Health and Access

Self-assessed health status is a measure of how an individual perceives his or her health—rating it as excellent, very good, good, fair, or poor. Self-assessed health status has been validated as a useful indicator of health for a variety of populations and allows for broad comparisons across different conditions and populations.[17] However, after multiple-variable adjustment, comparisons between adequately insured adults and others show that underinsured and never insured adults are 39% and 59% more likely to report poor/fair health, respectively, and 38% more likely to report Frequent Mental Distress (FMD)[18]. There are more residents without health insurance in the area (see Tables 27 and 28.)

Table 25: General Health

	Total Population Age 18	Estimated Population with Poor or Fair Health	Crude Percentage	Age-Adjusted Percentage
Greene County	215,291	34,877	16.2%	15.2%
Missouri	4,532,155	765,934	16.9%	16.0%
United States	232,556,016	37,766,703	16.2%	15.7%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse. US Department of Health and Human Services, Health Indicators Warehouse. 2006-12. Source geography: County

- The percentage of residents in Greene County who reported having "poor or fair" health is approximately the same as state and national levels.

[17] Idler E, Benyamini Y. Self-rated health and mortality: A review of 28 studies. J Health Soc Behav. 1997;38(1):21–37.

[18] Zhao G, Okoro CA, Hsia J, Town M. Self-Perceived Poor/Fair Health, Frequent Mental Distress, and Health Insurance Status Among Working-Aged US Adults. Prev Chronic Dis 2018;15:170523. http://dx.doi.org/10.5888/pcd15.170523. Accessed November 2018

Table 26: Access to Primary Care and Dentists

Primary Care	Mental Health Care Provider Rate (per 100,000 population)	PCPs per 100,000 Pop.	Total Population, 2015	Dentists per 100,000 Pop.
Greene County	312.3	108.44	288,072	69.43
Missouri	168.6	83.6	6,083,672	54.20
United States	202.8	87.8	321,418,820	65.60

Source: US Department of Health Human Services, Health Resources and Services Administration, Area Health Resource File. 2015. Source geography: County and Resource File. 2014. Source geography: County; Data Source: University of Wisconsin Population Health Institute, County Health Rankings. 2016. Source geography: County.

- Compared to state and national levels, Greene County has a higher number of primary care providers, dentists, and mental health care providers versus state and national ratios.
- However, primary research data collect from the Behavioral Risk Factor Surveillance System suggests a high number of primary care providers (26%) of adults in Greene County do not have a regular health care provider (see Table 25).
- Note that as a regional service provider, Greene County providers attract patients from a relatively broad geographic base. For example, for one large provider of outpatient behavioral health (and other) services, 14% of behavioral health patients and 18% of substance use disorder patients were from outside of Greene County in 2017.[19] Therefore, Greene County ratios shown in the table above may be overstated, as the actual population served may be greater than the Greene County total.

Table 27: Lack of a Consistent Source of Primary Care

	Survey Population (Adults Age 18)	Total Adults Without Any Regular Doctor	Percent Adults Without Any Regular Doctor
Greene County	189,744	49,417	26.04%
Missouri	4,560,355	938,202	20.57%
United States	236,884,668	52,290,932	22.07%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES. 2011-12. Source geography: County

[19] Source: Patient service use data supplied by providers, 2018.

Table 28: Uninsured Adults

	Total Population Age 18 - 64	Percent Population with Medical Insurance	Percent Population Without Medical Insurance
Greene County	174,639	84.40%	15.60%
Missouri	3,626,537	86.36%	13.64%
United States	194,584,952	86.79%	13.21%

Source: US Census Bureau, Small Area Health Insurance Estimates. 2015. Source geography: County

- The percentage of residents in Greene County without medical insurance is slightly higher than the state and national rate.

Table 29: Population Receiving Medicaid

	Total Population (For Whom Insurance Status is Determined)	Population with Any Health Insurance	Population Receiving Medicaid	Percent of Insured Population Receiving Medicaid
Greene County	279,368	239,550	38,691	16.15%
Missouri	5,932,449	5,205,916	875,908	16.83%
United States	311,516,332	271,070,101	57,557,806	21.23%

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

- The state's and Greene County's lower Medicaid participation percentages may be a partial result of the Medicaid expansion status; Missouri is one of approximately 14 states that have not expanded Medicaid.[20] There have also been a somewhat reduced number of qualifying households compared to several years ago.

[20] Families USA, "A 50-State Look at Medicaid Expansion." Available at https://familiesusa.org/product/50-state-look-medicaid-expansion

Risk and Protective Lifestyle Characteristics

When thinking about community health residents often mention life-style related conditions and chronic diseases such as food insecurity, health eating, heart disease, high blood pressure, obesity, diabetes and HIV. This section highlights some of the conditions most often linked to poor physical and mental health.

Healthy Eating

Food insecurity is defined by the USDA as a socioeconomic condition with limited or uncertain access to enough food to support a healthy life. The USDA and Feeding America estimates that one in seven Americans struggles to get enough to eat.

Recent research with records of over 80,000 Canadians indicate that "household food insecurity status is a robust predictor of mental health service utilization among working-age adults… and there is a particular vulnerability of individuals with mental illness to food insecurity."[21]

Table 30: Food Insecurity

	Total Population	Food Insecure Population, Total	Food Insecurity Rate
Greene County	280,657	46,500	16.57%
Missouri	6,063,589	1,019,350	16.80%
United States	318,198,163	47,448,890	14.91%

Source: Feeding America. 2014. Source geography: County

- Greene County and Missouri have higher rates of food insecurity[22] rate when compared to the United States.

Table 31: Population Receiving SNAP Benefits (ACS)

	Total Households	Household Receiving SNAP Benefits	Percent Households Receiving SNAP Benefits
Greene County	117,732	14,054	11.94%
Missouri	2,364,688	319,109	13.48%
United States	116,926,305	15,399,651	13.17%

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

- While Greene County has a slightly higher food insecurity rate compared to the U.S., a lower percentage of households are receiving SNAP benefits (11.94%), compared to Missouri (13.48%) and the United States (13.17%).

[21] Valerie Tarasuk, PhD, Joyce Cheng, MSc, Craig Gundersen, PhD, Claire de Oliveira, PhD, Paul Kurdyak, MD, PhD. Can J Psychiatry. 2018 Aug;63(8):557-569. https://www.ncbi.nlm.nih.gov/pubmed/29307216. Accessed November 2018.

[22] Note: The U.S. Department of Agriculture indicates that "food insecurity," means a family sometimes runs out of money to buy food, or it sometimes runs out of food before it can get more money. Available at https://www.merriam-webster.com/dictionary/food%20insecure

The Food Access Research Atlas[23] of the U.S. Department of Agriculture maps food access indicators for census tracts using ½-mile and 1-mile demarcations to the nearest supermarket for urban areas, 10-mile and 20-mile demarcations to the nearest supermarket for rural areas, and vehicle availability for all tracts. Limited access to supermarkets, supercenters, grocery stores, or other sources of healthy and affordable food may make it harder for some Americans to eat a healthy diet.

Table 32: Low Food Access and Low-Income Populations

	Total Population	Low Income Population	Low Income Population with Low Food Access	Percent Low Income Population with Low Food Access
Greene County	275,174	117,118	19,920	17.01%
Missouri	5,988,927	2,144,902	463,471	21.61%
United States	308,745,538	106,758,543	20,221,368	18.94%

Source: US Department of Agriculture, Economic Research Service, USDA - Food Access Research Atlas. 2015. Source geography: Tract

- Greene County has a lower percentage of low-income individuals with low food access compared to Missouri and the nation.
- Note that "low food access" differs slightly from "food insecurity." Food insecurity primarily references food-related barriers caused by economic factors; low food access can result from a broader range of factors such as food store location, the availability of transportation, psychological factors, and others.[24]

Table 33: Access to Fast Food

	Total Population	Number of Establishments	Establishments, Rate per 100,000 Population
Greene County	275,174	270	98.12
Missouri	5,998,927	4,153	69.34
United States	312,846,570	233,392	74.6

Source: US Census Bureau, County Business Patterns. Additional data analysis by CARES. 2015. Source geography: County

- Greene County has a higher rate of fast food establishments than Missouri and the U.S.

[23] Economic Research Service (ERS), U.S. Department of Agriculture (USDA). Food Access Research Atlas, https://www.ers.usda.gov/data-products/food-access-research-atlas/

[24] U.S. Department of Agriculture. Available at https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation/#definitions

Physical Activity, and Overweight/Obesity

Table 34: Adult Obesity and Overweight

	Overweight % (BMI 25-29.9)	Obese % (BMI > 30)
Greene County	30.8%	32.2%
Missouri	35.3%	30.6%
United States	35.8%	27.5%

Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. 2013. Source geography: County

- While Greene County has fewer overweight adult residents than the Missouri state average (30.8% compared with 35.8%), the county has a higher percentage of obese adults than the nation.

Table 35: Percentage of adults aged 20 and over reporting no leisure-time physical activity

	Total Population Age 20	Population with no Leisure Time Physical Activity	Percent Population with no Leisure Time Physical Activity
Greene County	215,265	48,650	22.2%
Missouri	4,486,311	1,120,890	24.1%
United States	234,207,619	52,147,893	21.8

Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. 2013. Source geography: County

- The percentage of adults in Greene County who are not meeting weekly physical activity recommendations is slightly lower than Missouri, but slightly higher than the United States.

Communicable Diseases

The following information demonstrates the incidence of communicable disease cases per 100,000 population. These indicators help to measure poor health status particularly as it relates to unsafe behaviors because they are commonly transmitted through behaviors such as unsafe sex and drug use.

Hepatitis C for example, is a viral infection that attacks the liver. If it is left untreated, hepatitis C can lead to chronic liver disease, cirrhosis of the liver, liver cancer, and ultimately death. Hepatitis C is on the rise in Missouri and the United States as opioid use, especially heroin, can lead to hepatitis C infections.

While the total number of infections reported is a small percentage of the population, it should be noted, that the rates for all these diseases - except for HIV - are higher in Greene County than the State or the nation.

Table 36: Chlamydia Incidence

	Total Population	Total Chlamydia Infections	Chlamydia Infection Rate (Per 100,000 Pop.)
Greene County	283,870	1,495	526.65
Missouri	6,044,718	27,981	462.9
United States	316,128,839	1,441,789	456.1

Source: US Department of Health and Human Services, Health Indicators Warehouse. Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. 2014. Source geography: County

- The Chlamydia Infection Rate in Greene County is approximately 14% higher than in Missouri and 15.4% higher than the United States.

Table 37: Gonorrhea Incidence

	Total Population	Total Gonorrhea Infections	Gonorrhea Infection Rate (Per 100,000 Pop.)
Greene County	283,870	411	144.8
Missouri	6,045,008	7,387	122.2
United States	316,128,839	350,062	110.7

Source: US Department of Health and Human Services, Health Indicators Warehouse. Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. 2014. Source geography: County

- The number of residents in Greene County with a Gonorrhea infection is 18.4% higher than Missouri as a whole.

Table 38: Cases and Rates of Chronic Hepatitis C Infections (HCV), 2015

	Number of Reported Cases, 2015	Rate (per 100,000), 2015
Greene County	403	141.0
Missouri	7,795	128.6
United States	181,871[25]	56.7

Source: Bureau of Reportable Disease Informatics. Epidemiologic Profile of Viral Hepatitis. 2015. http://health.mo.gov/data/hivstdaids/pdf/2015-MO-Profile.pdf

- Greene County also has a higher rate of HCV than the Missouri average.
- Both the Greene County and state of Missouri Hepatitis C incidence rate of reported cases is higher than the U.S. average.

Table 39: HIV Prevalence Rate

	Population Age 13+	Population with HIV / AIDS	Population with HIV / AIDS, Rate (Per 100,000 Pop.)
Greene County	240,131	521	217.0
Missouri	5,043,482	11,986	237.3
United States	263,765,822	931,526	353.2

Source: US Department of Health and Human Services, Health Indicators Warehouse. Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. 2013. Source geography: County

- The number of individuals living with HIV/AIDS in Greene County is less than Missouri and the United States as a whole

[25] CDC. Viral Hepatitis Surveillance – United States, 2015. Retrieved from https://www.cdc.gov/hepatitis/statistics/2015surveillance/pdfs/2015hepsurveillancerpt.pdf; https://www.cdc.gov/hepatitis/statistics/2015surveillance/Commentary.htm#Ref15

Tobacco Use

It is estimated that 40% of smokers have a behavioral health disorder and comprise 44% of the U.S. tobacco market. [26] Despite the national cigarette smoking rate decreasing among adults, for individuals with mental illness and substance use disorders, 40% reported tobacco use.[27]

Table 40: Current Tobacco Users

	Total Population Age 18	Total Adults Regularly Smoking Cigarettes	Percent Population Smoking Cigarettes
Greene County	215,291	44,135	21.3%
Missouri	4,532,155	1,024,267	23.2%
United States	232,556,016	41,491,223	18.1%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse.US Department of Health & Human Services, Health Indicators Warehouse. 2006-12. Source geography: County

- Tobacco use in Greene County in 2016 remains slightly below the Missouri average but above the U.S. total, while one in five Greene County adults (21.3%) regularly smoke cigarettes.
- Tobacco use in Greene County has decreased slightly from about 24% in 2011.[28]

[26] Lasser K, Wesley B, Woolhandler S. Smoking and mental illness: a population-based prevalence study. JAMA. 2000; 284(20):2606-2610. doi:10.1001/jama.284.20.2606

[27] Substance Abuse and Mental Health Services Administration. The NSDUH report Table 8.20B: 40% of adults with mental illness or substance use disorder use tobacco products. Rockville, MD. U.S. Dept. of Health and Human Services. U.S. Public Health Service. 2017. https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHDetailedTabs2017/NSDUHDetailedTabs2017.htm#tab1-115P

[28] Springfield Community Focus 2017. Available at https://www.springfieldcommunityfocus.org/community-health.cfm

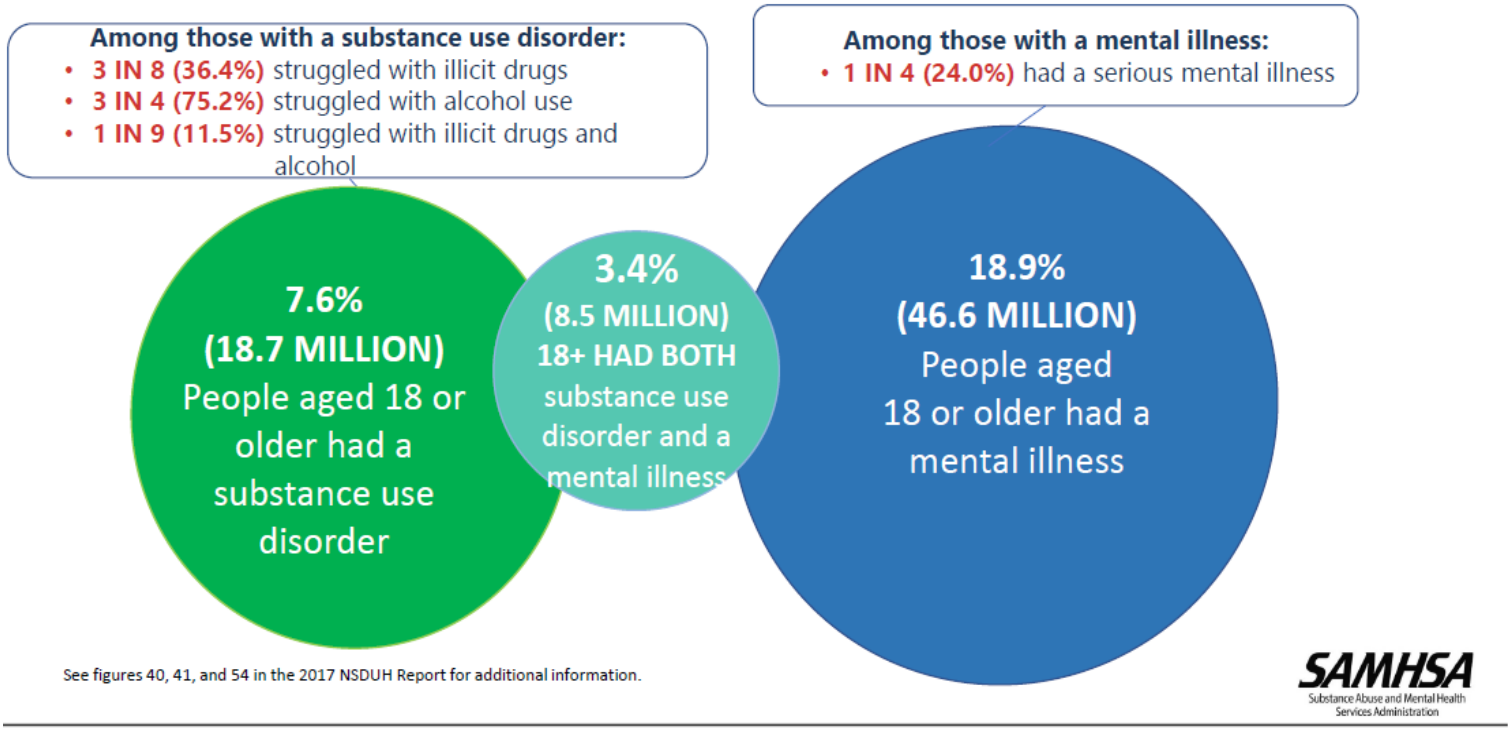
Mental Health

The following data-based discussion of mental health issues presents information in the following categories:

- Overview of Mental Health incidence
- Population Benchmarks
    - Service use trends
    - Inpatient admissions
- Diagnosis Incidence and Trends
    - Greene County service use trends by diagnosis
    - Depression prevalence
    - Suicide prevalence and trends
- Unintentional Deaths
    - Deaths Due to Drug Overdoses
- Substance Use Disorders
    - Excessive Alcohol Consumption
- Mental Health and Substance Use Disorder Treatment at Major Providers
- Child Abuse and Neglect
- School Mental Health and Substance Use Disorder Data

Overview of Mental Health Incidence

Mental Health and Substance Use Disorders (SUD) affect people of all ages, genders, race, and ethnic groups. According to SAMHSA's 2017 National Survey on Drug Use and Health[29] among the 46.6 million adults with Any Mental Illness (AMI), 19.8 million (42.6 percent) received mental health services in the past year. About 24% of those had a Serious Mental Illness (SMI). About 66.7 percent of people with an SMI received mental health services in the past year.



[29] Key substance use and mental health indicators in the United States: Results from the 2017 National Survey on Drug Use and Health (NSDUH). Substance Abuse and Mental Health Services Administration. (2018). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHFFR2017/NSDUHFFR2017.pdf

Population Benchmarks

Mental health issues are widespread across the U.S., Missouri, and Greene County. Although the number of days impacted by mental health issues for people in Greene County is similar to the State, those who report being impacted by frequent mental distress is higher.

Table 41: Average Number of Reported Mentally Unhealthy Days per Month

	Mentally Unhealthy Days (2017)	Percent of Frequent Mental Distress[30] (2017)
Greene County	4.2	13.0%
Missouri	4.2	11.0%
United States	3.7	11.0%

Source: County Health Rankings. (2017). 2017 Missouri Summary Report. Retrieved from http://www.countyhealthrankings.org/app/missouri/2017/rankings/greene/county/outcomes/overall/snapshot.

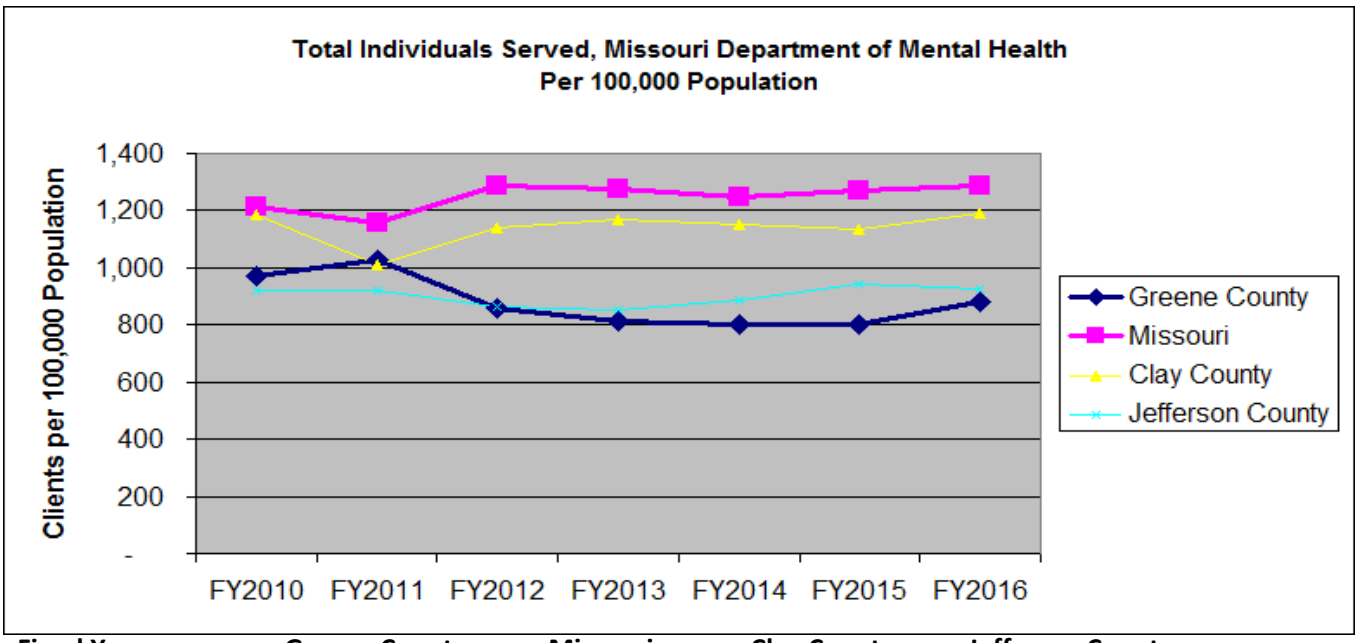
- While residents of Greene County reported the same number of mentally unhealthy days (4.2) as the state of Missouri, county residents experience 13% more frequent mental distress compared to Missouri as a whole.
- Regardless of the relative percentage compared with the Missouri and U.S. numbers, the Greene County percentage suggests that a high number of people – nearly 30,000 – in the area experienced 14 or more days of poor mental health in the most recent month.
- The impact of mentally unhealthy days affects broad-based sectors of the community – employers, schools, healthcare providers, the Criminal Justice System, and others.

[30] Frequent Mental Distress is the percentage of adults who reported ≥14 days in response to the question, "Now, thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" Source: County Health Rankings and Roadmaps. Available at http://www.countyhealthrankings.org/explore-health-rankings/what-and-why-we-rank/health-outcomes/morbidity/health-related-quality-of-life/frequent-mental-distress

State Mental Health Service Trends for Select Counties

Compared with similarly sized Missouri counties, the number (per 100,000) of Greene County community members served in Missouri Department of Mental Health reimbursed facilities tends to be slightly lower than some others – possibly due to slightly lower capacity in Greene County.[31]

Table 42: MDOMH Mental Health Service Use Trends



Fiscal Year	Greene County	Missouri	Clay County	Jefferson County
FY2010	973	1,214	1,187	919
FY2011	1,027	1,157	1,008	922
FY2012	861	1,288	1,142	863
FY2013	812	1,276	1,167	855
FY2014	801	1,249	1,154	884
FY2015	802	1,270	1,132	944
FY2016	882	1,285	1,192	928

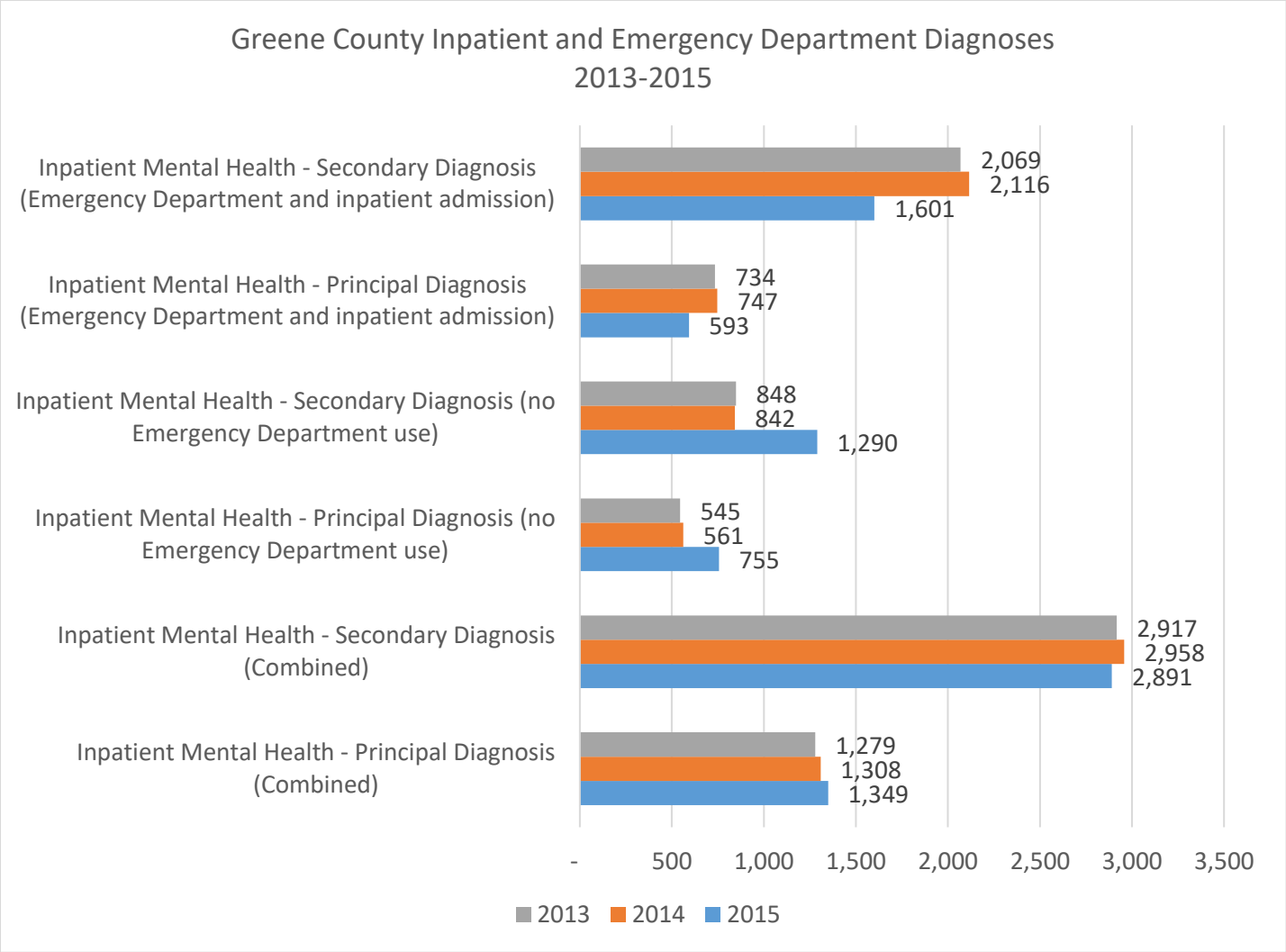
- From 2010 to 2016, approximately 30% fewer people (per 100,000 population) in Greene County received funded services from Missouri Department of Mental Health than the state average.
- Service use in Greene County and Jefferson County are similar, yet both are lower than Clay County.
- Overall service use trends (as well as capacity) have been fairly stable, 2010 to 2016.

[31] Missouri Department of Mental Health.

Inpatient Mental Health Admissions

Total inpatient admissions[32] were stable in Greene County, 2013-2015. However, there was a shift in the way that patients were admitted – a higher percentage were admitted with no Emergency Department use in 2015 compared to 2013.[33]

Table 43: Principal and Secondary MH Diagnoses



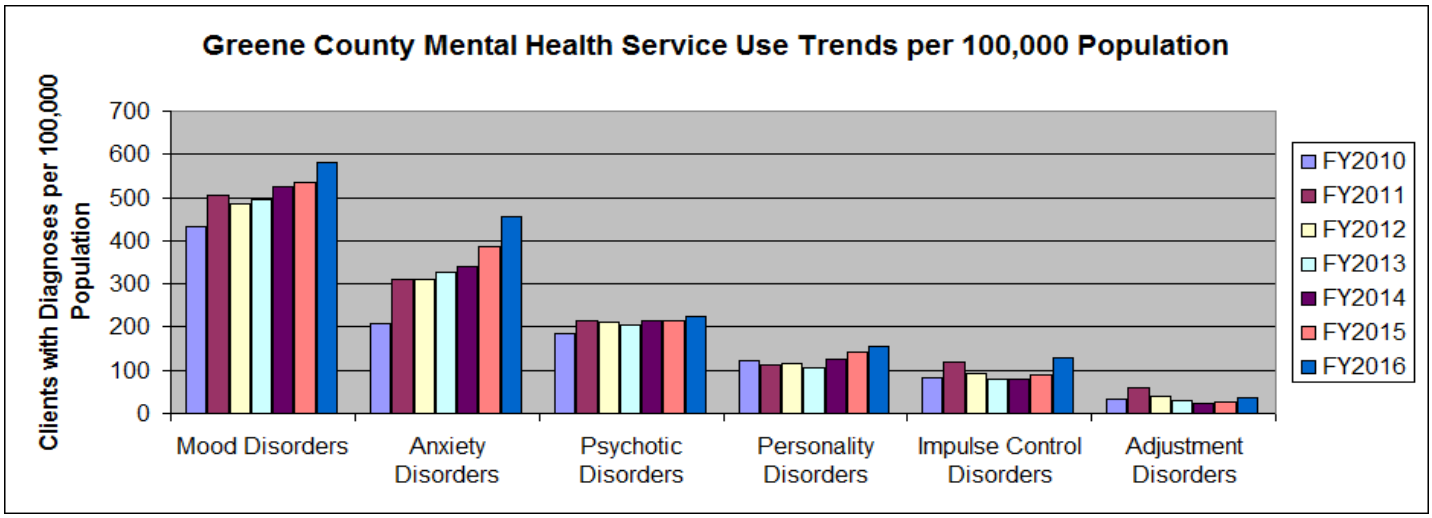
- Total inpatient admissions with a primary mental health diagnosis increased approximately six percent from 2013 to 2015. Admissions with a secondary mental health diagnosis decreased slightly.
- Inpatient admission in which there was no preceding Emergency Department use increased about 20%. Admissions for patients via the Emergency Department largely offset the increase.

[32] Counts for mental disorders are based on ICD-9 and ICD-10 diagnosis codes selected by the Healthcare Cost and Utilization Program.
[33] 2017 Status Report on Missouri's Substance Use and Mental Health. Available at https://dmh.mo.gov/ada/countylinks/documents/indicator-greene.pdf

Diagnosis Incidence and Trends

Mood disorders[34] are the most common diagnosis for people in Greene County receiving treatment for serious mental illness at publicly-funded facilities. Yet treatment for anxiety disorders increased more rapidly.[35] The data below indicate the number of clients seen with each diagnosis per year.[36]

Table 44: MDoMH Greene County Client Trends by Mental Health Diagnosis



Year	Mood Disorders	Anxiety Disorders	Psychotic Disorders	Personality Disorders	Impulse Control Disorders	Adjustment Disorders
FY2010	431.1	208.3	186.4	123.2	81.6	33.7
FY2011	506.5	311.7	213.1	112.8	117.3	59.7
FY2012	484.3	311.7	212.1	114.6	92.3	39.2
FY2013	496.4	326.0	204.8	107.3	78.5	28.8
FY2014	524.9	339.2	214.5	127.1	79.8	22.9
FY2015	534.9	385.7	213.5	141.6	89.6	25.7
FY2016	581.5	454.7	225.6	154.8	130.2	36.4

- In 2016, mood disorders were diagnosed and treated at publicly-funded facilities at a rate 35% higher than 2010.
- Treatment of anxiety disorders increased over 100% over the same time period.

[34] Mood disorders are a category of illnesses that describe a serious change in mood. Illness under mood disorders include: major depressive disorder, bipolar disorder (mania - euphoric, hyperactive, over inflated ego, unrealistic optimism), persistent depressive disorder (long-lasting low-grade depression), cyclothymia (a mild form of bipolar disorder), and SAD (seasonal affective disorder). Definitions available at http://www.mentalhealthamerica.net/conditions/mood-disorders

[35] Source: Missouri Department of Mental Health. Available at https://dmh.mo.gov/docs/ada/commprofile2018-greene.pdf

[36] An individual client may have more than one admission or multiple diagnoses within a year.

Table 45: Medicare Population with Depression

Area	Total Medicare Beneficiaries	Beneficiaries with Depression	Percent with Depression
Greene County	30,905	7,047	22.8%
Missouri	767,306	153,690	20.0%
United States	34,118,227	5,695,629	16.7%

Source: Centers for Medicare and Medicaid Services. 2015. Source geography: County

- Nearly one in four (22.8%) of Medicare beneficiaries has been diagnosed with depression.
- The percentage of the Medicare population with depression in Greene County is only slightly higher than the state average. However, both are nearly one-third higher than the U.S. total.
- The actual percent of beneficiaries may be much higher, as research shows that a high percentage of people with depression never seek services.[37]

The use of antidepressants in Greene County is at, or near, the expected rate based on several correlative measures.

Crescendo conducted an analysis[38] of all U.S. counties to examine the correlation between several demographic measures and the percent of the population prescribed medication to treat depression.

- The "level of accuracy" is a statistical term that indicates the degree to which the model can accurately estimate outcomes based on the contributing factors. There are several ways to measure the level of accuracy. One of the more common one is the "F-score[39]." The model was shown to have a high level of accuracy (F-score = 298.6).
- The predicted percent of people using antidepressants in Greene County was 7.03%* and the actual value was 7.04%[40] The predicted value was based on correlations with variables such as population, percent living in poverty, median household income, median age, owner-occupied households.
- Primary results from the analysis are consistent with insight from the Medicare data that rates of depression in Greene County were similar to the state average.
- Median household income was the contributing variable with the highest correlation with use of antidepressants.

[37] Source: Pratt LA, Brody DJ. Depression in the U.S. household population, 2009–2012. NCHS data brief, no 172. Hyattsville, MD: National Center for Health Statistics. 2014; In 2010, the National Institute of Mental Health (NIMH) estimated that 40 percent of adults with schizophrenia and 51 percent of individuals with severe bipolar disorder receive no treatment in a one-year period. Available at https://mentalillnesspolicy.org/consequences/percentage-mentally-ill-untreated.html

[38] Sources: *Crescendo Consulting Group, 2018 (proprietary modeling); ** ESRI, 2018.

[39] Statistics "How to … ." Available at https://www.statisticshowto.datasciencecentral.com/probability-and-statistics/f-statistic-value-test/

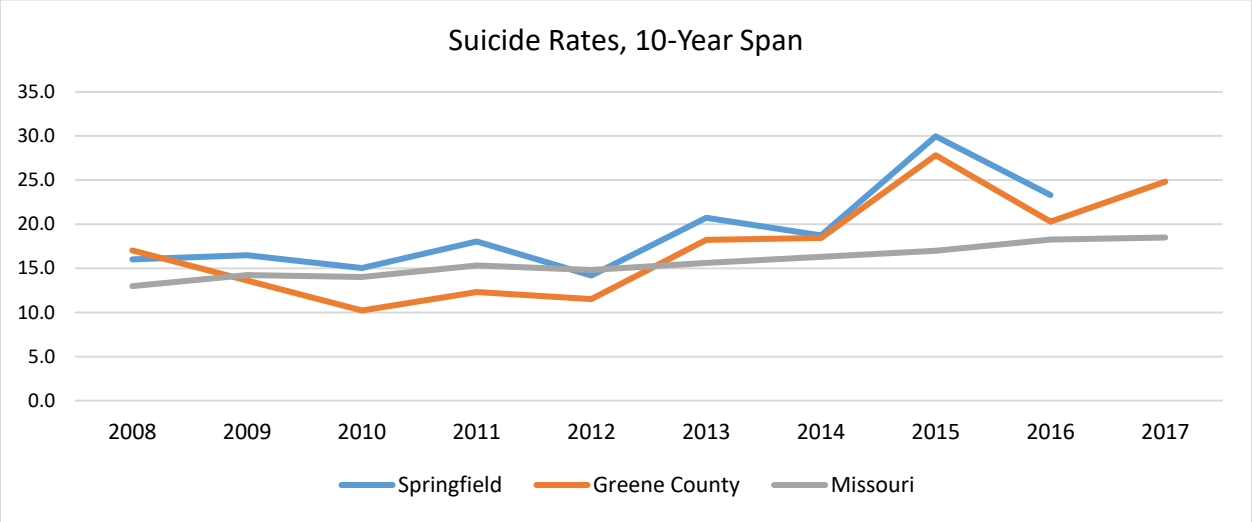
[40] Use of antidepressants (and use of mental health or other services) may to some degree positively reflect the impact of increased screening and community engagement efforts.

Suicide

Numerous sources have noted the importance of suicide prevention as an urgent public health issue in the United States. In 2016, over 45,000 people died by suicide in the U.S. In most states, the rate of completed suicide significantly increased from 1999 to 2016, with 25 states (including Missouri) experiencing increases of over 30% during the period. Nationally, the 2016 suicide rate was 15.6 deaths per 100,000 population [age-adjusted]).[41]

Since 2008, the Missouri rate of completed suicides increased 43.4%. The 2016 Springfield rate of 23.3 per 100,000 population is above both the state and U.S. average.

Table 46: **Suicide Mortality Rates over 10 years**



Area	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Springfield	16.0	16.5	15.0	18.1	14.2	20.7	18.7	30.0	23.3	NA
Green County	17.0	13.6	10.2	12.3	11.5	18.2	18.4	27.8	20.3	24.8
Missouri	13.0	14.3	14.0	15.3	14.8	15.6	16.3	17.0	18.3	18.5

Source: Missouri Department of Mental Health, https://dmh.mo.gov/ada/; Greene County Medical Examiner. Available at https://www.news-leader.com/story/news/local/ozarks/2018/07/02/missouri-suicide-rates-rise-greene-county-prevention/734577002/; American Foundation for the Prevention of Suicide. Available at https://afsp.org/about-suicide/suicide-statistics/

- Suicide Rates have increased steadily throughout Missouri, with Springfield continually above state and county averages.
- Rates in Missouri and Greene County are above the national average.

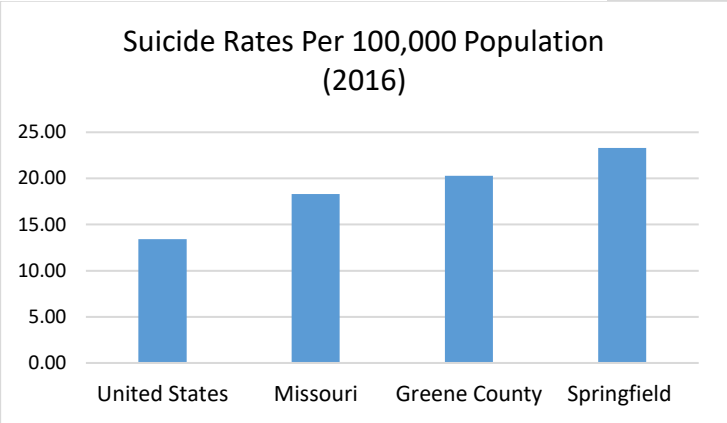
[41] Stone, D. M., Simon, T. R., Fowler, K. A., Kegler, S. R., Yuan, K., Holland, K. M., Ivey-Stephenson, A. Z, & Crosby, A. E. (2018). Vital Signs: Trends in suicide rates — United States, 1999-2016 and circumstances contributing to suicide — 27 states, 2015. Morbidity and Mortality Weekly Report, 67(22), 617-624. Retrieved from https://www.cdc.gov/mmwr/volumes/67/wr/pdfs/mm6722a1-H.pdf. Accessed December 2018

It is important to note that those who die from suicide represent a small percentage of people who consider or attempt suicide. Of every 31 U.S. adults who attempted suicide in the past 12 months, there was 1 death by suicide.[42]

Among adults attempting suicide in the U.S., the overall 12-month suicide completion / fatality rate was 3.2%. The rate varied significantly by sociodemographic factors. For those aged 45 or older, the adjusted suicide completion / fatality rate was higher among men (7.6%) than among women (2.6%) and the rate was higher among non-Hispanic whites (7.9%) than among non-white minorities (0.8–2.5%). The suicide completion / fatality rate was significantly higher among those with less than high school education (16.0%) than among college graduates (1.8%.)[43]

In other words, among people attempting suicide, non-Hispanic white males aged 45 or older with less than a secondary school education are at a higher risk for death by suicide.

Table 47: Suicide Rates Per 100,000



Source: Missouri Department of Mental Health, https://dmh.mo.gov/ada/

Table 48: Mortality - Unintentional Injury [44]

	Total Population	Average Annual Deaths, 2010-2014	Crude Death Rate (Per 100,000 Pop.)	Age-Adjusted Death Rate, (Per 100,000 Pop.)
Greene County	280,546	158	56.39	53.6
Missouri	6,026,129	3,047	50.57	48.4
United States	313,836,267	128,295	40.88	39.2

Source: Centers for Disease Control and Prevention, National Vital Statistics System. Accessed via CDC WONDER. 2010-14. Source geography: County

- The Greene County death rate from unintentional injury or accident is approximately 10% higher than the Missouri average and 30% higher the U.S. average.
- Combined, suicide and accidental injuries are the third greatest causes of death in the county.

[42] Han, B., Kott, P. S., Hughes, A., McKeon, R., Blanco, C., & Compton, W. M. (2016). Estimating the rates of deaths by suicide among adults who attempt suicide in the United States. Journal of Psychiatric Research, 77, 125-133. https://doi.org/10.1016/j.jpsychires.2016.03.002

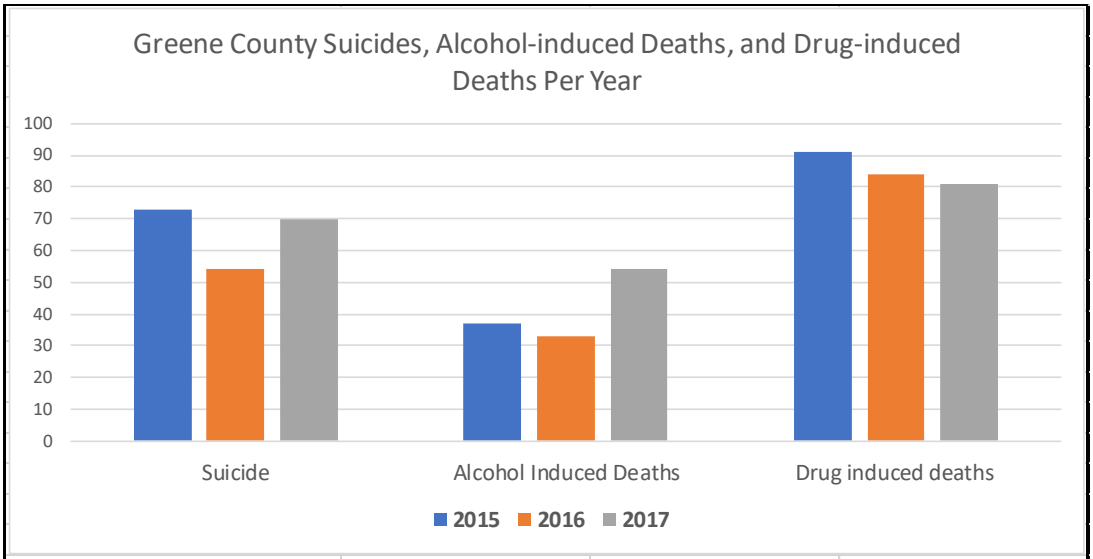
[43] Op cit. Han, B., Kott, et al.

[44] Op Cit. Citation 6. The term "injury" in this report includes unintentional injuries, suicides, and homicides. Unintentional injuries is a general term that refers to harm caused by accidents, falls, blows, burns, weapons, substance use, and more.

The links between mental illness, self-inflicted injury, and interpersonal violence are well recognized, but the association between poor mental health and unintentional injuries is gaining greater attention. A study[45] of the links between accidental death risks and psychiatric illnesses suggested that among persons who died from accidents, the risk of death was four to sevenfold among those with personality disorders, six to sevenfold among dementia, and two to fourfold among schizophrenia, bipolar disorder, depression or anxiety disorders - irrespective of sociodemographic characteristics, and for different types of accidental death.

In addition, suicidal ideation is significantly more prevalent than mortality. Compared to the 45,000 suicide deaths in 2016 in the U.S., it is estimated that over 10.6 million adults aged 18 or older (4.3 percent) had thought seriously about trying to kill themselves in 2017. Of those it is estimated 3.2 million adults in 2017 made suicide plans in the past year.

Table 49: Substance Use Deaths, 2015-2017



	2015	2016	2017
Suicide	73	54	70
Alcohol Induced Deaths	37	33	54
Drug induced deaths	91	84	81

The percent of adults aged 18 or older in 2017 who made an actual suicide plan was 1.3% of the population. This is higher than all but two of the years between 2008 and 2016.[46]

In addition, drug overdose death rates increased in 35 of 50 states and DC, and significant increases in death rates involving synthetic opioids occurred in 15 of 20 states, likely driven by illicitly manufactured fentanyl (IMF.) [47] In 2017, among 70,237 drug overdose deaths in the U.S., 47,600 (67.8%) involved opioids, with increases across age groups, racial/ethnic groups, county urbanization levels, and in multiple states. In Greene County, after notable increased in the number of suicides and substance-use related deaths from 2013 to 2015, rates in Greene County in 2015 to 2017 were highly variable (see above).[48]

[45].Crump, C., Sundquist, K., Winkleby, M., & Sundquist, J. (2013). Op Cit

[46] Op cit. Key substance use and mental health indicators in the United States.

[47] Scholl L, Seth P, Kariisa M, Wilson N, Baldwin G. Drug and Opioid-Involved Overdose Deaths — United States, 2013–2017. MMWR Morb Mortal Wkly Rep. ePub: 21 December 2018. DOI: http://dx.doi.org/10.15585/mmwr.mm675152e1

[48] Source: Missouri Department of Health. Available at https://dmh.mo.gov/ada/rpts/documents/status2018-greene.pdf

Substance Use Disorders Trends

The Missouri Department of Mental Health, Division of Behavioral Health (DBH), formerly the Divisions of Alcohol and Drug Abuse and Comprehensive Psychiatric Services, is responsible for assuring the availability of substance use prevention, treatment, and recovery support services for the State of Missouri.[49] The Division, in conjunction with Missouri Behavioral Health Epidemiology Workgroup and other state and County agencies, issues annual reports which highlights trends in mental illness and the use of alcohol, tobacco and illicit drugs.

As noted, the Substance Abuse and Mental Health Services Administration (SAMHSA) within the U.S. Department of Health and Human Services (HHS) sponsor the annual National Survey on Drug Use and Health (NSDUH). This annual survey provides national indicators of substance use and mental health among people aged 12 years old or older in the civilian, noninstitutionalized population of the United States. The state and national data sets suggest:

- In 2017, 30.5 million people aged 12 or older used an illicit drug in the past 30 days (i.e., current use), which corresponds to about 1 in 9 Americans (11.2 percent).[50]
- Approximately 419,000 Missourians struggle with a substance use disorder.[51]
- While prescription drugs and illicit drugs are not as commonly used as alcohol, the consequences of their use in Missouri tend to be higher than the national average. Risk and Protective Factor data indicate that more youth surveyed did not consider marijuana smoking to be a risky behavior than those who did not find other drugs to be risky. Over-the-Counter Drugs are the most available drug. Two groups – (1) those age 18-25, and, (2) males – tend to have the highest use rates across all drugs.[52]
- In Missouri, approximately 13,082 parolees and 28,700 probationers need substance use disorder treatment (Missouri Department of Corrections, 2015).[53]
- Of the approximately 494,300 Missouri Veterans, an estimated 6.2 percent or 30,600 have a substance use disorder (Missouri Department of Public Safety, 2016; SAMHSA, 2015b).
- Of the approximately 83,600 pregnancies in the state, about 8,400 are women who are struggling with an alcohol or drug problem (Missouri Department of Health & Senior Services, 2014; SAMHSA)

[49] See: https://dmh.mo.gov/ada/

[50] Op cit. Key substance use and mental health indicators in the United States. Page 5.

[51] Missouri Intervention and Treatment Programs 2017. Accessed December 2018 at: https://dmh.mo.gov/docs/ada/substanceuseinterventiontreatment2017.pdf

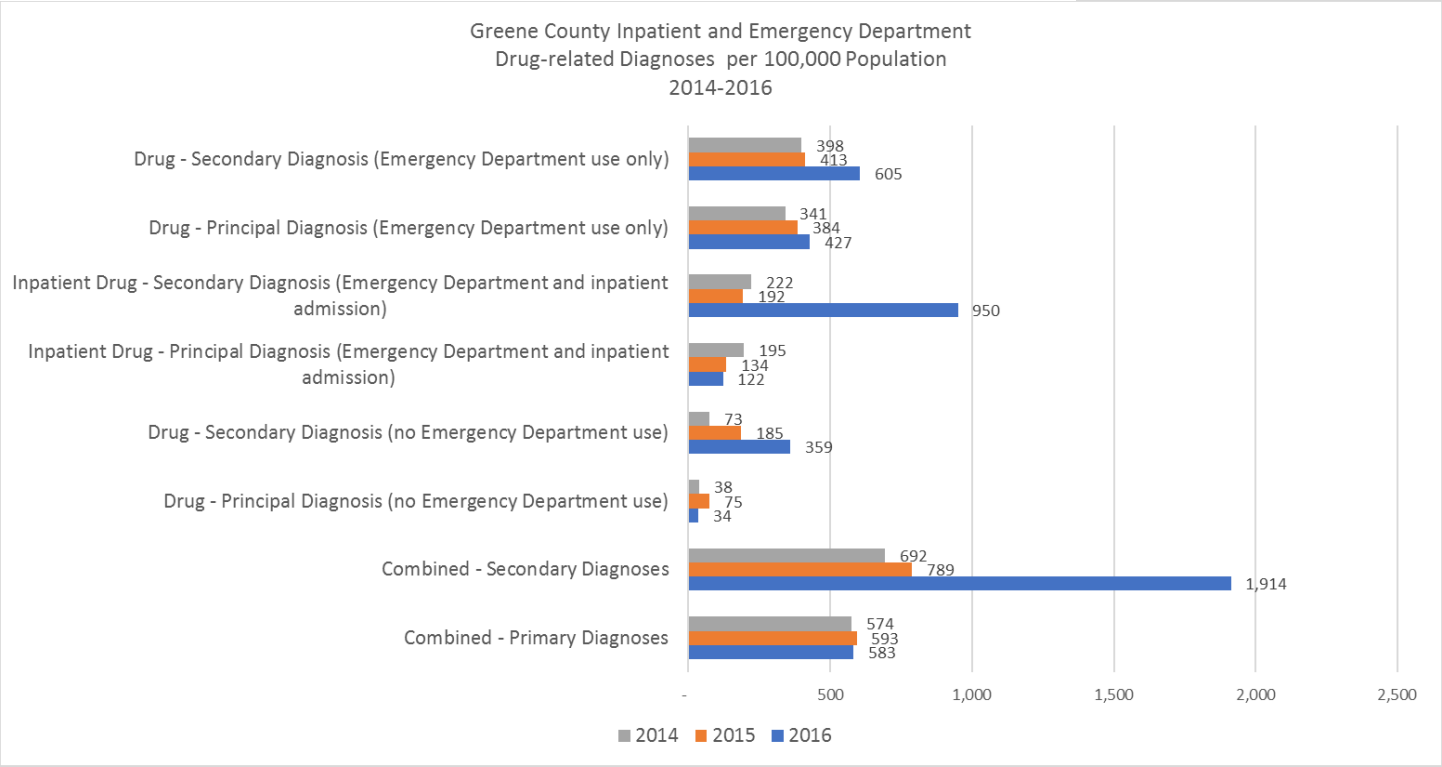
[52] The Missouri Behavioral Health Epidemiology Workgroup (MO-BHEW) State Epidemiological Profile 2017. Accessed December 2018. See: https://dmh.mo.gov/docs/ada/mobhew_missouristateepiprofile2017.pdf

[53] Op Cit. Missouri Intervention and Treatment Programs 2017. Page 1.

The annual MDOMH report also includes state and county profiles which summarize behavioral health data reported by Missouri state agencies and clinical treatment services funded by MDOMH. The following outlines recent data for substance use disorder treatment for Greene County .[54]

- The most recent SAMSHA data and state data suggests over 30,000 of people aged 12 or older used an illicit drug in the past 30 days.
- The total treatment rate for both primary and secondary diagnoses was 1,382 per 100,000 population in Greene County for 2015.

Table 50: Drug-related Diagnoses in Greene County 2014-2016



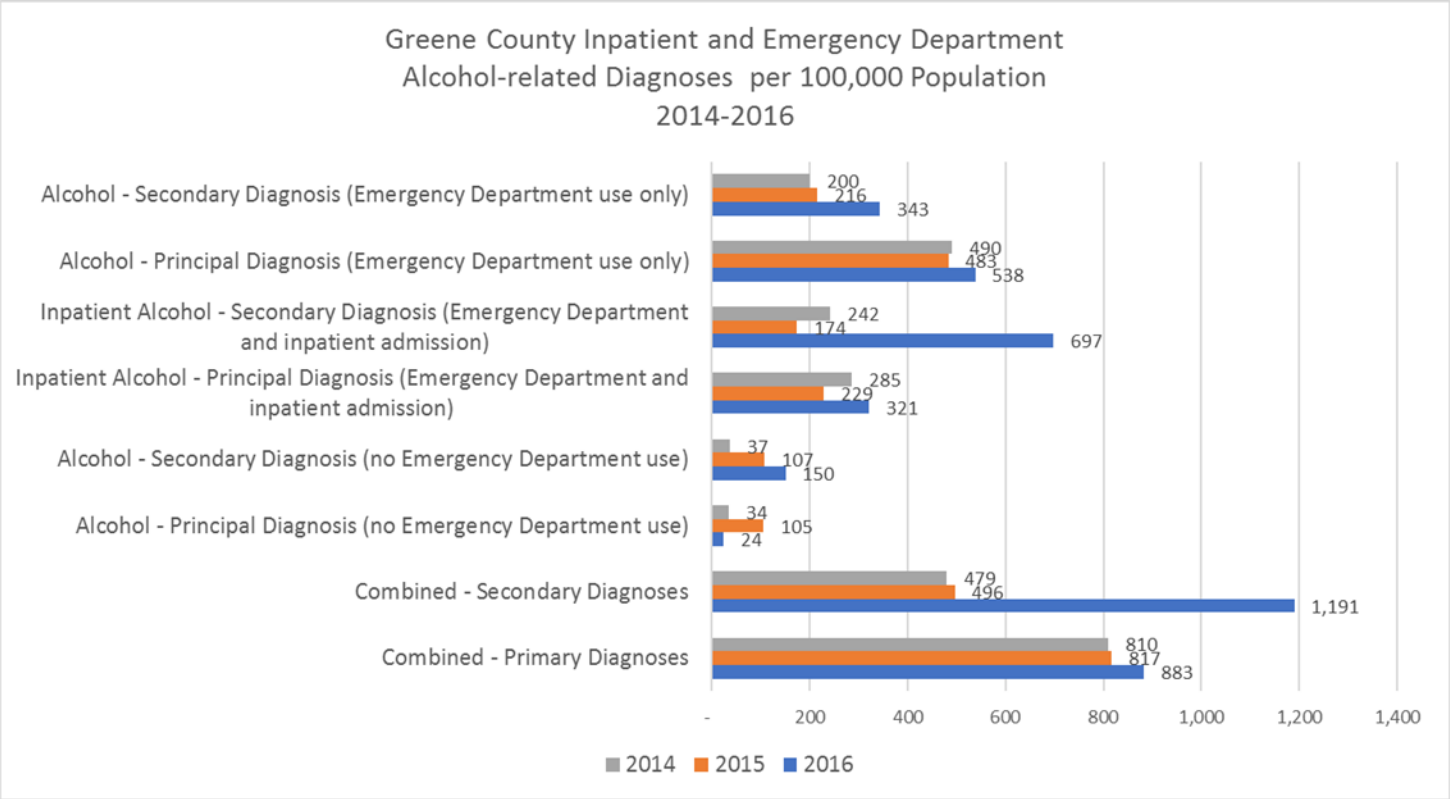
Source: Missouri Department of Mental Health.

- Treatment in Greene County emergency department and inpatient settings combined for drug-related primary and secondary diagnoses increased during every year from 2014 to 2016.[55]
- Primary and (especially) secondary diagnoses of alcohol, and drug-related disorders increased sharply in 2016.

[54] 2018 Status Report on Missouri's Substance Use and Mental Health – Greene County Page E-158. Available at https://dmh.mo.gov/ada/countylinks/documents/substancetreatment-greene.pdf

[55] Missouri Department of Mental Health. Available at https://dmh.mo.gov/ada/countylinks/documents/indicator-greene.pdf

Table 51: Alcohol-related Diagnoses in Greene County 2014-2016



Source: Missouri Department of Mental Health.

- Total alcohol-related inpatient and Emergency Department admissions increased in Greene County from 2014 to 2016.
- However, inpatient admissions for people who first used the Emergency Department increased more sharply over the same time period.[56]

[56] Missouri Department of Mental Health. Available at https://dmh.mo.gov/ada/countylinks/documents/indicator-greene.pdf

Table 52: Excessive Alcohol Consumption

	Total Population Age 18	Estimated Adults Drinking Excessively	Adults Drinking Excessively (Crude Percentage)	Adults Drinking Excessively (Age-Adjusted Percentage)
Greene County	215,291	25,404	11.8%	12.6%
Missouri	4,532,155	770,466	17%	17.9%
United States	232,556,016	38,248,349	16.4%	16.9%

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse. US Department of Health and Human Services, Health Indicators Warehouse. 2006-12. Source geography: County

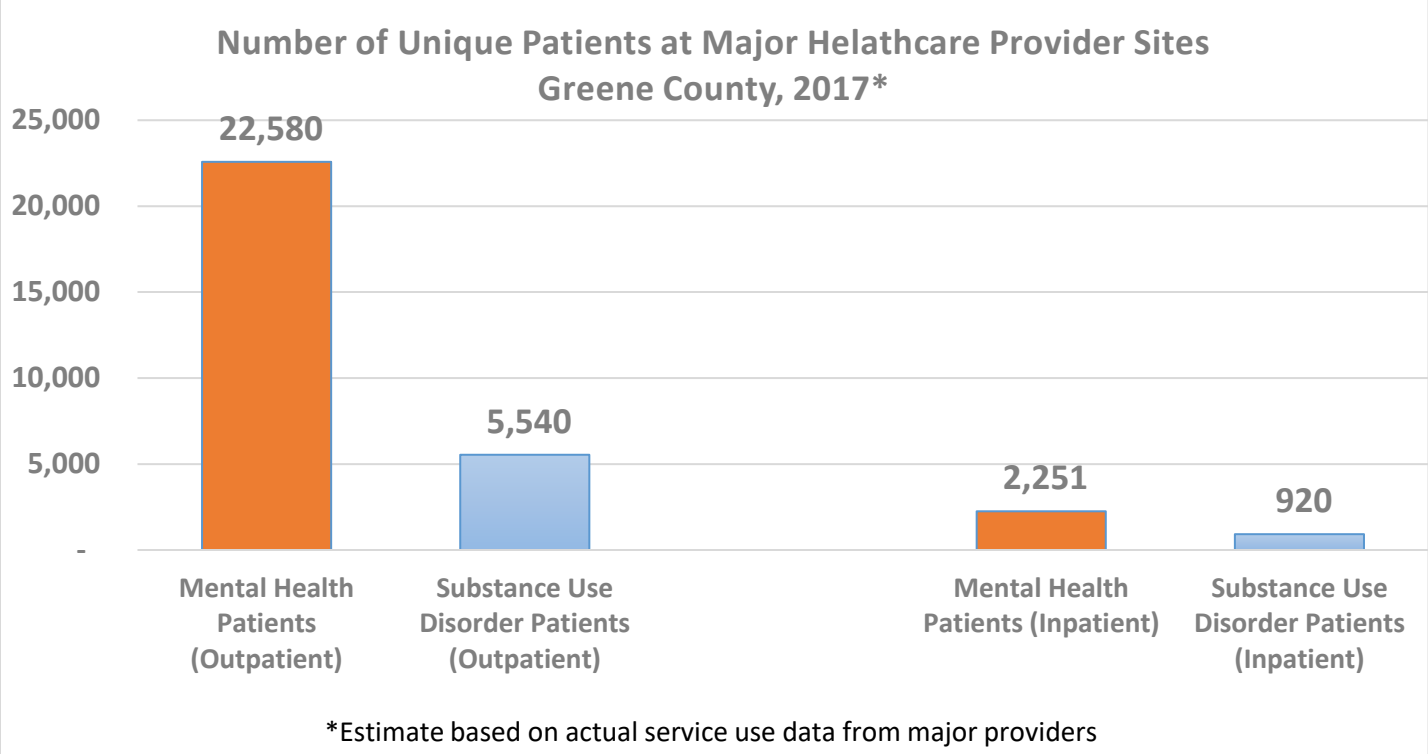
- Excessive alcohol consumption rates in Greene County are lower than the state and national rates. Alcohol is the most common substance to be introduced for the adolescent age group.

Mental Health and Substance Use Disorder Treatment at Major Providers

As an important part of the research process, Springfield / Greene County's largest health service providers shared de-identified service use data. The data was segmented by "inpatient discharges" and "outpatient visits" and indicated the number of unique patients seen (or discharged) by diagnosis and by zip code of residence. Data was provided by Jordan Valley Health Center (outpatient data), Burrell Behavioral Health (outpatient data), Mercy Hospital (inpatient and outpatient data), and CoxHealth (inpatient and outpatient data).[57]

The following section provides insight regarding service use and trends for mental health and substance use disorder patients in different care settings.

Table 53: Patients at Major Providers by Primary Diagnosis Type



Source: Service use data [de-identified] from Jordan Valley Health Center (outpatient data), Burrell Behavioral Health (outpatient data), Mercy Hospital (inpatient and outpatient data), and CoxHealth (inpatient and outpatient data).

Service use data collected from inpatient facilities and outpatient facilities[58] suggests:

- Over 30,000 people in Greene County sought help for mental health and/or substance use disorders in 2017.
- Depression-related issues are common among inpatient as well as outpatient settings.
- Anxiety is the most common primary diagnosis in an outpatient setting (35.4%).

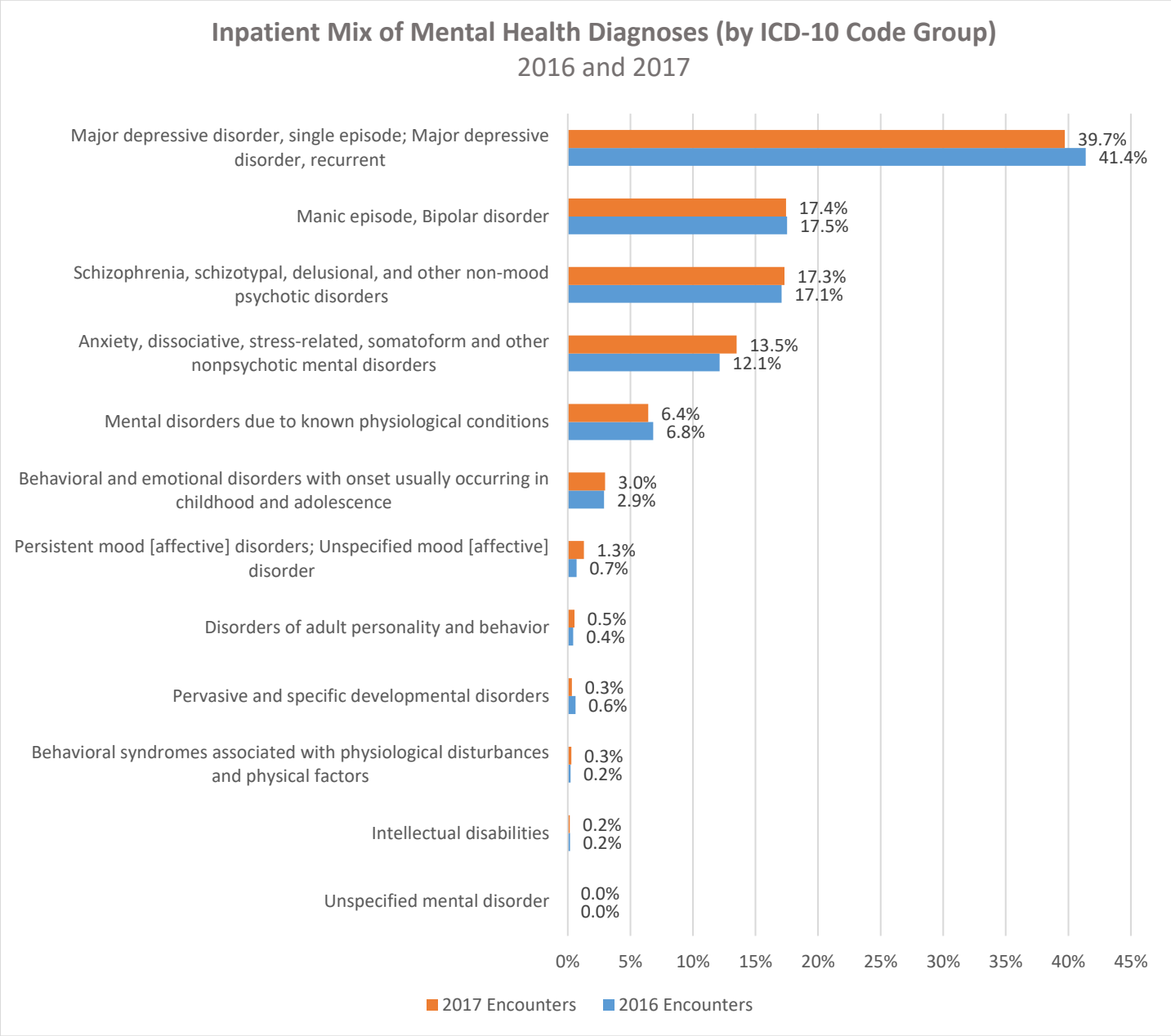
[57] At no time was any Protected Health Information requested or exchanged in any manner.

[58] The major sources of inpatient and outpatient data include Jordan Valley Health Center (outpatient data), Burrell Behavioral Health (outpatient data), Mercy Hospital (inpatient and outpatient data), and CoxHealth (inpatient and outpatient data). Unique patient data is based on actual [fully de-identified] service use data provided by the four organizations and assumes that they hold (aggregately) an 80% market share.

Inpatient Diagnoses

Inpatient mental health admissions were largely due to depression, as approximately two of five admissions included primary diagnoses in this category. Inpatient admissions differ somewhat from outpatient service use in that anxiety-related issues are the primary diagnosis in only one of eight inpatient admission while they are the leading diagnosis among outpatient service users.

Table 54: Diagnoses Rates, Inpatient, 2016-2017



Source: Service use data [de-identified] from Mercy Hospital, and CoxHealth.

"Depression" includes mild (ICD-10 F32.0) and multiple forms of major depression (ICD-10 F32.1 – 33.9). Definitions of categories noted on the left side of the chart can be found in the International Classification of Diseases, Tenth Revision (ICD-10) reference. Available at https://icd.codes/

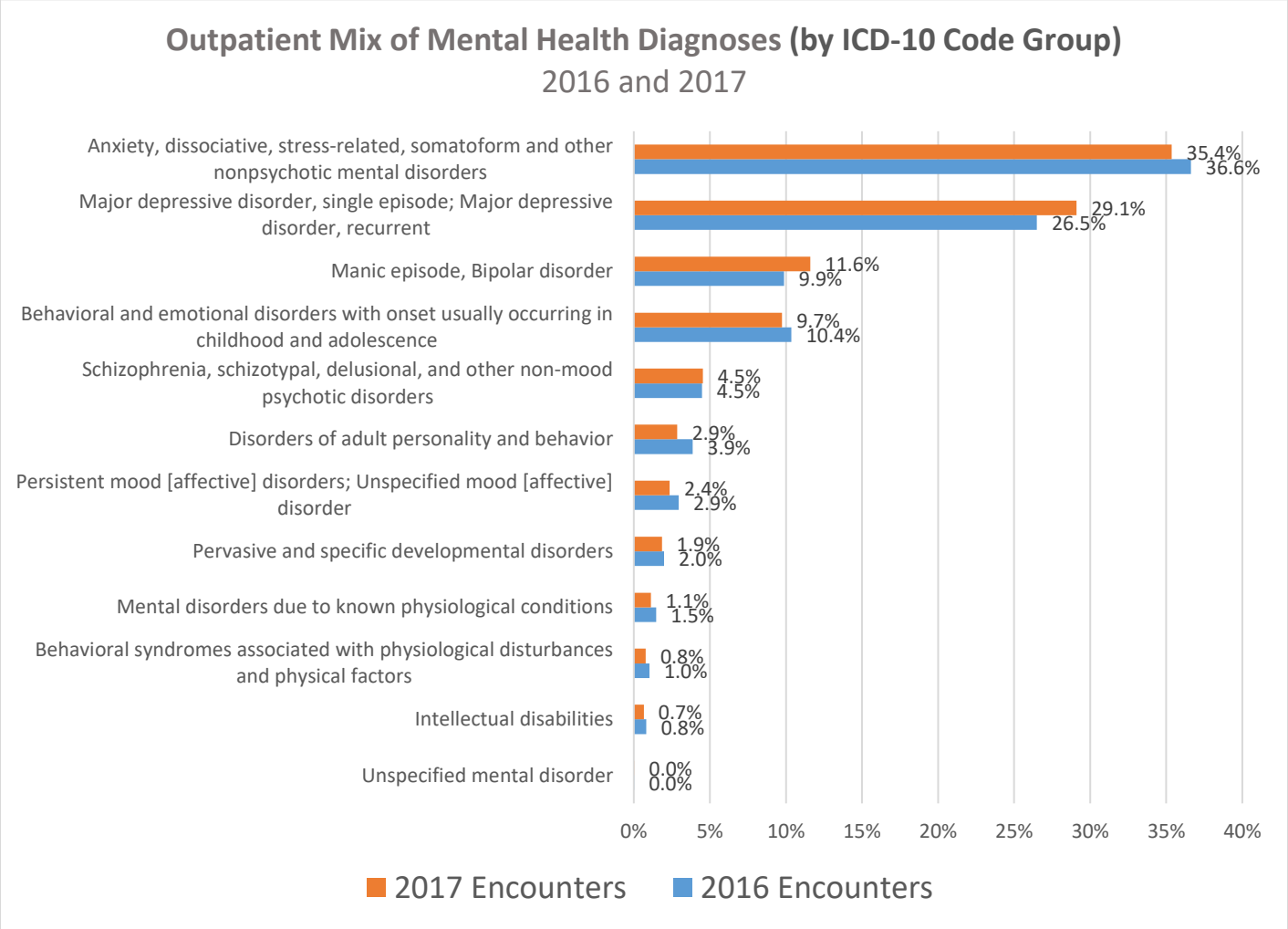
- More than two of five (39.7%) 2017 inpatient mental health admissions were due to depression and related conditions.
- Manic / bipolar (17.5%), schizoaffective disorders (17.1%), and anxiety related disorders (12.1%) comprised nearly half of all inpatient mental health primary diagnoses.

- Developmental and intellectual disabilities are present in a smaller percentage of community members.

Outpatient Diagnoses

More than half of people seeking outpatient services have a primary diagnosis of anxiety disorders or depression. The percent of patients with depression increased slightly (2.6 percentage points) in 2017 compared to 2016 while the percentage of people with manic episodes or bipolar diagnoses increased also, but at a slower rate. [59]

Table 55: Diagnoses Rates, Outpatient, 2016-2017



Source: Service use data [de-identified] from Jordan Valley Health Center, Burrell Behavioral Health, and CoxHealth.

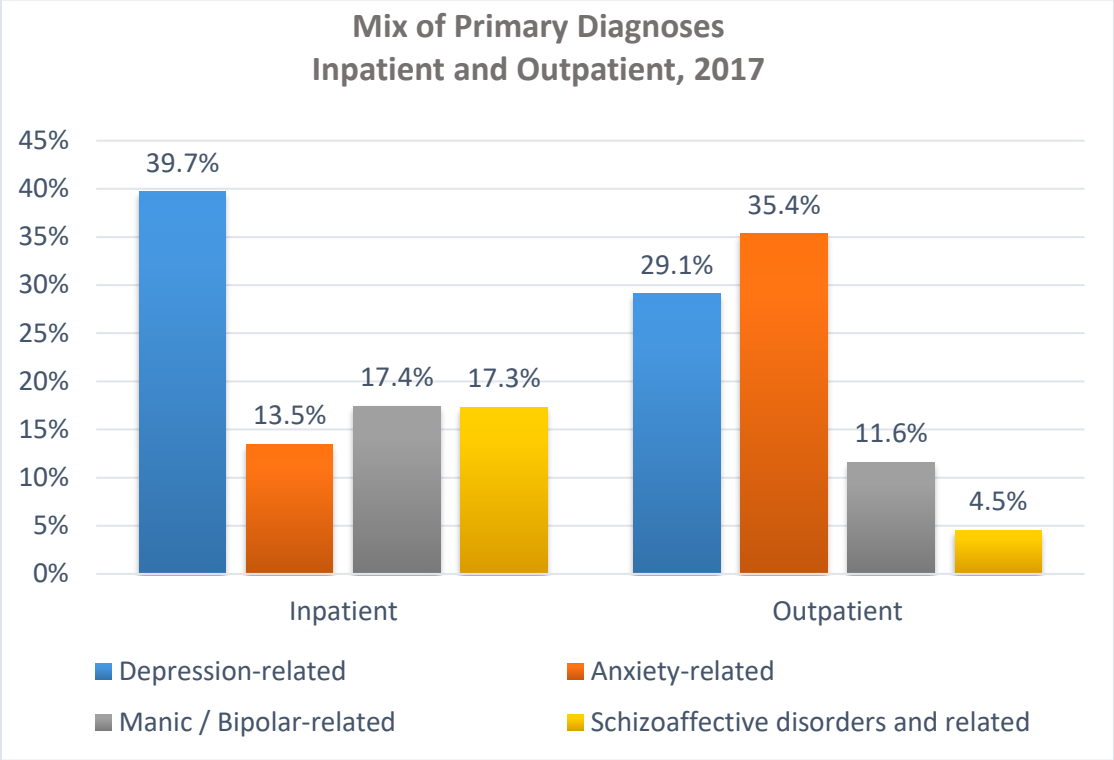
- Anxiety and related issues were the most common outpatient diagnoses.
- The percent of patients with a primary diagnosis of depression increased slightly in 2017.
- There is evidence that untreated anxiety may elevate longer-term behavioral health issues such as depression. [60]

[59] Definitions of categories noted on the left side of the chart can be found in the International Classification of Diseases, Tenth Revision (ICD-10) reference. Available at **https://icd.codes/**

[60] Kahn, S., Kahn, R.R., SciMed Central, "Annals of Psychiatry and Mental Health," 2017. Available at https://www.jscimedcentral.com/Psychiatry/psychiatry-5-1091.pdf

The following table summarizes the percentage of patients with various mental health primary diagnoses in an inpatient and outpatient setting.

Table 56: Mix of Primary Diagnosis Types



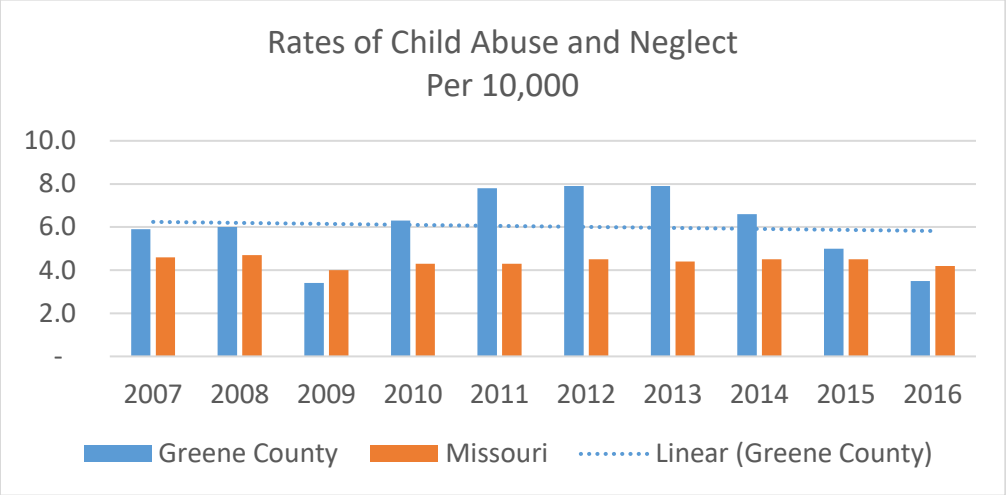
Source: Service use data [de-identified] from Jordan Valley Health Center (outpatient data), Burrell Behavioral Health (outpatient data), Mercy Hospital (inpatient and outpatient data), and CoxHealth (inpatient and outpatient data).

- Depression related diagnoses are highest at inpatient facilities (39.7%), where anxiety related diagnoses are most common at outpatient facilities (35.4%).
- At inpatient facilities, manic/bipolar related patients receive the second most common incidence of patient diagnosis (17.4%). Depression diagnosis is second most common at outpatient facilities (29.1%).

Child Abuse and Neglect

For much of the last decade, Greene County rates of child abuse and neglect were higher (in some years, much higher) than the Missouri average. However, since 2012 and 2013, Greene County rates have steadily declined such that in 2016, the rate was below the state average for the first time since 2009.

Table 57: Rates of Child Abuse and Neglect, 2007-2016



- Most years, the Greene County rate is above the Missouri average.[61] However, rates are down in Missouri and Greene County from a spike in 2011-2013.
- The 2016 Greene County rate was the lowest since 2009. The long-term trend (shown in the dotted line in the graph) shows a gradual decline; however, clearly, since 2013, the data shows a more distinct downward trend.
- The long-term importance of child abuse and neglect is strongly reflected in research regarding Adverse Childhood Experiences.[6263] For example, there is higher risk of mental and substance use disorders as an older adult (50+ years) among adults who (as children) experienced abuse (physical, sexual, psychological), parental substance abuse.[64]
- Adverse Childhood Experiences (ACEs) – several types of abuse, neglect, and other types of household dysfunction – have been shown to have a significant correlation to mental health and medical health challenges in adults. Adults who experienced adverse circumstances as children are, in many cases, more likely to face health challenges that require mental health of other healthcare services. Therefore, ACEs research suggests that efforts to reduce the impact of childhood abuse, neglect, and household dysfunction may have long-term benefits to individuals and the community.[65]

---

[61] The Annie E. Casey Foundation. Available at https://datacenter.kidscount.org/data/tables/9567-substantiated-child-abuse-neglect?loc=27&loct=2#detailed/2/any/false/870,573,869,36,868,867,133,38,35,18/any/18754,18755

[62] U.S. Centers for Disease Control and Prevention. Available at https://www.cdc.gov/violenceprevention/acestudy/index.html

[63] SAMHSA: Adverse childhood experiences (ACEs) are stressful or traumatic events, including abuse and neglect. They may also include household dysfunction, such as witnessing domestic violence or growing up with family members who have substance use disorders. ACEs are strongly related to the development and prevalence of a wide range of health problems throughout a person's lifespan, including those associated with substance use. Available at https://www.samhsa.gov/capt/sites/default/files/resources/aces-behavioral-health-problems.pdf

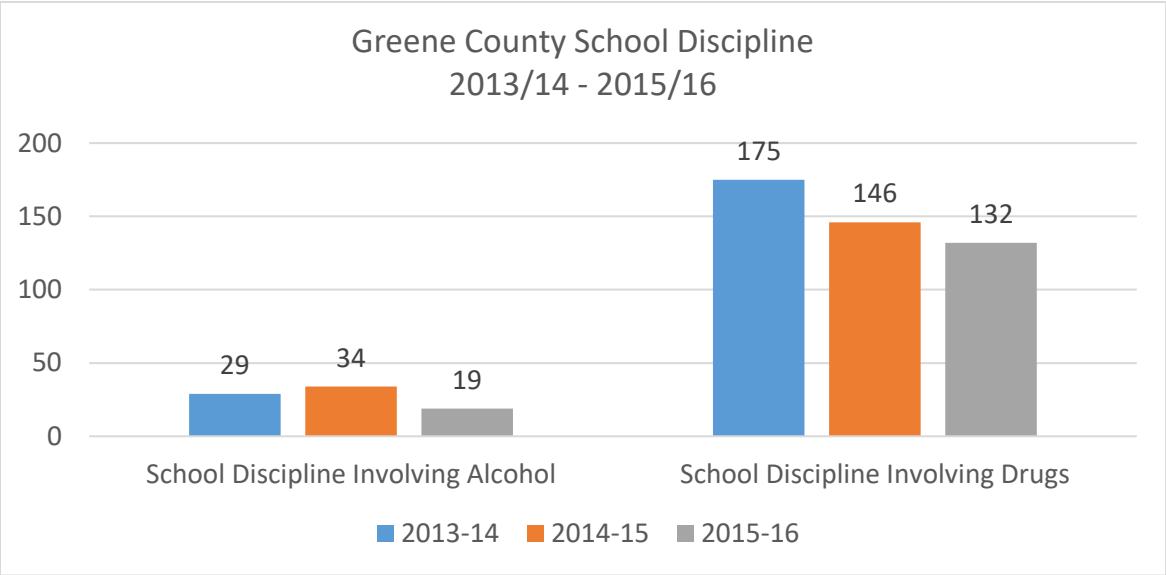
[64] Choi, DiNitto, Marti, & Choi, 2017; SAMHSA, 2018. Available at https://www.samhsa.gov/capt/sites/default/files/resources/aces-behavioral-health-problems.pdf

[65] More information about ACSs can be found at the following source: https://www.ajpmonline.org/article/s0749-3797(98)00017-8/pdf

School Mental Health and Substance Use Disorder Data

Table 58: School Discipline

School discipline issues and mental health challenges are often correlated.[66] The following data indicates that some school-related discipline issues in Greene County showed an improving trend in 2016.



- School discipline occurrences involving alcohol and drugs have decreased.[67]
- High school students who participated in focus groups indicated that substance use disorders remain a critically important issue and affirm the suggested link with mental health issues.[68] In addition, some students suggested that the total number of suspensions may be increasing even though the number associated with alcohol or drugs may trend differently.

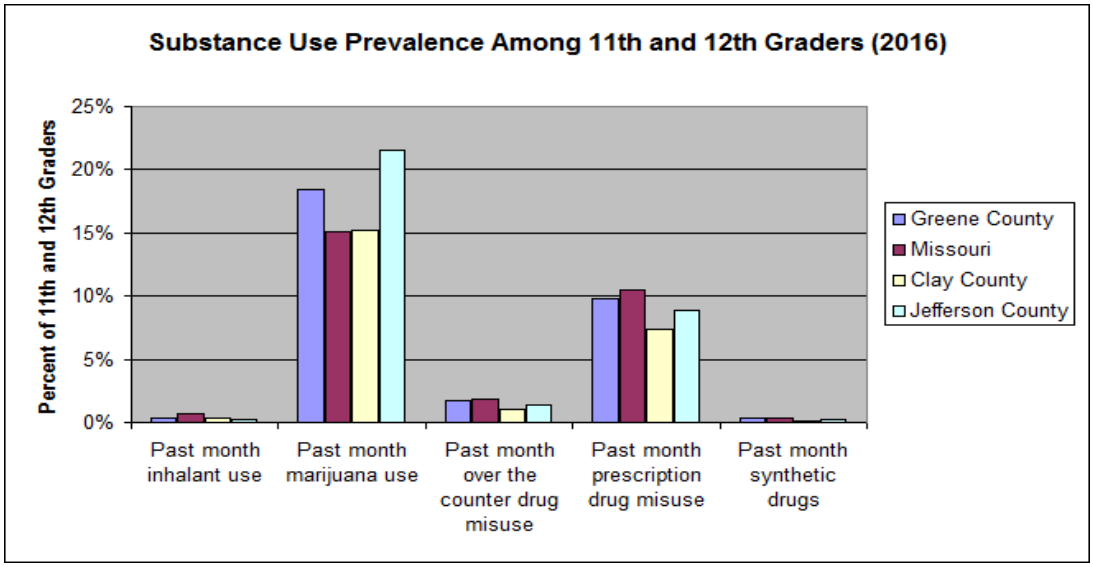
[66] Association for Children's Mental Health, "Problems at School." Available at http://www.acmh-mi.org/get-help/navigating/problems-at-school/

[67] Missouri Department of Mental Health. Available at https://dmh.mo.gov/ada/countylinks/documents/indicator-greene.pdf

[68] Note also that 2018 data indicate that the number of school suspensions of 10 or more consecutive days in the Springfield School System was more that twice the rate of the Missouri average (2.8 SPS suspensions per enrollment total compared to 1.2 statewide). Source: Missouri Department of Education, District Report Card, 2019. Available at https://apps.dese.mo.gov/MCDS/Reports/SSRS_Print.aspx

Table 59: Substance Use by High School Students

The Missouri Student Survey (MSS) tracks risk behaviors (e.g., alcohol, tobacco, and drug use) of students in grades 6-12 attending public schools in Missouri. In 2016, the survey was conducted jointly by the Missouri Department of Elementary and Secondary Education and the Missouri Department of Mental Health, Division of Behavioral Health (DBH). Some of the key findings from the survey, as they pertain to Greene County, follow.



- Marijuana and prescription drugs are the most frequently noted substances used [misused] by Greene County 11th and 12th graders.[69]
- Fewer than two percent of Greene County 11th and 12th graders indicate that they misused inhalants, over-the-counter drugs, or synthetic drugs within the past month.
- The following table exhibits the data reflected in the chart above.

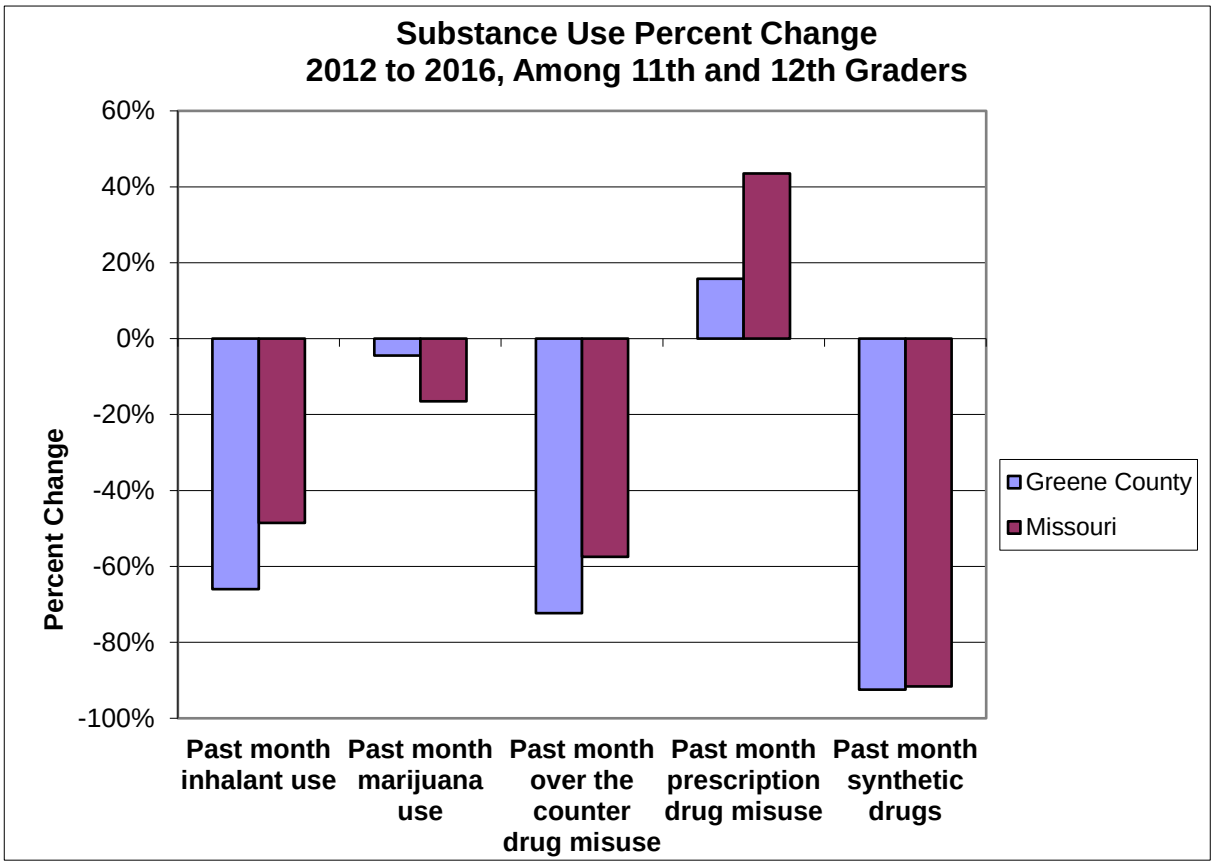
Area	Past month inhalant use	Past month marijuana use	Past month over the counter drug misuse	Past month prescription drug misuse	Past month synthetic drugs
Greene County	0.33%	18.46%	1.74%	9.76%	0.33%
Missouri	0.70%	15.09%	1.83%	10.46%	0.33%
Clay County	0.36%	15.19%	1.09%	7.42%	0.12%
Jefferson County	0.24%	21.51%	1.44%	8.83%	0.24%

- Marijuana is the most commonly used substance among 11th and 12th grade students.
- Jefferson county students use marijuana more frequently than Greene County students, but Greene County students have misused prescription medicine at a higher rate.

[69] Missouri Department of Mental Health. 2016, Aggregated High School Juniors and Seniors. Available at https://seow.dmh.mo.gov/MSS/MSSIndicators.aspx?SID=NEW&PATH=Indicators

Table 60: High School (11th and 12th Graders) School Substance Use Trends

Use of inhalants, marijuana, and most other substances decreased from 2012 to 2016 in Greene County, as well as the state, in total.[70]



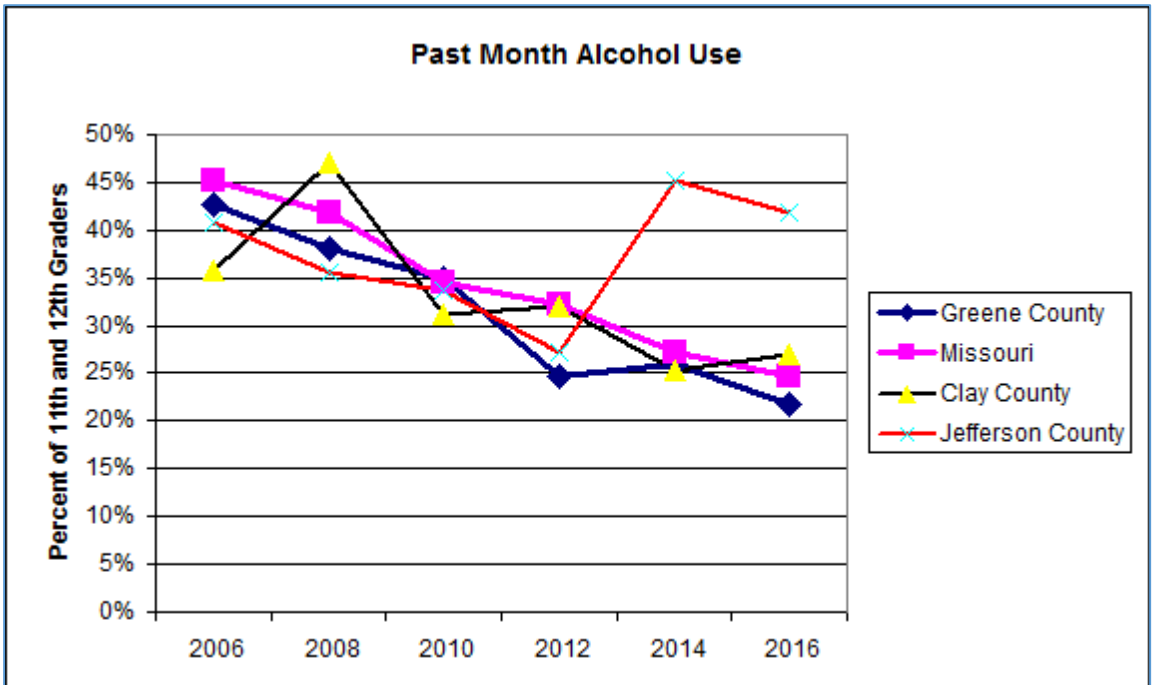
Area	Past month inhalant use	Past month marijuana use	Past month over the counter drug misuse	Past month prescription drug misuse	Past month synthetic drugs
Greene County	-65.98%	-4.45%	-72.29%	15.78%	-92.41%
Missouri	-48.53%	-16.49%	-57.44%	43.48%	-91.62%

- Although use rates of inhalants, over the counter drugs, and synthetic drugs was low in 2012 (i.e., fewer than two percent of 11th and 12th graders report using them within the past month), usage rates dropped even further for each in 2016.
- Usage rates of marijuana (the most commonly used substance), decreased more than four percent in Greene County from 2012 to 2016 – a rate slightly below the Missouri rate.

[70] Missouri Department of Mental Health. 2016, Aggregated High School Juniors and Seniors. Available at https://seow.dmh.mo.gov/MSS/MSSIndicators.aspx?SID=NEW&PATH=Indicators

Table 61: High School (11th and 12th Graders) Alcohol Use Trends

Alcohol use among high school juniors and seniors (in most areas) has decreased consistently since 2006.[71]



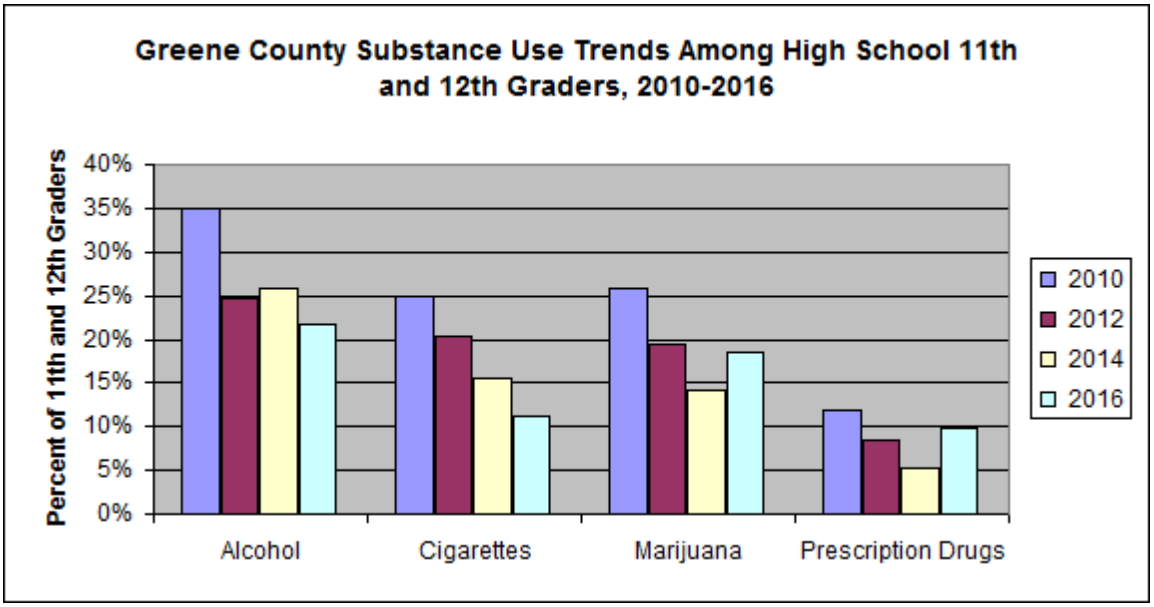
Year	Greene County	Missouri	Clay County	Jefferson County
2006	42.58%	45.22%	35.71%	40.85%
2008	38.09%	41.76%	46.98%	35.59%
2010	34.91%	34.44%	31.20%	33.58%
2012	24.70%	32.15%	31.94%	27.24%
2014	25.85%	27.28%	25.28%	45.22%
2016	21.82%	24.71%	27.06%	41.76%

- Reported rates of alcohol use (past month) among Greene County high school 11th and 12th graders declined approximately 50% from 2006 to 2016.
- Missouri state rates declined also, but not as strongly as rates in Greene County.

[71] Missouri Department of Mental Health. 2016, Aggregated High School Juniors and Seniors. Available at https://seow.dmh.mo.gov/MSS/MSSIndicators.aspx?SID=NEW&PATH=Indicators

Table 62: High School (11th and 12th Graders) 2010-2016 Trends Regarding Substance Use Trends, by Type of Substance Used

Examination of substance use trends among Greene County 11th and 12th graders provides additional insight regarding the improving trends in Springfield.



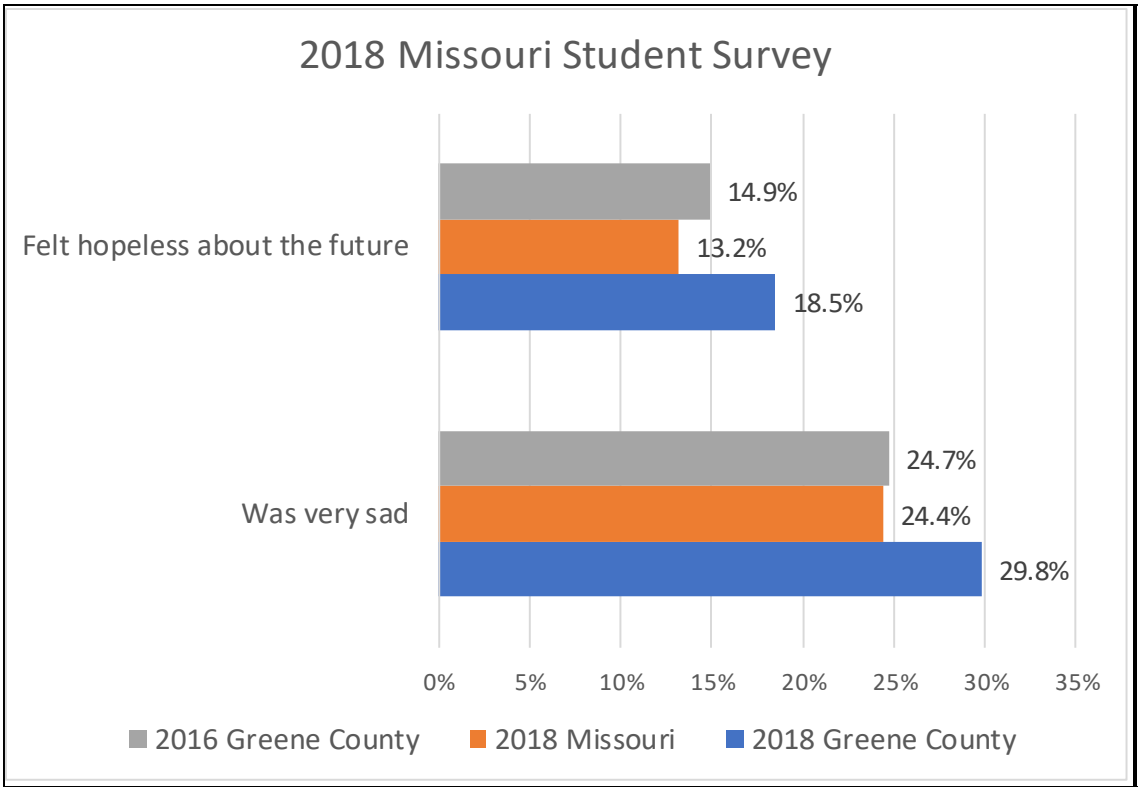
Year	Alcohol	Cigarettes	Marijuana	Prescription Drugs
2010	34.91%	24.97%	25.92%	11.84%
2012	24.70%	20.34%	19.32%	8.43%
2014	25.85%	15.59%	14.25%	5.29%
2016	21.82%	11.17%	18.46%	9.76%

- Use of alcohol, cigarettes, and marijuana has declined in Greene County since 2010.[72]
- Prescription drug usage has dipped as well, but usage rates remain similar to the 2010 average.

[72] Missouri Department of Mental Health. 2016, Aggregated High School Juniors and Seniors. Available at https://seow.dmh.mo.gov/MSS/MSSIndicators.aspx?SID=NEW&PATH=Indicators

In the 2018 Missouri Student Survey, Greene County results indicate that when students responded to questions related to depression, their scores were slightly higher than the Missouri average.

Table 63: Missouri Student Survey – Questions Related to Depression



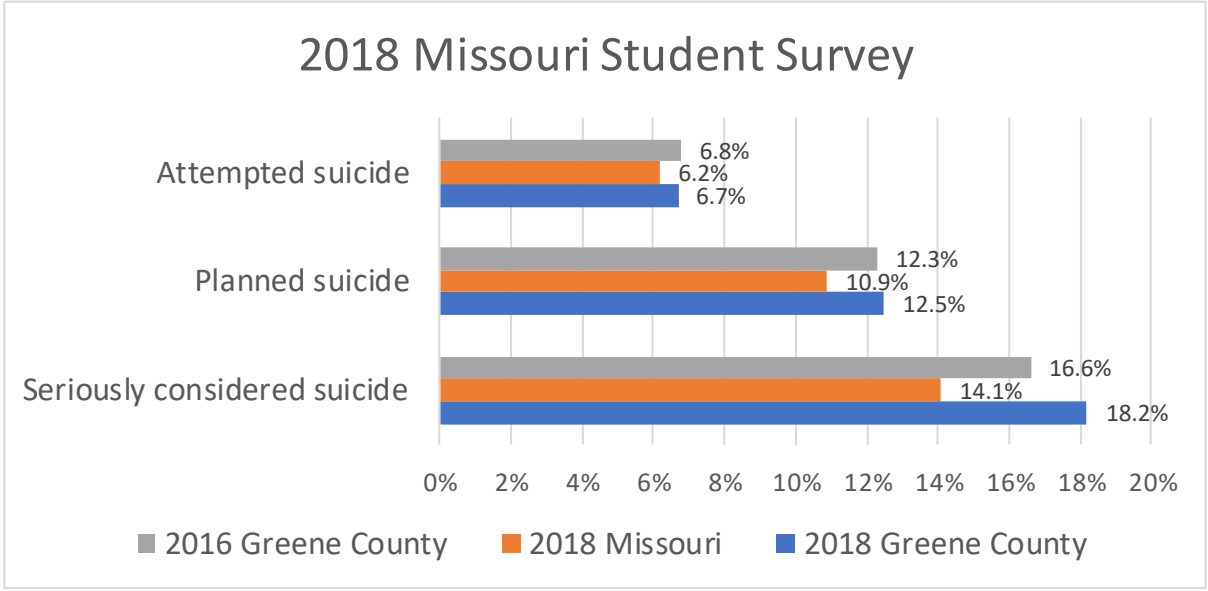
Measure	2018 Greene County	2018 Missouri	2016 Greene County
Was very sad	29.8%	24.4%	24.7%
Felt hopeless about the future	18.5%	13.2%	14.9%

2018 Missouri Student Survey, Greene County. Available at https://dmh.mo.gov/docs/ada/mss2018-greene.pdf

- Nearly three of ten indicated that they had been "very sad" during the previous 30 days – higher than the Missouri survey average and slightly higher than in 2016.
- Approximately one in five (18.5%) stated that they had felt hopeless about the future within the past 30 days – again, higher than the Missouri survey average and slightly higher than in 2016.

The same statewide survey found that suicidal thoughts or actions in Greene County were also higher than the Missouri average.

Table 64: Missouri Student Survey – Questions Related to Suicide



Measure	2018 Greene County	2018 Missouri	2016 Greene County
Seriously considered suicide	18.2%	14.1%	16.6%
Planned suicide	12.5%	10.9%	12.3%
Attempted suicide	6.7%	6.2%	6.8%

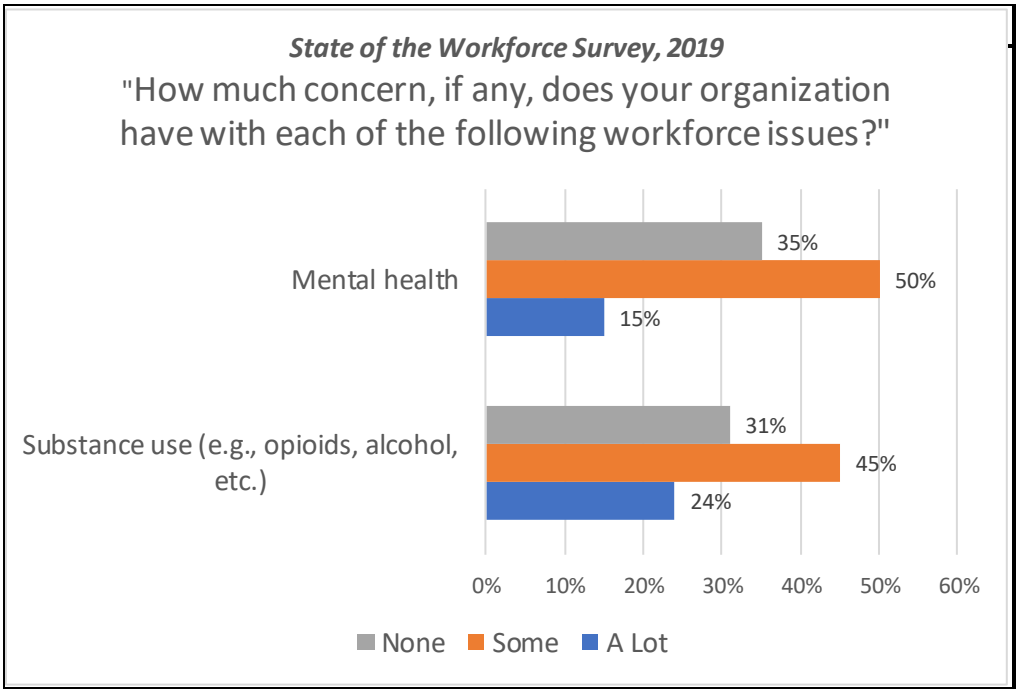
2018 Missouri Student Survey, Greene County. Available at https://dmh.mo.gov/docs/ada/mss2018-greene.pdf

- In 2018, more than one of six Greene County students (18.2%) seriously considered suicide; approximately two-thirds of whom (12.5% of the total survey sample) planned the suicide attempt. Both data points are slightly above the Missouri state average.
- About six percent of Missouri and Greene County students (6th – 12th grade) indicate that they have attempted suicide.

Business Community Mental Health Concerns

The recent (2019) State of the Workforce Survey indicates that substance use and mental health of employees is a concern among a majority of employers in Greene County.

Table 65: State of the Workforce Survey



How much concern, if any, does your organization have with each of the following workforce issues?

	Amount of Concern		
Issue	**A Lot**	**Some**	**None**
Substance use (e.g., opioids, alcohol, etc.)	24%	45%	31%
Mental health	15%	50%	35%

Source: Springfield - Greene County Health Department, State of the Workforce Survey, 2019. Available at https://www.springfieldmo.gov/DocumentCenter/View/42002/Workforce-Survey-with-Results

- More than two-thirds (69%) of employers indicate that they have “some” or “a lot” of concern about substance use.
- Nearly as many (65%) have similar concerns about mental health issues in the workplace.
- Qualitative research supports these findings, as substance use and mental health issues are reported as important factors to consider when maintaining and/or developing the employee base.

5.0 Community Resources

Systems of Care and Recovery Continuum – General

Springfield has a well-defined system of care that includes a broad range of services to treat mental health and substance use disorders. However, that does not imply that the capacity of the systems of care or access to them is without challenges.

The table below shows a schematic of service lines within the three primary stages of the systems of care – prevention, treatment, and supportive and recovery services.

Schematic of Major Types of Services

Including examples of each type

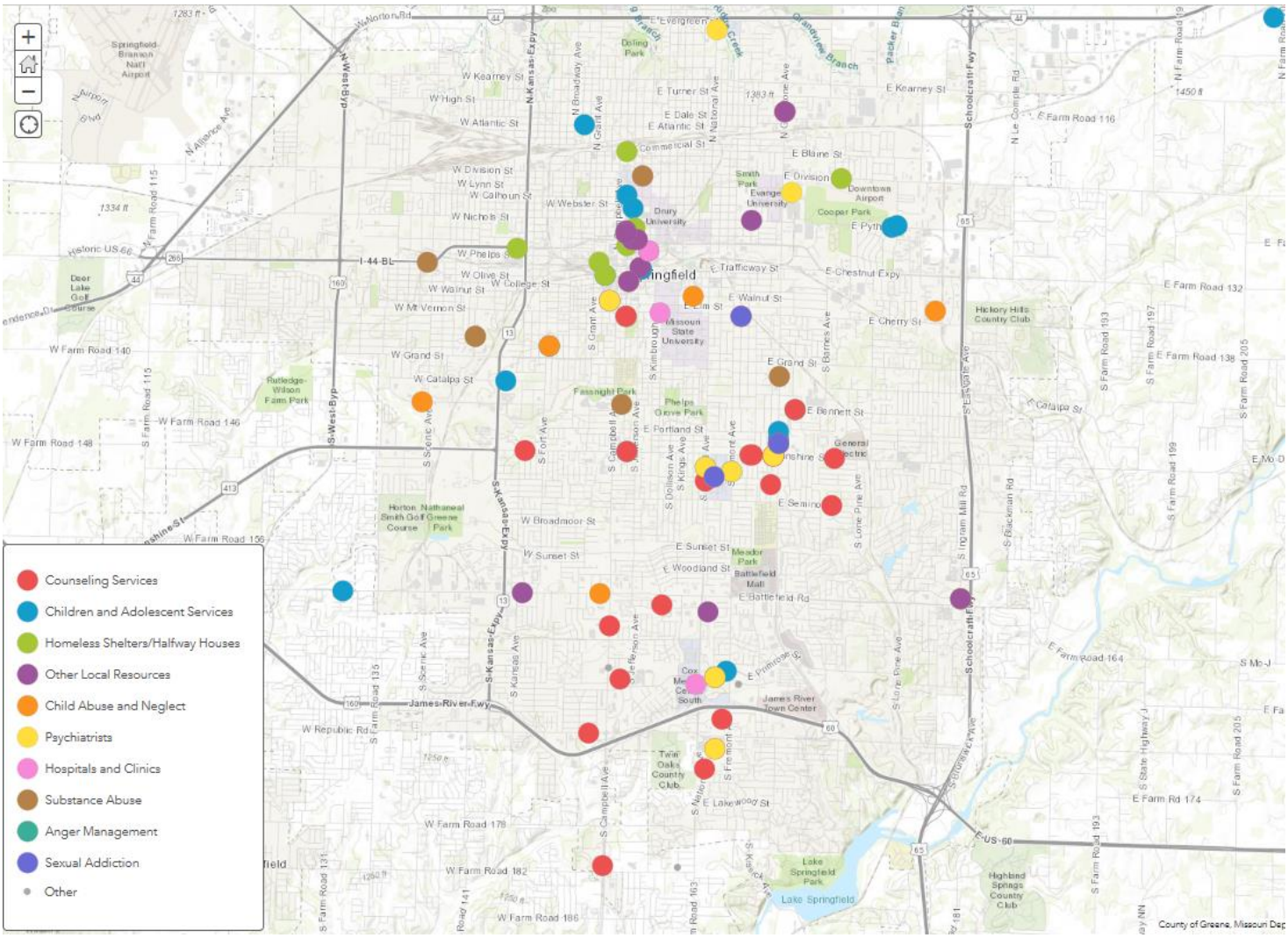
A planned sequence of culturally appropriate, science- driven strategies intended to facilitate attitude and behavior change for individuals and communities.	*Science driven, culturally appropriate strategies intended to engage and treat people are experiencing signs & symptoms of a brain disease either related to mental health or substance use disorders*	*Strategies to support individuals in their recovery to maximize their quality of life and reach their full potential.*
Destigmatize Mental Health Mental Health First Aid Training Prescription Medication Safety Campaign Opioid Medication prescription protocols (e.g. PDMP) Parenting Programs SBIRT in Schools and at Work Teen Suicide Prevention Assistance to Obtain Vocational Services School-based Aspire Programs	Outpatient community counselling Intensive Outpatient and Partial Hospital Programs (IOP/PHP SUD and MH) Inpatient Treatment Sub-Acute Detox Medically Assisted Treatment (MAT) MH Pharmacological Management In-house jail services Emergency Services Crisis Intervention	Outpatient Services Intensive Outpatient Services Residential Treatment Care Coordination Assistance to Obtain Necessary Services Recovery Housing Vocational/Employment Services Specialty Dockets (Drug Court, Mental Health Court) Peer Recovery Supporter Certification Workforce Development & Training

The Springfield area includes organizations that provide prevention, treatment, and support and recovery services. A detailed list is contained in the appendices, and an interactive map is shown on the following page.

Community Resources Maps including Community Mental Health Locations

The following map shows the locations of direct care services in Greene County which provide inpatient services, outpatient services, support groups, and/or other types of care addressing mental health and substance use disorder issues. The map is interactive with service provide names and locations accessible via the following hyperlink: https://arcg.is/TW85n A list of the sites is included in the appendices in tabular form.

Table 66: Springfield Detail and Greene County Overview of Service Locations



6.0 Digital / Social Media Data Analysis

Over four billion people across the globe use the internet with approximately 3.2 billion using social media in 2018.[73] The internet and social media has become a powerful channel to share information at home and around the world.

Approximately two-thirds of all U.S. adults (68%) are Facebook users, and 75% of those users access Facebook at least daily. YouTube, while not considered a traditional social media platform, has increased in popularity in the recent years with 73% of U.S. adults reported using the platform[74]. Google continues to be the top search engine with 70% of all search market share.

With an abundance of information at an individual's fingertips, one in three Americans have searched online about a medical condition.[75] Of those who seek medical information online, 46% of the individuals sought attention from their medical provider. Reviewing online search interest and social media can help identify the most common, emerging, and surging healthcare-related issues in the local community.

Goal and Approach:

To better understand community members' interest in mental health and substance use disorder topics, Crescendo deployed data analysis and reporting techniques to identify the most common, emerging, and/or surging mental health and substance use disorder issues included in publicly available online discussions. As noted, based on digital communications resources such as the following:

- Facebook Business Manager
- Meltwater Social Media Insight
- Google Analytics and Trend Analysis

Digital tools, such as Google Trends, Meltwater Services, and others can help identify mental health and substance use disorder issues that are increasingly pertinent in online discussions across social media and the internet.

About Google Trends

Google Trends is a search trends feature from Google that shows how frequently a given search term is entered into Google's search engine relative to the site's total search volume over a given time period. Google uses a relative score to measure the index of search activity. The maximum value, or peak popularity, is 100. For example, if the value for "Springfield" is 100 and the value for "donut" is 50, the number of searches for "donut" is half as popular as "Springfield." A score of 0 means there was not enough data for the term to be included in the trend analysis.

[73] We Are Social. *Digital in 2018: World's Internet User Pass the 4 Billion Mark*. https://wearesocial.com/blog/2018/01/global-digital-report-2018

[74] Pew Research Center. *Social Media Use in 2018*. http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/

[75] Pew Research Center. Health Online 2013. http://www.pewinternet.org/2013/01/15/health-online-2013/

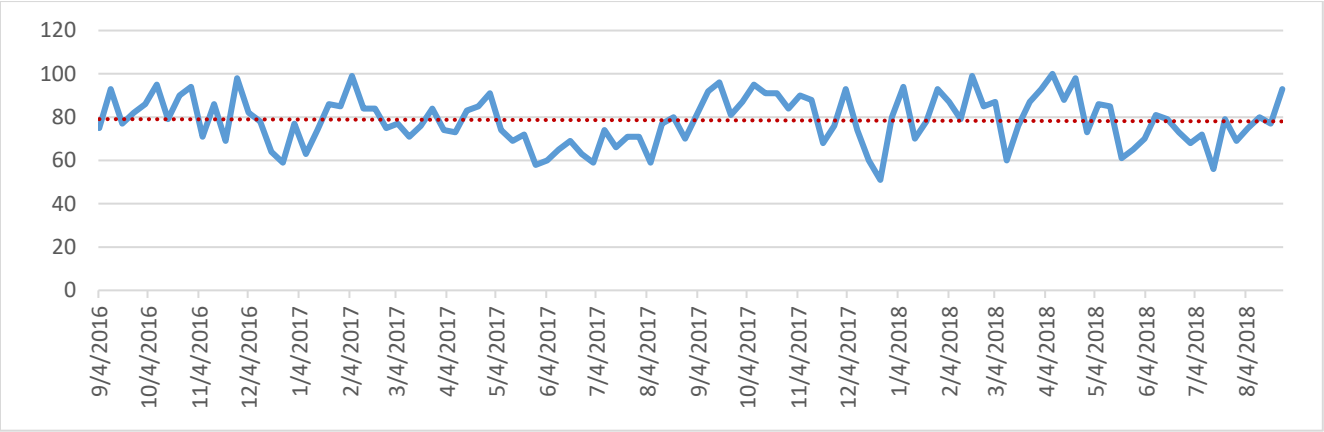
Mental Health Search Interest Overview

Online discussions and searches for "mental health"-related issues have been stable since 2016. However, specific topics within the broader field of mental health show increasing trends. The following charts depict the search interest for mental health issues in the Springfield area since 2016 and additional trends for more "urgent" or "emergent" issues that help to more clearly describe residents' interest level in key topics. Digital and social media trend charts are displayed for the following topics:

- Mental health
- Anxiety
- Depression
- Suicides completed
- Opioid use disorder
- JUUL

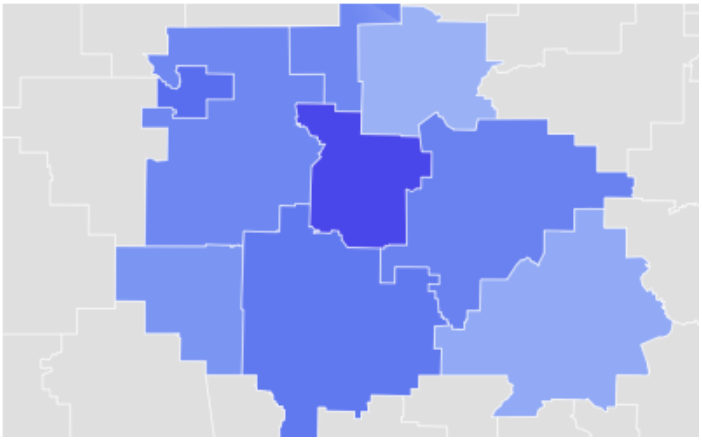
Online and digital searches for the general category of mental health has been relatively stable since 2016; however, anecdotal information indicates that increasing attention is being paid to individual mental health or substance use issues – especially when there is a sentinel event or other publicly reported issue.

Table 67: Google Search Terms Related to "Mental Health" in Springfield



- From September 2016 through August 2018, "mental health" as a search category remained approximately the same with a few peaks and troughs.
- Key peaks measuring above 90 occurred around November 27, 2016, February 5, 2017, February 18, 2018, April 4, 2018, and April 22, 2018.
- Top mental health search terms include anxiety, depression, autism, stress, and ADHD.

Table 68: Google Search Interest Over Time for "Mental Health" by Geographic Region



Top Five Regions

Columbia-Jefferson City 100

St. Joseph 72

Springfield 63

St. Louis 56

Kansas City 51

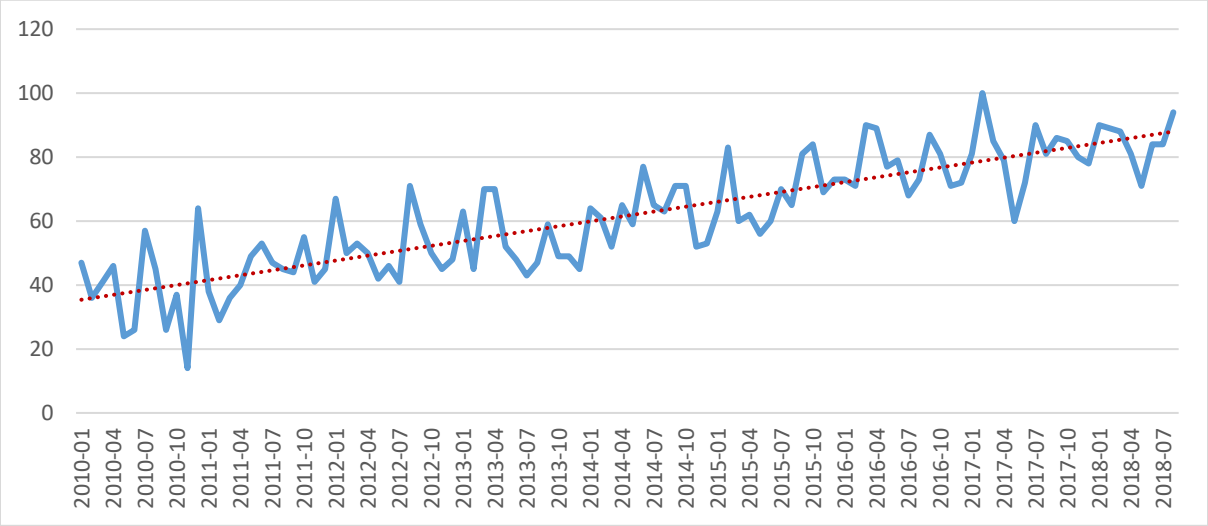
- Mental health search interest is highest in the Columbia-Jefferson City area followed by St. Joseph, and Springfield areas. As the capital of Missouri, Jefferson City is home to the Department of Mental Health and other state government offices, which may be why search interest is high in the area. Additionally, search interest may be high in St. Joseph due to the local Glore Psychiatric Museum.
- Top search terms for Missouri include mental health, behavioral health, mental illness, mental hospital, and department of mental health. Search terms, such as "Mental Health Awareness Month" and "mental health awareness" has increased over the course of the two-year time period indicating mental health awareness is increasing in the general population in Missouri.

Approximately 35% of U.S. adults have reported they have gone online to get more information about a health-related condition they or someone else might have.[76] While search interest for mental health has been relatively stable, search interest for specific mental health disorders in the Springfield area has increased since September 2016.

There is a correlation between Google Trends search data and MDoMH Green County diagnosis data for specific mental health diagnoses, such as anxiety and depression. For FY2010 through FY2016, search interest for "anxiety" and "depression" have increased along with diagnoses of the disorders in Greene County.

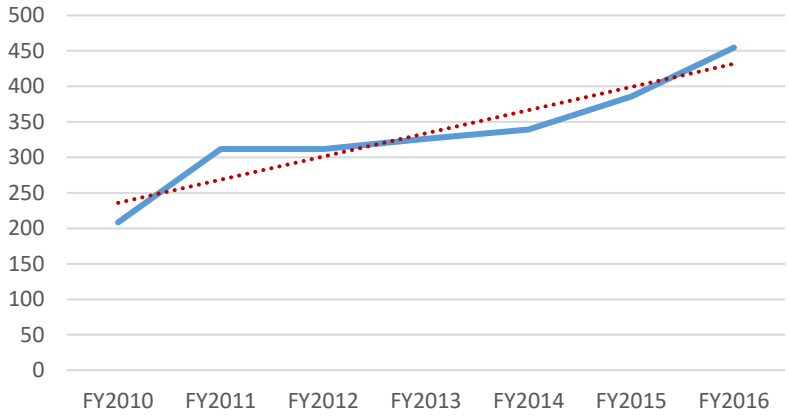
[76] Pew Research Center. Health Online 2013. http://www.pewinternet.org/2013/01/15/health-online-2013/

Table 69: Google Search Term Interest for "Anxiety," 2010-2018



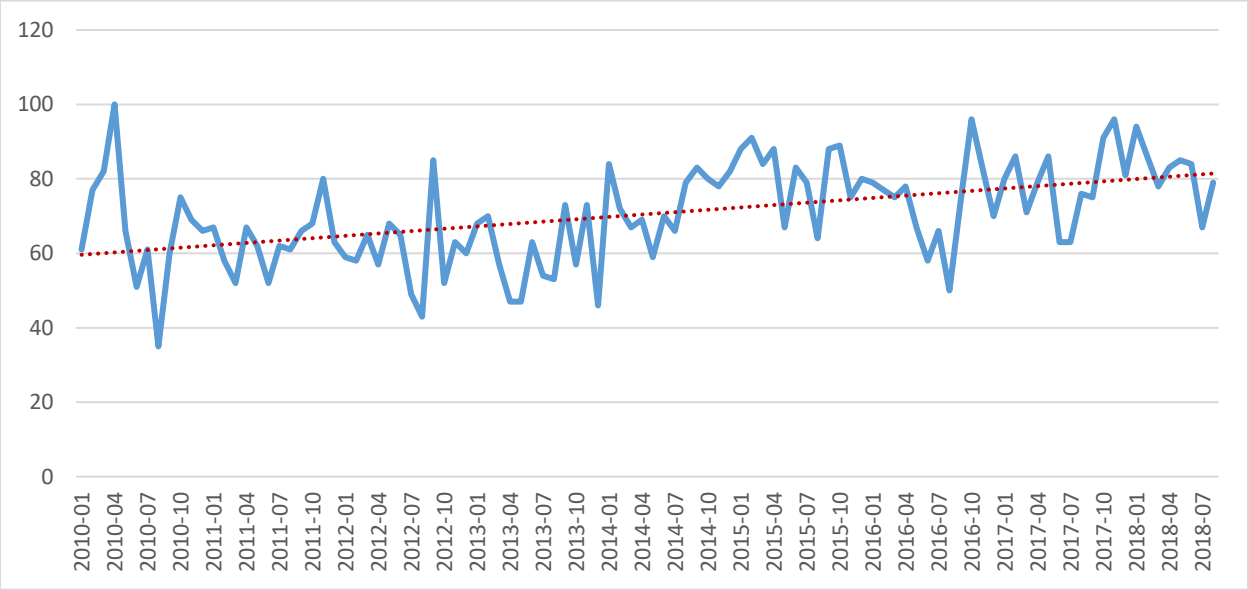
- While search interest for "anxiety" has only increased 17% from September 2016 through August 2018, search term interest increased approximately 151% since January 2010.

Table 70: MDoMH Greene County Anxiety Disorders Diagnosis, FY2010-FY2016



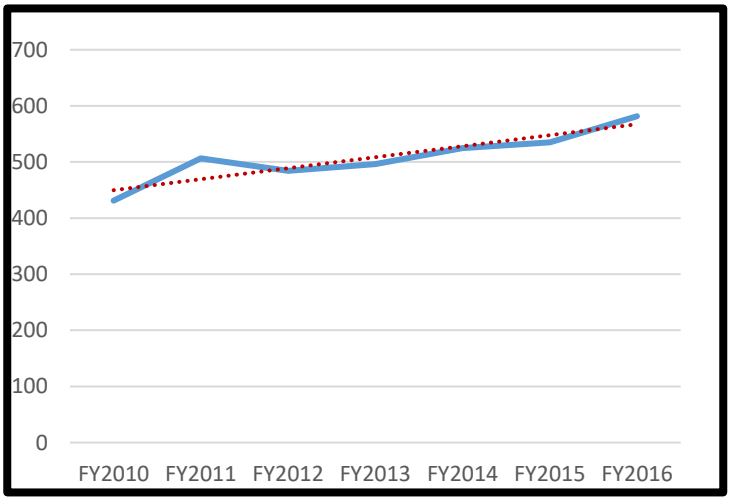
- Anxiety Disorder diagnoses for Greene County has increased approximately 83% from FY2010 to FY2016 indicating that there is a positive correlation between Google search interest and diagnosis.

Table 71: Google Search Term Interest for "Depression,": 2010-2018



- Search interest in "depression" increased approximately 33% from January 2010 to August 2018 Top search terms include depression, anxiety, depression symptoms, and bipolar depression.
- Mood Disorders diagnoses, including major depressive disorder, increased approximately 35% from FY2010 through FY2016 in Greene County indicating a positive correlation between Google search interest and diagnosis.

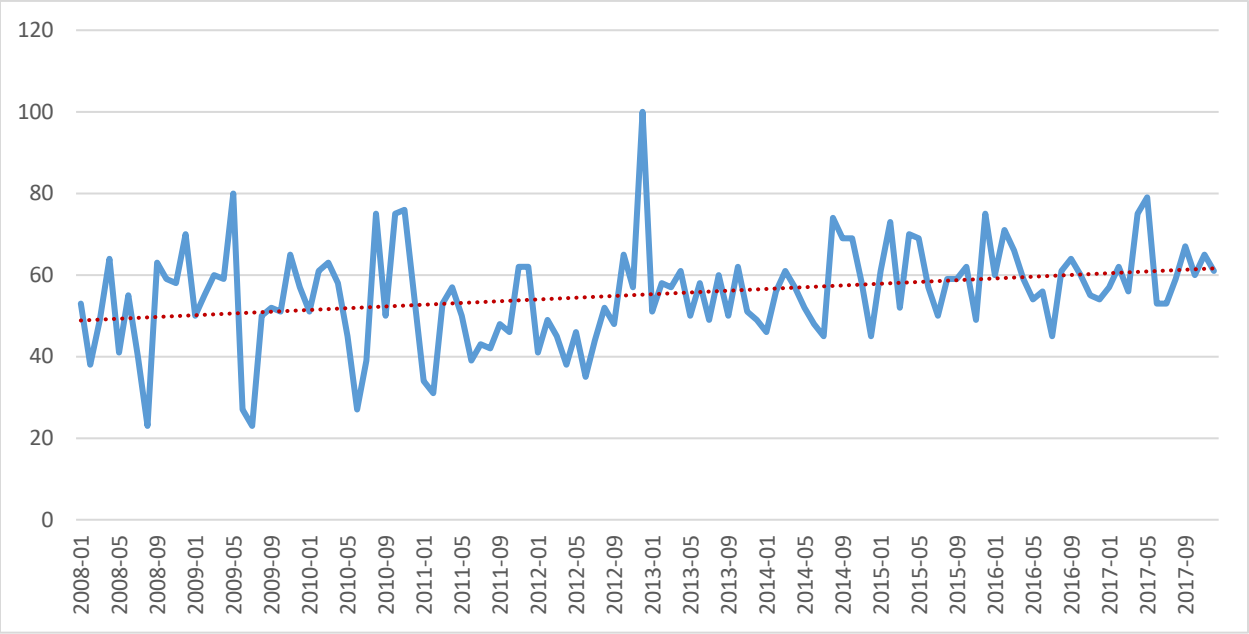
Table 72: MDoMH Greene County Mood Disorder Diagnoses, FY2010-FY2016



Suicide

Suicide is the third leading cause of death for American adults. Since 1999, the suicide rate in most states, including Missouri, has increased approximately 30%.[77]The suicide rate in Springfield, Greene County, and Missouri have increased steadily since 2008. During the same time period, Google search interest for completed suicides has steadily increased with several peaks from high profile suicides of several celebrities and athletes. As awareness for suicide increases in the general public, more people are searching for information on suicide prevention and the suicide hotline.

Table 73: Google Search Interest for "Suicide," 2008-2017



- Google search interest for "suicide" increased approximately 20% from 2008 to 2017. Top search terms include suicide, suicide hotline, assisted suicide, and suicide prevention.
- Search interest for suicide was the highest in December 2012. High search interest may because of the high-profile suicide-murder death of Kansas City Chiefs linebacker, Jovan Henry Allen Belcher.
- From 2008 to 2017, the suicide death rate increased steadily in Springfield and Greene County along with Google search interest for suicide indicating there is a positive correlation.

[77] Stone, D. M., Simon, T. R., Fowler, K. A., Kegler, S. R., Yuan, K., Holland, K. M., Ivey-Stephenson, A. Z, & Crosby, A. E. (2018). Vital Signs: Trends in suicide rates — United States, 1999-2016 and circumstances contributing to suicide — 27 states, 2015. Morbidity and Mortality Weekly Report, 67(22), 617-624. Retrieved from https://www.cdc.gov/mmwr/volumes/67/wr/pdfs/mm6722a1-H.pdf. Accessed December 2018

Table 74: Suicide Rates per 100,000 Population, 10-Year Span

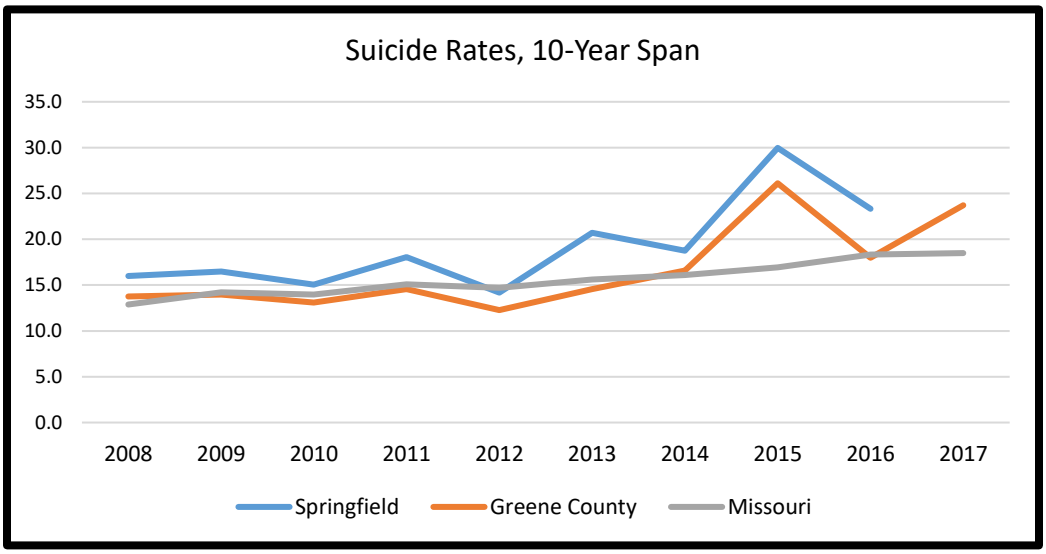
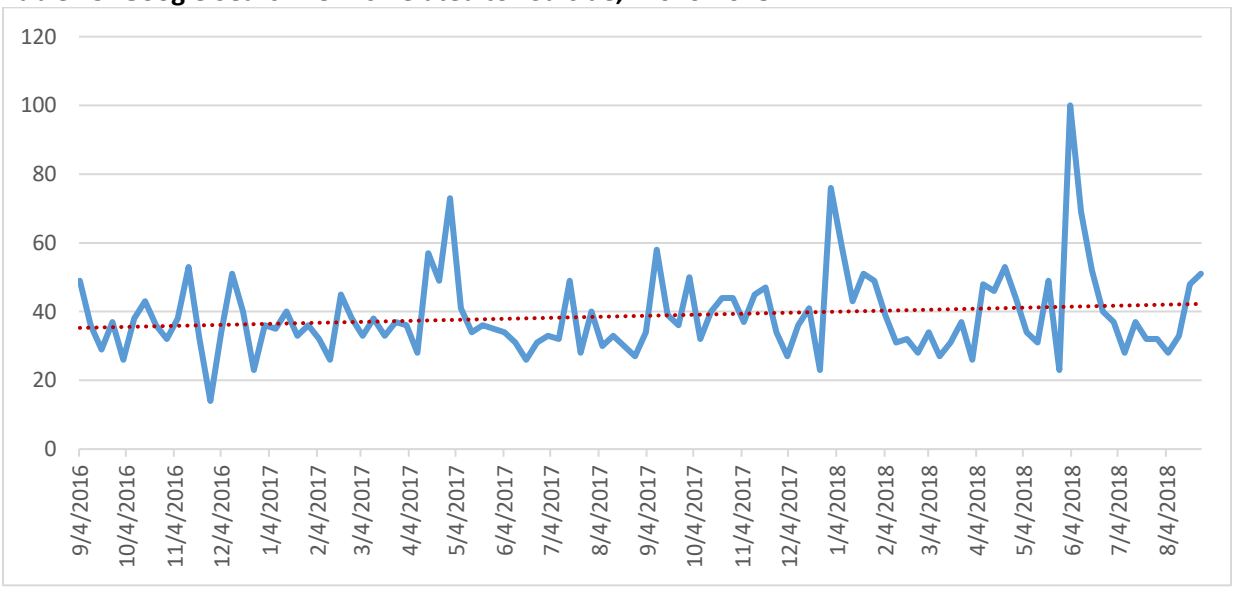
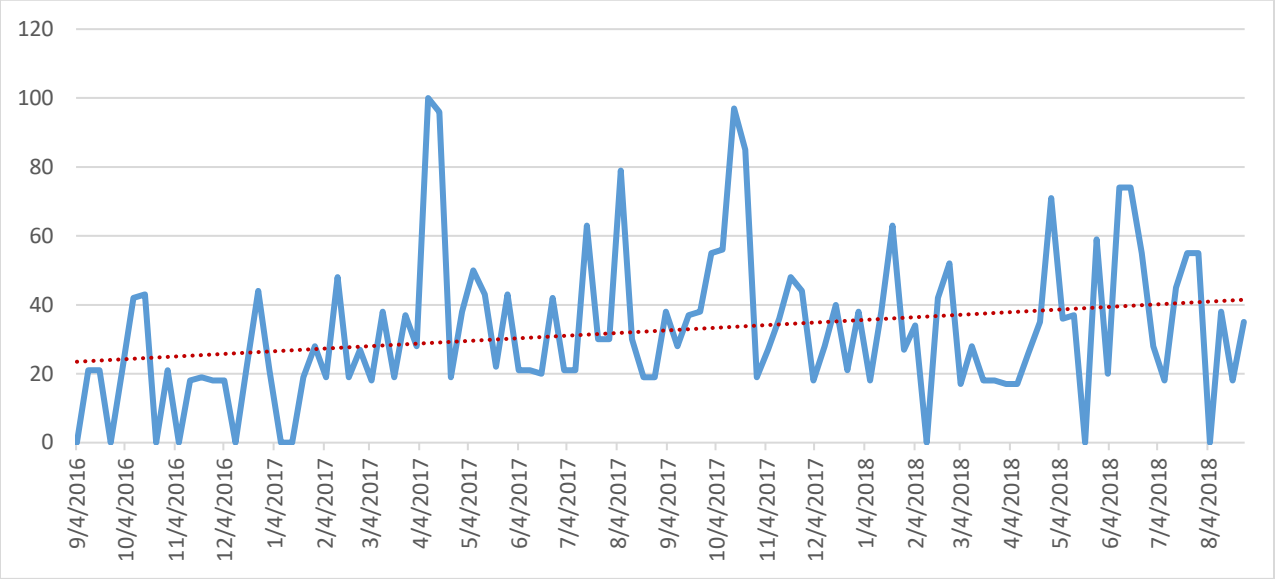


Table 75: Google Search Terms Related to "Suicide," 2016-2018



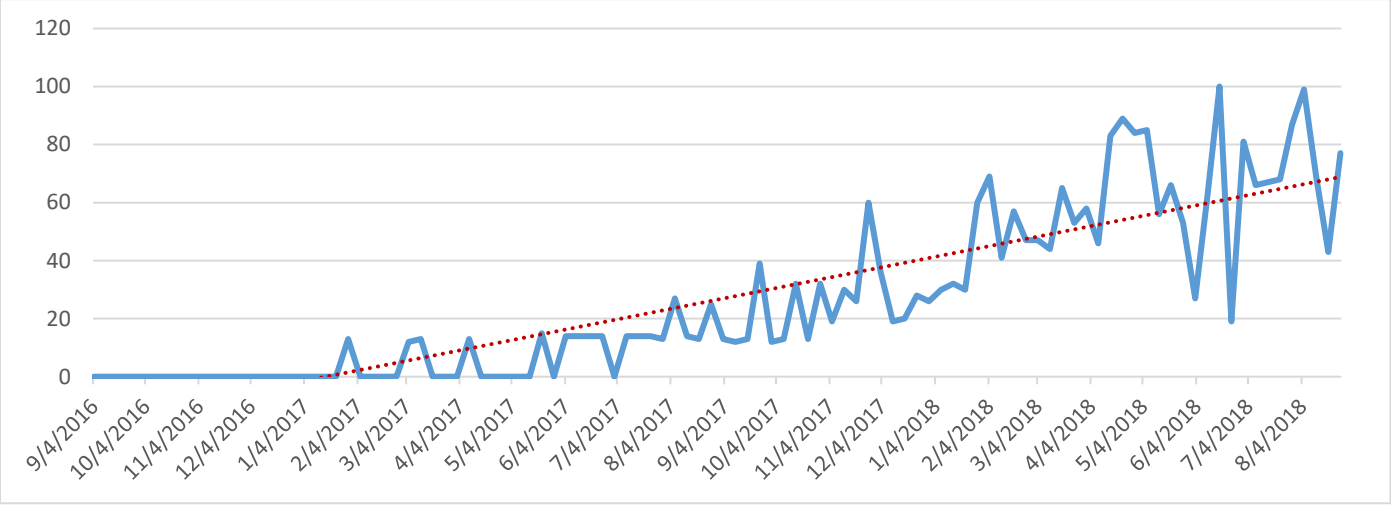
- From September 2016 to August 2018, search interest for the term "suicide" has remained relatively stable throughout the two-year period.
- Several high peaks occurred around April 30, 2017, December 31, 2017, and June 3, 2018.
- The lowest interest occurred November 27, 2016.
- Top search terms include suicide, suicide hotline, suicide forest, suicide prevention, and assisted suicide.
- Search interest was at an all time high during the week of June 3rd through the 8th due to the high profile suicides of Kate Spade and Anthony Bourdain.

Table 76: Google Search Terms Related to "Opioid Use Disorder"



- Online search activity for opioid-related topics increased approximately 82% from September of 2016 until late 2017. However, interest in the topic has been flat and highly variable throughout 2018.
- Interest in opioid use disorder was highest around November 2017 – possibly associated with the beginning of Health Department work on Springfield / Greene County mental health and substance use disorders needs (and the associated media coverage).

Table 77: Google Search Terms Related to "JUUL," 2016-2018[78]



- Online search activity for Juul first emerged in mid-2017 and has increased dramatically since then.

[78] NOTE: UUL Labs is an electronic cigarette company which spun off from PAX Labs in 2017. It makes the JUUL e-cigarette, which was introduced by PAX Labs in 2015. JUUL is a type of e-cigarette that uses nicotine alts that exist in leaf-based tobacco for its key ingredient.

- Recent reports from the CDC found that use of JUUL by youth in schools is widely reported. JUUL contains the highest concentration of nicotine of any e-cigarette. Nicotine is highly addictive and is harmful to brain development in children.[79]
- A 2014 study published in the New England Journal of Medicine suggests that e-cigarettes may serve as a "gateway drug" for other drugs like cocaine.[80]

Digital Analysis Summary

The digital analysis of Google search interest trends in the Springfield area reveals correlations between mental health disorder Google searches and diagnoses. Since 2010, anxiety disorders and mood disorders diagnoses have increased steadily along with Google search interest traffic. Following national trends, suicide morality rates have increased since 2008 in Springfield, Greene County, and Missouri. During that same time period, Google search traffic for suicide in the Springfield area increased approximately 20%.

The correlation between Google search increases for anxiety, depression, and suicide and the increased diagnoses and the rate of completed suicides may suggest opinions such as the following: 1) awareness has increased and more individuals are searching for information regarding symptoms, prevention, and general insight, 2) increased numbers of people concerned about mental health and substance use issues and are using the Internet as a useful tool to learn about available treatment resources, and/or, 3) people facing urgent mental health issues may be seeking access to care information as a "first step" to pursuing care for themselves or someone else. For example, top search terms for suicide include suicide hotline and suicide prevention indicating individuals are interested in learning more information on how to prevent suicide.

Google Trends data can also help Public Health departments monitor search interest for specific diseases or lifestyle behaviors and develop strategies and programs to address the public health issue. For example, search interest for JUUL has increased significantly since the product was launched in mid-2017. Current national research from the CDC and the New England Journal of Medicine reveal that e-cigarette usage among school aged youth is high. Since nicotine is highly addictive and harmful to the brain development of children, some suggest that programs that educate school-aged youth about the harmful effects of nicotine and e-cigarettes could be developed to curb the rise in youth nicotine usage.

[79] King et al. Electronic Cigarette Sales in the United States, 2013-2017. JAMA. October 2, 2018. Accessed from https://jamanetwork.com/journals/jama/article-abstract/2705175.

[80] Kandel ER, Kandel DB. A Molecular Basis for Nicotine as a Gateway Drug. N Engl J Med 2014; 371:932-943. Accessed from: https://www.nejm.org/doi/full/10.1056/NEJMsa1405092.

7.0 Primary Mixed Method Research

Primary mixed method research was used to investigate individuals' and groups' in-depth insight regarding community strengths, mental health and substance use disorder service needs. The components included:

- Key stakeholder meetings
- Stakeholder interviews
- Focus group discussions
- National Behavioral Health System executive interviews

Each was selected and designed to best engage a full range of research participants. The following sections highlight the results from these participants.

Focus Group Discussions and Key Stakeholder Interviews

Focus Groups (N=18) were held with five sectors of respondents – the Criminal Justice System, Schools, Employers, Service Providers, and Community Groups.

The focus groups provided venues in which participants could provide in-depth insight regarding behavioral health and substance use disorder issues – typically while among peers. Given that each group was typically comprised of people with similar interests or professional focus, each was able to identify unique perspectives that tend to more heavily impact members of their group – facilitating a broad-based research approach while honoring the insights of particular sometimes small sub-populations. As noted in the method section, some of the discussion topics include the following:

- The current availability of services and identification of unmet needs.
- Access to services.
- Resources and strengths to capitalize on opportunities to improve health and the fabric of the community.

Focus Group Audiences and Number of Groups

Criminal Justice System (CJS) (Drug Court participants, Judge Davis and team, CJS adjudicators)	3
Schools (Parents, teachers, school counselors, students, university healthcare providers)	4
Employers (and the business sector) (Chamber of Commerce members, career center, and others)	3
Community groups (Neighborhood Advisory Council, Bissett neighborhood group, homeless community, LGBTQ community)	4
Service providers (Ozark Mental Health Network, faith-based service providers, hospital surgeons, and others)	4

One-on-one interviews with over 60 individuals were used to provide depth of understanding to issues that emerged from the environmental scan and other research activities. Interviews were conducted in-person (N=25) and by telephone (N=35) throughout the project timeline. Initial research in 2018Q1 and 2018Q2 provided insight and helped construct the corpus of the community needs. Latter-stage interviews were used to provide specialized insight and fill information gaps.

Behavioral Health System Executive Interviews

Some of the strengths and challenges seen in Springfield / Greene County were similar to ones found in other parts of the U.S. In order to gain a national perspective on key mental health and substance use disorder treatment issues impacting the Springfield / Greene County area, a webinar and several key stakeholder interviews were conducted. Webinar attendees and interview targets included executives at several of the nation's leading behavioral healthcare facilities such as the following:

- Linden Oaks / Edward Hospital (Naperville, Illinois)
- Pine Rest Christian Mental Health Services (Grand Rapids, Michigan)
- McLean Hospital (Boston, Massachusetts)
- University of Pennsylvania / Princeton House Behavioral Health (Princeton, New Jersey)
- Atrium Health / Carolinas Healthcare System (Charlotte, North Carolina)
- Spring Harbor Hospital (Portland, Maine)
- University of Pittsburgh Medical Center / Western Psychiatric Hospital and Clinics (Pittsburgh, Pennsylvania)
- University of Florida / Shands Hospital (Gainesville, Florida)
- Butler Hospital (Providence, Rhode Island)
- Avera Behavioral Health (Sioux Falls, South Dakota)

National Issues and Challenges

The webinar and interviews focused on the emerging challenges in the mental health field related to the nationwide opioid epidemic, as well as the broader impact of increasing patient acuity in inpatient and outpatient settings. Some key initiatives include the following:

- Mental health, substance use disorders, and medical / physical health issues are increasingly prevalent, and the integrated care approach required to address comorbid conditions is also becoming more prominent. As such, providers are often engaging a broader range of services throughout communities to meet needs of higher-risk patients and (in some cases) whole at-risk communities. Payers are increasingly considering expanded reimbursement criteria to pay for care coordination, aftercare support, or similar services designed (and empirically supported) to reduce readmissions or reduce the harm of various health conditions. Payers' reimbursement approaches, though improving, are generally not adequate to meet broad-based needs – especially of higher-risk individuals.

- The urgency with which federal and regional substance use disorder and mental health policies are put in place is inconsistent because of the delayed nature of regional epidemic spreading. For example, data from the Centers for Disease Control and Prevention show an epidemic of critical opioid use rates in New England and the Mid-Atlantic, with the Midwest and Western parts of the United States showing less severe use. Trends like this tend to spread from East to West – making a consistent national policy urgent in some areas while being almost insignificant in others.

- Many organizations are implementing system-wide changes to tackle opioid-related mental health service demand issues. For some, this includes educating hospital staff and doctors, reaching out to community services, and an ongoing review of system guidelines.

Approaches and Processes Led by Hospitals or Public Health Departments:

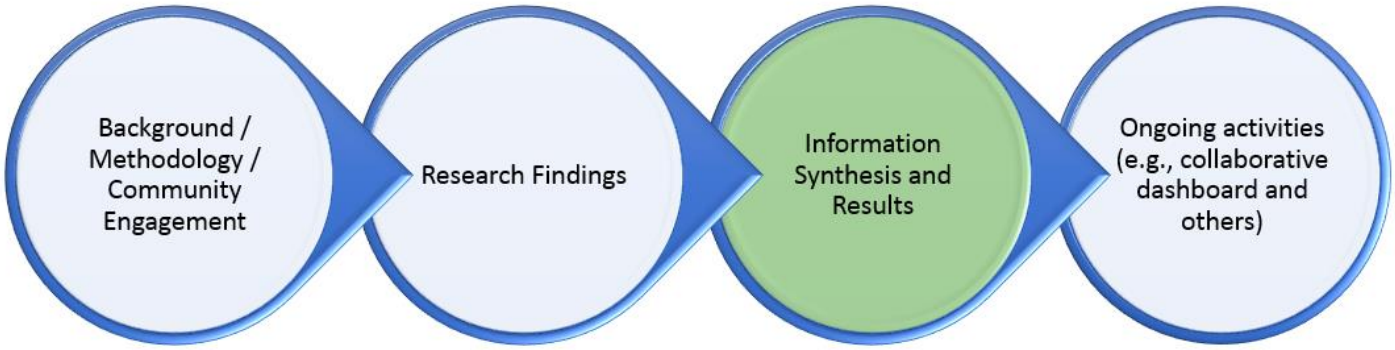
- Using public grants to implement Narcan Reversal Peer Specialist programs, where peer specialists with lived history are stationed in emergency rooms and engage people in what is hoped to be a "moment of clarity".
- Partnering with the U.S. Drug Enforcement Administration and its Community 360 initiative – a collaborative effort between public safety providers (i.e., police) and community partners designed to improve public safety, reduce criminal recidivism, and better align health and community resources.
- Conducting joint programs between public health departments, universities (or other large academic institutions), the criminal justice system, and the prison population to help inmates prepare for release. The programs typically pair inmates with peer navigators who work with them for a year following release from prison.
- Working collaboratively with community health service providers (e.g., outpatient counseling, integrated care support, providers of wrap-around services, and others) to provide community-based – not inpatient – detox and medication assisted treatment (MAT) programs.
- Engaging insurers in shared cost programs or (minimally) educating them on the impact of the rising mental health and substance use disorder issues; identifying joint programs that provide benefits to patients, care providers, and payers.

National Topics Research Summary

The challenges and approaches identified by national leaders do not necessarily reflect issues impacting the environment in Springfield / Greene County. However, some things noted in the research suggest that national issues overlap with local issues to some extent. Clearly, the mental health and substance use disorder challenges translate to the local market. Secondly, (1) the use of peer specialists in the E.D. and other places, (2) cross-sector collaboration between public health, the criminal justice system, payers, and others, and (3) wrap-around services as a way to reduce readmissions, relapse, and criminal recidivism are all national approaches consistent with needs found in Springfield / Greene County.

Information Synthesis and Results

The following section of the report synthesizes and integrates the research findings and begins to draw summaries and conclusions – summarizing the initial, synthesized core themes of the research findings and culminating in a strategic grid of prioritized needs and interventions.



Initial Core Themes & Observations

As described above, Crescendo Consulting Group conducted extensive qualitative research (e.g., focus group discussions, stakeholder interviews, and other activities). Research and prioritization work led to the development of a list of core themes – awareness and early intervention, crisis stabilization, and access to appropriate care.[81] This section describes the initial core themes that each contain a number of needs and interventions as described below. To provide detailed descriptions of the core research themes, a three-column list was generated that includes:

- Identified Need
- Potential Solution and/or Intervention
- Related Quotation(s)

Some of the needs and/or solutions are clustered in one row when they are thematically related.

- The list is not comprehensive and does not completely reflect the sentiments of every interviewee, but includes needs and solutions that were mentioned multiple times or are otherwise supportive of broader conversations. It includes 18 “needs” and 53 “possible solutions or interventions” – some of which may be beyond the scope of the project. These opinions are included to help illustrate respondents’ interests. In some, but not all, instances, there are illustrative quotations included to help clarify particular perspectives.
- Please reference the detailed table below that exhibits identified needs, potential solutions and/or interventions, and related quotations for illustration. The table is segmented by domain.

[81] Another important topic was the mental health issues affecting employers. – analysis and prioritization work for this topic is interlaced throughout the core themes.

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• Better coordinate community education re: healthy lifestyles, healthcare, mental health, and substance use.	• Increase healthcare provider and SGCHD participation in cultural events. • Increase opportunities (and/or better recruit people for existing opportunities) to engage in healthy lifestyle activities – (suggested) hiking, martial arts, social clubs, community building projects, sports, and others.	"Mental health is really better termed 'healthy lifestyles.' When I think of living a healthy life, I think of taking care of myself physically, mentally, spiritually, and emotionally."
• Increase awareness of culturally sensitive health literacy materials for African Americans, Hispanics, people facing Socio-Economic Challenges, and others.	• Engage providers who serve African Americans, Hispanics, and people facing Socio-Economic Challenges, and participate in community outreach. • Incorporate healthy lifestyle, mental health, and substance use information in earlier childhood education (starting in approximately Grade 5), on an age appropriate basis.	

• Destigmatize mental health issues	• Convene conferences and similar large-scale educational opportunities
	  ○ Mental Health Court Conference
	  ○ MSU Impact Summit Conference
		"There is tremendous stigma associated with mental health among all community classes."

• Strengthen awareness of and early intervention capabilities	• Draft and implement a communications plan to increase public (and provider) awareness of success stories, new initiatives, existing services, access to care (including system entry points), and navigation. (SGCHD and/or the Mental Health Task Force)
	• Increase ACEs training and education
	• Provide Mental Health First Aid training.
	  ○ School teachers, counselors, and administrators
	  ○ Student leaders
	  ○ Parents / family members
	  ○ Healthcare providers (e.g., nurses, Emergency Department staff members, physicians, and others)
	  ○ Human Resource Managers
	  ○ First responders (EMTs, police, others)
	  ○ Neighborhood Advisory Council
	  ○ Faith-based leaders
	  ○ Other community members
		"Everyone would benefit from Mental Health First Aid. Plus, teaching people about Trauma Informed Care and ACEs is really critical. If everyone was armed with this knowledge, we'd be a lot better off."

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
	• Work with the Springfield Cardinals, Bass Pro Shops, the Springfield Parks Department, and other recreational / leisure activity agents to incorporate wellness and positive health (including mental health) messaging into their work. • Develop opioid surveillance system (SGCHD) • Develop a COS Peer Support resource that may include system navigators, community outreach, and a 'warm line.'[82][83]	
• New job applicants who do not fail pre-employment drug screens. • Resources for employees who test positive for substance use.	• A healthcare or counseling resource where employers can refer job applicants who fail an initial job screening in order to get care. • Dedicated resource of medication treatment and counselors (similar to a MAT) staffed by area providers and jointly funded by employers and others. • An Intensive Outpatient Program (IOP) or Partial Hospitalization Program (PHP) Program for employers to access for currently employees who test positive for substance use; this is an alternative to employment termination. • Work with employers and payers to encourage use of Employee Assistance Programs (EAPs).	"Within the business community, there is not a good understanding of mental health, and its impact on their business, and how to respond to employees with mental health and substance use disorder problems." "High value employees are equally susceptible to substance use issues, so medication treatment and counselors for current employees is important."

[82] "Although many peer supports may sound similar to services currently being offered in many mental health systems, it is important to recognize that no service is recovery-oriented unless it incorporates the attitude that recovery is possible and has the goal of promoting hope, healing, empowerment, and connection."

What Is Recovery? A Conceptual Model and Explication Nora Jacobson, Ph.D. Dianne Greenley, M.S.W., J.D.
https://ps.psychiatryonline.org/doi/abs/10.1176/appi.ps.52.4.482

[83] Also see: See NAMI Missouri peer support video at https://namimissouri.org/peer-support-video

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• Lack of understanding (and implementation) of the new regulatory requirements associated with new Federal and state workplace drug policies	• Training and education for employers which provides a better understanding of laws and regulatory requirements associated with marijuana use and the impact workforce recruiting, retention, and care.[84] • Regular training and information sessions targeting Human Resource leaders and small business owners. Sessions may be jointly provided by legal system volunteers and the Health Department (or others).	"Ongoing training can be supplemented by email and other direct communications with Human Resource leaders and small business owners." "It is important to fully involve the Chamber of Commerce and other local Business Sector leaders."
• A better prepared workforce that has entrants able to avoid substance use issues, address mental health challenges, and prepare for employment.	• Additional soft skills training and healthy living programs. • Expand employer awareness of, and increase access to, the Missouri Career Center "Change 1,000" program or similar ones.	"For many employers, it is difficult to hire new employees due to the compound impact of a generally tight labor supply and the high rate of applicants who fail initial drug screens."

Access to Appropriate Care		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• Additional transportation services	• Provide bus or other transportation services – especially in the Northwest quadrant – for individuals to get to healthcare service sites. • Consider decentralizing mental health and substance use services (and educational sessions) to higher-risk neighborhood locations.	"It's nothing for you or I to get in the car and to see a doctor. Many people, though, who need services the most, either don't drive, can't drive, or just can't expend the emotionally energy to do so. Not to mention the financial impact of taking time off from work, childcare, and other things!"
• Increased Information services specifically for Insurance, Financial and Cost of care barriers	• Develop a resource guide which includes contact information for financial resources. • Work with payers to expand the list of covered services and location requirements.	

[84] **Medical use of CBD oil for seizures is permitted.** In July 2014, Governor Jay Nixon signed into law the Missouri Medical Marijuana Bill, allowing the use of CBD oil to treat persistent seizures. In 2015, the state issued licenses to two non-profits to grow cannabis for oil to be sold to patients. **Marijuana possession has been decriminalized.** Legislation was **approved** in 2014 to decriminalize the possession of 10 grams or less of cannabis, such that possession is punishable by a fine only. Available at phttps://www.mp.org/states/missouri/ .

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• More strict medication prescription protocols.	• Offer provider PDMP-related training and education. • Adopt PDMP standards. • Monitor and enforce PDMP violations. • Join in the class action lawsuit against pharmaceutical manufacturers (City / County / or State). • Require that facilities that provide medication treatment to opioid patients integrate counseling services (similar to MAT programs). • Expand MAT programs.[85] • Consider best practices and supporting legislation to reduce the number of opioids available for diversion[86]	"This could involve provider education, development of limits or stricter prescribing standards, Medical Director support and oversight at major service sites, closer management of EMR data (where available)."
• Lack of consumer (and provider) awareness of points of access and pathways of care, as well as treatment options	• Maintain a resource (such as a directory) that includes all area providers of mental health and SUD services, contact information, and payer options. It was suggested that the Springfield Library System currently maintains such a directory. • Provide a "mandatory" one-day training session(s) for all area providers of mental health and SUD services.	"Patients – or people who need to be patients, or their kids – are, to an unfortunate degree, on their own when it comes to navigating the healthcare system. I have a college degree and work in a health-related field, and I could figure out how to get help. God help you if you need emergency care. The good part is that the services are generally there, but it is difficult to get to them."

[85] It was stated that the MAT program for pregnant women is working well, and that there are opportunities to expand services to other higher-risk sub-populations, as well as the general community.

[86] By changing its medical model to focus on alternatives to opioids and by passing legislation, Maine demonstrated the impact of these activities in reducing opioids. From 2013-2017, opioid prescriptions have declined by 32 percent. Source: Bangor Daily News, http://bangordailynews.com/2018/04/19/health/opioid-prescribing-declines-steeply-in-maine-data-show

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• Improved Treatment Integration and Care Coordination	• Promote improved integrated care by including primary care physicians in the awareness and communications activities and by supporting these efforts. [87] • Create a "bed board" with which providers at disparate organizations can quickly identify inpatient (or outpatient) resources. • Encourage direct care providers to involve Community Health Workers or other lower-cost resources to provide care navigation and motivational interviewing skills to higher-risk people. Increase coordination of care and referrals with Higher Ground, Freeway Ministries, Harmony House, and other faith-based or highly focused providers. • Develop the Family Justice Center[88] (or similar organization) that can provide domestic abuse victims with wrap-around legal, healthcare, substance use, wellness, and general support activities. • Expand continuity of care relationships between inpatient care providers and outpatient facilities.[89] • Increase provider education regarding integrated care. • Increase staffing and other resources to provide and support integrated care. • Work with lawmakers, payers, and providers to establish reimbursable channels by which outpatient service providers can co-locate at schools and other community-based sites.	"[The local FQHC] does an extraordinary job with coordination of care. It may be helpful for them to be included in a leadership role to share ideas and approaches." "[The area's largest behavioral health center and the local FQHC] are amazing, and both are blessings to our city. The more that they can coordinate services with each other and with smaller providers like OCC, the better. In addition, when they [providers] go where the patients are [i.e., collate service sites], everyone wins." "At a facility that could provide primary care, specialized care, and mental health / SA services, a dollar goes further [i.e., has a bigger impact on community health] in a primary care or specialized care effort. It is financially very difficult to prioritize mental health – especially when it is a zero-sum environment, in most cases. You need to spend the dollar where it makes the greatest impact."

[87] Evidence suggests that adults in the U.S. living with serious mental illness die on average 25 years earlier than others, largely due to treatable medical conditions. Improved integration between primary care and mental heal providers may reduce this. National Association of State Mental Health Program Directors Council. (2006). Morbidity and Mortality in People with Serious Mental Illness. Alexandria, VA: Parks, J., et al. http://www.nasmhpd.org/docs/publications/MDCdocs/Mortality%20and%20Morbidity

[88] Springfield-based domestic abuse victim services providers and representatives of the criminal justice system are evaluating strategies to provide wrap-around services to domestic abuse victims.

[89] It was noted that a local Federally Qualified Health Center and one of the Springfield hospitals are discussing strategies such as of co-developing a follow-up care / ongoing care capability to address the needs.

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• Severe provider capacity constraints in a number of mental health treatment areas which increase access problems.	Develop or recruit the following: • In-patient psychiatric beds[90] • Psychiatrists and other psychiatric service providers (e.g., Psychiatric Nurse Practitioners (PNP) and tele-psychiatry). • Emergency services (e.g., Mental Health First Aid, mental health triage in hospital Emergency Departments for forensic patients and the community-at-large). • Social Workers in the hospital Emergency Departments. • Care coordination / case management; Community Health Workers (CHWs) Peer Support Specialists, and other community-based, affiliated healthcare supporters. • Counselors for children, adolescents, and adults – especially high-risk patients. • Healthcare (i.e., primary care, specialized care, mental health, SUD) for the homeless. • More Missouri-based bed capacity for those struggling with Severe and Persistent Mental Illness. • Broad-based community services for school children – food programs, clothing, and support for kids whose parents struggle with mental health or SUD. • Wrap-around services for adults (e.g., clothing, hygiene, school support (for children), job skills, childcare, case management, medical triage (nurse visits), Trauma Informed Care therapy, SUD and mental health support groups, life skills, others. • Grief services and other support for families and the social network of people with mental health issues and/or SUD. • Expand the MSU Psychiatric Nurse Practitioners program.	"This is a burning issue – recruitment and retention. [We need to] establish workforce development programs to attract, develop, and retain mental health and substance use disorder treatment providers." "Since Bill's Place closed, there is a growing need for housing and residential care options for the homeless." "Ozark Community Hospital will soon open an additional 60 in-patient psychiatric beds. This should help with in-patient needs." The biggest problem is to realign a lot of what we already have in our community. Sure, there are some things [i.e., services] that we need to add, but if we can shuffle the cards a little differently and realign what we already have, we can address two-thirds of our issues."

[90] It was noted that the Lakeland Behavioral Health System hospital has 84 inpatient beds for children 17 and under and 16 beds for seniors 60 years and older; as well, they have approximately 100 residential care beds for young people age 9 to 20. Secondly, Ozark Community Hospital is expected to open approximately 60 inpatient psychiatric beds in June 2018. Note that during the project, Crescendo will develop a more comprehensive bed count for the service area.

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
	• Expand housing and residential care options for the homeless. • Expand the Crisis Access Center at Burrell Behavioral Health. • Expand the Jordan Valley Pain Management Clinic.	

• System-level processes that promote shorter access time.	• Co-locate counseling services at schools.
	• Provide information (suggested: workshops, curriculum pieces, printed materials, and others) that describe situations when seeking support from a guidance counselor or other trained professional may be helpful.
	• Increase suicide prevention education and crisis services.
	  ○ Launch an information campaign to combat mental health and substance use disorder stigma.
	  ○ Develop youth suicide prevention programs – education, early intervention, hotlines, treatment, support, family support and training, etc.
	  ○ Expand mental health and SUD education and prevention to elementary curricula school (starting at 5th Grade) – not only in Health Class.
	• Review and consider additional support for the Youth Mental Health Support Program.	

Awareness and Early Intervention		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**
• Ongoing care and support services	• Review community-based treatment and recovery support services to help offset long-term relapse risk. ○ Engage "Mutual help organizations"[91] ○ Support "Peer-based recovery support services" ○ Examine options for "Sober living environments"[92] and "Recovery Community Centers."[93] ○ Recovery supports in educational settings (e.g., specialty high schools, separate elementary or secondary school programs for high-need youth, etc.	"You can't 'fix' a mental health problem or addiction in 28 days or 6 months. Issues need intervention and treatment, THEN ongoing support and a positive environment to keep people safe – living a healthy life. Too many young people get treatment, return to a toxic environment (e.g., school or neighborhood), and then wind up back in a bad place … or dead."

[91] Including organizations such as, but not limited to, Alcoholics Anonymous, Narcotics Anonymous, SMART Recovery, Secular Organization for Sobriety, Women for Sobriety, Moderation Management More in-depth information available at https://www.tandfonline.com/doi/abs/10.1080/1556035X.2012.705646.

[92] Polcin, Douglas, Journal of Psychoactive Drugs, "What Did We Learn from Our Study on Sober Living Houses and Where Do We Go from Here?", December 2010, Sober living houses (SLHs) are alcohol and drug free living environments for individuals attempting to abstain from alcohol and drugs. They are not licensed or funded by state or local governments and the residents themselves pay for costs. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3057870/ .

[93] These are locatable sources of community-based recovery support beyond the clinical setting, helping members achieve sustained recovery by building and successfully mobilizing personal, social, environmental, and cultural resources. The Springfield Recovery Community Center on E. Bennet Street is one of approximately 85 RCCs in the U.S.

Crisis Stabilization		
Identified Need	**Potential Solution and/or Intervention**	**Related Quotation(s)**

• Diversion programs (through the Criminal Justice System) that can provide SUD and MH treatment in less costly settings, reduce recidivism and reduce demands on the criminal justice system.	• Establish a group that includes representatives from the Prosecutor's Office, the Public Defender's Office, private attorneys, judges' offices, police, and SGCHD designed to review the County judicial system and identify ways to improve the throughput of cases and, where needed, access to care. This group may also provide guidance regarding employment, drug screening, reimbursement regulation, and other regulatory issues.
	• Expand post-incarceration wrap-around services that provide guidance for the following
	  ○ Housing
	  ○ Healthy lifestyle activities
	  ○ Job training / Education / Skills development
	  ○ Entry into Mutual Help Organizations
	  ○ Access to healthcare (including mental health and substance use) services
	  ○ Goal development and attainment
	• Consider use of Vivitrol® when inmates with opioid use histories are released.
	• Train family members of soon-to-be released inmates with opioid use histories on the use of Narcan®.
	• Expand Drug Court and other specialty court capacity.
	• Keep Specialty Court judges as dedicated judicial officers i.e., they do ONLY their specialty court.
	• Hire social workers for dedicated use within Specialty Court panels.
	• Pursue opportunities for "pilot programs" on select Specialty Court topics.
	• Consider holding a Drug Court Conference to bring visibility to the initiative and improve performance by reinforcing evidence-base protocols.
		"There are tremendous needs at many levels of the [Criminal Justice] system. The healthcare – including mental health – system is actually quite good. There is never enough capacity because the great majority of inmates and others in the system have mental health and/or substance use issues. There are many needs, but two that stand out are (1) getting people through the court system more quickly, (2) hooking up people with services that keep them accountable but also provide broader, wrap-around services so that I don't need to see them so often – or maybe ever again."

• A triage or immediate access capability for highest-risk patients that may not need inpatient care	• Major service providers (e.g., CoxHealth, Mercy Hospital, Jordan Valley, Burrell Behavioral Health, and others) may jointly develop a resource to address urgent needs of patients in crisis. • Establish an evaluation and triage resource for police and other first responders to bring people suffering from mental health issues (open 24/7). • Establish a "bridge clinic" that provides walk-in care to people with psychiatric needs and can align them with either urgent care or subacute outpatient care	"This is a highly competitive environment. Getting major players to work together is a challenge, but it is imperative."

8.0 Domains, Impacts and Interventions

The following information is a culmination of several HLA meetings and onsite work. The general format (shown below) is intended to facilitate integration with subsequent prioritization analysis and other Springfield planning activities. Discussion of each of the three domains includes the following sections:

- Domain name
- Definition and Description
- Community Impact and Supporting Research, and,
- Community Identified Interventions[94]

Note that the "interventions" within each domain have been categorized for easy reference and grouping. Each of the three domains includes three categories of interventions as shown below (and described in the following pages).

Domain 1: Awareness and Early Intervention

Category 1: Employer support

Category 2: Education

Category 3: Practical tools

Domain 2: Crisis Stabilization

Category 1: System supports

Category 2: Direct care services

Category 3: Policies and procedures

Domain 3: Access to appropriate care

Category 1: Capacity

Category 2: System supports

Category 3: Policies and procedures

Later in the document, interventions for each are rated and prioritized.

[94] ***Community Identified Interventions:*** Each of the Domains have a list of discrete "consensus opinions on interventions." These interventions are listed and, where possible, have citations and/or examples.

Domain 1: Awareness and Early Intervention

Awareness and early intervention is a very broad domain. For convenience and for the purpose of this analysis, it is discussed below in two parts (1) Stigma, and, (2) Awareness and Early Intervention.

Definition and Description: Stigma

There are a wide range of community impacts resulting from a lack of awareness of mental health issues and the stigmatization of people with mental health and/or substance use disorders[95]. These include, but are not limited to:

- Reluctance to seek help or treatment.
- Lack of understanding by family, friends, co-workers or others.
- Fewer opportunities for work, school or social activities or trouble finding housing.
- Bullying, physical violence or harassment.
- Health insurance that doesn't adequately cover your mental illness treatment.
- The belief that you'll never succeed at certain challenges or that you can't improve your situation.

Community Impact and Supporting Research: Stigma

Stigma is a reality for many people with a mental illness who report that "others' judgements of them is one of their greatest barriers to a complete and satisfying life."

- People stigmatize others with anxiety (63%), prescription drug abuse (77%), alcohol (77%), and depression (62%); among all categories, education about ways to recognize the MH condition reduces stigma.[96]
- The majority (70%) of mental health problems have their onset during childhood or adolescence.
- More than one-third (36.3%) of young adults (18-35) who needed mental health care chose not to do so due to perceived stigma or discrimination. [SAMHSA, 2015]
- Nearly seven of ten (69.7%) stakeholders interviewed said that stigma-related issues are among the most important needs.

[95] Source: Mayo Clinic, 2017, https://www.mayoclinic.org/diseases-conditions/mental-illness/in-depth/mental-health/art-20046477

[96] Michigan State University, 2017. Available at: https://msutoday.msu.edu/_/pdf/assets/2017/anxiety-pdf.pdf

Definition and Description: Awareness and Early Intervention:

Solid schools, a capable workforce and a strong economy are "the lifeblood" of community strength. The lack of awareness of mental health and substance use disorders impact all other sectors – health, criminal justice system, and others.

- SUD prevalence among employees or potential employees exacerbates labor shortages.
    - High levels of people failing initial job screening.
    - Random drug testing of employees identifies substance users.
- SUD in the workplace contribute to secondary issues.
    - Decreasing family income / increasing poverty levels.
    - Lower productivity and slower business growth.
- Mental health issues among employees and potential employees create additional staffing and productivity challenges for employers.

Community Impact and Supporting Research: Awareness and Early Intervention

- More than three in ten (30.2%) interview respondents include workforce implications as a leading mental health/SUD challenge in the area.
- Many (approximately 85%) employer focus group participants indicate that they are negatively impacted by MH/SUD.
    - Difficult to hire.
    - Challenges when employees develop health problems.
    - Some retailers are negatively impacted by customers with MH/SUD issues.
- Mental Health First Aid is an international program that originated in Australia and is now managed, operated, and disseminated in the US by the National Council for Behavioral Health and the Missouri Department of Mental Health. In peer-reviewed studies it has been found to be effective to:
    - Grow knowledge of signs, symptoms and risk factors of mental illnesses and addictions.
    - Identify multiple types of professional and self-help resources for people with mental illness or addiction.
    - Increase confidence in and the likelihood of helping an individual in distress.
    - Show increased mental wellness in the trainees themselves.[97]
- Drug-free workplace programs address illicit drug use by federal employees and in federally regulated industries. The Drug-Free Workplace Toolkit is available to provide step-by-step guidance for starting and maintaining drug-free workplace policies and programs.[98]

[97] See: https://www.mentalhealthfirstaid.org/cs/wp-content/uploads/2013/10/MHFA-Research-Summary-UPDATED.pdf

[98] See: https://www.samhsa.gov/workplace

- The Screening, Brief Intervention, and Referral to Treatment (SBIRT) model has been shown to be an effective tool that can empower primary care providers (and others) to identify and treat patients with substance use and mental health problems before costly symptoms emerge.[99]
- Childhood experiences, both positive and negative, have a tremendous impact on future violence victimization and perpetration, and lifelong health and opportunity. As such, early experiences are an important public health issue. Much of the foundational research in this area has been referred to as Adverse Childhood Experiences (ACEs). As the number of ACEs increases, so does the risk. Adverse Childhood Experiences have been linked to
    - Risky health behaviors
    - Chronic health conditions
    - Low life potential
    - Early death. [100]

Community Identified Interventions: Awareness and Early Intervention and Stigma

Employer Support

- Provide a medical or counseling referral resource and policy for job applicants or current employees who fail a job screening due to substance use.
- Work with health insurers or others to review and improve approaches for medication treatment and counselling staffed by area providers and jointly funded by employers and others (similar to best practice Medication Assisted Treatment (MAT) format.)
- Expand Mental Health First Aid training to Springfield employers.

Education

- Increase Adverse Childhood Experiences (ACEs) training and education among teachers, first responders, and Criminal Justice System (CJS) personnel.
- Integrate mental health and substance use disorder curricula in the public school system starting at Grade 5.
- Provide mental health first aid training for all first responders and others including police, fire department, EMTs, school counselors, and employers.
- Increase provider training on culturally competent care in mental health settings for diverse populations including the LGBTQ community, old-old seniors, immigrants, and people of color.
- Convene behavioral health conferences and large-scale educational opportunities such as Mental Health Court Conference; MSU Impact Summit Conference.

---

[99] See: Implementing SBIRT (Screening, Brief Intervention and Referral to Treatment) in primary care: lessons learned from a multi-practice evaluation portfolio. Https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5809898/

[100] The CDC-Kaiser Permanente Adverse Childhood Experiences (ACE) Study is one of the largest investigations of childhood abuse and neglect and later-life health and well-being. The original ACE Study was conducted at Kaiser Permanente from 1995 to 1997 with two waves of data collection. Over 17,000 Health Maintenance Organization members from Southern California receiving physical exams completed confidential surveys regarding their childhood experiences and current health status and behaviors. The CDC continues ongoing surveillance of ACEs by assessing the medical status of the study participants via periodic updates of morbidity and mortality data. See: https://www.cdc.gov/violenceprevention/acestudy/about_ace.html

- Conduct neighborhood-level outreach to inform community groups about the of Needs Assessment results, identify opportunities for ongoing activities to address needs, and otherwise, engage community members.

Practical Tools

- Draft and implement a communications plan to increase public and provider awareness of success stories, new initiatives, existing services, access to care (including system entry points), and navigation.
- Develop and enhance partnerships with community groups.
- Build behavioral health system efficiency by strengthening awareness among medical and behavioral health providers regarding system resources and referral networks.

Domain 2: Crisis Stabilization

Definition and Description: Crisis Stabilization

Nationwide, crisis stabilization is defined as "a direct service that assists with deescalating the severity of a person's level of distress and/or need for urgent care associated with a substance use or mental health disorder. Crisis Services are a continuum of services that are provided to individuals experiencing a psychiatric emergency. The primary goal of these services is to stabilize and improve psychological symptoms of distress and to engage individuals in an appropriate treatment service to address the problem that led to the crisis. Core crisis services include: 24-hour crisis stabilization/observation beds, short term crisis residential services and crisis stabilization, mobile crisis services, 24/7 crisis hotlines, warm lines, psychiatric advance directive statements, and peer crisis services."[101]

- Suicides increase without access to crisis resources.
- People with SUD are at elevated risk of overdose if they unsuccessfully seek services.
- For businesses, employees in crisis impact on-the-job safety issues (as well as productivity).
- People in the Criminal Justice System in MH/SUD crisis elevate public safety concerns.

Community Impact and Supporting Research: Crisis Stabilization

- This domain was the first MH and SUD need identified in the qualitative research in Springfield. The urgency with which MH/SUD issues dominate the healthcare landscape are reflected locally, regionally, statewide, and nationally by supporting research such as the following:
    - National statistics attest to the significant need for crisis services. In 2010, 2.2 million hospitalizations and 5.3 million emergency department visits involved a diagnosis related to a mental health condition (Agency for Healthcare Research and Quality, 2010). Moreover, in any given year approximately one fourth of adult Americans will have a mental disorder and about five percent of children aged 4–17 years have serious emotional distress (National Center for Health Statistics, National Health Interview Survey, 2009)[102].
    - Suicides account for between 15% and 20% of deaths among people under age 30.
    - Among MSU student research, 7.8% had serious thoughts of suicide, and 16.5% reported non-suicidal self-injury in the previous year.
    - More than half (52.2%) of stakeholders said that crisis services are among the most important needs.
    - Suicide rates for men in Greene County are 221% greater than for women.
    - Greene County rates of depression are 36.7% higher than the U.S. average.
    - Several key stakeholders (providers) agreed to collaborate on a solution.

[101] See SAMMHSA: Crisis Services: Effectiveness, Cost Effectiveness, and Funding Strategies https://store.samhsa.gov/shin/content/SMA14-4848/SMA14-4848.pdf

[102] Op Cit.

Community Identified Interventions: Crisis Stabilization

System Supports

- Develop a collaborative resource among major service providers to address urgent needs of patients in crisis. This may include physical and/or virtual evaluation and triage resources accessible by first responders with people suffering from behavioral health issues.
- Create a crisis bed board and/or another type of real-time listing of available urgent care beds, seats, group meetings, etc.
- Establish a resource to support better coordination of services among providers of physical and mental healthcare services, wraparound service sites, and social networks. This resource would allow different service providers to communicate more clearly and improve the efficiency with which they try to support patient needs.

Direct Services

- Establish a "bridge clinic" that provides walk-in or referral-based care to people recently released from in-patient facilities (or the criminal justice system). The patients typically are not in crisis but require intensive psychiatric services. Bridge clinics may provide direct services or referrals to other acute care or subacute outpatient care.
- Provide prerelease case management for inmates.
- Provide case management for high-risk patients upon inpatient discharge.
- Provide Narcan training for first responders and the social network of high-risk individuals (i.e. family members and friends of people being discharged from hospital care, released from jail, or other high-risk environments).

Policy and Procedure

- Create a criminal justice system team to review and revise procedures designed to speed up the access to treatment and support (including Specialty Court.) This may include quicker access to Drug Court, access to integrated medical and mental health care, transitional services to help provide ongoing care for inmates after release, and/or others.
- Enact Medicaid suspension rather than termination for incarcerated individuals for recently released inmates and select others eligible for Medicaid.
- Develop and implement a plan to incentivize providers to consistently monitor patient use of prescription medications using the existing PDMP system. NOTE: The prescription drug monitoring program (PDMP) is an electronic database that tracks controlled substance prescriptions. PDMPs can provide health authorities timely information about prescribing and patient behaviors that contribute to drug misuse and facilitate responses.

Domain 3: Access to Appropriate Care

Definition: Access to Appropriate Care

National Strategy for Quality Improvement in Health Care (National Quality Strategy, or NQS)[103] sees access as the first step in obtaining high-quality care: To receive quality care, first Americans must first gain entry into the health care system.

The NQS uses the framework of the National Healthcare Quality and Disparities Report (QDR) to track Achieving Healthy People/Healthy Communities. Access to care measures tracked in the QDR include having health insurance, having a usual source of care, encountering difficulties when seeking care, and receiving care as soon as wanted. Historically, Americans have experienced variable access to care based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity, and residential location.

Community Impact and Supporting Research: Access to Appropriate Care

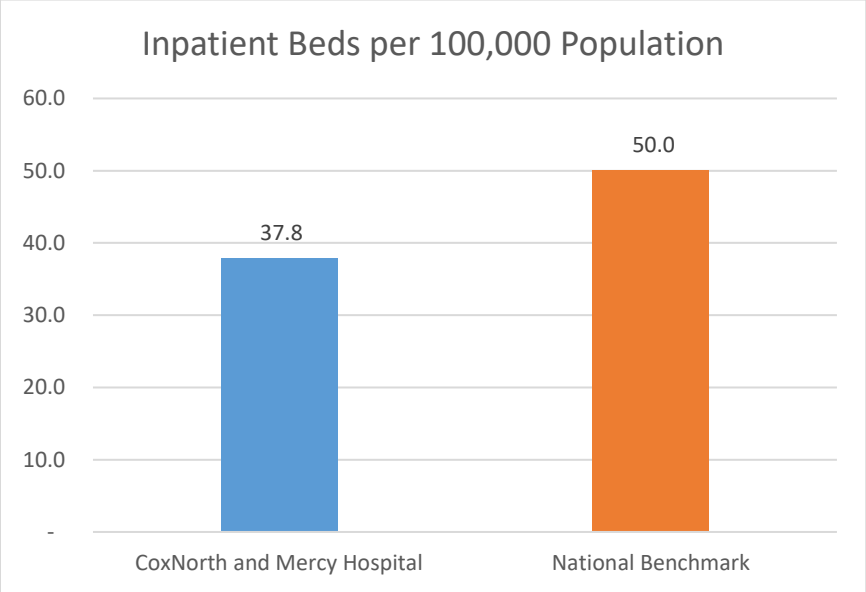
Healthy People 2020 notes that "Access to health care impacts one's overall physical, social, and mental health status and quality of life."[104] Access to Care in Springfield and Greene County is generally understood to include a broad diversity of consumers' experience utilizing a patchwork of techniques to receive the care they need.

- Several (approximately one of eight) qualitative research participants indicate bottlenecks include confusion, lack of knowledge, and misinformation regarding the current access and triage models.
- Community members also believe there are (or should be) better education on and access to the "best practice" treatment protocols available to the general public. Access to Care includes topics such as capacity, transportation, ability to pay, and others.
- Nearly one of five (19.8%) people in Greene County live below the poverty line (U.S. rate = 15.5%) which affects access (although Mental Health and Substance Use disorders are prominent across income strata).
- Many people with severe MH symptoms do not get help:
    - Schizophrenia (32%)
    - Bipolar disorder (50%)
    - Panic disorder (55%)
    - Major depression (56%)
    - Generalized anxiety disorder (57%)
    - Obsessive-compulsive disorder (59%)
    - Alcohol dependence (78%)

[103] See: https://www.ahrq.gov/research/findings/nhqrdr/nhqdr16/overview.html

[104] https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services

- Even though Greene County "Mental Health Providers per 100,000 Population"[105] is higher than the U.S. average, more than half of focus group participants and interviewees said that it is difficult to access care due to schedule availability, insurance criteria, or other factors such as the following:
    - Long wait times; lack of mental health provider sites.
    - Uncertainty regarding ways to access the healthcare system.
    - Transportation challenges – especially for the increasing numbers of people living further from major service sites and for Springfield residents in lower income neighborhoods.
- Nearly 80% of interviewees (and many focus group participants) identify the need for greater access to care.



    - The combined number of inpatient beds in Springfield (CoxNorth and Mercy Hospital) is well below the U.S. benchmark.
    - Estimated inpatient capacity target is approximately 50 per 100,000[106] (including children and forensic (criminal justice-involved) patients.
- People suggest there are a number of reasons they do not get help[107].
    - Stigma.
    - Practical barriers – Transportation, Costs, etc.
    - Providers are generally not available or do not offer convenient appointment times.

[105] Note that as a regional service provider, Greene County providers attract patients from a relatively broad geographic base. For example, for one large provider of outpatient behavioral health (and other) services, 14% of behavioral health patients and 18% of substance use disorder patients were from outside of Greene County in 2017.

[106] See: http://www.treatmentadvocacycenter.org/storage/documents/backgrounders/bed-supply-need-per-capita.pdf

[107] Source: David Susman. 2015. http://davidsusman.com/2015/06/11/8-reasons-why-people-dont-get-mental-health-treatment/

- Awareness – Lack of insight.
- Personal challenges and motivations.
  - Feelings of inadequacy.
  - Limited awareness.
  - Distrust.
  - Hopelessness.

- One in eight (13%) Greene County adults report 14 or more days of poor mental health per month. (U.S. rate = 11%).
- According to the Dartmouth Atlas, the Springfield area is on about the 12th percentile in regard to the number of psychiatrists per 100,000 residents – fewer than 88% of communities included in the research.[108]

Psychiatrists per 100,000 Residents	
Region	**Data Point**
Springfield, MO	**6.2**
National Average	**10.9**
90th Percentile	**14.8**
50th Percentile	**8.5**
10th Percentile	**5.5**

- When people who need help don't receive it, the following are more likely to occur:
  - The severity of their condition increases.
  - Secondary effects occur – the afflicted person, the family, public safety, employers, school colleagues, and others are impacted.
  - Costs of care and societal costs increase.
  - Reduced access to care in the criminal justice system (including transition services upon release) often increases criminal justice system recidivism, as well as ongoing mental health or substance use disorder issues.

[108] Dartmouth Atlas.

Community Identified Interventions: Access to Appropriate Care

Capacity

- Increase access to inpatient mental health and substance use disorder treatment beds (especially pediatric beds) by increasing the number of licensed beds and/or other approaches (i.e. reducing blocked beds.) This activity may also include review of licensing regulation, payer / reimbursement policies, or other public policies.
- Increase the number of counselors and others who provide adult and pediatric outpatient mental health counseling and substance use disorder treatment services.
- Expand use and capacity of MAT programs. Current MAT providers would include: Heartland, Preferred, Behavioral Health Group (BHG), A & M Recovery, Recovery Outreach, Clarity (Burrell), and Higher Ground. Funding for MAT varies. Provider capacity may be enhanced through greater use of psychiatric nurse practitioners (PNPs), tele-psych, or other services.
- Expand alternative sentencing options (e.g., Specialty Court) capacity.
- Review the possibility of creating a "treatment pod" at the jail (i.e. a unit or group of inmate cells in which inmates with mental health issues reside and receive more highly monitored attention and care.
- Establish / expand continuity of care and transition processes for people in the CJS who transfer from the CJS health service to community providers.
- Increase telehealth capacity for community members seeking mental health care.
- Incentivize additional physicians to obtain DEAx training and licensure for prescribing suboxone, if needed, to help address patients' opioid addiction. NOTE: Currently, the ability of a provider to prescribe suboxone requires several hours of additional training and approval from the Drug Enforcement Administration (i.e., "DEAx" licensure).

System Supports

- Create a non-crisis "bed board" with which providers at disparate organizations can quickly identify inpatient (or outpatient) resources to which they can refer patients for specialized acute care or post-discharge outpatient services.
- Create a transportation strategy to improve access for people needing transportation to mental health or substance use disorder treatment services in higher-need areas.
- Include information on financial resources in the current resource guide to support people seeking treatment.

Policy and Procedure

- Work with lawmakers, payers, and providers to establish reimbursement mechanisms to better facilitate co-location of outpatient service providers at schools and other community-based sites.
- Continue to lobby for enhanced tele-psych reimbursement.
- Continue to lobby for enhanced reimbursement for care coordination, patient navigation, and other affiliated health services.
- Development of a "Good Track Record" and/or post-conviction certificate system for ex-offenders whereby Specialty Court graduates and others can rebuild credentials that can help incentivize landlords, employers, and other to help improve the opportunities and outcomes of ex-offenders (i.e., those with felonies.)

Data Synthesis Analysis, and Prioritized Recommendations

9.0 Prioritization Process Results

Prioritizing the community mental health needs helps build leadership consensus and facilitates consensus on implementation. The primary and secondary research yielded a strong list of 37 specific community needs. The significant, common challenge faced by communities at this point is that the final prioritization is often based on positional authority, non-representative quantitative ranking, or some other process that does not fully incorporate disparate insights and build consensus among the stakeholders.

To address potential this challenge, Crescendo worked with the HLA and the SGCHD to implement a needs prioritization process. The results: 1) clearly identify the core impact areas, 2) create a prioritized list of needs to be addressed, and 3) develop a sense of ownership of the ongoing initiatives developed to address the needs.

There were three steps, or "rounds" in the process. The first round involved a short survey disseminated electronically and completed by HLA members anonymously.

Round 1: The Leadership Group members were asked to complete a web-based survey to rate the importance of each Domain of unmet need on a seven-point scale and provide a short comment regarding their rationale for the rating. The surveys were tallied by Crescendo in a way that maintains the respondents' anonymity. Crescendo then presented them for discussion at the Leadership Group meeting in October 2018.

The preliminary prioritization of the categories of Domain 1, Awareness and Early Intervention, indicated that:

- Stakeholders rated Employer Support categories generally highest.
- Ratings and rankings are similar but not fully consistent.
- Overall, "awareness" rankings are lower than some others.
- The approach / basis for rating and prioritizing included criteria such as feasibility, impact, urgency, possibility of success and others.

Prioritization Round 1 Summary
Domain 1: Awareness and Early Intervention Needs

Domain 1: Awareness and Early Intervention Needs	Rating *	Ranking **
Category: Employer Support	61%	8
Category: Education	39%	7
Category: Practical Tools	44%	5

*** % saying Much More Attention and Focus**
**** 1 = Highest ranked category of need**

The preliminary prioritization of the categories of Domain 2, Crisis Services, indicated that:

- Crisis-related direct care services and system supports are highly rated.
- Category ratings and rankings are consistent.
- Crisis service categories appear to be among core topics for further focus.

Prioritization Round 1 Summary Domain 2: Crisis Stabilization Needs		
Domain 2: Crisis Stabilization Needs	Rating *	Ranking **
Category: System Supports	72%	2
Category: Direct Services	89%	1
Category: Policy and Procedure	67%	5
* % saying Much More Attention and Focus ** 1 = Highest ranked category of need		

The preliminary prioritization of the categories of Domain 3, Access to Appropriate Care, indicated that:

- Capacity and system support are among the more highly rated need categories.
- Ratings and rankings are similar but not fully consistent.
- Policies and procedures – though important – are noted as requiring less focus than others.

Prioritization Round 1 Summary Domain 3: Access to Appropriate Care Needs		
Domain 3: Access to Appropriate Care Needs	Rating *	Ranking **
Category: Capacity	50%	3
Category: System Supports	56%	4
Category: Policy and Procedure	39%	9
* % saying Much More Attention and Focus ** 1 = Highest ranked category of need		

SGCHD leaders held a prioritization review session in which each of the prioritized needs were discussed in terms of "practical" considerations. Specifically, each need was categorized in terms of the degree of local control and the timeline on which the need could feasibly be impacted. The "strategic grid" below shows the number of needs within each time frame and level of control.

Strategic Grid of Prioritized Needs / Service Gaps

Number of Prioritized Interventions per Grid Category[109]

	Impact or Activity Within One Year	Impact or Activity in One to Three Years	Impact or Activity in Four or More Years
High Level of Local Control	12	12	2
Moderate Level of Local Control	3	2	1
Minimal Level of Local Control	0	3	2

- The preponderance of needs (26 of 37) are ones for which there is a high level of local control – many of which (i.e., 12 of 26) can positively affect needs within approximately one year.
- The following is a rank-ordered table of the needs evaluated.

Rank	Description	Domain	Category	Degree of Local Control	Time Frame
1	Increase the number of counselors and others who provide adult and pediatric outpatient mental health counseling and substance abuse treatment services.	Access to appropriate care	Capacity	Moderate level of local control	Two to three years
1	Increase access to inpatient mental health and substance abuse treatment beds (especially pediatric beds) by increasing the number of licensed beds and/or other approaches (i.e. reducing blocked beds.) This activity may also include review of licensing regulation, payer / reimbursement policies, or other public policies.	Access to appropriate care	Capacity	Minimal level of local control	Four years or longer
3	Enact Medicaid suspension rather than termination for incarcerated individuals for recently released inmates and select others eligible for Medicaid.	Crisis Stabilization	Policies and procedures	Minimal level of local control	Two to three years
4	Provide case management for high-risk hospital patients upon inpatient discharge.	Crisis Stabilization	Direct care services	High level of local control	Within one year
4	Create a Criminal Justice System (CJS) team to review and revise procedures designed to speed up the access to treatment and support (including Specialty Court assignment). This may include quicker access to Drug Court, access to integrated medical and mental health care, transitional services to help provide ongoing care for inmates after release, and/or others.	Crisis Stabilization	Policies and procedures	High level of local control	Two to three years
6	Create a crisis bed board and/or another type of real-time listing of available urgent care beds, seats, group meetings, etc.	Crisis Stabilization	System supports	High level of local control	Two to three years
7	Build behavioral health system efficiency by strengthening awareness among medical and behavioral health providers regarding system resources and referral networks.	Awareness and Early Intervention	Practical tools	High level of local control	Two to three years
7	Development of a "Good Track Record" and/or post-conviction certificate system for ex-offenders whereby Specialty Court graduates and others can rebuild	Access to appropriate care	Policies and procedures	High level of local control	Two to three years

[109] NOTE: The appendices contain detailed Strategic Grids which describe community mental health and substance use disorder needs in order of ranked priority for each of the time frame and "degree of local control" pieces of the grid above.

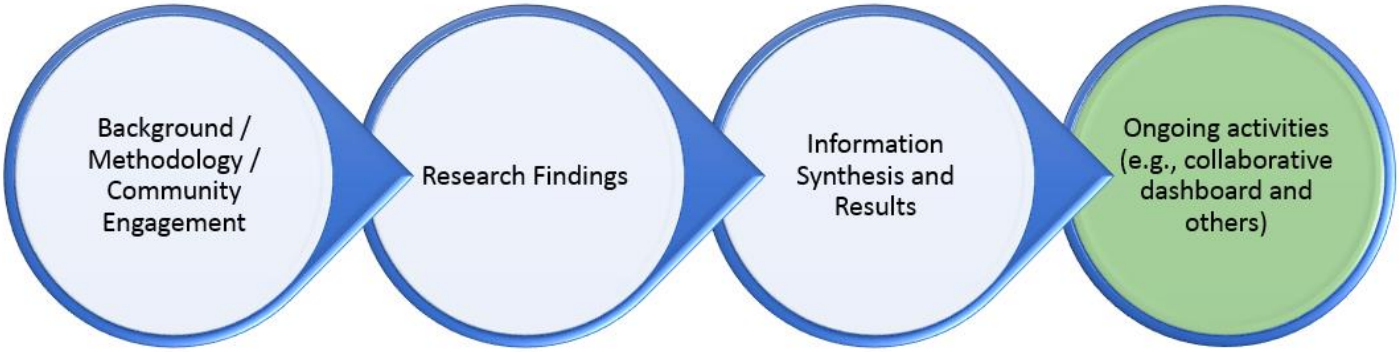
Rank	Description	Domain	Category	Degree of Local Control	Time Frame
	credentials that can help incentivize landlords, employers and others to help improve the opportunities and outcomes of ex-offenders (i.e., those with felonies.)				
9	Work with lawmakers, payers, and providers to establish reimbursement mechanisms to better facilitate co-location of outpatient service providers at schools and other community-based sites.	Access to appropriate care	Policies and procedures	Moderate level of local control	Within one year
9	Develop and implement a plan to incentivize providers to consistently monitor patient use of prescription medications using the existing PDMP system. NOTE: The prescription drug monitoring program (PDMP) is an electronic database that tracks controlled substance prescriptions. PDMPs can provide health authorities timely information about prescribing and patient behaviors that contribute to drug misuse and facilitate responses.	Crisis Stabilization	Policies and procedures	Minimal level of local control	Two to three years
11	Develop a collaborative resource among major service providers to address urgent needs of patients in crisis. This may include physical and/or virtual evaluation and triage resources accessible by first responders with people suffering from behavioral health issues.	Crisis Stabilization	System supports	High level of local control	Within one year
12	Expand use and capacity of Medication Assisted Treatment (MAT) programs. Current MAT providers would include: Heartland, Preferred, Behavioral Health Group (BHG), A & M Recovery, Recovery Outreach, Clarity (Burrell), and Higher Ground. Funding for MAT varies. Provider capacity may be enhanced through greater use of psychiatric nurse practitioners (PNPs), tele-psych, or other services.	Access to appropriate care	Capacity	Moderate level of local control	Within one year
12	Increase Adverse Childhood Experiences (ACEs) training and education among teachers, first responders, and Criminal Justice System (CJS) personnel.	Awareness and Early Intervention	Education	High level of local control	Two to three years
12	Continue to lobby for enhanced reimbursement for care coordination, patient navigation, and other affiliated health services.	Access to appropriate care	Policies and procedures	High level of local control	Four years or longer
15	Establish a resource to support better coordination of services among providers of physical and mental healthcare services, wraparound service sites, and social networks. This resource would allow different service providers to communicate more clearly and improve the efficiency with which they try to support patient needs.	Crisis Stabilization	System supports	High level of local control	Two to three years
16	Establish a “bridge clinic” that provides walk-in or referral-based care to people recently released from in-patient facilities (or the criminal justice system). The patients typically are not in crisis but require intensive psychiatric services. Bridge clinics may provide direct services or referrals to other acute care or subacute outpatient care.	Crisis Stabilization	Direct care services	High level of local control	Two to three years
17	Increase telehealth capacity for community members seeking mental health care.	Access to appropriate care	Capacity	Moderate level of local control	Within one year
17	Integrate mental health and substance abuse curricula in the public school system starting at Grade 5.	Awareness and Early Intervention	Education	High level of local control	Four years or longer

Rank	Description	Domain	Category	Degree of Local Control	Time Frame
19	Expand Mental Health First Aid training to Springfield employers	Awareness and Early Intervention	Employer support	High level of local control	Within one year
19	Create a non-crisis “bed board” with which providers at disparate organizations can quickly identify inpatient (or outpatient) resources to which they can refer patients for specialized acute care or post-discharge outpatient services.	Access to appropriate care	System supports	High level of local control	Two to three years
21	Provide prerelease case management for inmates.	Crisis Stabilization	Direct care services	High level of local control	Within one year
21	Develop and enhance partnerships with community groups.	Awareness and Early Intervention	Practical tools	High level of local control	Within one year
21	Draft and implement a communications plan to increase public and provider awareness of success stories, new initiatives, existing services, access to care (including system entry points), and navigation.	Awareness and Early Intervention	Practical tools	High level of local control	Within one year
21	Establish / expand continuity of care and transition processes for people in the Criminal Justice System (CJS) who transfer from the CJS health service to community providers.	Access to appropriate care	Capacity	High level of local control	Two to three years
25	Expand alternative sentencing options (e.g., Specialty Court) capacity.	Access to appropriate care	Capacity	High level of local control	Within one year
25	Provide mental health first aid training for all first responders and others including police, fire department, Emergency Medical Technicians (EMTs), school counselors, and employers.	Awareness and Early Intervention	Education	High level of local control	Within one year
25	Continue to lobby for enhanced tele-psych reimbursement.	Access to appropriate care	Policies and procedures	High level of local control	Two to three years
28	Include information on financial resources in the current resource guide to support people seeking treatment.	Access to appropriate care	System supports	High level of local control	Within one year
28	Review the possibility of creating a “treatment pod” at the jail (i.e. a unit or group of inmate cells in which inmates with mental health issues reside and receive more highly monitored attention and care).	Access to appropriate care	Capacity	High level of local control	Two to three years
28	Work with health insurers or others to review and improve approaches for medication treatment and counselling staffed by area providers and jointly funded by employers and others (similar to best practice Medication Assisted Treatment (MAT) format).	Awareness and Early Intervention	Employer support	Minimal level of local control	Four years or longer
31	Provide a medical or counseling referral resource and policy for job applicants or current employees who fail a job screening due to substance use.	Awareness and Early Intervention	Employer support	High level of local control	Two to three years
32	Conduct neighborhood-level outreach to inform community groups about the Needs Assessment results, identify opportunities for ongoing activities to address needs, and otherwise, engage community members.	Awareness and Early Intervention	Education	High level of local control	Within one year
33	Create a transportation strategy to improve access for people needing transportation to mental health or substance abuse care services in higher-need areas.	Access to appropriate care	System supports	Moderate level of local control	Four years or longer

Rank	Description	Domain	Category	Degree of Local Control	Time Frame
34	Convene behavioral health conferences and large-scale educational opportunities such as Mental Health Court Conference; Missouri State University (MSU) Impact Summit Conference.	Awareness and Early Intervention	Education	High level of local control	Within one year
35	Provide Narcan training for first responders and the social network of high-risk individuals (i.e. family members and friends of people being discharged from hospital care, released from jail, or other high-risk environments).	Crisis Stabilization	Direct care services	Moderate level of local control	Two to three years
36	Increase provider training on culturally competent care in mental health settings for diverse populations including the LGBTQ community, seniors, immigrants, and people of color.	Awareness and Early Intervention	Education	High level of local control	Within one year
36	Incentivize additional physicians to obtain DEAx training and licensure for prescribing suboxone, if needed, to help address patients' opioid addiction. NOTE: Currently, the ability of a provider to prescribe suboxone - a drug used to help wean people away from opioid use / addiction - requires several hours of additional training and approval from the Drug Enforcement Administration (i.e., "DEAx" licensure).	Access to appropriate care	Capacity	Minimal level of local control	Two to three years

Ongoing activities

The fourth primary section of the report provides some insight and guidance for activities in place or to be considered to address prioritized needs. The section includes some examples of initiatives or guidance previously used (in other locales) to address similar mental health and/or SUD issues, a collaborative dashboard, and other material.



Burrell Behavioral Health

- Increased access to mental health care. Specifically, efforts at Burrell have led to increased access to the walk-in clinic and decreased wait time for appointments.
- The partnership with the Springfield Public Schools system includes offering counseling services in schools.
- Expanded PD Virtual mobile clinic services are planned.
- Embedded access in primary care practices and Emergency Departments is underway. For example, Burrell is currently partnering with CoxHealth and Mercy Hospital to offer mental health access inside the hospitals' Emergency Departments in an ongoing effort to integrate behavioral health in primary care.
- There are expanded services at the JVCHC Integrated Clinic. For example, there is a clinic on the north side of Springfield serving as a partner clinic between Jordan Valley Community Health Center and Burrell Behavioral Health.
- Certified Community Behavioral Health Clinics (CCBHC) expansion continues to be an active goal of Federal and State advocacy (Burrell is currently one of only ten CCBHCs in Missouri and the only one in the Springfield area).

CoxHealth

- CoxHealth is providing PDMP Leadership at the local and state levels.
- The number of "psych safe" beds has doubled from four to eight.
- Addiction treatment services have been expanded by establishing a new partnership with Hazeldine Betty Ford Clinic.
- There has been a focus on increased training and protection for healthcare workforce. CoxHealth will be developing plans to work with Missouri Hospital Association and others on efforts to enhance workforce safety initiatives.

Jordan Valley Community Health Center

- ACES screening is beginning to take place in the clinical care environment.
- Community Health Workers are increasingly being used to increase system capacity.
- Medication Assistance Therapy Clinic currently operates five days per week (Monday – Friday).
- Integrated, clinic-based care activities with Burrell Integrated Clinic have been expanded.
- An addiction program for pregnant mothers is expanding.

Mercy Hospital

- Behavioral health unit in Emergency Department has been created for psychiatric patients.
- Initiatives to reduce opioid use in pain management programs is underway.
- Access to mental health services through telemedicine—especially in pediatrics – is increasing.
- Partnership with Burrell has been established to provide mental health services seamlessly through the Emergency Department. The partnership also includes psychiatry coverage for the IP psychiatric unit.

Opportunity for Improvement Identified by All Providers:

Reimbursement

Assuring that adequate reimbursement for treatment of mental illness is available for and mental health providers alike was identified by all providers and other interviewees through the assessment. The rate of reimbursement is not sustainable for adequately meeting demand for mental illness.

Items identified include: addiction treatment services are often reimbursed at rates lower than the cost of care, or not covered by insurance; the lack of Medicaid expansion or reform impacts uncompensated care in all settings; there is a need for Medicaid suspension versus termination upon incarceration in Missouri.

Access to Appropriate Care

Emergency Departments are often the place where patients seek care for mental illness, especially in crisis situations. Identifying symptoms and preventing crises can offer diversion to other more appropriate care. Additionally, efforts to prevent and reduce the suicide rate in Greene County should be a priority.

Resources and Tools

Mental Health First Aid Training was identified as a valuable resource and necessary tool to be used to offer early intervention and prevention of crisis. Currently, Community Partnership of the Ozarks is offering training and education to reduce the incidence of mental illness and prevent crises. These efforts and others should be leveraged and should be used to train our community, specifically children, youth and young adults, some of our most vulnerable.

Provider Shortages

Mental Health provider shortages are prevalent in Springfield but also throughout the country. In addition to improved reimbursement, Efforts to seek options for alternative ways to treat patients such as telehealth and community health workers must be explored to expand care.

10.0 Potential Concepts and Measures for Collaborative Dashboard

Background

Conceptually, the Springfield/Green Community Collaborative Dashboard for Behavioral Health would utilize an on-line data collecting tool which would pull select measures for analysis and reporting. The purpose of the dashboard would be to benchmark and measure the impact of strategic initiates led by the SGCHD and its partners. Public reporting of a focused list of system-level and other key measures will help illuminate progress and provide an easy reference for the community.

Typically, dashboard initiatives include three phases: 1) finalizing the data set and definitions; 2) pulling retrospective study data from each collaborative member organization, and; 3) using the dashboard for prospective reporting to inform key stakeholders to potential opportunities to further enhance efforts. The following outlines the some of the Phase One fundamental concepts with selected examples.

Fundamental Concepts

Consistency, Simplicity and Relevance

- Utilize standard definitions and descriptions for each measure.
- Use existing data sources and processes where possible.
    - *Example: Opioid Overdose Deaths.*
- Use Measures That Have Interest and Impact to the community both good & bad.
- It starts as a report to the Community more than Quality Improvement (QI) measurement.

A Few, Broad, Co-equal Measures Reported Quarterly

- As a report to the Community, the simplicity and graphic presentation are important.
- Use traditional QI approaches to identifying issue areas, e.g. high variability and volume.

Link The Dashboard to Community Research Observations and Action Items

- Include measures from the top Domains.
    - *Example: Increase the number of counselors and others who provide adult and pediatric outpatient mental health counseling and substance abuse treatment.*

Use The Dashboard Elements Across the Full System of Care and Recovery

- Outpatient (# of psychiatrists).
- Schools (School Discipline Incidents).
- Criminal Justice System (RANT tool trends).
- Inpatient (Example: Alcohol Screening and Follow-up for People with SPMI.

Dashboard Elements

A dashboard of key measures will help provide a clear set of measures against which to monitor the community impact of ongoing activities, newly developed initiatives, and response to emerging community mental health issues and substance use disorder-related challenges. The dashboard can also be used by key stakeholders as a guide to encourage ongoing collaboration with other community partners.

Since some measures can be more readily monitored through currently available sources of information, existing community partnerships, and other readily available data sources, the following table includes two phases of dashboard development.

Phase 1 will include the following categories of select measures.

- Capacity: Availability/Counts of Providers.
- Number of people receiving Mental Health First Aid Training.
- Mortality / Deaths.
- Secondary Substance Use Disorder (SUD) Intervention.
- Criminal Justice-related Measures.
- Narrative Section Regarding Policy and Regulatory Issues.

Phase 2 Dashboard measures will include the following.

- All measures included in Phase 1.
- Major Behavioral Health Inpatient Diagnoses & Access.
- Major Behavioral Health Outpatient Diagnoses & Access.
- Outpatient Access to Care Trends.

Please see the table on the following page.

Dashboard Measures, Phases, Metrics, Sources, and Periodicity			
Dashboard Phase	**Categories of Dashboard Measures Including Measure Details**	**Metrics**	**Data Source and Reporting Periodicity**
Phase 1	**Capacity: Availability/Counts of Providers** • Psychiatrists • Psychologist • Behavioral health counsellors • Mental health first responders	Rates per 100,000 and Trend	Ratio from Publicly Available Data or Key Stakeholder / Providers (quarterly)
	Number of people receiving Mental Health First Aid Training	Count	Community Partnership of the Ozarks
	Mortality / Deaths • All unintentional deaths • Opioid/Heroin Overdose Death Rates • Suicide Death Rates	Death rates per 100,000 and Trend	County Coroner – (Quarterly) Missouri Department of Health & Senior Services (Yearly)
	Secondary Substance Use Disorder (SUD) Intervention • CoxHealth and Mercy Hospital EMS runs due to drug overdose	Monthly count and trend	CoxHealth and Mercy Hospital EMS (Quarterly)
	Criminal Justice-related Measures • Juvenile drug and alcohol offenses • Drug, Mental Health, and Veterans Court graduations	Monthly count and trend	2018 Status Report on Missouri's Substance Use and Mental Health (MO Dept. of MH quarterly)
	Narrative section regarding policy and regulatory issues. For example, policies to overcome barriers such as reimbursement challenges and ongoing efforts, and others.	Narrative	SGCHD and Key Stakeholder Insight

Dashboard Measures, Phases, Metrics, Sources, and Periodicity			
Dashboard Phase	**Categories of Dashboard Measures Including Measure Details**	**Metrics**	**Data Source and Reporting Periodicity**
Phase 2 Measures to be Added	**Major Behavioral Health Inpatient Diagnoses & Access** • Mood disorders • Anxiety disorders • Psychotic disorders • Personality disorders • Impulse control disorders • Adjustment disorders	Quarterly count and trend Analysis of the number served as a percent of estimate discharges	Hospital Discharge Data – CoxHealth and Mercy Hospital
	Major Behavioral Health Outpatient Diagnoses & Access • Mood disorders • Anxiety disorders • Psychotic disorders • Personality disorders • Impulse control disorders • Adjustment disorders	Quarterly count and trend Analysis of the number served as a percent of estimated total number of unique patient visits	Service Use Data – Burrell Behavioral Health & Jordan Valley Community Health Center
	Outpatient Access to Care Trends • Days to appointments	Monthly count and trend	Access Data – Burrell Behavioral Health & Jordan Valley Community Health Center

The dashboard will serve as a pubic reporting tool, and the list of measures will be updated as new information becomes available and/or as new issues are tracked.

Appendices

CSTAR Patient Service Use

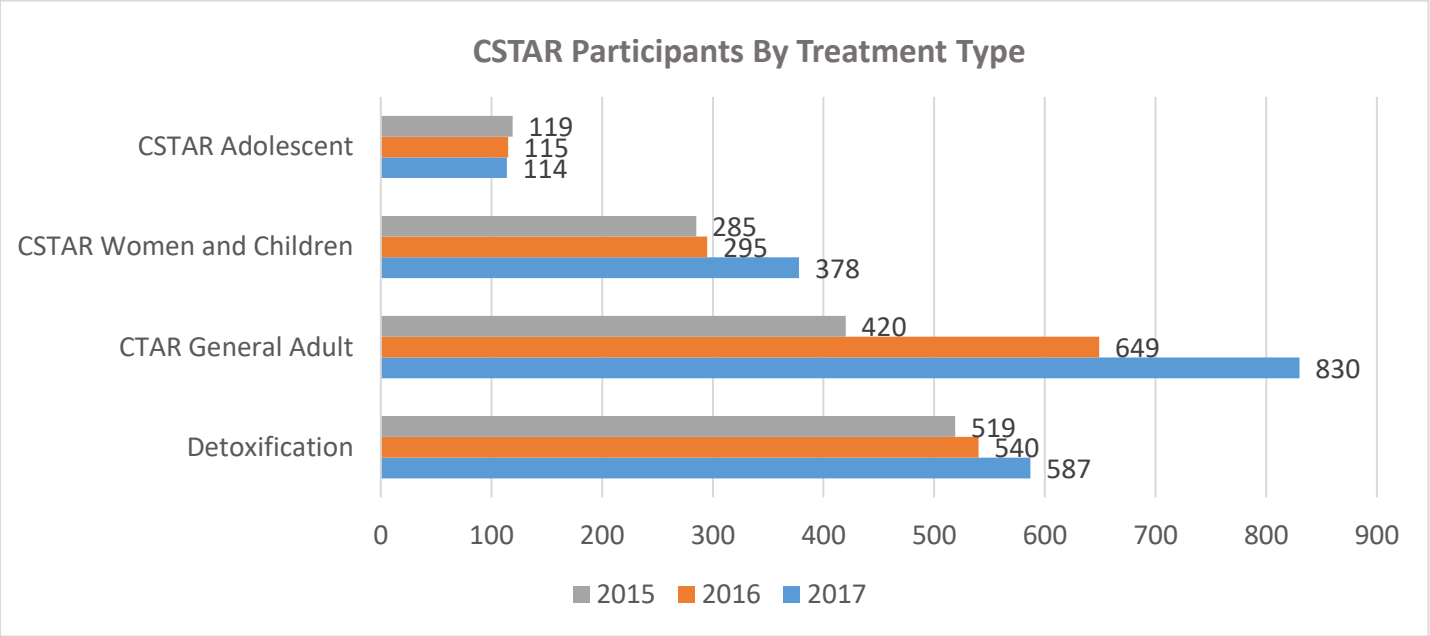
Developed by the Missouri Department of Behavioral Health (DBH) and funded by Missouri's Medicaid program and DBH's purchase-of-service system, the Comprehensive Substance Treatment and Rehabilitation (CSTAR) Program also provides a full continuum of care approach to substance use disorder treatment. CSTAR offers a flexible combination of clinical and supportive services, to include temporary living arrangements when appropriate, that vary in duration and intensity depending on the needs of the consumer. To better address the specific needs of those seeking treatment, four specialized CSTAR programs were developed[110]:

- "CSTAR Women and Children. Substance use disorder affects women in unique ways, both physically and psychologically. These programs are designed for women and their children. Priority is offered to women who are pregnant, postpartum, or have children in their physical care and custody. Depending on assessed needs, additional services may include daycare, housing support and community support for children that accompany their mother into treatment.
- "CSTAR General Population. These programs offer intensive outpatient treatment services to both men and women with substance use disorder problems. The full menu of treatment services is available.
- "CSTAR Detoxification. These medication-assisted treatment programs are designed for medically supervised withdrawal from heroin and other opiate drugs, followed by ongoing treatment and rehabilitation for addiction and related life problems. Priority admission is given to women who are pregnant and persons who are HIV positive. Missouri's opioid treatment programs meet required federal guidelines.
- "CSTAR Adolescent. Early intervention, comprehensive treatment, academic education, and multiple levels of care are important in averting substance use disorder and resulting problems that might otherwise follow a young person for a lifetime. Designed for children 12 to 17 years in age, these programs offer the full spectrum of treatment services to Missouri's youth." [111]

[110] Missouri Department of Behavioral Health, CSTAR Program. Available at https://dmh.mo.gov/ada/progs/treatment.html.

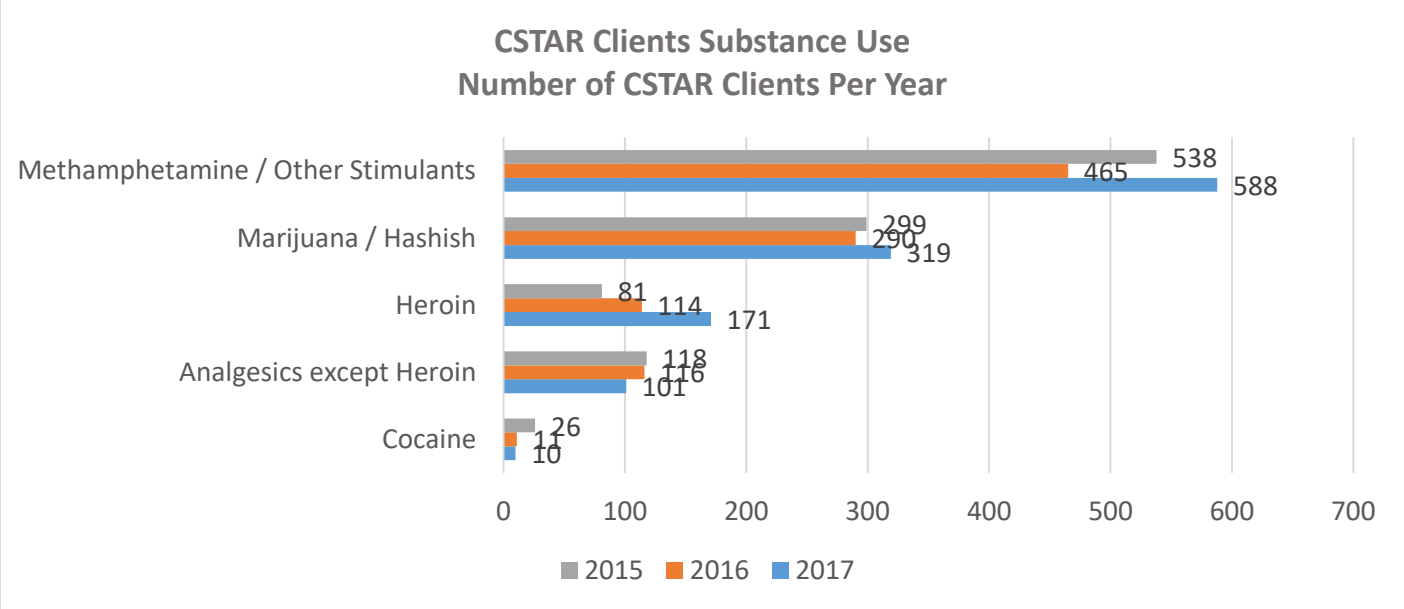
[111] Missouri Department of Mental Health. Available at https://dmh.mo.gov/ada/progs/treatment.html.

Table A1: CSTAR Participation



- Adolescent participation has waned slightly over the 3-year period.
- General adult participants have nearly doubled.

Table A2: CSTAR Client Substance Use



- Methamphetamine and other stimulant usage have been and continue to be the leading substance of CSTAR clients.
- Heroin rates have nearly doubled from 2015-2017.
- Marijuana continues to be a steadily used substance of CSTAR clients, seeing a slight uptick from 2015-2107.

Heroin rates nearly doubled from 2015 to 2017.

Stigma and Mental Health First Aid (MHFA) Support

Research conducted in the U.S. and Australia regarding the evidence for the impact and effectiveness of Mental Health First Aid (MHFA) training include the following:[112]

- MHFA participants gained
    - Better recognition of mental health disorders
    - Better understanding of treatment options
    - Confidence in providing help to others
    - Improved mental health for themselves
    - Lessened stigmatizing attitudes and decreased social distance from people with mental disorders.
- Community-based outcomes include:
    - Increased help and outreach to others
    - Increased guidance to direct others (or themselves) to attain professional help
    - Improved concordance with health professionals about treatment

Note also that MHFA training among direct care providers improved mental health first aid intentions (p= <.001) and decreased stigmatizing attitudes towards people with mental health problems (p= .04). There was also evidence that among some, MHFA trained individuals were more confident to help a friend with mental health problems (p= <.001), and had greater mental health insight and knowledge (p= .003). Research participants reported improvement in their knowledge and confidence to help someone.[113]

http://www.dbsalliance.org/site/DocServer/MHFA_Evidence.pdf?docID=8202

NIH-supported work identifies three types of stigma: self-induced stigma (self-perceptions), social stigma (societal impressions and prejudices), and structural stigma (healthcare system, provider-based, or other care paradigm-based challenges).[114]

Self-stigma: Evidence indicates that self-stigma can be reduced through therapeutic interventions. Example: Group-based acceptance and commitment therapy (ACT). A study conducted by JB Luoma, et al used group-based ACT in an outpatient clinical setting to work with people with substance use disorders to address mental health and SUD stigma and related life-skills issues.[115] The results of the study showed to a statistically significant level that the ACT approach

[112] National Council for Community Behavioral Healthcare. Available at http://www.dbsalliance.org/site/DocServer/MHFA_Evidence.pdf?docID=8202

[113] BMC (Springer Nature), 2018. Available at https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-018-1154-x

[114] National Institutes of Health. Available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3272222/#__sec12title

[115] Luoma JB, Kohlenberg BS, Hayes SC, Bunting K, Rye AK. Reducing self-stigma in substance abuse through acceptance and commitment therapy: model, manual development, and pilot outcomes. Addict Res Theory. 2008;16:149–65

decreased shame [*g*= 1.33, standard error (SE) = 0.35,*P*< 0.001] and internalized stigma (*g*= 1.14, SE = 0.57, *P*< 0.05) among. However, scores of perceived stigma and stigma-related rejection remained unchanged.

Social stigma: Effective strategies for addressing social stigma include public communications efforts that establish a public dialogue – not solely provide monodirectional information. For example, motivational interviewing and communicating positive stories of people with substance use disorders has been shown in research settings to positively impact social stigma. Luty et al.'s randomized control trial concluded that the distribution of outreach materials depicting positive impressions of people struggling with heroin addiction significantly reduced stigmatized attitudes among the general public (*g*= 1.50, SE = 0.13, *P*< 0.0001) and alcohol (*g*= 1.25, SE = 0.13, *P*< 0.0001) dependence.[116] In another of Luty's studies, the authors found that brief motivational interviews conducted with members of the general public moderately decreased stigmatizing attitudes towards people with alcohol dependence (*g*= 0.44, SE = 0.14, *P*< 0.01).[117] It is possible that community level dialogue may have the same positive impact on a larger scale.

Structural stigma: Programs positively impacting structural stigma include contact-based training and education programs for medical care providers, students, professionals (e.g. police, counsellors), and other first responders. For example, Georgetown University conducted a large-scale research project to evaluate the immediate and long-term impact on attitudes and behavior of individuals trained in MHFA. Preliminary results suggest MHFA training significantly increased knowledge, provider self-efficacy, and confidence in performing MHFA actions, and 17% - 58% reported using MHFA when encountering individuals with mental health problems.[118]

[116] Luty J, Rao H, Arokiadass SMR, Easow JM, Sarkhel A. The repentant sinner: methods to reduce stigmatised attitudes towards mental illness. Psychiatr Bull. 2008;32:327–32

[117] Luty J, Umoh O, Nuamah F. Effect of brief motivational interviewing on stigmatised attitudes towards mental illness. Psychiatr Bull. 2009;33:212–4

[118] Anthony, B., Banh, M., Goldman, S., Yoon. I. Evaluation of Mental Health First Aid Summary of Psychometric Study. Georgetown Center for Child and Human Development, 2015. Available at https://www.mentalhealthfirstaid.org/cs/wp-content/uploads/2013/10/MHFA-Research-Summary-UPDATED.pdf

Stigma Evaluation Tools

Instruments used to evaluate and establish benchmarkable trends for self-stigmatization include the Stigma Scale created by M. King et al.[119] Each of the following 42 statements in the Stigma Scale are evaluated on a 5-point scale (i.e., levels of agreement). A similar instrument could be developed in order to evaluate and track social and structural stigma.

Stigma Scale Evaluation Instrument

Statement Number	Statement
1	The general public is understanding of people with mental health problems
2	Other people have made me feel ashamed of myself because of my mental health problems
3	The way people have treated me upsets me
4	I have been discriminated against by housing departments/landlords because of my mental health problems
5	I have been discriminated against in education because of my mental health problems
6	Sometimes I feel that I am being talked down to because of my mental health problems
7	Having had mental health problems has made me a more understanding person
8	I am to blame for my mental health problems
9	I feel ashamed of myself that I have had mental health problems
10	I do not feel bad about having had mental health problems
11	Other people think less of me because I have had mental health problems
12	Newspapers/television take a balanced view about mental health problems
13	I am open to my family about my mental health problems
14	I worry about telling people I receive psychological treatment
15	Some people with mental health problems are dangerous
16	Other people have never made me feel embarrassed because of my mental health problems
17	People have been understanding of my mental health problems
18	I have been discriminated against by police because of my mental health problems
19	I have been discriminated against by employers because of my mental health problems
20	I have been physically threatened or attacked because of my mental health problems
21	My mental health problems have made me more accepting of other people
22	Very often I feel alone because of my mental health problems
23	I am scared of how other people will react if they find out about my mental health problems
24	I would have had better chances in life if I had not had mental health problems
25	I am as good as other people, even though I have had mental health problems
26	I do not mind people in my neighborhood knowing I have had mental health problems
27	I would say I have had mental health problems if I was applying for a job
28	I worry about telling people that I take medicines/tablets for mental health problems

[119] King, M., Dinos, S., Shaw, J., Watson, R., Stevens, S., Passetti, F., . . . Serfaty, M. (2007). The Stigma Scale: Development of a standardised measure of the stigma of mental illness. *British Journal of Psychiatry, 190*(3), 248-254. doi:10.1192/bjp.bp.106.024638

Stigma Scale Evaluation Instrument

Statement Number	Statement
29	People's reactions to my mental health problems make me keep myself to myself
30	I am angry with the way people have reacted to my mental health problems
31	I have not had any trouble from people because of my mental health problems
32	I have been discriminated against by health professionals because of my mental health problems
33	People have avoided me because of my mental health problems
34	People have insulted me because of my mental health problems
35	Having had mental health problems has made me a stronger person
36	I do not feel embarrassed because of my mental health problems
37	I avoid telling people about my mental health problems
38	Having had mental health problems makes me feel that life is unfair
39	When I see or read something about mental health in the papers or television, it makes me feel bad about myself
40	I feel the need to hide my mental health problems from my friends
41	I find it hard telling people I have mental health problems
42	I do not understand the diagnosis I have been given

Strategic Grid Detailed Tables

Corresponding with the strategic grid above, the following nine tables list the community mental health and substance use disorder needs in order of ranked priority.

Strategic Grid Sub-Table 1	
High Level of Local Control	**Impact or Activity Within One Year**
	Provide case management for high-risk hospital patients upon inpatient discharge. Overall Rank: 4
	Develop a collaborative resource among major service providers to address urgent needs of patients in crisis. This may include physical and/or virtual evaluation and triage resources accessible by first responders with people suffering from behavioral health issues. Overall Rank: 11
	Expand Mental Health First Aid training to Springfield employers Overall Rank: 19
	Develop and enhance partnerships with community groups. Overall Rank: 21
	Draft and implement a communications plan to increase public and provider awareness of success stories, new initiatives, existing services, access to care (including system entry points), and navigation. Overall Rank: 21
	Provide prerelease case management for inmates. Overall Rank: 21
	Expand alternative sentencing options (e.g., Specialty Court) capacity. Overall Rank: 25
	Provide mental health first aid training for all first responders and others including police, fire department, Emergency Medical Technicians (EMTs), school counselors, and employers. Overall Rank: 25
	Include information on financial resources in the current resource guide to support people seeking treatment. Overall Rank: 28
	Conduct neighborhood-level outreach to inform community groups about the Needs Assessment results, identify opportunities for ongoing activities to address needs, and otherwise, engage community members. Overall Rank: 32
	Convene behavioral health conferences and large-scale educational opportunities such as Mental Health Court Conference; Missouri State University (MSU) Impact Summit Conference. Overall Rank: 34
	Increase provider training on culturally competent care in mental health settings for diverse populations including the LGBTQ community, seniors, immigrants, and people of color. Overall Rank: 36

Strategic Grid Sub-Table 2	
High Level of Local Control	**Impact or Activity in One to Three Years**
	Create a Criminal Justice System (CJS) team to review and revise procedures designed to speed up the access to treatment and support (including Specialty Court assignment). This may include quicker access to Drug Court, access to integrated medical and mental health care, transitional services to help provide ongoing care for inmates after release, and/or others. Overall Rank: 4
	Create a crisis bed board and/or another type of real-time listing of available urgent care beds, seats, group meetings, etc. Overall Rank: 6
	Build behavioral health system efficiency by strengthening awareness among medical and behavioral health providers regarding system resources and referral networks. Overall Rank: 7
	Development of a "Good Track Record" and/or post-conviction certificate system for ex-offenders whereby Specialty Court graduates and others can rebuild credentials that can help incentivize landlords, employers and others to help improve the opportunities and outcomes of ex-offenders (i.e., those with felonies.) Overall Rank: 7
	Increase Adverse Childhood Experiences (ACEs) training and education among teachers, first responders, and Criminal Justice System (CJS) personnel. Overall Rank: 12
	Establish a resource to support better coordination of services among providers of physical and mental healthcare services, wraparound service sites, and social networks. This resource would allow different service providers to communicate more clearly and improve the efficiency with which they try to support patient needs. Overall Rank: 15
	Establish a “bridge clinic” that provides walk-in or referral-based care to people recently released from in-patient facilities (or the criminal justice system). The patients typically are not in crisis but require intensive psychiatric services. Bridge clinics may provide direct services or referrals to other acute care or subacute outpatient care. Overall Rank: 16
	Create a non-crisis “bed board” with which providers at disparate organizations can quickly identify inpatient (or outpatient) resources to which they can refer patients for specialized acute care or post-discharge outpatient services. Overall Rank: 19
	Establish / expand continuity of care and transition processes for people in the Criminal Justice System (CJS) who transfer from the CJS health service to community providers. Overall Rank: 21
	Continue to lobby for enhanced tele-psych reimbursement. Overall Rank: 25
	Review the possibility of creating a “treatment pod” at the jail (i.e. a unit or group of inmate cells in which inmates with mental health issues reside and receive more highly monitored attention and care). Overall Rank: 28
	Provide a medical or counseling referral resource and policy for job applicants or current employees who fail a job screening due to substance use. Overall Rank: 31

Strategic Grid Sub-Table 3	
High Level of Local Control	**Impact or Activity Within Four or More Years**
	Continue to lobby for enhanced reimbursement for care coordination, patient navigation, and other affiliated health services. Overall Rank: 12
	Integrate mental health and substance abuse curricula in the public school system starting at Grade 5. Overall Rank: 17

Strategic Grid Sub-Table 4	
Moderate Level of Local Control	**Impact or Activity Within One Year**
	Work with lawmakers, payers, and providers to establish reimbursement mechanisms to better facilitate co-location of outpatient service providers at schools and other community-based sites. Overall Rank: 9
	Expand use and capacity of Medication Assisted Treatment (MAT) programs. Current MAT providers would include: Heartland, Preferred, Behavioral Health Group (BHG), A & M Recovery, Recovery Outreach, Clarity (Burrell), and Higher Ground. Funding for MAT varies. Provider capacity may be enhanced through greater use of psychiatric nurse practitioners (PNPs), tele-psych, or other services. Overall Rank: 12
	Increase telehealth capacity for community members seeking mental health care. Overall Rank: 17
Strategic Grid Sub-Table 5	
Moderate Level of Local Control	**Impact or Activity in One to Three Years**
	Increase the number of counselors and others who provide adult and pediatric outpatient mental health counseling and substance abuse treatment services. Overall Rank: 1
	Provide Narcan training for first responders and the social network of high-risk individuals (i.e. family members and friends of people being discharged from hospital care, released from jail, or other high-risk environments). Overall Rank: 35
Strategic Grid Sub-Table 6	
Moderate Level of Local Control	**Impact or Activity Within Four or More Years**
	Create a transportation strategy to improve access for people needing transportation to mental health or substance abuse care services in higher-need areas. Overall Rank: 33

Strategic Grid Sub-Table 7	
Minimal Level of Local Control	**Impact or Activity Within One Year**
	NONE
Strategic Grid Sub-Table 8	
Minimal Level of Local Control	**Impact or Activity in One to Three Years**
	Enact Medicaid suspension rather than termination for incarcerated individuals for recently released inmates and select others eligible for Medicaid. Overall Rank: 3
	Develop and implement a plan to incentivize providers to consistently monitor patient use of prescription medications using the existing PDMP system. NOTE: The prescription drug monitoring program (PDMP) is an electronic database that tracks controlled substance prescriptions. PDMPs can provide health authorities timely information about prescribing and patient behaviors that contribute to drug misuse and facilitate responses. Overall Rank: 9
	Incentivize additional physicians to obtain DEAx training and licensure for prescribing suboxone, if needed, to help address patients' opioid addiction. NOTE: Currently, the ability of a provider to prescribe suboxone - a drug used to help wean people away from opioid use / addiction - requires several hours of additional training and approval from the Drug Enforcement Administration (i.e., "DEAx" licensure). Overall Rank: 36
Strategic Grid Sub-Table 9	
Minimal Level of Local Control	**Impact or Activity Within Four or More Years**
	Increase access to inpatient mental health and substance abuse treatment beds (especially pediatric beds) by increasing the number of licensed beds and/or other approaches (i.e. reducing blocked beds.) This activity may also include review of licensing regulation, payer / reimbursement policies, or other public policies. Overall Rank: 1
	Work with health insurers or others to review and improve approaches for medication treatment and counselling staffed by area providers and jointly funded by employers and others (similar to best practice Medication Assisted Treatment (MAT) format). Overall Rank: 28

Priority Initiatives and Best Practices Synthesis

Selected Citations

Some, but not all, of the initiatives have citations and evidence-based best-practice data supporting them. The following is an extract from a longer document that examines most of the "Consensus Opinions on Interventions" listed earlier in this section.

Initiatives	Best Practice Examples and References
Destigmatize Mental Health	
• Convene conferences and similar large-scale educational opportunities. • Develop community presentations • Draft and implement a communications plan to increase public (and provider) awareness,	NAMI national anti-stigma campaign https://www.nami.org/stigmafree Psychiatric Rehabilitation Journal study: ending self-stigma https://www.ncbi.nlm.nih.gov/pubmed/21768078
Strengthen Awareness of Early Intervention and Capacities	
• Provide Mental Health First Aid Training to all identified groups (school teachers, first responders, student leaders, parents/family members, ED staff, faith-based leaders, Springfield employers.	Mental Health USA: Research and Evidence Base https://www.mentalhealthfirstaid.org/about/research/ Specific list of historical research on Mental Health First Aid: https://www.mentalhealthfirstaid.org/cs/wp-content/uploads/2013/10/MHFA-Research-Summary-UPDATED.pdf
• Provide a healthcare or counseling resource where employers can refer job applicants or current employee who fail an initial job screening.	No clear evidence on this suggested initiative. Most information available speaks to how to handle drug use and misuse in the workforce as well as federal laws around drug use in the workplace: https://www.naadac.org/assets/2416/substanceuse_misusetoolkit9.pdf Most employers offer Employee Assistance Programs that assist in the interventions and some employers make this referral mandatory.

Initiatives	Best Practice Examples and References
• Increase ACEs training and education among teachers, first responders, and CJS personnel	ACE resources from the United States CDC: https://www.cdc.gov/violenceprevention/acestudy/resources.html SAMHSA Center for the Application of Prevention Technologies Webinar ACE training: https://www.samhsa.gov/capt/tools-learning-resources/trauma-adverse-childhood-experiences-implications-preventing-substance
Access to Appropriate Care & Treatment	
• Decentralize mental health and substance use disorder treatment services and provide them in higher-risk locations.	US National Library of Medicine/National Institute of Health: Decentralization matters – Differently organized mental health services relationship to staff competence and treatment practice: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2691730/
Improved Treatment Integration and Care Coordination	
• Encourage direct care providers to involve Community Health Workers to provide care navigation and motivational interviewing skills to high-risk people.	BMC Health Care Research: Implementation and Maintenance of Patient Navigation Programs Linking Primary Care with Community-Based Health and Social Services: a Scoping Literature Review Ruta K. Valaitis, corresponding author Nancy Carter, Annie Lam, Jennifer Nicholl, Janice Feather, and Laura Cleghorn See Table 5 – Outcomes of Patient Navigation systems https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5294695/
• Develop an organization to provide domestic abuse victims with wrap-around supports.	Center for Policy Research, in partnership with National Resource Center on Domestic Violence: Making the Case For Domestic Violence Services and Interventions https://aspe.hhs.gov/system/files/pdf/255511/BuildingDV.pdf A checklist used to determine wraparound services that may be needed: https://csgjusticecenter.org/wp-content/uploads/2017/02/Wrap-Around-Check-List_MN.pdf
Schools	

Initiatives	Best Practice Examples and References
• Co-location of counseling services	US Centers for Disease Control and Prevention, Whole School, Whole Community, Whole Child: https://www.cdc.gov/healthyschools/wscc/index.htm Journal of School Health: Whole School, Whole Community, Whole Child Model: https://onlinelibrary.wiley.com/toc/17461561/2015/85/11 National Resource Center for Mental Health Promotion and Violence Prevention: Developing a Comprehensive School Mental Health Program https://healthysafechildren.org/learning-module-series/mental-health-module-series
Crisis Stabilization, Diversion & Post-Acute or Post-Incarceration Support	
• Expand Drug Court/Specialty Courts	National Institute of Justice: Findings from Drug Court Research (May 2018) https://www.nij.gov/topics/courts/drug-courts/pages/work.aspx Additional supporting NIJ research: https://www.nij.gov/topics/courts/drug-courts/pages/key-reports.aspx
• Establish an evaluation and triage resource for police and first responders for people with mental health issues	Robie Adler-Tapia: Early Mental Health Intervention for First Responders/ Protective Service Workers Including Firefighters and Emergency Medical Services (EMS) Professionals (Checklist chapter from his book): https://www.emdrhap.org/content/wp-content/uploads/2014/07/X-N_Early-Mental-Health-Intervention-for-First-Responders-etc.pdf
• Provide Narcan training for first responders and the social network members of higher-risk people being discharged from hospital care, released from jail, or other high-risk environments	Addiction Science and Clinical Practice: Opioid overdose prevention and naloxone rescue kits: what we know and what we don't know: https://ascpjournal.biomedcentral.com/articles/10.1186/s13722-016-0068-3 2015 American Heart Association Guidelines Update for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: See Part 10 Special Circumstances for Resuscitation https://www.ahajournals.org/doi/10.1161/CIR.0000000000000252