Saint Luke's

Hedrick Medical Center
Community Health Needs Assessment

2021

◆ Hedric Medical Center

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EXECUTIVE SUMMARY

Introduction

This Community Health Needs Assessment ("CHNA") was conducted by Hedrick Medical Center ("HMC" or "the hospital") to identify significant community health needs and to inform development of an Implementation Strategy to address current needs.

Hedrick Medical Center is a critical access hospital located in Chillicothe, Missouri. A city-owned, not-for-profit critical access hospital, Hedrick Medical Center is the only Joint Commission-accredited hospital in north-central Missouri. The 25-bed acute care hospital offers comprehensive care, including a 24-hour emergency department staffed by board-certified physicians, inpatient and outpatient diagnostic testing, a spacious maternity unit, a Women's Center featuring 3-D mammography, inpatient and outpatient surgery, inpatient and outpatient rehabilitation services, an Intensive Care Unit featuring eICU, a specialty clinic, and primary care offices adjoining the facility. Additional information about HMC is available at: https://www.saintlukeskc.org/locations/hedrick-medical-center.

Saint Luke's Health System ("SLHS") is a faith-based, not-for-profit health system committed to the highest levels of excellence in providing health care and health-related services in a caring environment. The system is dedicated to enhancing the physical, mental, and spiritual health of the diverse communities it serves. Saint Luke's Health System operates 18 hospitals and campuses across the Kansas City region, home care and hospice services, behavioral health care, dozens of physician practices, a life care senior living community, and additional facilities and services. Additional information regarding SLHS is available at: https://www.saintlukeskc.org/about-saint-lukes.

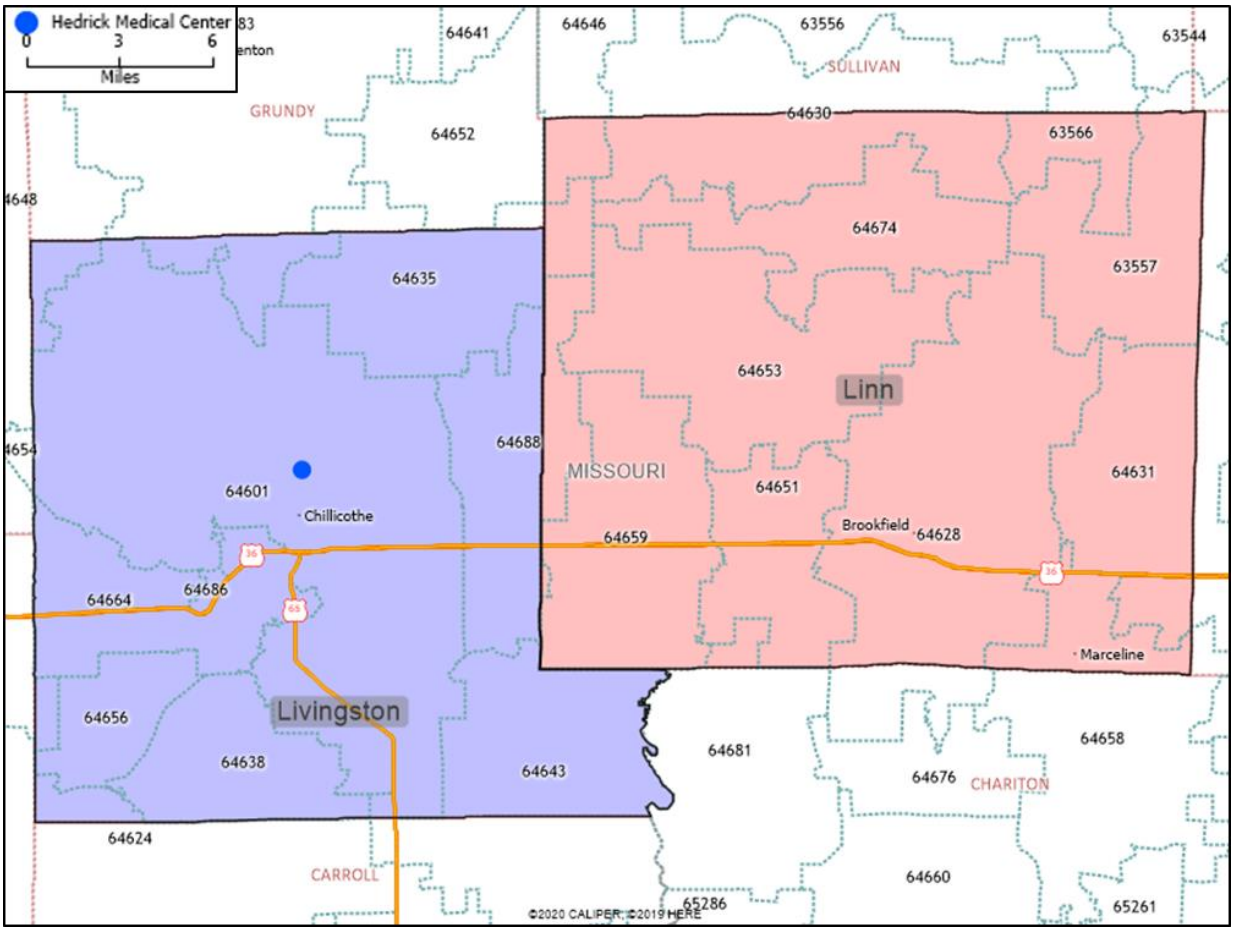
This CHNA was conducted using widely accepted methodologies to identify the significant health needs of the community served by HMC. The assessment also was conducted to comply with federal laws and regulations.

Community Assessed

For purposes of this CHNA, HMC's community is defined as Livingston County, MO, and Linn County, MO. The community was defined by considering the geographic origins of the hospital's inpatient discharges and emergency room visits in calendar year 2020. Livingston and Linn counties accounted for approximately 60 percent of the hospital's 2020 inpatient discharges and 78 percent of emergency room cases.

The total population of the HMC community in 2019 was 27,239.

The following map portrays the community assessed by HMC and the hospital's location within Livingston County.



Source: Caliper Maptitude, 2020.

Significant Community Health Needs

As determined by analyses of quantitative and qualitative data, the significant health needs in the community served by Hedrick Medical Center are:

- Access to Care and Health Insurance
- COVID-19 Pandemic and Effects
- Mental Health and Access to Mental Health Services
- Obesity, Physical Inactivity, and Chronic Conditions
- Poverty
- Smoking and Tobacco Use
- Substance Use Disorder and Overdoses
- Transportation

Significant Community Health Needs: Discussion

Access to Care and Health Insurance

Accessing health care services is challenging for some members of the community, particularly for those who are low-income, uninsured, underinsured, and with limited transportation options.

The per-capita supply of primary care physicians is low compared to state and national averages in Linn County, and many parts of the county have been designated as Medically Underserved Areas ("MUAs"). The supply of dentists and mental health providers is low in Livingston and Linn counties. The federal government has designated both counties as Health Professional Shortage Areas ("HPSAs") for low-income residents seeking access to primary care physicians and dentists. Both counties also have been designated as HPSAs for mental health professionals.

Community representatives who provided input into this CHNA ("community informants") confirmed that providers are in short supply. Access to specialty care requires travel to more populated areas, creating transportation barriers. Access to mental health services (particularly family counselors and inpatient hospitalization) is limited due to a lack of providers, leading to long wait times. Primary care providers are in short supply as well, with residents using emergency departments for primary care.

Community informants cited numerous, additional reasons why health care services are difficult to access, including poverty (which makes affording health care services difficult because resources are needed for other basic needs such as food and rent), prevalence of uninsured people, transportation problems, poor health literacy, and a lack of knowledge regarding available resources.

Rates of health insurance coverage are lower in Livingston and Linn counties compared to state and national averages. Community informants identified health insurance as a significant barrier, with few options for the uninsured and providers not accepting certain insurance plans. Recent spikes in unemployment due to the COVID-19 pandemic are contributing to the number of community members who are uninsured.

Other community health needs assessments also have identified improving access to affordable health care services and health insurance as priorities. They state that a lack of providers is a significant issue due to difficulties in physician recruitment and retainment.

COVID-19 Pandemic and Effects

The Centers for Disease Control and Prevention ("CDC") provides information, data, and guidance regarding the COVID-19 pandemic. The pandemic represents a public health emergency for the state, nation, and the world. In addition to contributing to severe illness and death, the pandemic also has exposed the significance of problems associated with long-standing community health issues, including racial health inequities, chronic disease, access to health services, mental health, and related issues.

Part of the CDC's work has included identifying certain populations that are most at risk for severe illness and death due to the pandemic. Based on that work, many at-risk people live in the community served by HMC. Populations most at risk include older adults, people with certain underlying conditions, pregnant women, and members of racial and ethnic minority groups. According to the CDC, "long-standing systemic health and social inequities have put some members of racial and ethnic minority groups at increased risk of getting COVID-19 or experiencing severe illness, regardless of age." Men also are more likely to die from COVID-19 than women.

Community informants indicated that COVID-19 was a significant issue in the HMC community, with recent spikes in cases making national news. A variety of health and mental health problems have worsened due to the pandemic. Mental health status has deteriorated due to increased social isolation, particularly for elderly people. Vaccine hesitancy among residents is common. People and providers have been experiencing stress due to interruptions in employment and in daily routines. Elective procedures and routine health care services have been delayed, making it difficult for people to manage chronic conditions and to receive needed screening services. An expansion of telehealth services has helped improve access to care. However, a "digital divide" has been formed as low-income, elderly, and rural populations struggle to access technology.

The pandemic also is having serious economic impacts. In 2020, the number of people unemployed in the HMC community and in the U.S. increased substantially. The rise in unemployment has reduced access to employer-based health insurance and has increased housing and food insecurity. Social services agencies are experiencing unprecedented demand.

Mental Health and Access to Mental Health Services

Livingston and Linn counties compare unfavorably to Missouri and U.S. averages for the prevalence of mentally unhealthy days (adults). Linn County's suicide mortality rate also is above the statewide average.

Poor mental health status (including depression, anxiety, and severe mental illness) were identified by most community informants as a significant concern. Contributing factors include an under-supply of providers and facilities, stress, hopelessness, a lack of social connectedness, isolation due to the COVID-19 pandemic, and mental health stigma.

In community meetings, mental health and access to mental health services were the most frequently identified significant health problems. Both counties have a problematic undersupply of mental health services, comparing poorly to state and national averages and receiving mental health professional Health Professional Shortage Area (HPSA) designations. This is contributing to long wait times for those seeking services. While mental health stigma is less prevalent today than in prior years, it remains a barrier for many seeking needed services.

Obesity, Physical Inactivity, and Chronic Conditions

Obesity and its contributing factors – including physical inactivity, access to healthy food, and a lack of nutrition knowledge – are significant concerns.

Livingston County ranks 114th out of 115 Missouri counties for the prevalence of adult obesity, and both counties compare unfavorably to national averages for rates of physical inactivity and access to exercise opportunities. Mortality rates for chronic conditions that have been associated with obesity (including heart disease and hypertension) also are above average. Food deserts are located in Livingston County, and Linn County had a low food environment index score.

Community members also identified obesity and chronic conditions as worsening issues. They cited a lack of culture around healthy lifestyles and preventive health as contributing. Accessing healthy foods was considered difficult due to cost and availability, with cheap and unhealthy alternatives common.

A recently conducted community health assessment cited the need to increase accessibility to recreational areas. The most recently published Missouri Health Improvement Plan identified obesity as a priority, and a rural health assessment identified multiple chronic diseases as prevalent.

Poverty

People living in low-income households generally are less healthy than those living in more prosperous areas.

In 2015-2019, 16.2 percent of Livingston County and 15.4 percent of Linn County residents lived in poverty – above Missouri and U.S. averages. Poverty rates for Black, Asian, and Hispanic (or Latino) residents have been substantially higher than rates for White residents in both counties. Livingston and Linn counties compare unfavorably to Missouri and national averages for children in poverty.

Several census tracts in Livingston and Linn counties have been identified as "low income" and as having an unfavorable Social Vulnerability Index, including for socioeconomic vulnerability (published by the Centers for Disease Control). Most of these tracts are around Chillicothe in Livingston County and Brookfield in Linn County. People in several census tracts also are affected by a lack of access to affordable housing and transportation.

Community informants identified poverty among the most significant needs in the HMC community. Interviewees stressed that poverty can be generational, and that there are limited job opportunities that would allow one to become financially stable. Poverty was especially thought to impact access to health services. The low-income populations of Livingston and Linn counties were designated as primary care and dental care HPSAs.

Other state and local community health assessments have confirmed that poverty is a significant need in the region.

Smoking and Tobacco Use

Above average tobacco use and smoking rates have been persistent problems in the county. Compared to national averages, Livingston and Linn counties both had higher adult smoking rates.

Mortality rates related to smoking were higher compared to Missouri rates, including for chronic lower respiratory diseases in Linn County and lung cancer in Livingston and Linn counties. The percent of mothers who smoked during pregnancy was nearly double the Missouri average in both counties.

Smoking and tobacco use were identified by community informants among the most significant needs, despite many years of education around the issue. Decreasing smoking was a priority in the recent Missouri health improvement plan, and the national rural health assessment identified chronic diseases related to smoking as priorities, including cancer and chronic lower respiratory disease.

Substance Use Disorder and Overdoses

Substance use disorders are significant, growing in severity in the HMC community. Disorders associated with opioids, methamphetamine, alcohol, and other substances are problematic.

Between 2013 and 2018, drug poisoning deaths in Livingston County increased 22 percent, and in Linn County increased 29 percent. The rates in Livingston County have been consistently above national averages.

Alcohol abuse was also identified as a significant issue, increasing during the COVID-19 pandemic. Compared to peer counties, Livingston and Linn counties compared unfavorably for excessive drinking percentages.

Community informants confirmed that substance use disorders and alcohol abuse are significant needs. These issues have been worsened by growing mental health challenges and by the COVID-19 pandemic, as self-medication is common. Access to substance use disorder treatment services is limited due to an undersupply of providers, long wait times, high costs, and long travel times to services available outside of the community.

The Missouri Health Improvement plan identified misuse of alcohol and drugs as a significant issue.

Transportation

The lack of transportation was identified as a significant need. Transportation is needed to access health services, especially specialty care, and a variety of other basic needs (such as food and employment).

Census tracts throughout Livingston County and near Brookfield in Linn County are ranked in the bottom quartile nationally for transportation vulnerability. Both counties compare unfavorably to national rates for the percentage of population that drives alone to work.

All interviewees identified transportation as a significant issue, and a barrier to accessing health care services. Community informants cited a lack of public options and the need to travel far for health services as problematic. Elderly residents and low-income populations are particularly affected.

An assessment of rural health found transportation to be a significant barrier to accessing health services across the United States.

DATA AND ANALYSIS

Community Definition

This section identifies the community that was assessed by HMC. The community was defined by considering the geographic origins of the hospital's discharges and emergency room visits in calendar year 2020.

On that basis, HMC's community was defined as Livingston County, MO, and Linn County, MO. The two counties accounted for 60 percent of the hospital's 2020 inpatient volumes and 78 percent of its emergency room visits (**Exhibit 1**).

Exhibit 1: HMC Discharges and Emergency Room Visits, 2020

County	State	Inpatient Discharges	Percent Discharges	ER Visits	Percent ER Visits
Livingston	MO	696	48.3%	5,450	69.2%
Linn	MO	172	11.9%	673	8.5%
From Community		**868**	**60.2%**	**6,123**	**77.7%**
Other Areas		573	39.8%	1,753	22.3%
Hospital Total		**1,441**	**100.0%**	**7,876**	**100.0%**

Source: Analysis of Saint Luke's utilization data, 2021.

The total population of the HMC community in 2019 was approximately 27,200 persons (**Exhibit 2**).

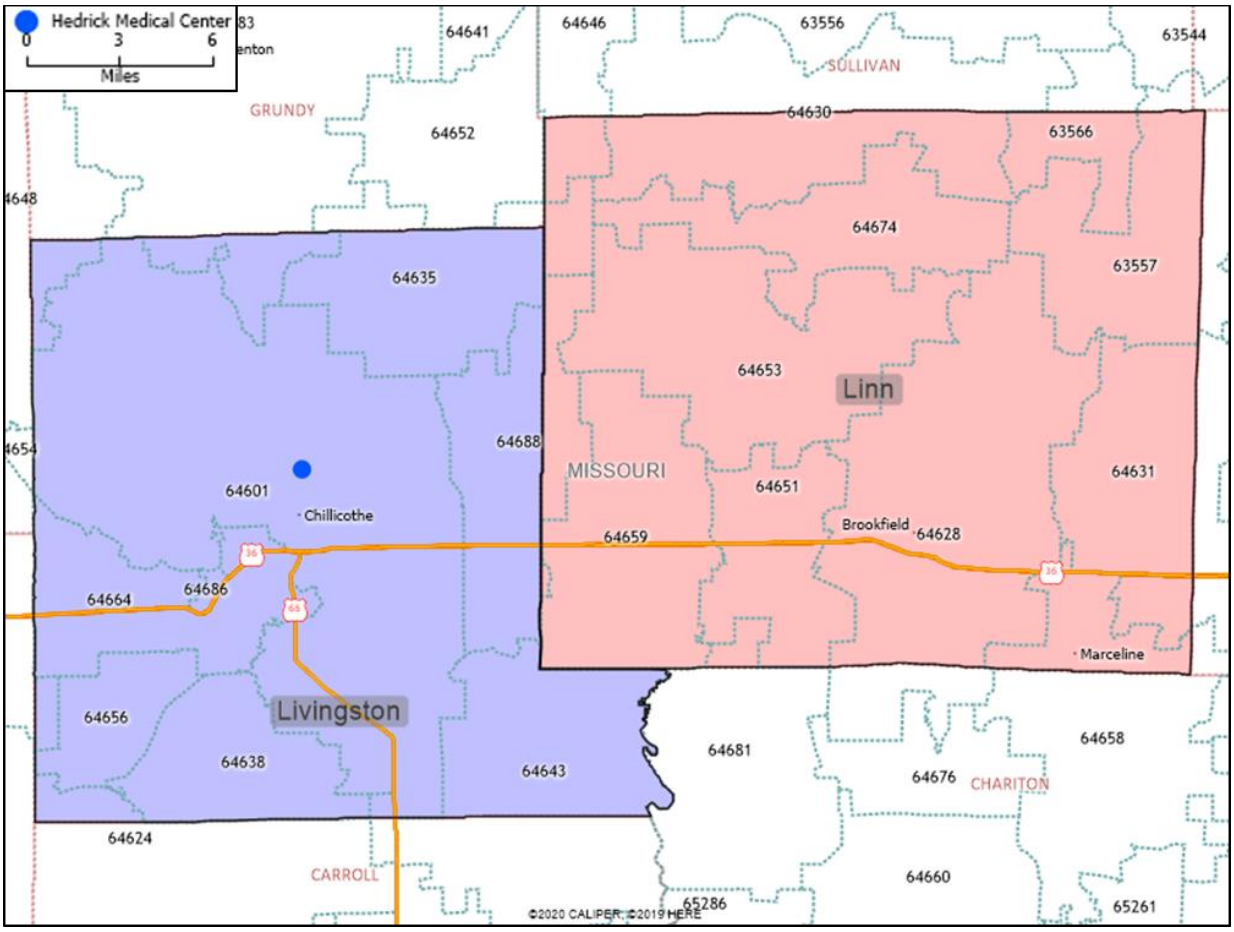
Exhibit 2: Community Population by County, 2019

County	State	Total Population 2019	Percent of Total Population 2019
Livingston	MO	15,126	55.5%
Linn	MO	12,113	44.5%
Community Total		**27,239**	**100.0%**

Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

The hospital is located in Chillicothe, MO (Livingston County, ZIP Code 64601). **Exhibit 3** portrays HMC's community and ZIP code boundaries.

Exhibit 3: Hedrick Medical Center Community



Source: Caliper Maptitude, 2020.

Secondary Data Summary

The following section summarizes principal observations from the secondary data analysis. *See* Appendix B for more detailed information.

Demographics

Demographic characteristics and trends directly influence community health needs. The total population in the HMC community is expected to decline 2.4 percent from 2019 to 2025 (approximately 650 persons). The population in Livingston County is expected to grow slightly during the time period (0.7 percent), while the population in Linn County is expected to decrease by approximately 750 people (6.3 percent). Among age cohorts, only the population aged 45 to 64 is expected to grow between 2019 and 2025.

The HMC community has substantial variation in demographic characteristics (e.g., age, race/ethnicity, income levels). Over 31 percent of residents in three Linn County ZIP codes (64631, 63566, and 63557) were age 65 or older in 2019, while this proportion was below 15 percent in Livingston County ZIP code 64638. The hospital's ZIP code of 64601 had a

proportion of Black residents of 3.1 percent. Only one other ZIP code in the community (Livingston ZIP code 64635) had a proportion above 1.0 percent. Livingston County ZIP Codes 64656 (8.3 percent) and 64686 (7.3 percent) had the highest proportion of Hispanic (or Latino) residents.

A lower percentage of Livingston and Linn county adults had a high school diploma compared to the Missouri average. Proportionately less people were disabled in both counties compared to Missouri, and proportionately fewer people in both counties and in Missouri are linguistically isolated compared to the United States.

Socioeconomic Indicators

People living in low-income households generally are less healthy than those living in more prosperous areas. In 2015-2019, approximately 16.2 percent of Livingston County and 15.4 percent of Linn County residents lived in poverty – above Missouri and U.S. averages (13.7 percent and 13.4 percent respectively).

Poverty rates for Black, Asian, and Hispanic (or Latino) residents have been substantially higher than rates for White residents in both counties. Poverty rates for all racial and ethnic cohorts were above the Missouri and United States averages in Livingston and Linn counties.

Low-income census tracts can be found in both counties, particularly in Chillicothe and in southern Linn County near Brookfield. These census tracts also are categorized as "higher need" by the Dignity Health Community Need Index™ and are in the bottom half and quartile nationally for "social vulnerability" according to the Centers for Disease Control Social Vulnerability Index.

Between 2016 and early 2020, unemployment rates in Livingston and Linn counties, Missouri, and the United States fell significantly. However, due to the COVID-19 pandemic, unemployment rose substantially in 2020 in all areas. The rise in unemployment is likely to affect numerous health-related factors, such as access to employer-based health insurance, housing and food insecurity, and access to health services. Linn County unemployment rates were at or above the Missouri rates for all years.

Overall crime rates in Livingston and Linn counties have been below Missouri averages.

The percentage of people with health insurance coverage is lower in Livingston and Linn counties than in Missouri and the U.S.

Missouri recently voted to expand Medicaid, and after legal challenges is currently working through administrative hurdles to begin enrolling the expanded population. In 2018, the average uninsured rate in states that expanded Medicaid was 7.7 percent; the average rate in states that did not expand Medicaid was 14.6 percent.

Other Local Health Status and Access Indicators

In the 2020 *County Health Rankings* and for overall health outcomes, Livingston County ranked 43rd and Linn County ranked 94th (out of 115 counties and cities in Missouri).

Livingston County ranked in the bottom 50th percentile among Missouri counties and cities for 14 of the 41 indicators assessed. Of those, two were in the bottom quartile, including adult obesity and children in single-parent households.

Linn County ranked in the bottom 50th percentile for 21 of the 41 indicators assessed. Of those, six were in the bottom quartile, including health outcomes, mental health providers, social and economic factors, unemployment, and children in single-parent households.

Community Health Status Indicators ("CHSI") compares indicators for each county with those for peer counties across the United States. Each county is compared to 30 to 35 of its peers, which are selected based on socioeconomic characteristics such as population size, population density, percent elderly, per-capita income, and poverty rates.

In CHSI, Livingston and Linn counties benchmark poorly for several indicators, including:

- physically unhealthy days,
- low birthweight births,
- excessive drinking,
- uninsured,
- supply of mental health providers,
- mammography screening,
- post-secondary education,
- children in single-parent households,
- social associations,
- violent crime, and
- driving alone with a long commute.

Other secondary data from the Missouri Department of Health and Senior Services, the Centers for Disease Control and Prevention, America's Health Rankings, the Health Resources and Services Administration, and the United States Department of Agriculture have been assessed. Based on an assessment of available secondary data, the indicators presented in **Exhibit 4** appear to be most significant in the HMC community.

An indicator is considered *significant* if it was found to vary materially from a benchmark statistic (e.g., an average value for Missouri, for peer counties, or for the United States). For example, 42.3 percent of Livingston County's adults are obese; the average for the United States is 29.0 percent. The last column of the exhibit identifies where more information regarding the data sources can be found in this report.

Exhibit 4: Significant Indicators

Indicator	Area	Value	Benchmark		Exhibit
			Value	Area	
Poverty rate, 2015-2019	Livingston County	16.2%	13.4%	United States	13
	Linn County	15.4%	13.4%	United States	13
Poverty rate,Black, 2015-2019	Livingston County	28.2%	15.1%	Livingston County, White	14
	Linn County	35.1%	14.8%	Linn County, White	14
Poverty rate, Hispanic (or Latino), 2015-2019	Livingston County	56.7%	15.1%	Livingston County, White	14
Percent children in poverty	Linn County	25.7%	18.3%	Missouri	28
Community Need Index score	Livingston County	3.7	3.0	United States	21
Percent uninsured	Livingston County	11.1%	8.8%	United States	17
	Linn County	10.6%	8.8%	United States	17
Percent adults with some post-secondary education	Livingston County	50.1%	66.7%	Missouri	28
	Linn County	52.5%	66.7%	Missouri	28
Years of potential life lost before age 75 per 100,000	Livingston County	11,047	6,900	United States	28
Leukemia mortality per 100,000	Livingston County	12.7	6.7	Missouri	32
	Linn County	12.1	6.7	Missouri	32
Average number of mentally unhealthy days	Livingston County	4.5	4.0	United States	28
	Linn County	4.6	4.0	United States	28
Obesity (Percent adults BMI >=30)	Livingston County	42.3%	29.0%	United States	28
	Linn County	33.3%	29.0%	United States	28
Percent adults physically inactive	Livingston County	27.6%	23.0%	United States	28
	Linn County	28.7%	23.0%	United States	28
Ratio of population to primary care physicians	Linn County	2,439:1	1,330:1	United States	28
Ratio of population to dentists	Linn County	4,012:1	1,450:1	United States	28
Ratio of population to mental health providers	Linn County	4,012:1	400:1	United States	28
Drug poisoning mortality rate, 2018	Livingston County	21.2	16.5	Livingston County, 2013	33
	Linn County	19.6	13.8	Linn County, 2013	33
Smoking percentage among adults	Linn County	20.4%	17.0%	United States	28
Chronic lower respiratory disease mortality per 100,000	Linn County	71.1	49.1	Missouri	31
Percent mothers who smoked while pregnant	Livingston County	22.6%	12.8%	Missouri	35
	Linn County	23.0%	12.8%	Missouri	35
Infant deaths per 1,000 births, Black	Missouri	12.0	5.3	Missouri, White	26
Teen birth rate per 1,000 female pop. ages 15-19	Livingston County	34.1	23.0	United States	28
	Linn County	33.2	23.0	United States	28
COVID-19 mortality per 100,000 population	Livingston County	382.9	169.8	Missouri	30

Source: Verité Analysis.

When Missouri health data are arrayed by race and ethnicity, significant differences are observed, in particular for:

- Infant mortality,
- Low birthweight births,
- Teen births,
- Cancer,
- Children in poverty,
- Diabetes,
- Obesity,
- High school graduation,

- Mental distress,
- Depression,
- Crowded housing, and
- Severe housing problems.

These differences indicate the presence of racial and ethnic health inequities and disparities.

Ambulatory Care Sensitive Conditions

Ambulatory Care Sensitive Conditions (ACSCs) include thirteen health conditions (also referred to as Prevention Quality Indicators (PQIs)) "for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[1] Among these conditions are: diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

Analyses conducted for this CHNA indicate that discharges for ACSCs are comparatively high in Livingston County.

Food Deserts

The U.S. Department of Agriculture's Economic Research Service identifies census tracts that are considered "food deserts" because they include lower-income persons without supermarkets or large grocery stores nearby. Federally-designated food deserts are located in Livingston County, in Chillicothe.

Medically Underserved Areas and Populations

Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration based on an "Index of Medical Underservice." Areas throughout Linn County have been designated as medically underserved.

Health Professional Shortage Areas

A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is present. The low-income populations of Livingston and Linn counties have been designated as primary care and dental health care HPSAs. The entire populations of Livingston and Linn counties have been designated as mental health care HPSAs.

CDC COVID-19 Prevalence and Mortality Findings

[1] Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

The Centers for Disease Control and Prevention (CDC) provides information, data, and guidance regarding the COVID-19 pandemic. The pandemic represents a public health emergency for the HMC community, Missouri, and the United States. The pandemic also has exposed the significance of problems associated with long-standing community health issues, including racial health inequities, chronic disease, access to health services, mental health, and related issues.

Part of the CDC's work has included identifying certain populations that are most at risk for severe illness and death due to the pandemic. Based on that work, many at-risk people live in the community served by HMC. Populations most at risk include:

- Older adults;
- People with certain underlying medical conditions, including cancer, chronic kidney disease, COPD, obesity, serious heart conditions, diabetes, sickle cell disease, asthma, hypertension, immunocompromised state, and liver disease;
- People who are obese and who smoke;
- Pregnant women; and,
- Black, Hispanic (or Latino), and American Indian or Alaska Native persons.

According to the CDC, "long-standing systemic health and social inequities have put some members of racial and ethnic minority groups at increased risk of getting COVID-19 or experiencing severe illness, regardless of age."

Findings of Other CHNAs

The State of Missouri, local health departments, and national organizations that specialize in rural health recently released community needs assessments or updates to previous health improvement plans. This CHNA has integrated the findings of that work.

The issues most frequently identified as *significant* in these other assessments are (presented in alphabetical order):

- Access to health care services and specialty care;
- Affordability of health services;
- Health insurance coverage;
- Maternal and infant health, and prenatal care;
- Obesity, physical inactivity, and chronic conditions;
- Poverty and living wages;
- Public health infrastructure;
- Smoking and tobacco use;
- Substance use disorder, including alcohol; and
- Transportation.

Primary Data Summary

Primary data were gathered through key stakeholder interviews and online meetings. Two community meetings relevant to HMC were conducted, including one focused on community stakeholders and another meeting with HMC staff members. Interviews were conducted by phone or online video conferences, and meetings were conducted by online video conferences.

See Appendix C for information regarding those who participated in the community input process.

Key Stakeholder Interviews

Six (6) interviews were conducted to learn about community health issues in the HMC community. Participants included individuals representing public health departments, social service organizations, community health centers, and similar organizations.

Questions focused first on identifying and discussing health issues in the community before the COVID-19 pandemic began. Interviews then focused on the pandemic's impacts and on what has been learned about the community's health given those impacts. Stakeholders also were asked to describe the types of initiatives, programs, and investments that should be implemented to address the community's health issues and to be better prepared for future risks.

Stakeholders most frequently identified the following issues as significant before the COVID-19 pandemic began.

- **Transportation** was identified by all interviewees as a significant concern, limiting the ability of residents to access basic needs and medical services (particularly specialty providers in larger metro areas) due to limited public options. Elderly and low-income populations are most affected by transportation issues.

- **Mental Health** is a significant issue, with problems such as depression, anxiety, and severe mental health conditions all increasing. **Access to mental health services** is also limited due to a lack of providers (particularly for family counseling and inpatient care for severe mental health issues) leading to long wait times. Insurance often limits access to mental health care.

- There is a **lack of health care providers** throughout the region, limiting access for many residents. This issue is particularly pronounced for **specialty providers**. Due to the low supply of physicians, residents must travel far for care. There are few low-cost options, and many utilize emergency departments for primary care. Physician recruitment and retention is difficult, made worse by an aging and declining population.

- The **needs of elderly populations** are significant as the population ages. Elderly populations are particularly vulnerable due to transportation issues and difficulties aging in place, made worse if the resident is on a fixed or low income.

- **Poverty** is a significant concern, often systemic and generational throughout the area. Many job opportunities offer low wages or limited opportunities for career advancement. **Low-income populations** have limited access to a variety of services, including primary care, mental health care, specialty care, and basic need services.

- **Obesity** is worsening, and associated with **chronic conditions** including diabetes and heart disease which are widespread. There is a **lack of preventive health** and little culture around healthy living. More education is needed around obesity issues, including for youth and elderly.

- Associated with obesity, it is difficult for residents to a**ccess healthy foods** due to the higher cost of healthy food and widespread availability of cheaper, unhealthy options. Food pantries can be limited, and knowledge of **nutrition** is limited for many residents.

- **Health insurance** limits access to care for residents, with few options for uninsured populations. Lapses in Medicaid coverage make access difficult, and a number of providers do not accept certain insurance plans (such as Missouri *Ambetter* plans).

- Issues with **substance use disorder** persist, with the use of methamphetamines and opioids both cited as significant concerns. **Alcohol abuse** is also commonly seen. Many residents turn to substance use for self-medication of mental health concerns.

Interviewees were also asked to discuss the impacts of the COVID-19 pandemic, both on the community and also on their own organizations. From this discussion, the following impacts were discussed most often:

- **Isolation** was widespread and impacted the **mental health** of many residents, particularly among **elderly** and children.

- Many residents **delayed medical care** and preventive health services due to not wanting to be exposed to the virus in a medical setting. This delay led to a worsening in severity of chronic conditions and unnoticed health issues, and resulted in an increased need for emergency services.

- Many providers – both in health care and social services – are feeling **burnout** due to increasing demand of services and stress brought on due to the pandemic.

- Providers and decision makers found it difficult navigating changing health guidelines and had **difficulty with regulation compliance**. Some residents also did not want to adhere to changing guidelines. **Vaccination hesitancy** was also common.

- **Telehealth represented one of the successes** of the pandemic, with many residents having increased access to health services due to an increasingly online model. However, the pandemic also highlighted the **digital divide** as some residents, particularly elderly and low-income, had difficulty accessing technology.

Community and Internal Hospital Meetings

From June 17 through July 1, 2021, eight online meetings were conducted across the Saint Luke's Critical Access region to obtain community input. Four meetings were comprised of external community stakeholders in community counties[2], and four meetings were comprised of staff from HMC and other Saint Luke's Health System critical access hospital facilities.

Sixteen (16) stakeholders participated in the two community meetings relevant to HMC. These individuals represented organizations such as local health departments, non-profit organizations, local businesses, health care providers, and local policymakers.

Each meeting began with a presentation that discussed the goals and status of the CHNA process and the purpose of the community meetings. Then, secondary data were presented, along with a summary of the most unfavorable community health indicators.

Meeting participants then were asked to discuss whether the identified, unfavorable indicators accurately identified the most significant community health issues and were encouraged to add issues that they believed were significant.

After discussing the needs identified through secondary data and adding others to the list, participants in each meeting were asked through an online survey process to identify "three to five" they consider to be most significant. From this process, participants identified the following needs as most significant for the HMC Community:

- Mental health conditions, suicide, and access to mental health services
- Substance use disorder and access to substance use disorder treatment
- COVID-19 pandemic and its effects
- Poverty and its impacts on accessing resources
- Obesity
- Smoking and tobacco use

[2] These counties include Allen County, KS; Anderson County, KS; Grundy County, MO; Linn County, MO; Livingston County, MO; and Mercer County, MO.

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

This section identifies other facilities, clinics, and resources available in the HMC community that are available to address community health needs.

Hospitals

Exhibit 5 presents information on hospital facilities located in Livingston and Linn counties.

Exhibit 5: Hospitals Located in Community, 2021

Organization	Address	City	County	ZIP
Hedrick Medical Center	2799 North Washington Street	Chillicothe	Livingston	64601
Pershing Memorial Hospital	130 East Lockling	Brookfield	Linn	64628

Source: Missouri Department of Health and Senior Services, 2021.

Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs) are established to promote access to ambulatory care in areas designated as "medically underserved." These clinics provide primary care, mental health, and dental services for lower-income members of the community. FQHCs receive enhanced reimbursement for Medicaid and Medicare services and most also receive federal grant funds under Section 330 of the Public Health Service Act. There currently are two FQHC sites operating in the community (**Exhibit 6**).

Exhibit 6: Federally Qualified Health Centers Located in Community, 2021

Name	Address	City	County	ZIP Code
Family Health Center @ Marceline	1600 N Missouri Ave	Marceline	Linn	64658
McCoy & Samples Dental Clinic	850 Fairway Dr	Chillicothe	Livingston	64601

Source: HRSA, 2021.

According to 2018 data published by HRSA, FQHCs in the HMC community served 34 percent of uninsured persons and 17 percent of Medicaid recipients. Nationally, FQHCs served 22 percent of uninsured patients and 19 percent of the nation's Medicaid recipients.[3]

Other Community Resources

Many social services and resources are available throughout Missouri to assist residents. The United Way of the Greater St. Louis maintains the Missouri 2-1-1 database of available resources throughout the state. The Missouri 2-1-1 is available 24-hours a day, seven days a week, and has resources in the following categories:

- COVID-19 Resources

[3] See: http://www.nachc.org/research-and-data/research-fact-sheets-and-infographics/chartbook-2020-final/ and https://www.udsmapper.org/.

- Food
- Housing and utilities
- Clothing and household items
- Transportation
- Legal and public safety
- Education
- Health, wellness, and dental
- Employment
- Income support
- Individual and family support
- Mental health and addictions
- Environment, arts, and recreation
- Disaster services
- Consumer, information, and municipal services

Additional information about these resources and participating providers can be found at: https://mo211.myresourcedirectory.com/.

In addition to United Way 2-1-1, Saint Luke's Health System maintains a Community Resource Hub to connect community members to reduced-cost and free services in their neighborhoods. The Saint Luke's Community Resource Hub contains resources for a variety of categories, including:

- Food
- Housing
- Goods
- Transit
- Health
- Money
- Care
- Education
- Work
- Legal

Additional information about these resources and participating providers can be found at: https://saintlukesresources.org/.

APPENDIX A – OBJECTIVES AND METHODOLOGY

Regulatory Requirements

Federal law requires that tax-exempt hospital facilities conduct a CHNA every three years and adopt an Implementation Strategy that addresses significant community health needs.[4] In conducting a CHNA, each tax-exempt hospital facility must:

- Define the community it serves;
- Assess the health needs of that community;
- Solicit and take into account input from persons who represent the broad interests of that community, including those with special knowledge of or expertise in public health;
- Document the CHNA in a written report that is adopted for the hospital facility by an authorized body of the facility; and,
- Make the CHNA report widely available to the public.

The CHNA report must include certain information including, but not limited to:

- A description of the community and how it was defined,
- A description of the methodology used to determine the health needs of the community, and
- A prioritized list of the community's health needs.

Methodology

CHNAs seek to identify significant health needs for particular geographic areas and populations by focusing on the following questions:

- ***Who*** in the community is most vulnerable in terms of health status or access to care?
- ***What*** are the unique health status and/or access needs for these populations?
- ***Where*** do these people live in the community?
- ***Why*** are these problems present?

The focus on ***who*** is most vulnerable and ***where*** they live is important to identifying groups experiencing health inequities and disparities. Understanding ***why*** these issues are present is challenging but is important to designing effective community health improvement initiatives. The question of ***how*** each hospital can address significant community health needs is the subject of the separate Implementation Strategy.

Federal regulations allow hospital facilities to define the community they serve based on "all of the relevant facts and circumstances," including the "geographic location" served by the hospital facility, "target populations served" (e.g., children, women, or the aged), and/or the hospital

[4] Internal Revenue Code, Section 501(r).

facility's principal functions (e.g., focus on a particular specialty area or targeted disease)."[5] Accordingly, the community definition considered the geographic origins of the hospital's patients and also the hospital's mission, target populations, principal functions, and strategies.

Data from multiple sources were gathered and assessed, including secondary data[6] published by others and primary data obtained through community input. Input from the community was received through key stakeholder interviews and online community meetings (including a meeting conducted with internal hospital staff). Stakeholders and community meeting participants represented the broad interests of the community and included individuals with special knowledge of or expertise in public health. *See* Appendix C. Considering a wide array of information is important when assessing community health needs to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively.

Certain community health needs were determined to be "significant" if they were identified as problematic in at least two of the following three data sources: (1) the most recently available secondary data regarding the community's health, (2) recent assessments developed by the state and local organizations, and (3) input from community stakeholders who participated in the community meeting and/or interview process.

In addition, data were gathered to evaluate the impact of various services and programs identified in Saint Luke's previous CHNA process. *See* Appendix E.

Collaborating Organizations

For this community health assessment, Hedrick Medical Center collaborated with the following Saint Luke's Critical Access hospitals: Allen County Regional Hospital (Iola, KS), Anderson County Hospital (Garnett, KS), and Wright Memorial Hospital (Trenton, MO). These facilities collaborated through gathering and assessing secondary data together, conducting community meetings and key stakeholder interviews, and relying on shared methodologies, report formats, and staff to manage the CHNA process.

Data Sources

Community health needs were identified by collecting and analyzing data from multiple sources. Statistics for numerous community health status, health care access, and related indicators were analyzed, including data provided by local, state, and federal government agencies, local community service organizations, and Saint Luke's Health System. Comparisons to benchmarks were made where possible. Findings from recent assessments of the community's health needs conducted by other organizations (e.g., local health departments) were reviewed as well.

[5] 501(r) Final Rule, 2014.
[6] "Secondary data" refers to data published by others, for example the U.S. Census and the Missouri Department of Health and Social Services. "Primary data" refers to data observed or collected from first-hand experience, for example by conducting interviews.

Input from persons representing the broad interests of the community was taken into account through key informant interviews (6 participants) and community meetings (16 participants). Stakeholders included: individuals with special knowledge of or expertise in public health; local public health departments; hospital staff and providers; representatives of social service organizations; and leaders, representatives, and members of medically underserved, low-income, and minority populations.

Saint Luke's Health System posts CHNA reports and Implementation Plans online at https://www.saintlukeskc.org/community-health-needs-assessments-implementation-plans.

Consultant Qualifications

Verité Healthcare Consulting, LLC (Verité) was founded in May 2006 and is located in Arlington, Virginia. The firm serves clients throughout the United States as a resource that helps hospitals conduct Community Health Needs Assessments and develop Implementation Strategies to address significant health needs. Verité has conducted more than 100 needs assessments for hospitals, health systems, and community partnerships nationally since 2012.

The firm also helps hospitals, hospital associations, and policy makers with community benefit reporting, program infrastructure, compliance, and community benefit-related policy and guidelines development. Verité is a recognized national thought leader in hospital community benefits, 501(r) compliance, and Community Health Needs Assessments.

APPENDIX B – SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the Hedrick Medical Center (HMC) community. The HMC community is defined as Livingston County, MO, and Linn County, MO.

Demographics

Exhibit 7: Change in Community Population by County, 2019 to 2025

County	State	Total Population 2019	Projected Population 2025	Percent Change 2019-2024
Livingston	MO	15,126	15,234	0.7%
Linn	MO	12,113	11,347	-6.3%
Community Total		**27,239**	**26,582**	**-2.4%**

Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

Description

Exhibit 7 portrays the estimated population by county in 2019 and projected to 2025.

Observations

- Between 2019 and 2025, the HMC community is expected to decline by 657 people (2.4 percent).
- Livingston County is expected to grow slightly (0.7 percent), while Linn County is expected to decline in population by 6.3 percent.

Exhibit 8: Change in Community Population by Age Cohort, 2019 to 2025

Age Cohort	Total Population 2019	Projected Population 2025	Percent Change 2019 - 2025
Age 0-19	6,705	6,283	-6.3%
Age 20-44	8,157	7,954	-2.5%
Age 45-64	6,885	7,034	2.2%
Age 65+	5,492	5,476	-0.3%
Community Total	**27,239**	**26,747**	**-1.8%**

Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.
Note: US Census projections by age cohort use a different methodology than the projections for the total population (Exhibit 7).

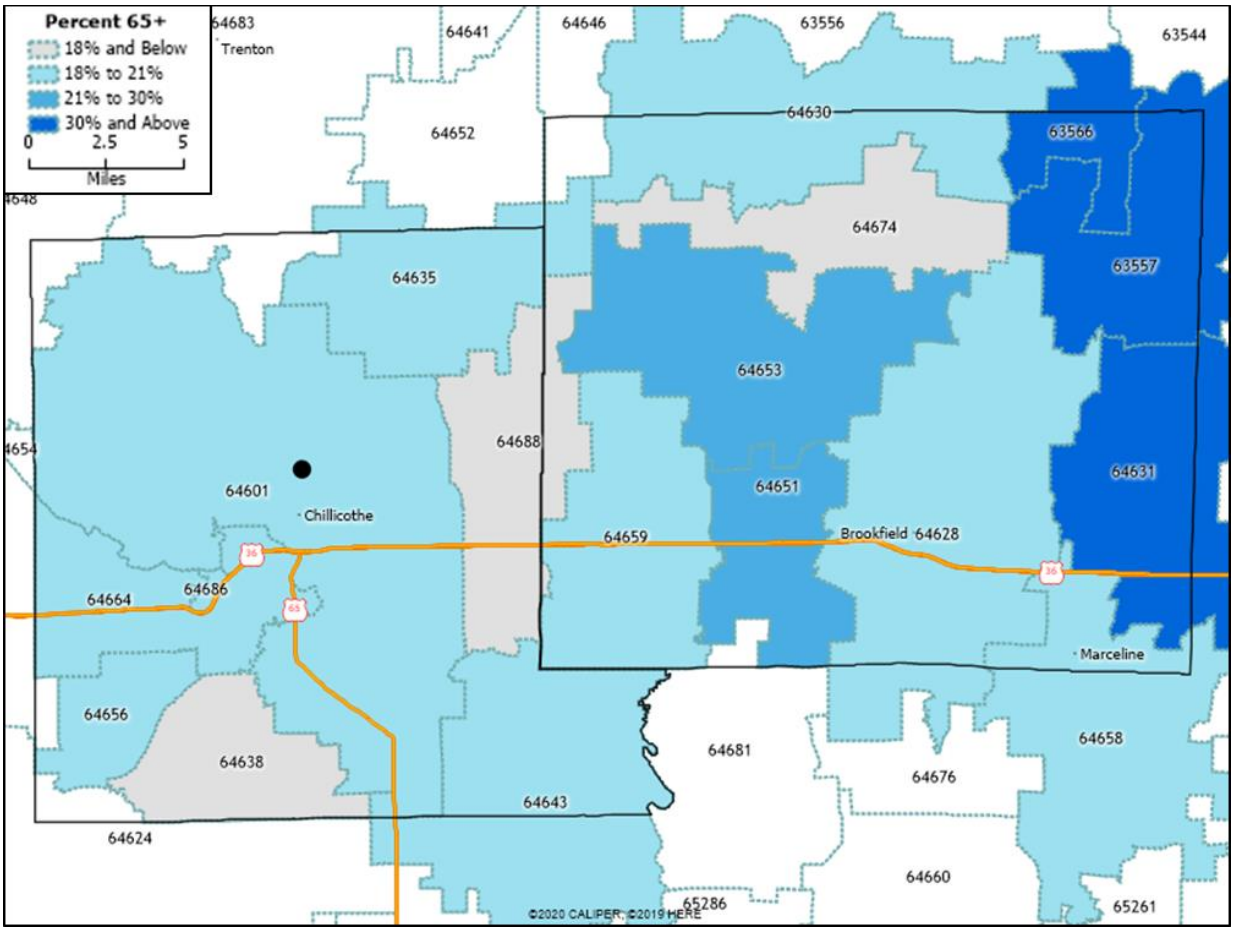
Description

Exhibit 8 shows the HMC community population for certain age cohorts in 2019, with projections to 2025.

Observations

- All age cohorts are expected to decrease between 2019 and 2025, except for those aged 45-64.

Exhibit 9: Percent of Population – Aged 65+, 2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020, and Caliper Maptitude.

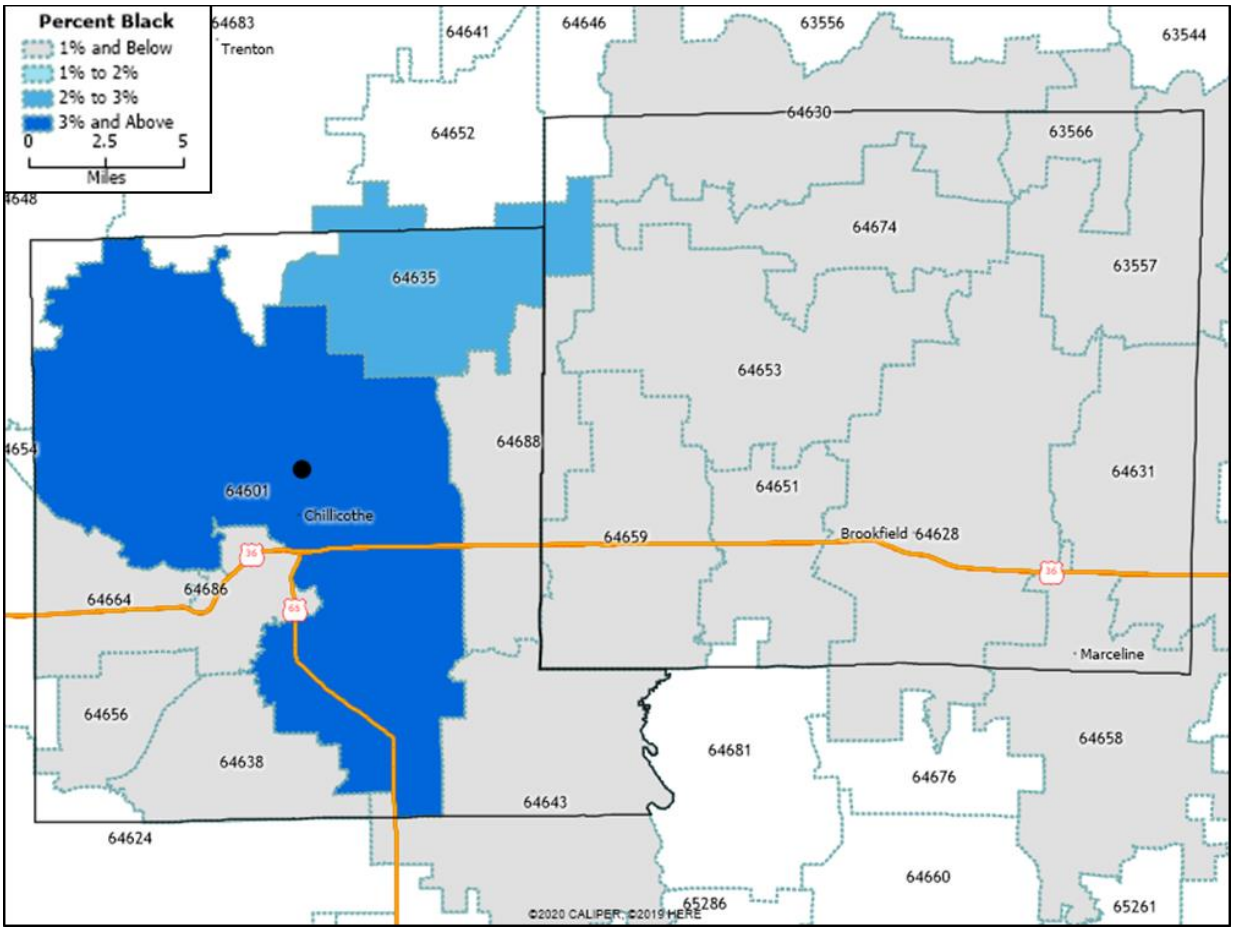
Description

Exhibit 9 portrays the percent of the population 65 years of age and older by ZIP code.

Observations

- Linn County ZIP codes 64631, 63566, and 63557 had the highest proportion, each above 31 percent.
- At 14.9 percent, Livingston County ZIP code 64638 had the lowest proportion.

Exhibit 10: Percent of Population – Black, 2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020, and Caliper Maptitude.

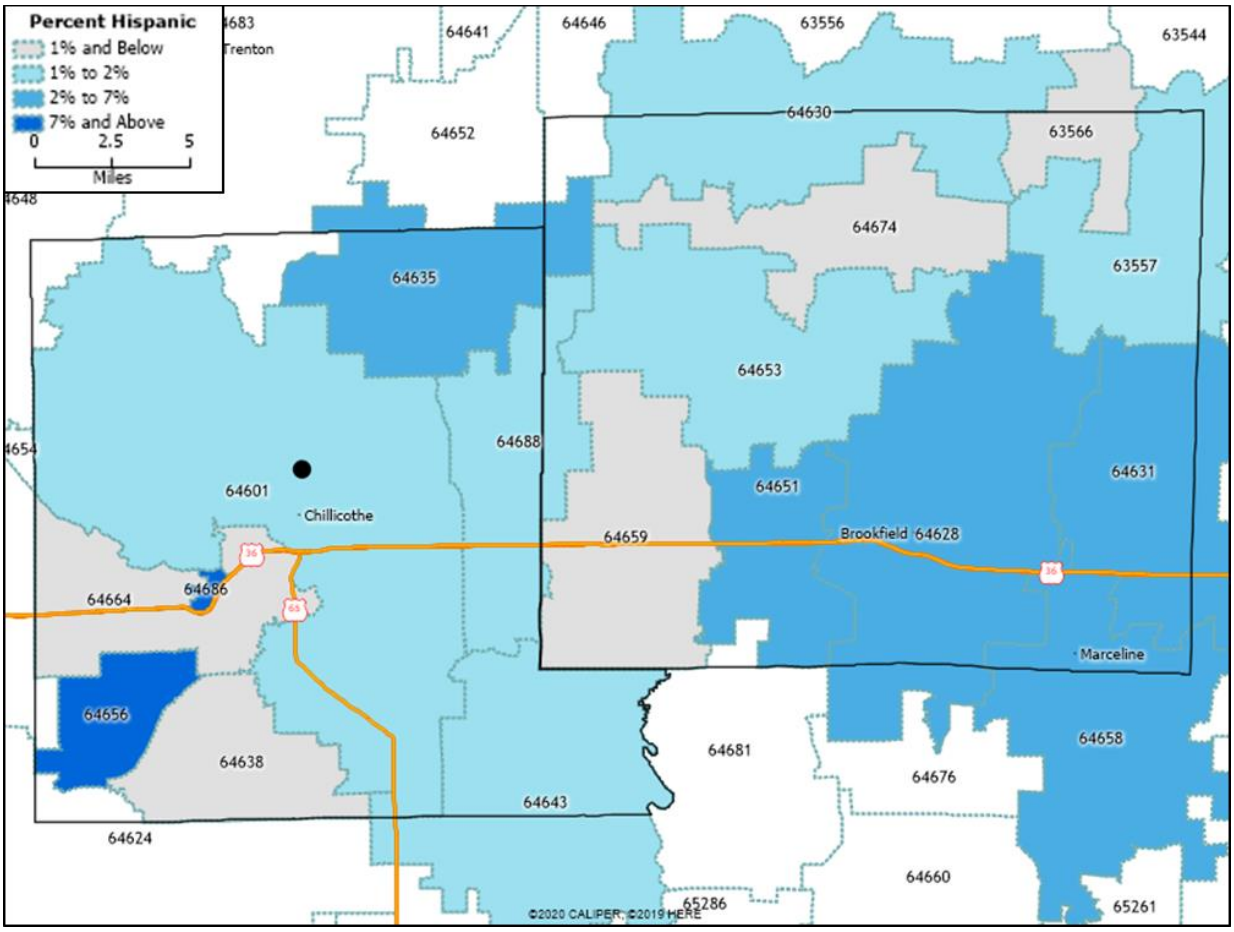
Description

Exhibit 10 portrays the percent of the population – Black by ZIP code.

Observations

- Livingston County ZIP code 64601, which includes Chillicothe, had the highest proportion of Black residents at 3.1 percent. ZIP code 64635 had a proportion of 2.4 percent.
- No other ZIP codes had a proportion above 1.0 percent.

Exhibit 11: Percent of Population – Hispanic (or Latino), 2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020, and Caliper Maptitude.

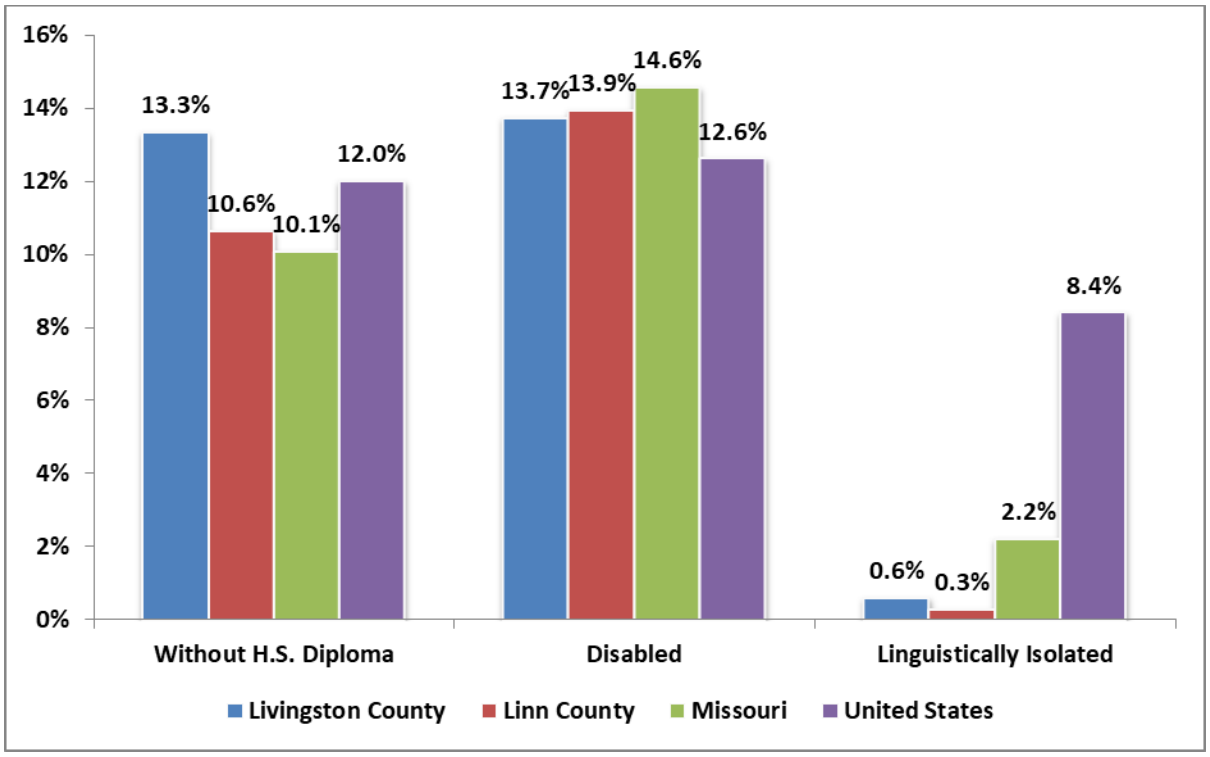
Description

Exhibit 11 portrays the percent of the population – Hispanic (or Latino) by ZIP code.

Observations

- Livingston County ZIP Codes 64656 (8.3 percent) and 64686 (7.3 percent) had the highest proportion of Hispanic (or Latino) residents.

Exhibit 12: Selected Socioeconomic Indicators, 2015-2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

Description

Exhibit 12 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated for community counties, Missouri, and the United States. Linguistic isolation is defined as residents who speak a language other than English and speak English less than "very well."

Observations

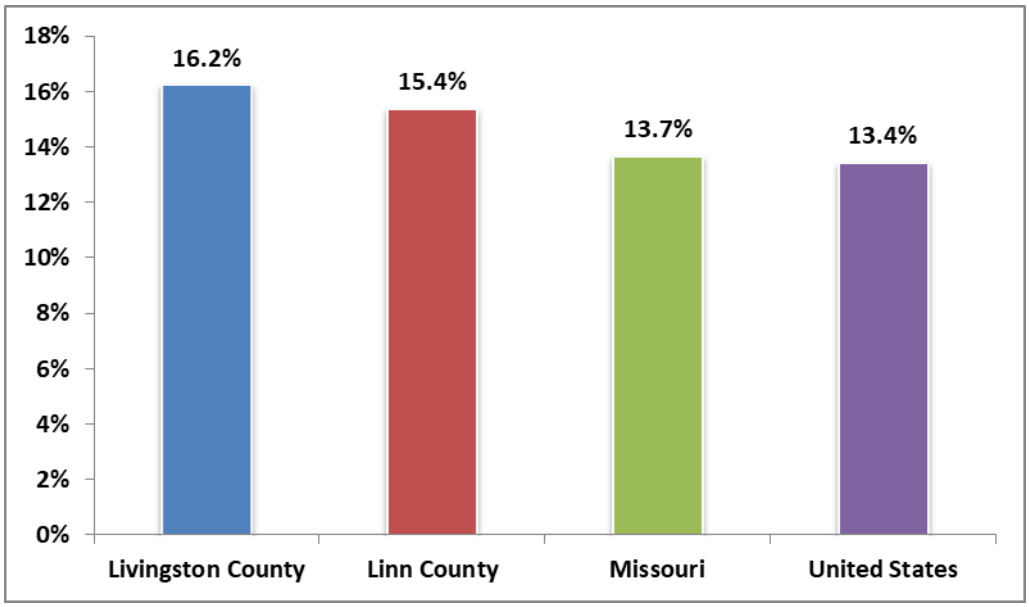
- In 2015-2019, a lower percentage of Livingston and Linn county adults had a high school diploma compared to the Missouri average.
- Proportionately less people were disabled in both counties compared to Missouri, but more compared to the United States.
- Compared to the United States, proportionately fewer people in both counties and in Missouri are linguistically isolated.

Socioeconomic indicators

This section includes indicators for poverty, unemployment, health insurance status, crime, housing affordability, and "social vulnerability." All have been associated with health status.

People in Poverty

Exhibit 13: Percent of People in Poverty, 2015-2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

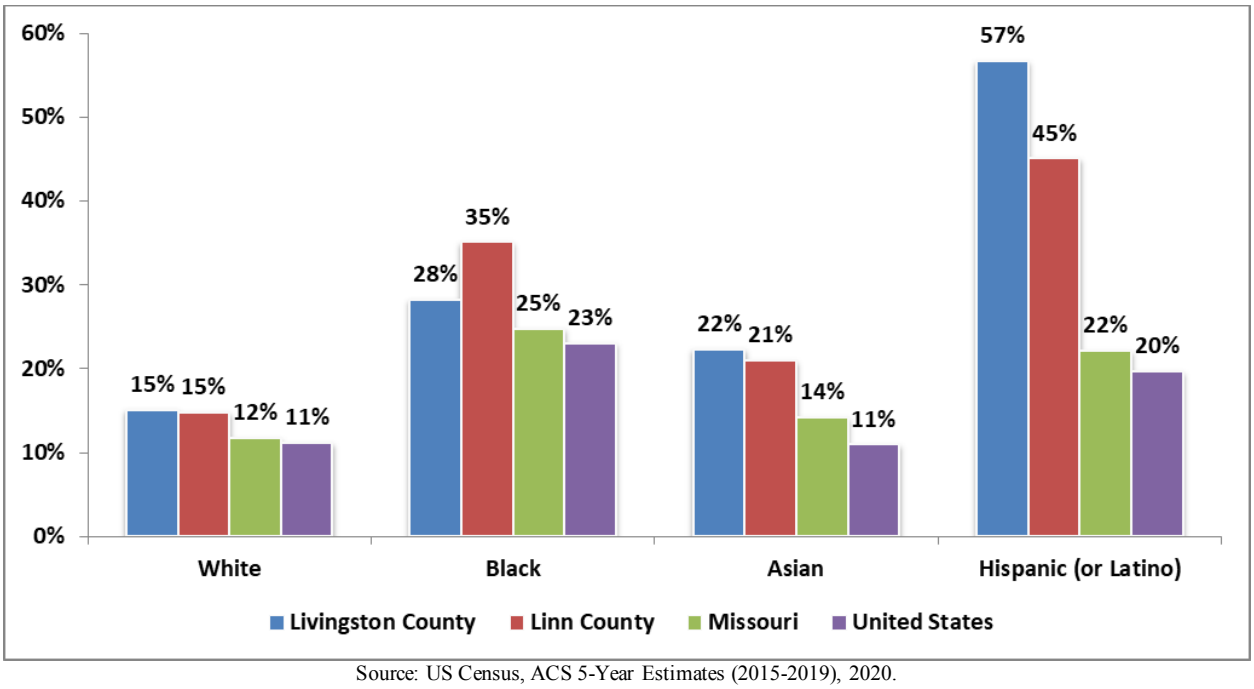
Description

Exhibit 13 portrays poverty rates in community counties, Missouri, and the United States.

Observations

- In 2015-2019, the overall poverty rates in Livingston and Linn counties were above the Missouri and United States averages.

Exhibit 14: Poverty Rates by Race and Ethnicity, 2015-2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

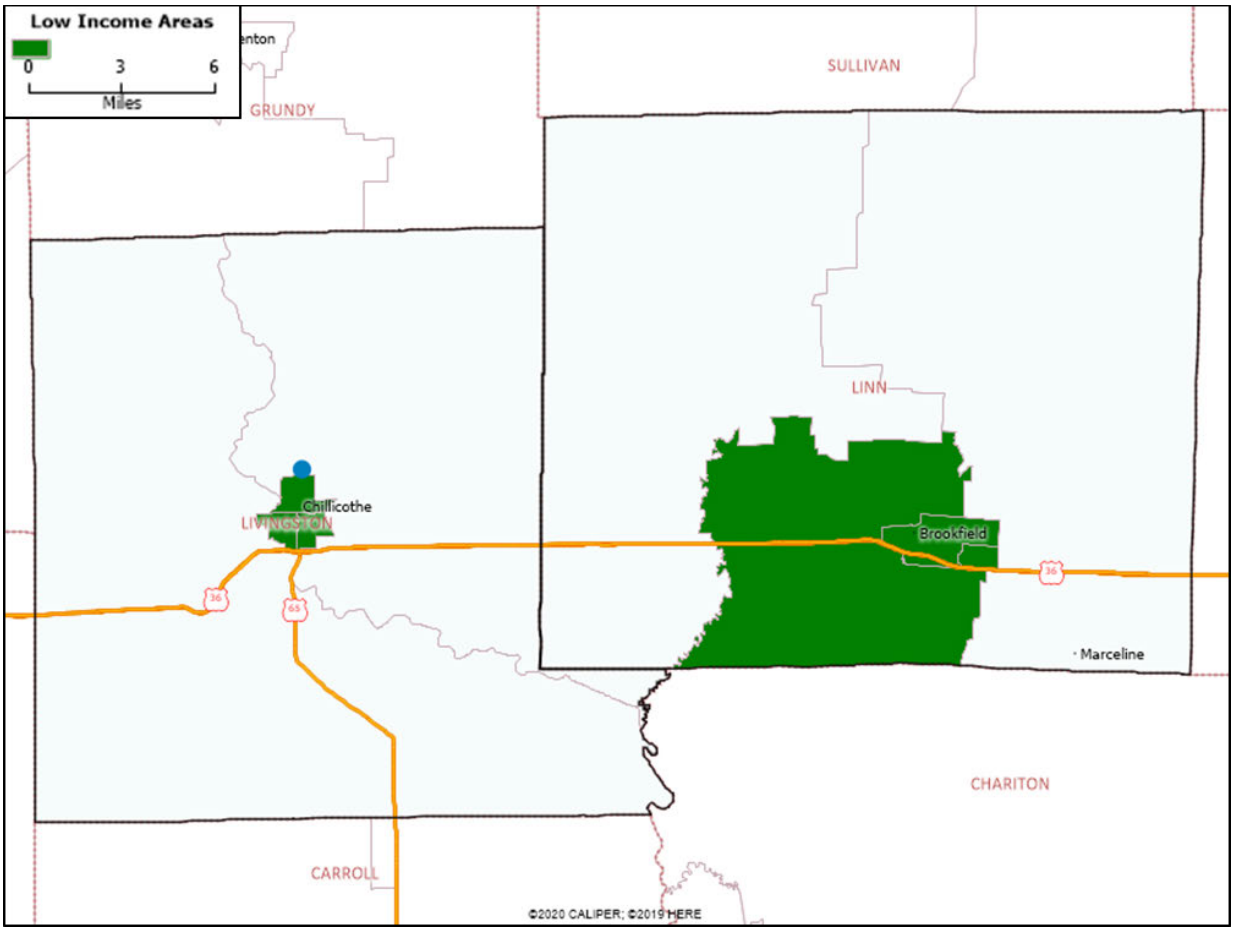
Description

Exhibit 14 portrays poverty rates by race and ethnicity.

Observations

- Poverty rates were higher for Black, Asian, and Hispanic (or Latino) populations than for White populations in Livingston and Linn counties.
- Poverty rates for all racial and ethnic cohorts were above the Missouri and United States averages in Livingston and Linn counties.

Exhibit 15: Low Income Census Tracts, 2019



Source: US Department of Agriculture Economic Research Service, ESRI, 2021.

Description

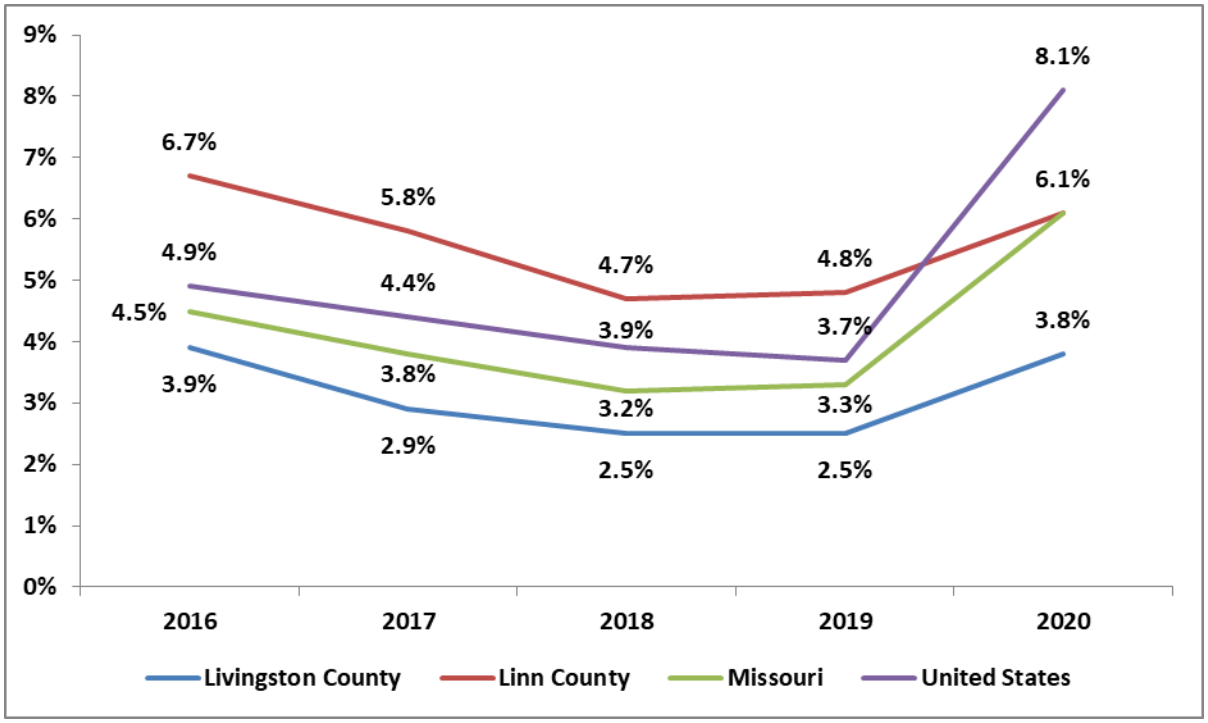
Exhibit 15 portrays the location of federally designated low-income census tracts.

Observations

- In 2019, low income census tracts were concentrated in areas around the hospital in the Chillicothe and in southern areas of Linn County.

Unemployment

Exhibit 16: Annual Unemployment Rates, 2016 to 2020



Source: Bureau of Labor Statistics, 2021.

Description

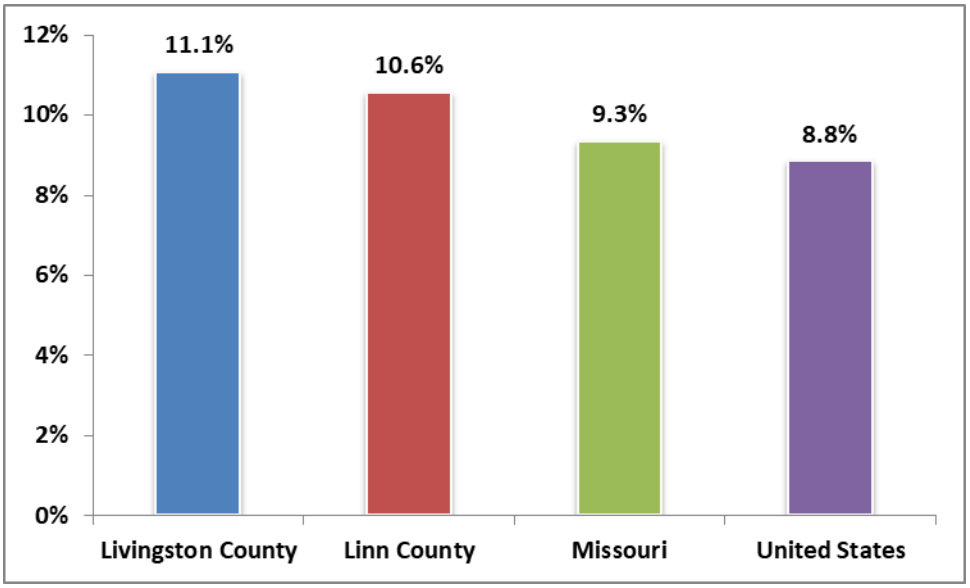
Exhibit 16 shows annual unemployment rates compared to Missouri and the United States for 2016 through 2020.

Observations

- Unemployment rates declined steadily from 2015 through 2019. Due to fallout from the COVID-19 pandemic, unemployment rates rose substantially in 2020.
- The rise in unemployment is likely to affect numerous health-related factors, such as access to employer-based health insurance, housing and food insecurity, and access to health services.
- Livingston County rates were below Missouri and national rates for all years. Linn County rates were at or above the Missouri rates for all years.

Health Insurance Status

Exhibit 17: Percent of Population without Health Insurance, 2015-2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

Description

Exhibit 17 presents the estimated percent of population without health insurance.

Observations

- Livingston and Linn counties had a higher percentage of the population without health insurance than Missouri and the United States.
- Missouri recently voted to expand Medicaid, and after legal challenges is currently working through administrative hurdles to begin enrolling the expanded population.
- According to a second analysis prepared by the Kaiser Family Foundation, the average uninsured rate in 2018 in states that expanded Medicaid was 7.7 percent. The average rate in states that did not expand Medicaid was 14.6 percent.[7]
- Recent spikes in unemployment likely are leading to more uninsured community members.

[7] https://www.kff.org/uninsured/issue-brief/key-facts-about-the-uninsured-population/

Crime Rates

Exhibit 18: Crime Rates by Type, Per 1,000, 2019

Offense Type	Livingston County	Linn County	Missouri
Violent Crime Offenses	13.2	66.0	**497.6**
Murder	-	-	**9.3**
Rape	-	-	**47.8**
Robbery	-	-	**81.2**
Aggravated Assault	13.2	66.0	**359.3**
Property Crime Offenses	171.9	165.1	**2,652.7**
Burglary	52.9	57.8	**432.7**
Larceny	112.4	90.8	**1,874.9**
Motor Vehicle Theft	6.6	16.5	**345.2**

Source: Federal Bureau of Investigation, 2020.

Description

Exhibit 18 provides crime statistics and rates per 100,000 population. Light grey shading indicates rates above the Missouri average; dark grey shading indicates rates more than 50 percent above the average.

Observations

- 2019 crime rates Linn and Livingston counties were below the Missouri rates for all crime types.

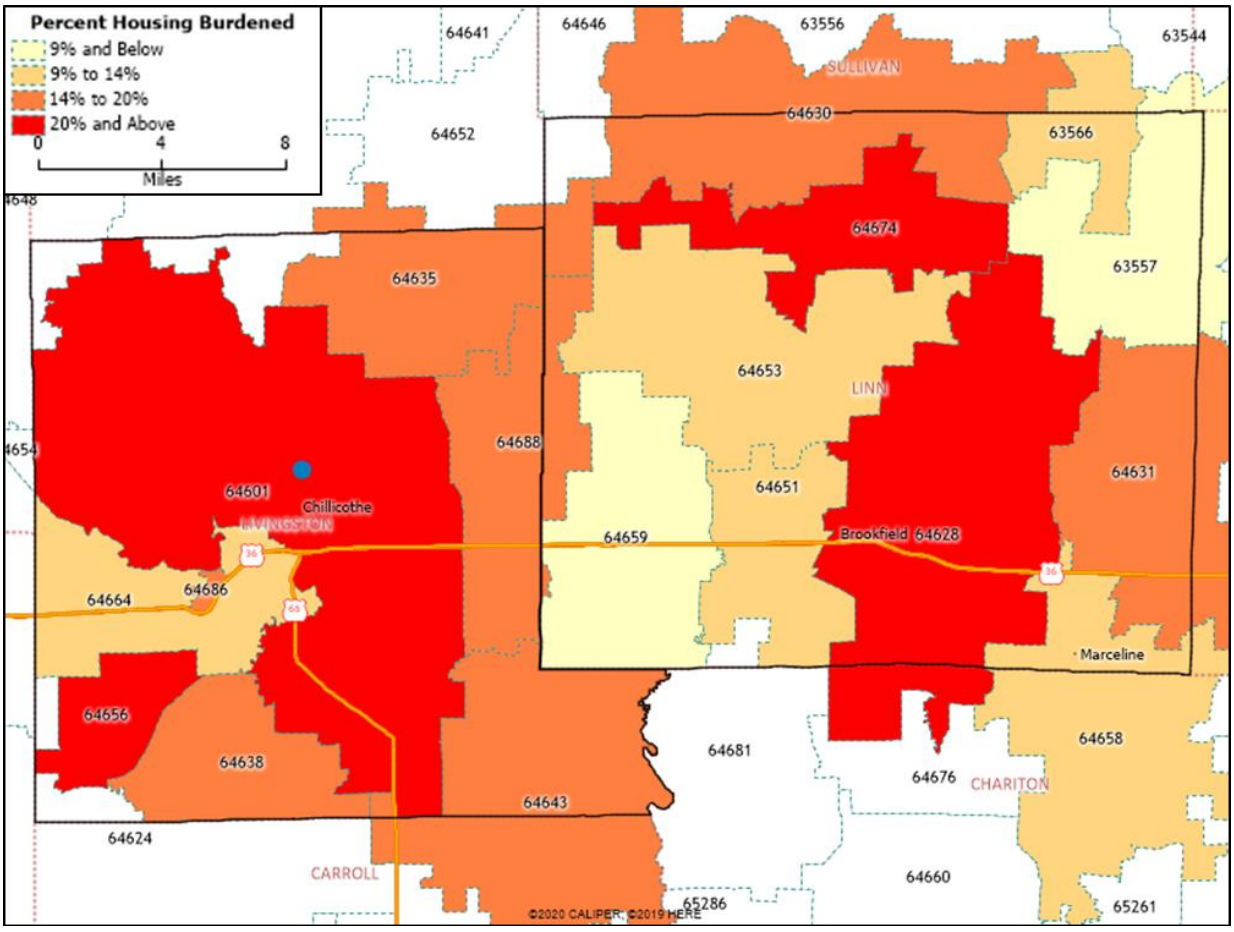
Housing Affordability

Exhibit 19: Percent of Households – Housing Burdened, 2015-2019

Area	Occupied Housing Units	Excessive Housing Costs (30%+ of Income)	Percent Housing Burdened
Livingston County	5,915	1,229	20.8%
Linn County	5,106	840	16.5%
Total Community	**11,021**	**2,069**	**18.8%**
Missouri	2,414,521	616,342	25.5%
United States	120,756,048	37,249,895	30.8%

Source: US Census, ACS 5-Year Estimates (2015-2019), 2020.

Exhibit 20: Map of Percent of Housing Burdened Households, 2015-2019



Source: US Census, ACS 5-Year Estimates (2015-2019), 2020, and Caliper Maptitude.

Description

The U.S. Department of Health and Human Services ("HHS") identifies "housing burdened" as those spending more than 30 percent of income on housing and as a contributor to poor health outcomes.[8] Exhibits 19 and 20 portray the percent of household spending on housing in the community.

Observations

As stated by the Federal Reserve, "households that have little income left after paying rent may not be able to afford other necessities, such as food, clothes, health care, and transportation."[9]

- In the HMC community, 18.8 percent of households have been designated as "housing burdened," a level below the Missouri and national averages.
- The percentage of occupied households cost burdened was highest in Linn County ZIP code 64674 (23.6 percent) and Livingston County ZIP code 64656 (22.8 percent).
- Housing insecurity is known to have become more problematic due to the COVID-19 pandemic.

[8] https://health.gov/healthypeople/objectives-and-data/browse-objectives/housing-and-homes/reduce-proportion-families-spend-more-30-percent-income-housing-sdoh-04
[9] *Ibid.*

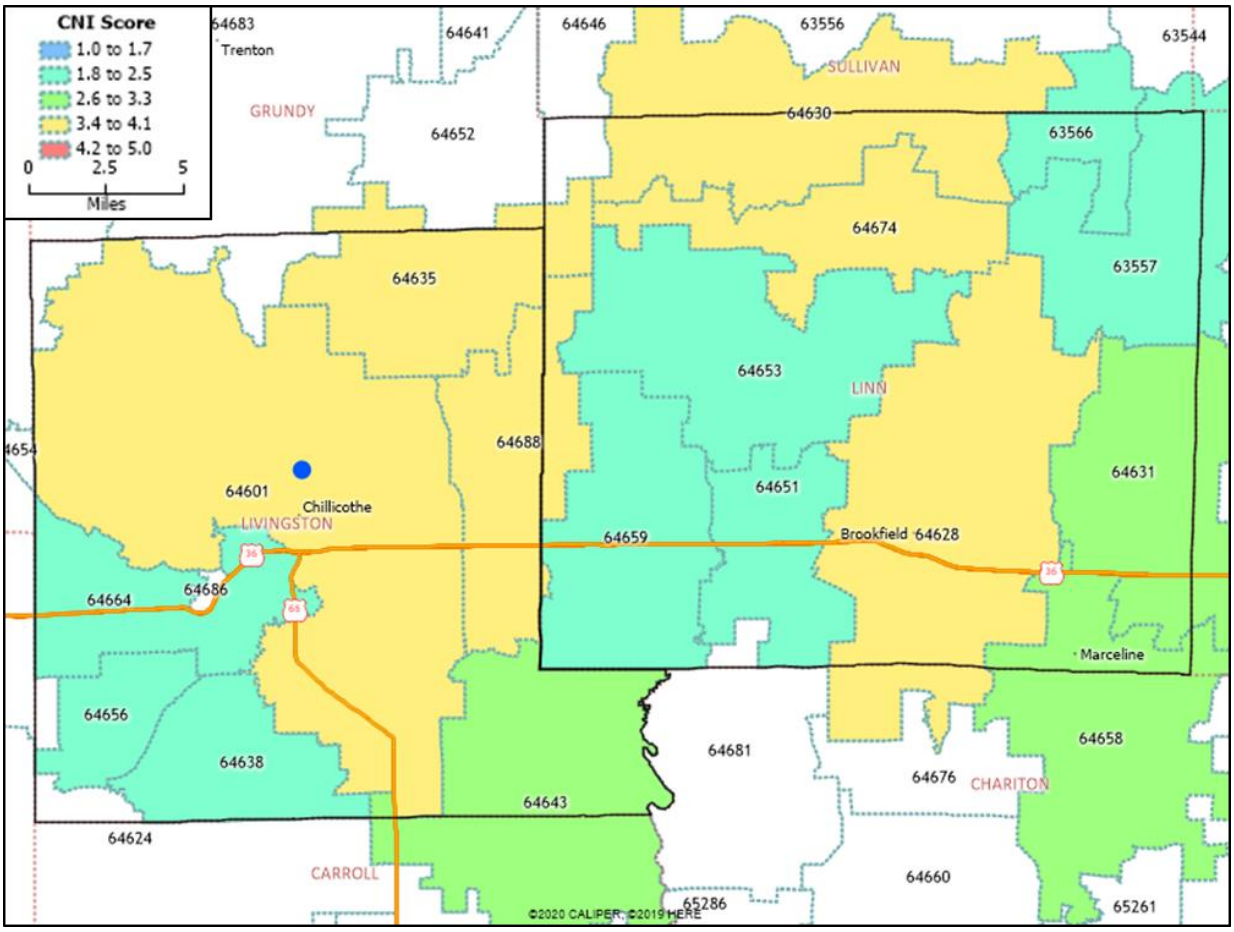
Dignity Health Community Need Index™

Exhibit 21: Weighted Average Community Need Index™ Score by County, 2021

Area	CNI Score
Livingston County	3.7
Linn County	3.1
United States	**3.0**

Source: CommonSpirit Health, 2021.
Note: CNI scores weighted by the number of people living within each region.

Exhibit 22: Community Need Index, 2021



Source: CommonSpirit Health, 2021, and Caliper Maptitude.

Description

Exhibits 21 and 22 present *Community Need Index*™ (CNI) scores. Higher scores (e.g., 4.2 to 5.0) indicate the highest levels of community need. The index is calibrated such that 3.0 represents a U.S.-wide median score.

CommonSpirit Health (formerly Dignity Health) developed the CNI as a way to assess barriers to health care access. The index, available for every ZIP code in the United States, consists of five social and economic indicators:

- The percentage of elders, children, and single parents living in poverty;
- The percentage of adults over the age of 25 with limited English proficiency, and the percentage of the population that is non-White;
- The percentage of the population without a high school diploma;
- The percentage of uninsured and unemployed residents; and
- The percentage of the population renting houses.

CNI scores are grouped into "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0) categories.

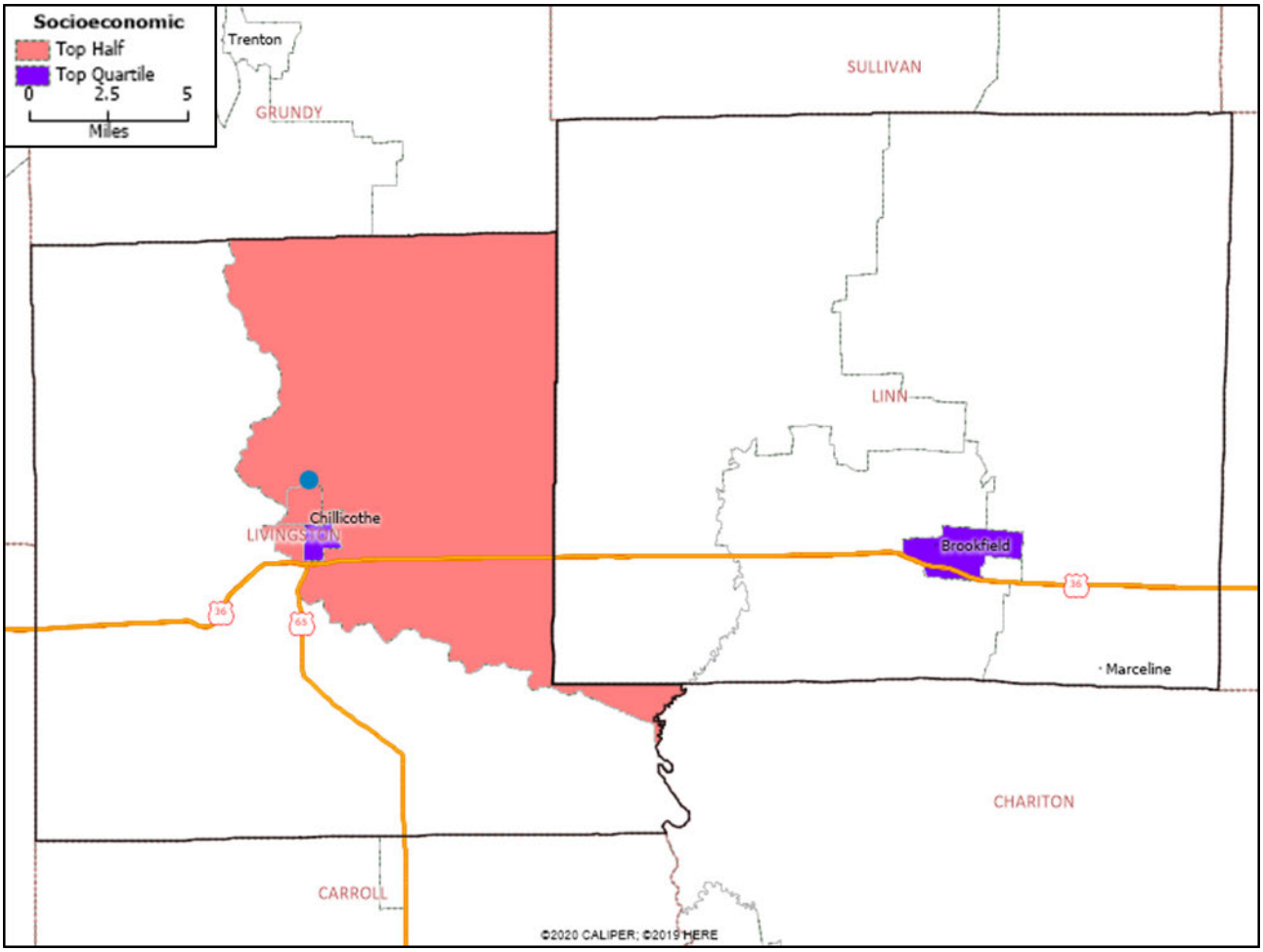
Observations

- At 3.7, the weighted average CNI score for Livingston County is higher than the U.S. median. Linn County (3.1) is slightly above the national median.

- Five ZIP codes – including the hospital's ZIP code of 64601 – received a score of 3.8, the highest in the community.

Centers for Disease Control and Prevention Social Vulnerability Index (SVI)

Exhibit 23: Socioeconomic Index – Top Half/Quartile Census Tracts



Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude.

Description

Exhibits 23 through 26 are maps that show the Center for Disease Control and Prevention's *Social Vulnerability Index* (SVI) scores for census tracts throughout the community. Highlighted census tracts are in the top half or quartile nationally for indicators on which the SVI is based.

The SVI is based on 15 variables derived from U.S. census data. Variables are grouped into four themes, including:

- Socioeconomic status;
- Household composition;
- Race, Ethnicity, and Language; and
- Housing and transportation.

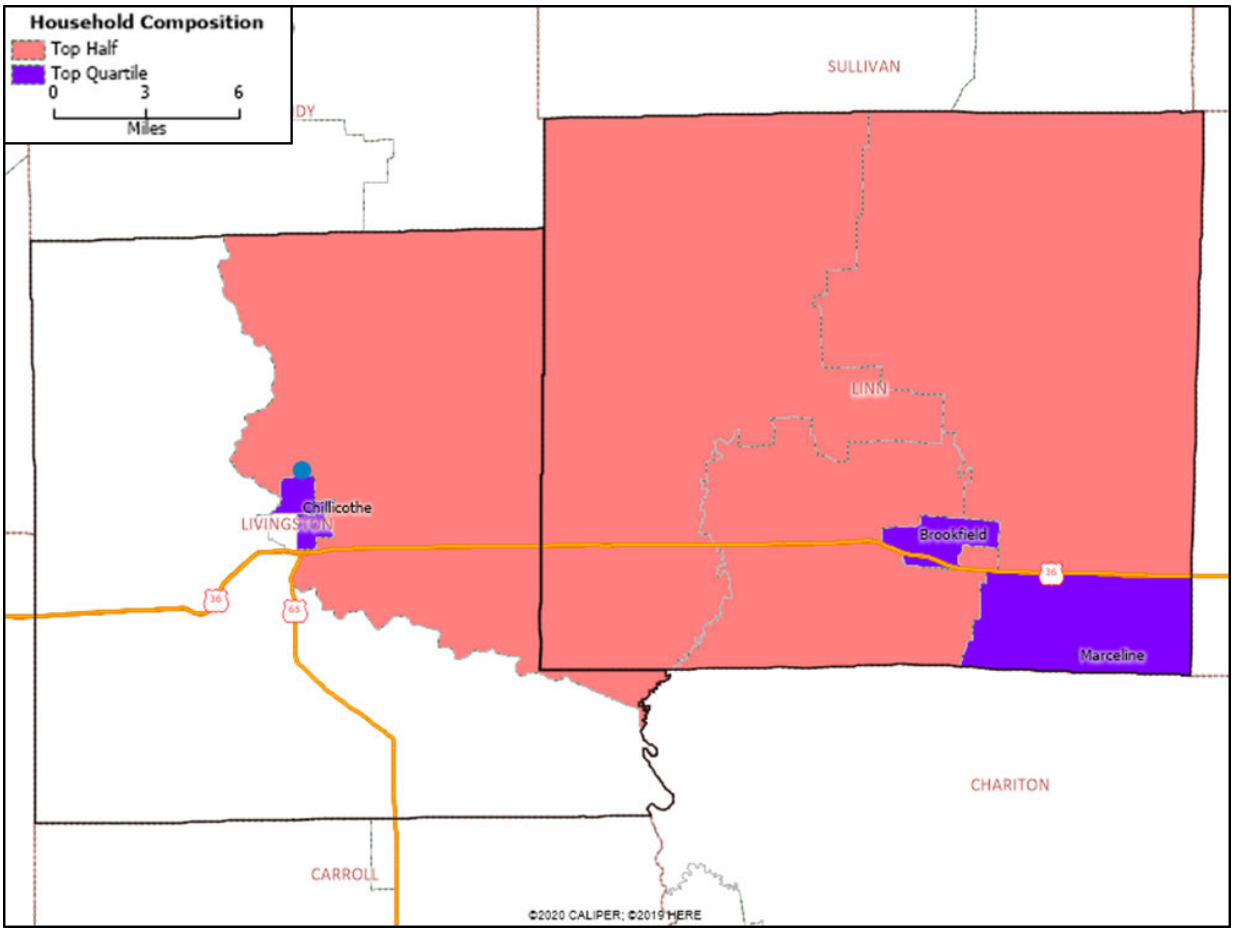
Exhibits 23 through 26 highlight SVI scores for each of these themes.

Exhibit 23 identifies census tracts in the top quartile nationally for socioeconomic vulnerability.

Observations

- Census tracts with the highest levels of socioeconomic vulnerability are located near Chillicothe in Livingston County and Brookfield in Linn County.

Exhibit 24: Household Composition and Disability Index – Top Half/Quartile Census Tracts



Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude.

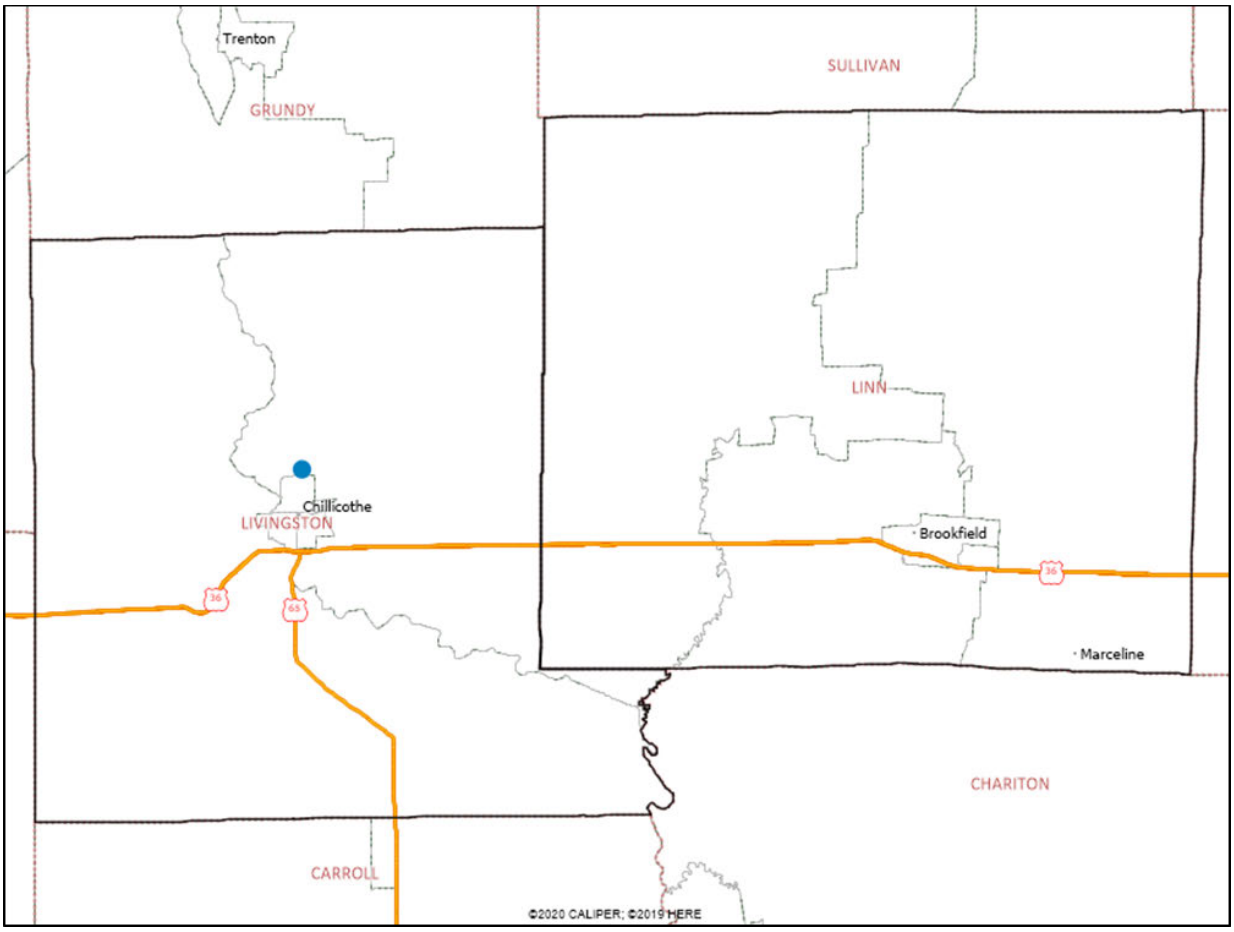
Description

Exhibit 24 identifies census tracts in the top half or quartile nationally for household composition and disability vulnerability.

Observations

- Census tracts with the highest levels of household composition and disability vulnerability are located near Chillicothe in Livingston County, and near Brookfield and Marceline in Linn County.

Exhibit 25: Minority Status and Language Index – Top Half/Quartile Census Tracts



Source: Centers for Disease Control and Prevention, 2018, and Caliper Maptitude.

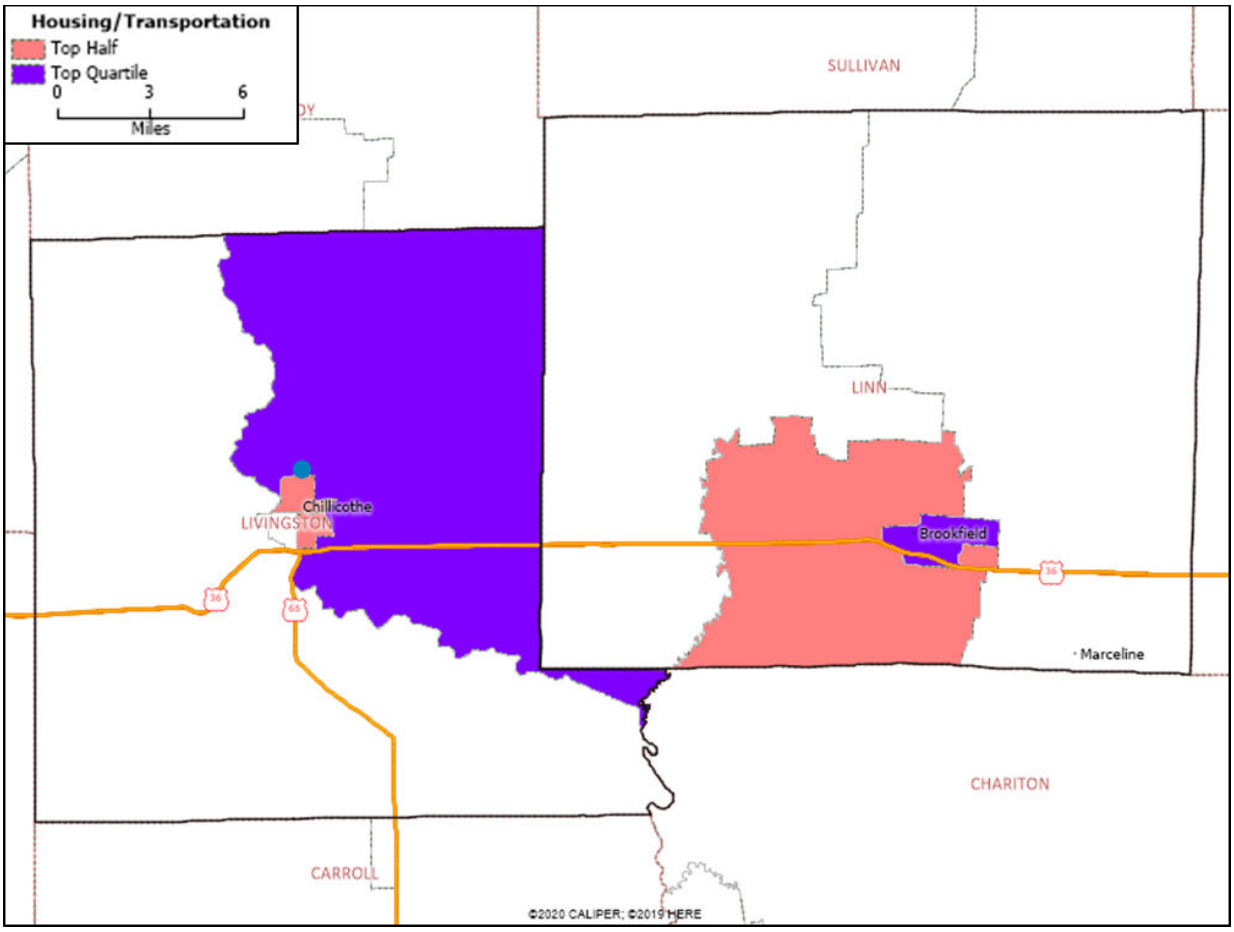
Description

Exhibit 25 identifies census tracts in the top half or quartile nationally for minority status and language vulnerability.

Observations

- No census tracts in the HMC community are in the top half for minority status and language vulnerability.

Exhibit 26: Housing Type and Transportation Index – Top Half/Quartile Census Tracts



Source: Centers for Disease Control and Prevention, 2018, and Caliper Maptitude.

Description

Exhibit 26 identifies census tracts in the top half or quartile nationally for housing type and transportation vulnerability.

Observations

- Census tracts considered the most vulnerable for housing and transportation issues are in eastern Livingston County, and near Brookfield in Linn County.

Other Health Status and Access Indicators

County Health Rankings

Exhibit 27: County Health Rankings, 2020

Measure	Livingston County	Linn County
Health Outcomes	43	94
Health Factors	37	65
Length of Life	33	101
Quality of Life	65	77
Poor or fair health	35	76
Poor physical health days	52	76
Poor mental health days	52	63
Low birthweight	82	67
Health Behaviors	77	44
Adult smoking	41	63
Adult obesity	114	57
Food environment index	36	81
Physical inactivity	38	54
Access to exercise opportunities	22	37
Excessive drinking	54	64
Alcohol-impaired driving deaths	44	11
Sexually transmitted infections	79	33
Teen births	70	63
Clinical Care	28	49
Uninsured	43	47
Primary care physicians	13	49
Dentists	11	72
Mental health providers	65	97
Preventable hospital stays	74	30
Mammography screening	62	81
Flu Vaccinations	21	51
Social & Economic Factors	32	88
High school graduation	37	19
Some college	75	62
Unemployment	7	105
Children in poverty	45	82
Income inequality	58	43
Children in single-parent households	92	99
Social associations	50	42
Violent crime	54	76
Injury deaths	67	40
Physical Environment	11	8
Air pollution - particulate matter	10	10
Severe housing problems	21	13
Driving alone to work	62	49
Long commute - driving alone	9	26

Source: County Health Rankings, 2020.

Description

Exhibit 27 presents *County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation that incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." The health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[10] social and economic factors, and physical environment.[11] *County Health Rankings* is updated annually. *County Health Rankings 2020* relies on data from 2012 to 2018. Most data are from 2015 to 2019.

The exhibit presents 2020 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 114 counties (and one independent city) in Missouri. The lowest numbers indicate the most favorable rankings. Light grey shading indicates rankings in the bottom half of Missouri's counties; dark grey shading indicates rankings in bottom quartile.

Observations

- In 2020, Livingston County ranked in the bottom 50th percentile among Missouri counties and cities for 14 of the 41 indicators assessed. Of those, two were in the bottom quartile, including adult obesity and children in single-parent households.

- Linn County ranked in the bottom 50th percentile among Missouri counties and cities for 21 of the 41 indicators assessed. Of those, six were in the bottom quartile, including health outcomes, mental health providers, social and economic factors, unemployment, and children in single-parent households.

[10] A composite measure of Access to Care, which examines the percent of the population without health insurance and ratio of population to primary care physicians, and Quality of Care, which examines the hospitalization rate for ambulatory care sensitive conditions, whether diabetic Medicare patients are receiving HbA1C screening, and percent of chronically ill Medicare enrollees in hospice care in the last 8 months of life.

[11] A composite measure that examines Environmental Quality, which measures the number of air pollution-particulate matter days and air pollution-ozone days, and Built Environment, which measures access to healthy foods and recreational facilities and the percent of restaurants that are fast food.

Exhibit 28: County Health Rankings Data Compared to State and U.S. Averages, 2020

Indicator Category	Data	Livingston County	Linn County	Missouri	United States
Health Outcomes					
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,884	11,047	8,374	**6,900**
Quality of Life	Percent of adults reporting fair or poor health	18.5%	20.5%	18.0%	**17.0%**
	Average number of physically unhealthy days reported in past 30 days	4.6	4.7	4.2	**3.8**
	Average number of mentally unhealthy days reported in past 30 days	4.5	4.6	4.4	**4.0**
	Percent of live births with low birthweight (<2500 grams)	8.6%	8.1%	8.3%	**8.0%**
Health Factors					
Health Behaviors					
Adult Smoking	Percent of adults that report smoking >= 100 cigarettes and currently smoking	19.8%	20.4%	20.8%	**17.0%**
Adult Obesity	Percent of adults that report a BMI >= 30	42.3%	33.3%	32.2%	**29.0%**
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	7.7	7.0	6.8	**7.6**
Physical Inactivity	Percent of adults aged 20 and over reporting no leisure-time physical activity	27.6%	28.7%	25.8%	**23.0%**
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	74.5%	66.4%	76.7%	**84.0%**
Excessive Drinking	Binge plus heavy drinking	17.0%	17.4%	19.8%	**19.0%**
Alcohol-Impaired Driving Deaths	Percent of driving deaths with alcohol involvement	23.1%	13.3%	27.4%	**28.0%**
STDs	Chlamydia rate per 100,000 population	355.9	213.2	534.6	**524.6**
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	34.1	33.2	26.0	**23.0**
Clinical Care					
Uninsured	Percent of population under age 65 without health insurance	12.2%	12.4%	10.9%	**10.0%**
Primary Care Physicians	Ratio of population to primary care physicians	1,264:1	2,439:1	1,430:1	**1,330:1**
Dentists	Ratio of population to dentists	1,515:1	4,012:1	1,721:1	**1,450:1**
Mental Health Providers	Ratio of population to mental health providers	1,683:1	4,012:1	515:1	**400:1**
Preventable Hospital Stays	Hospitalization rate for ambulatory-care sensitive conditions per 100,000 Medicare enrollees	5,107	3,883	4,800	**4,535**
Mammography Screening	Percent of female Medicare enrollees, ages 67-69, that receive mammography screening	39.0%	37.0%	43.0%	**42.0%**
Flu Vaccinations	Percent of Medicare enrollees who receive an influenza vaccination	48.0%	40.0%	45.0%	**46.0%**

Source: County Health Rankings, 2020.

Exhibit 28: County Health Rankings Data Compared to State and U.S. Averages, 2020 (continued)

Indicator Category	Data	Livingston County	Linn County	Missouri	United States
Health Factors					
Social & Economic Factors					
High School Graduation	Percent of ninth-grade cohort that graduates in four years	95.3%	96.6%	91.3%	**85.0%**
Some College	Percent of adults aged 25-44 years with some post-secondary education	50.1%	52.5%	66.7%	**66.0%**
Unemployment	Percent of population age 16+ unemployed but seeking work	2.5%	4.7%	3.2%	**3.9%**
Children in Poverty	Percent of children under age 18 in poverty	20.7%	25.7%	18.3%	**18.0%**
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	4.2	4.1	4.6	**4.9**
Children in Single-Parent Households	Percent of children that live in a household headed by single parent	34.8%	36.9%	33.3%	**33.0%**
Social Associations	Number of associations per 10,000 population	12.5	13.1	11.8	**9.3**
Violent Crime	Number of reported violent crime offenses per 100,000 population	218.1	322.5	481.2	**386.0**
Injury Deaths	Injury mortality per 100,000	91.2	78.7	87.7	**70.0**
Physical Environment					
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	9.3	9.3	9.7	**8.6**
Severe Housing Problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	10.0%	9.0%	13.8%	**18.0%**
Driving Alone to Work	Percent of the workforce that drives alone to work	80.9%	79.4%	81.9%	**76.0%**
Long Commute – Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	17.1%	23.6%	31.8%	**36.0%**

Source: County Health Rankings, 2020.

Description

Exhibit 28 provides data that underlie the County Health Rankings and compares indicators to statewide and national averages.[12] Light grey shading highlights indicators found to be worse than the national average; dark grey shading highlights indicators more than 50 percent worse.

Note that higher values generally indicate that health outcomes, health behaviors, and other factors are worse in the county than in the United States. However, for several indicators, lower values are more problematic, including:

- Food environment index,
- Percent with access to exercise opportunities,
- Percent receiving mammography screening,
- Percent receiving flu vaccination,
- High school graduation rate, and
- Percent with some college.

Observations

- Missouri-wide indicators are worse than U.S. averages for most indicators, including all indicators for health outcomes.

- In Livingston County, the ratio of population to mental health providers compared particularly unfavorably.

- In Linn County, the following indicators compared particularly unfavorably:

    - Years of potential life lost before age 75;
    - Ratio of population to primary care physicians;
    - Ratio of population to dentists; and
    - Ratio of population to mental health providers.

[12] County Health Rankings provides details about what each indicator measures, how it is defined, and data sources at http://www.countyhealthrankings.org/sites/default/files/resources/2013Measures_datasources_years.pdf

Community Health Status Indicators

Exhibit 29: Community Health Status Indicators, 2020
(Light Grey Shading Denotes Bottom Half of Peer Counties; Dark Grey Denotes Bottom Quartile)

Category	Indicator	Livingston County	Peer Counties	Linn County	Peer Counties
Length of Life	Years of Potential Life Lost Rate	7,884	9,971	11,047	9,179
Quality of Life	% Fair/Poor Health	18.5%	18.9%	20.5%	17.2%
	Physically Unhealthy Days	4.6	4.3	4.7	4.0
	Mentally Unhealthy Days	4.5	4.3	4.6	4.1
	% Births - Low Birth Weight	8.6%	7.7%	8.1%	6.8%
Health Behaviors	% Smokers	19.8%	19.7%	20.4%	17.5%
	% Obese (BMI >30)	42.3%	34.5%	33.3%	33.3%
	Food Environment Index	7.7	7.1	7.0	7.1
	% Physically Inactive	27.6%	29.6%	28.7%	29.6%
	% With Access to Exercise Opportunities	74.5%	48.7%	66.4%	54.5%
	% Excessive Drinking	17.0%	16.6%	17.4%	16.9%
	% Driving Deaths Alcohol-Impaired	23.1%	25.9%	13.3%	25.1%
	Chlamydia (per 100,000 population)	355.9	368.4	213.2	246.0
	Teen Births (per 1,000 females ages 15-19)	34.1	39.4	33.2	29.7
Clinical Care	% Uninsured	12.2%	12.3%	12.4%	11.8%
	Per-capita supply of primary care physicians	79.1	48.3	41.0	48.0
	Per-capita supply of dentists	66.0	41.9	24.9	41.2
	Per-capita supply of mental health providers	59.4	180.2	24.9	131.2
	Preventable Hospitalizations (per 100,000 Medicare Enrollees)	5,107	5,783	3,883	4,428
	% Mammography Screening	39.0%	39.5%	37.0%	39.9%
	% Flu Vaccination	48.0%	40.1%	40.0%	34.4%
Social & Economic Factors	% High School Graduation	95.3%	87.8%	96.6%	92.1%
	% Some College	50.1%	54.9%	52.5%	58.5%
	% Unemployed	2.5%	3.7%	4.7%	3.4%
	% Children in Poverty	20.7%	24.0%	25.7%	22.2%
	Income Ratio	4.2	4.5	4.1	4.3
	% Children in Single-Parent Households	34.8%	34.8%	36.9%	32.2%
	Social Association (per 10,000 population)	12.5	13.8	13.1	19.1
	Violent Crime (per 100,000 population)	218.1	232.2	322.5	204.5
	Injury Deaths (per 100,000 population)	91.2	100.8	78.7	93.9
Physical Environment	Average Daily PM2.5	9.3	8.7	9.3	8.6
	% Severe Housing Problems	10.0%	12.0%	9.0%	10.8%
	% Drive Alone to Work	80.9%	79.4%	79.4%	78.6%
	% Long Commute - Drives Alone	17.1%	25.4%	23.6%	25.9%

Source: County Health Rankings and Verité Analysis, 2019.

Description

County Health Rankings has assembled community health data for all 3,143 counties in the United States. Following a methodology developed by the Centers for Disease Control's *Community Health Status Indicators* Project (CHSI), County Health Rankings also publishes lists of "peer counties" so comparisons with peer counties in other states can be made. Each county in the U.S. is assigned 30 to 35 peer counties based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly, and poverty rates.

CHSI formerly was available from the CDC. Because comparisons with peer counties (rather than only counties in the same state) are meaningful, Verité Healthcare Consulting rebuilt the CHSI comparisons for this and other CHNAs.

Exhibit 29 compares Livingston and Linn counties to their respective peer counties and highlights community health issues found to rank in the bottom half and bottom quartile of the counties included in the analysis. Light grey shading indicates rankings in the bottom half of peer counties; dark grey shading indicates rankings in the bottom quartile of peer counties. Underlying statistics also are provided.

See Appendix D for a list of peer counties for Livingston and Linn counties.

Note that higher values generally indicate that health outcomes, health behaviors, and other factors are worse in the county than in its peer counties. However, for several indicators, lower values are more problematic, including:

- Food environment index,
- Percent with access to exercise opportunities,
- Percent receiving mammography screening,
- Percent receiving flu vaccination,
- High school graduation rate, and
- Percent with some college.

Observations

- Livingston County ranks in the bottom half of peer counties for 13 of the 34 benchmark indicators. Of those, three are in the bottom quartile:
    - Obesity;
    - Per-capita supply of mental health providers; and
    - Some college.

- Linn County ranks in the bottom half of peer counties for 23 of the 34 benchmark indicators. Of those, 12 are in the bottom quartile:
    - Years of potential life lost rate;
    - Percent fair or poor health;
    - Physically unhealthy days;
    - Mentally unhealthy days;
    - Low birthweight births;
    - Smoking;
    - Per-capita supply of dentists;
    - Per-capita supply of mental health providers;
    - Some college;
    - Unemployment;
    - Social associations; and

- Violent crime.

COVID-19 Incidence and Mortality

Exhibit 30: COVID-19 Incidence, Mortality, and Vaccination (As of September 2, 2021)

Indicator	Livingston County	Linn County	Missouri	United States
Total Confirmed Cases	2,437	1,744	712,859	**38,838,052**
Confirmed Cases (per 100,000 Population)	16,090	14,489	11,636	**11,904**
Total Deaths	58	23	10,404	**626,167**
Deaths (per 100,000 Population)	382.9	191.1	169.8	**191.9**
Percent of Adults Fully Vaccinated	45.2%	48.9%	50.1%	**59.0%**
Estimated Percent of Adults Hesitant About Receiving COVID-19 Vaccination	14.8%	14.8%	12.6%	**10.0%**
Vaccine Coverage Index	0.71	0.65	0.49	**0.39**

Source: Sparkmap, 2021.

Description

Exhibit 30 presents data regarding COVID-19 incidence and mortality. Light grey shading highlights indicators found to be worse than the national average; dark grey shading highlights indicators more than 50 percent worse.

Observations

- COVID-19 cases per 100,000 in Livingston and Linn counties were above the Missouri and United States rates. Deaths per 100,000 in Livingston County were significantly above the state and national rates.

- The percent of adults fully vaccinated and the percent hesitant about receiving the vaccine in Livingston and Linn counties were both unfavorable compared to state and national averages.

Mortality Rates

Exhibit 31: Causes of Death (Age-Adjusted, Per 100,000), 2017-2019

Cause of Death	Livingston County	Linn County	Missouri
Heart disease	157.9	256.0	**188.5**
Cancer	189.3	191.6	**163.9**
Other diseases/conditions	76.9	60.6	**86.7**
Accidents (unintentional injuries)	58.1	64.0	**60.4**
Chronic lower respiratory diseases	40.7	71.1	**49.1**
Stroke (cerebrovascular diseases)	33.7	34.2	**39.0**
Alzheimer's disease	31.4	24.5	**33.1**
Diabetes	18.5	15.6	**20.9**
Kidney disease(nephritis nephrotic syndrome and nephrosis)	14.4	28.0	**19.0**
Other digestive diseases	16.9	23.5	**18.8**
Suicide	18.0	25.1	**18.7**
Influenza and pneumonia	14.3	28.2	**16.1**
Other respiratory diseases	15.9	25.0	**15.6**
Septicemia	10.8	13.1	**11.2**
Homicide	2.8	12.7	**11.2**
Chronic liver disease & cirrhosis	11.8	11.8	**9.7**
Parkinson's disease	6.9	2.0	**8.9**
Pneumonitis due to solids and liquids	10.3	10.5	**7.5**
Essential hypertension	9.2	10.1	**7.5**
Other Infections-Parasites	2.5	4.8	**5.2**
Benign/in situ neoplasms and neoplasms of uncertain behavior	7.0	9.9	**4.3**
Other major cardiovascular diseases	1.7	1.6	**4.0**
Conditions originating in the perinatal period	5.9	3.4	**3.8**
Congenital anomalies	6.0	3.3	**3.4**
Aortic aneurysm & dissection	3.3	5.1	**3.1**
Other external causes	0.0	3.5	**2.6**

Source: Missouri Department of Health and Senior Services, 2020.

Description

Exhibit 31 provides age-adjusted mortality rates (2017 through 2019) for a variety of causes in community counties and Missouri. Light grey shading highlights indicators found to be worse than the state average; dark grey shading highlights indicators more than 50 percent worse.

Observations

- Both counties compared unfavorably to state averages for mortality due to cancer, other respiratory diseases, chronic liver disease and cirrhosis, pneumonitis, essential hypertension, benign/in situ neoplasms and neoplasms, and aortic aneurysm.

Exhibit 32: Cancer Mortality Rates per 100,000 Population, 2014-2019

Cancer Site	Livingston County	Linn County	Missouri
All cancers	180.7	192.0	**168.0**
Trachea/bronchus/lung	53.6	49.4	**47.5**
Other and unspecified malignant neoplasms	24.1	31.3	**19.9**
Colon/rectum/anus	12.4	21.4	**14.5**
Pancreas	12.2	11.6	**11.5**
Breast	11.6	7.0	**11.4**
Prostate	7.1	6.5	**7.3**
Leukemia	12.7	12.1	**6.7**
Liver / intrahepatic bile ducts	7.8	5.9	**6.4**
Non-Hodgkin's lymphoma	5.7	9.2	**5.4**
Esophagus	6.4	5.9	**4.6**
Meninges, brain and other CNS	3.8	4.7	**4.4**
Bladder	1.8	5.1	**4.3**
Kidney and renal pelvis	5.5	5.2	**4.3**
Ovary	0.8	1.5	**3.4**
Multiple myeloma and immunoproliferative neoplasms	2.5	1.0	**3.4**
Lip/mouth/pharynx	1.6	5.5	**2.8**
Uterus	3.3	3.9	**2.7**
Malignant melanoma of skin	4.1	-	**2.6**
Stomach	1.9	3.4	**2.4**
Cervix uteri	1.8	-	**1.3**
Larynx	-	0.8	**1.1**
Hodgkin's disease	-	0.8	**0.3**

Source: Centers for Disease Control and Prevention, 2020.
*Note: Due to low incidence, rates considered unstable.

Description

Exhibit 32 provides age-adjusted mortality rates for selected forms of cancer in 2015-2019.

Observations

- Overall cancer mortality rates in Livingston and Linn counties were above the state average.
- Both counties compared unfavorably for several cancer types, including lung, pancreas, leukemia, non-Hodgkin’s lymphoma, esophagus, kidney and renal pelvis, and uterus.

Exhibit 33: Drug Poisoning Mortality per 100,000, 2013 and 2018

Area	2013	2018	Percent Change 2013 - 2018
Livingston County	16.5	21.2	22.1%
Linn County	13.8	19.6	29.2%
Missouri	17.0	26.3	35.5%
United States	**13.9**	**20.6**	**32.4%**

Source: Centers for Disease Control and Prevention, 2020.

Description

Exhibit 33 provides mortality rates for drug poisoning for 2013 and 2018. Light grey shading highlights indicators found to be worse than the national average; dark grey shading highlights indicators more than 50 percent worse.

Observations

- Drug poisoning mortality rates were higher in Livingston County than national averages in both 2013 and 2018, but below Missouri averages.
- Between 2013 and 2018, drug poisoning mortality rates increased 22 percent in Livingston County and 29 percent in Linn County. Rates increased more than 30 percent in Missouri and the United States.

Communicable Diseases

Exhibit 34: Communicable Disease Incidence Rates per 100,000 Population, 2018-2019

Measure	Livingston County	Linn County	Missouri
HIV Diagnoses	N/A	0.0	**9.5**
HIV Prevalence	92.9	N/A	**248.3**
Chlamydia	382.3	229.6	**568.1**
Congenital Syphilis	0.0	0.0	**22.8**
Early Latent Syphilis	19.8	0.0	**8.9**
Gonorrhea	26.4	49.2	**246.8**
Primary and Secondary Syphilis	0.0	0.0	**13.2**

Source: Centers for Disease Control and Prevention, 2020.

Description

Exhibit 34 presents incidence rates for certain communicable diseases in community counties and Missouri.

Observations

- Rates of communicable disease were below Missouri averages for all indicators, except for early latent syphilis in Livingston County.

Maternal and Child Health

Exhibit 35: Maternal and Child Health Indicators, 2015-2019

Indicator	Livingston County	Linn County	Missouri
Care Began First Trimester	83.7%	70.0%	**71.2%**
Inadequate Prenatal Care - Missouri Index	11.3%	19.3%	**21.1%**
Mother Smoked During Pregnancy	22.6%	23.0%	**12.8%**
Preterm Births (less than 37 Weeks Gestation)	9.9%	10.7%	**10.5%**
Low Birth Weight	8.1%	6.8%	**8.7%**
Very Low Birth Weight	1.1%	0.9%	**1.5%**
Breastfeeding Initiation in Hospital	82.3%	74.5%	**79.5%**
Neonatal Deaths per 1,000	3.4	2.6	**4.1**
Perinatal Deaths per 1,000	10.2	7.8	**9.7**
Postneonatal Deaths per 1,000	3.4	2.6	**2.4**
Infant Deaths per 1,000	6.8	5.2	**6.4**
Sudden Infant Death Syndrome (SIDS) per 1,000	0.6	0.0	**0.3**

Source: Missouri Department of Health and Senior Services, 2020.

Description

Exhibit 35 compares various maternal and child health indicators for community counties with Missouri averages.

Observations

- Rates of mothers who smoked during pregnancy were nearly double the Missouri average in both Livingston and Linn counties.
- Livingston County also compared unfavorably for infant deaths, perinatal deaths, and postneonatal deaths, as well as sudden infant death syndrome.
- Linn County compared unfavorably for prenatal care beginning in the first trimester, preterm births, breastfeeding, and postneonatal deaths.

Exhibit 36: Maternal and Child Health Indicators by Race, 2019

Indicator	White	Black or African-American	Missouri Total
Morbidity (2015-2019)			
Preterm Births (less than 37 Weeks Gestation)	9.7%	14.7%	**10.5%**
Low Birth Weight	7.4%	15.1%	**8.7%**
Low Birth Weight and Term	2.2%	4.9%	**2.7%**
Very Low Birth Weight	1.2%	3.1%	**1.5%**
Small for Gestational Age	7.2%	16.0%	**8.7%**
NICU Admission	9.0%	13.4%	**9.7%**
Breastfeeding Initiation in Hospital	82.0%	66.5%	**79.5%**
WIC Infants - Ever Breastfed	74.6%	70.7%	**73.5%**
Mortality (2009-2019)			
Neonatal Deaths per 1,000	3.4	7.4	**4.1**
Perinatal Deaths per 1,000	8.2	16.6	**9.7**
Postneonatal Deaths per 1,000	1.9	4.6	**2.4**
Infant Deaths per 1,000	5.3	12.0	**6.4**
Sudden Infant Death Syndrome (SIDS) per 1,000	0.3	0.3	**0.3**

Source: DHSS-MOPHIMS, 2020.

Description

Exhibit 36 provides maternal and child health data by race and ethnicity for Missouri, compared to the state total.

Observations

- For almost all indicators, Black mothers and infants compared unfavorably to overall averages and rates for White populations, including low birth weight births, NICU admissions, and infant mortality.

America's Health Rankings

Exhibit 37: America's Health Rankings, Underlying Data by Race/Ethnicity, 2020

Measure Name	Black	Hispanic (or Latino)	White	Missouri Overall
Arthritis	21.5%	12.9%	28.3%	**27.1%**
Asthma	10.4%	13.4%	9.9%	**10.1%**
Avoided Care Due to Cost	22.7%	14.5%	12.6%	**14.3%**
Cancer	5.5%	N/A	8.4%	**8.1%**
Cardiovascular Diseases	8.5%	N/A	9.9%	**9.9%**
Children in Poverty	39.1%	26.8%	14.8%	**18.3%**
Chlamydia	1,859.8	470.8	299.8	**568.1**
Chronic Kidney Disease	3.3%	N/A	2.9%	**3.1%**
Chronic Obstructive Pulmonary Disease	7.5%	N/A	8.9%	**8.8%**
Colorectal Cancer Screening	71.3%	N/A	70.0%	**69.7%**
Crowded Housing	2.3%	7.5%	1.6%	**1.9%**
Dedicated Health Care Provider	72.8%	61.5%	80.3%	**78.8%**
Dental Visit	59.9%	53.2%	64.6%	**63.3%**
Dependency	37.8%	40.8%	39.7%	**39.6%**
Depression	18.6%	19.3%	23.2%	**22.8%**
Diabetes	11.9%	N/A	10.1%	**10.3%**
Drug Deaths (1-year)	47.2	9.4	25.8	**26.8**
Education - Less Than High School	12.2%	22.2%	8.4%	**9.3%**
Excessive Drinking	17.7%	23.0%	18.1%	**18.1%**
Exercise	20.3%	23.1%	16.3%	**17.1%**
Flu Vaccination	36.6%	36.4%	47.8%	**46.0%**
Frequent Mental Distress	16.6%	18.6%	14.1%	**14.9%**
Frequent Physical Distress	12.0%	13.2%	13.0%	**13.3%**
Fruit and Vegetable Consumption	6.5%	N/A	5.6%	**6.1%**
High Blood Pressure	34.2%	16.6%	31.2%	**30.9%**
High Cholesterol	28.7%	39.8%	35.2%	**34.4%**
High Health Status	46.8%	49.5%	50.1%	**49.2%**
High School Graduation	80.0%	84.7%	91.6%	**89.2%**
High-risk HIV Behaviors	12.2%	N/A	5.9%	**6.9%**
High-speed Internet	81.2%	89.0%	87.4%	**86.9%**
Insufficient Sleep	42.4%	20.9%	32.7%	**34.0%**
Low Birthweight	15.6%	7.3%	7.3%	**8.7%**
Multiple Chronic Conditions	7.1%	N/A	11.6%	**11.2%**
Non-medical Drug Use	5.4%	17.6%	9.7%	**9.8%**
Non-medical Use of Prescription Opioids	4.2%	8.5%	5.1%	**5.4%**
Obesity	39.9%	39.6%	34.0%	**34.8%**
Per Capita Income	22,128	19,986	34,105	**31,756**
Physical Inactivity	33.2%	29.9%	30.1%	**30.6%**
Premature Death	14,154	4,145	8,788	**8,886**
Preventable Hospitalizations	7,399	3,831	4,451	**4,662**
Severe Housing Problems	23.6%	22.0%	11.5%	**13.3%**
Smoking	22.6%	18.3%	18.8%	**19.6%**
Suicide	11.2	11.5	22.0	**20.1**
Teen Births	33.9	33.1	18.8	**21.6**
Unemployment	6.5%	4.3%	3.4%	**3.9%**

Source: America's Health Rankings, 2020.

Description

Exhibit 37 presents Missouri data from America's Health Rankings for racial and ethnic cohorts, with Missouri overall for comparison. America's Health Rankings provides an analysis of national health on a state-by-state basis by evaluating a historical and comprehensive set of health, environmental, and socioeconomic data to determine national health benchmarks and state rankings. Light grey shading highlights indicators found to be worse than the state average; dark grey shading highlights indicators more than 50 percent worse.

Observations

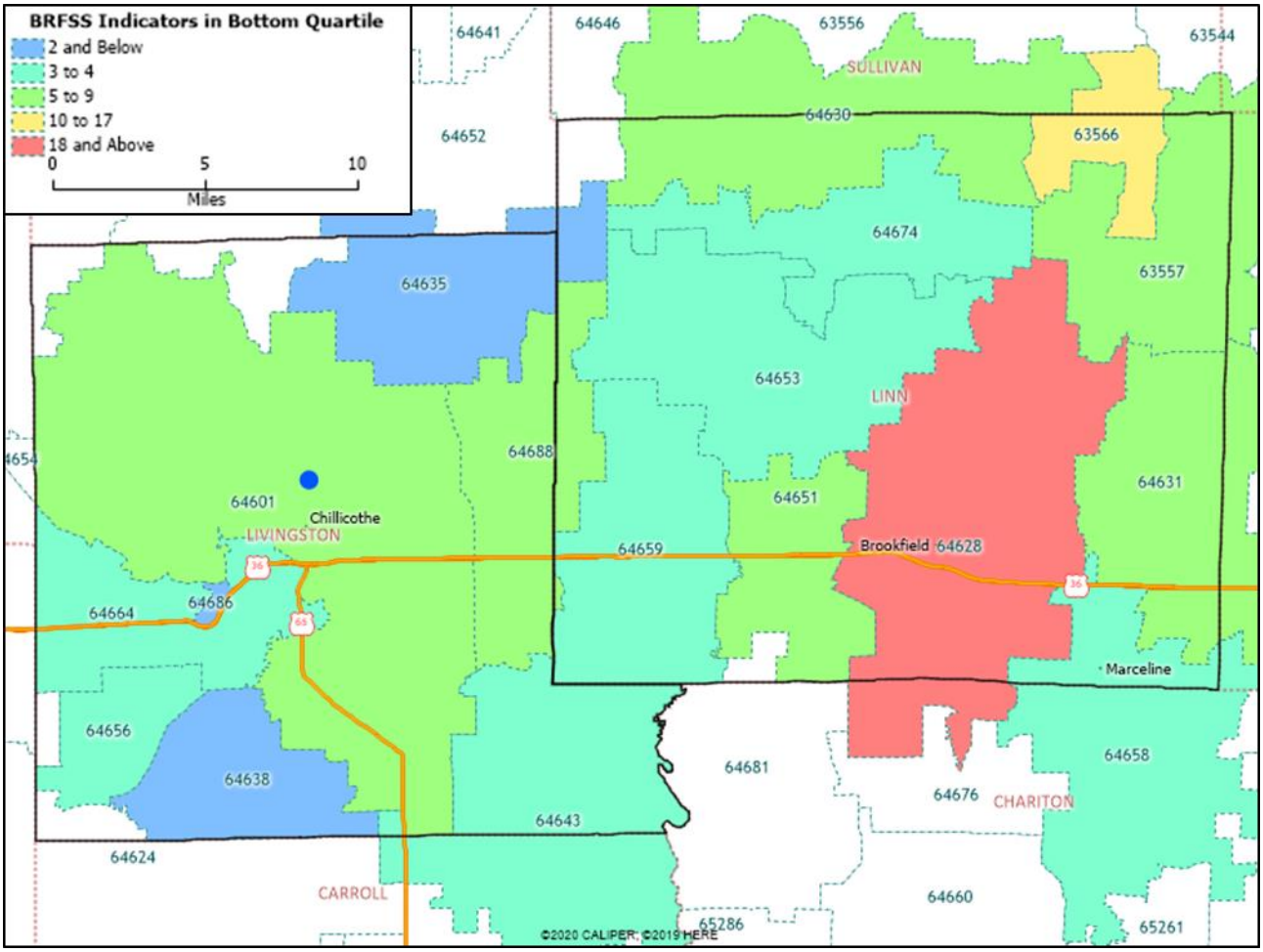
- Black populations compared worse than state averages for many indicators, with particularly unfavorable rates of avoiding care due to cost, children in poverty, chlamydia, drug deaths, high-risk HIV behaviors, low birthweight births, premature death, preventable hospitalizations, severe housing problems, teen births, and unemployment.

- Hispanic populations compared worse for a variety of indicators, including significantly higher rates of crowded housing, high school diploma, non-medical drug and prescription opioid use, severe housing problems, and teen births.

- White populations compared unfavorably for 11 indicators, including cancer, COPD, depression, exercising, and suicide.

Centers for Disease Control and Prevention PLACES

Exhibit 38: BRFSS Indicators in Bottom Quartile Nationally, 2017-2018



Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude.

Description

Exhibit 38 presents CDC PLACES data. PLACES, a collaboration between CDC, the Robert Wood Johnson Foundation, and the CDC Foundation, provides model-based population-level analysis and community estimates to all counties, places (incorporated and census designated places), census tracts, and ZIP Code Tabulation Areas (ZCTAs) across the United States. PLACES is an extension of the original 500 Cities Project that provided city and census tract estimates for chronic disease risk factors, health outcomes, and clinical preventive services use for the 500 largest US cities.

Exhibit 42 identifies how many BRFSS indicators are in the bottom quartile nationally by ZIP code out of 28 indicators.

Observations

- Linn County ZIP codes 64628 (18 indicators) and 63566 (12 indicators) compared the most unfavorably.

Ambulatory Care Sensitive Conditions

Exhibit 39: Saint Luke's Health System ACSC (PQI) Discharges by County, 2020

Condition	Grundy County	Linn County	Livingston County	Mercer County
Heart Failure	29	5	44	6
Bacterial Pneumonia	16	3	29	5
Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults	21	2	23	3
Urinary Tract Infection	10	1	16	4
Diabetes Long-Term Complications	9	1	8	2
Diabetes Short-Term Complications	6	1	2	2
Uncontrolled Diabetes	3	-	5	-
Hypertension	-	1	1	-
Lower-Extremity Amputation among Patients with Diabetes Rate	1	-	2	-
Asthma in Younger Adults	-	-	1	-
Total ASCC Discharges	**95**	**14**	**131**	**22**
Total Adult Discharges	463	116	606	108
Percent	**20.5%**	**12.1%**	**21.6%**	**20.4%**

Source: Analysis of Saint Luke's Health System Discharges, 2020.

Exhibit 40: Saint Luke's Health System ACSC (PQI) Discharges by Hospital, 2020

Condition	Hedrick Medical Center
Heart Failure	61
Bacterial Pneumonia	41
Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults	37
Urinary Tract Infection	18
Diabetes Short-Term Complications	18
Diabetes Long-Term Complications	15
Uncontrolled Diabetes	9
Lower-Extremity Amputation among Patients with Diabetes Rate	3
Hypertension	2
Asthma in Younger Adults	1
Total ASCC Discharges	**205**
Total Adult Discharges	1,109
Percent	**18.5%**

Source: Analysis of Saint Luke's Health System Discharges, 2020.

Description

Exhibits 39 and 40 provide information based on an analysis of discharges from Saint Luke's Health System hospitals. The analysis identifies discharges for Ambulatory Care Sensitive Conditions (ACSCs).

ACSCs are health "conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[13] As such, rates of hospitalization for these conditions can "provide insight into the quality of the health care system outside of the hospital," including the accessibility and utilization of primary care, preventive care, and health education.

These conditions include angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

Disproportionately high rates of discharges for ACSC indicate potential problems with the availability or accessibility of ambulatory care and preventive services and can suggest areas for improvement in the health care system and ways to improve outcomes.

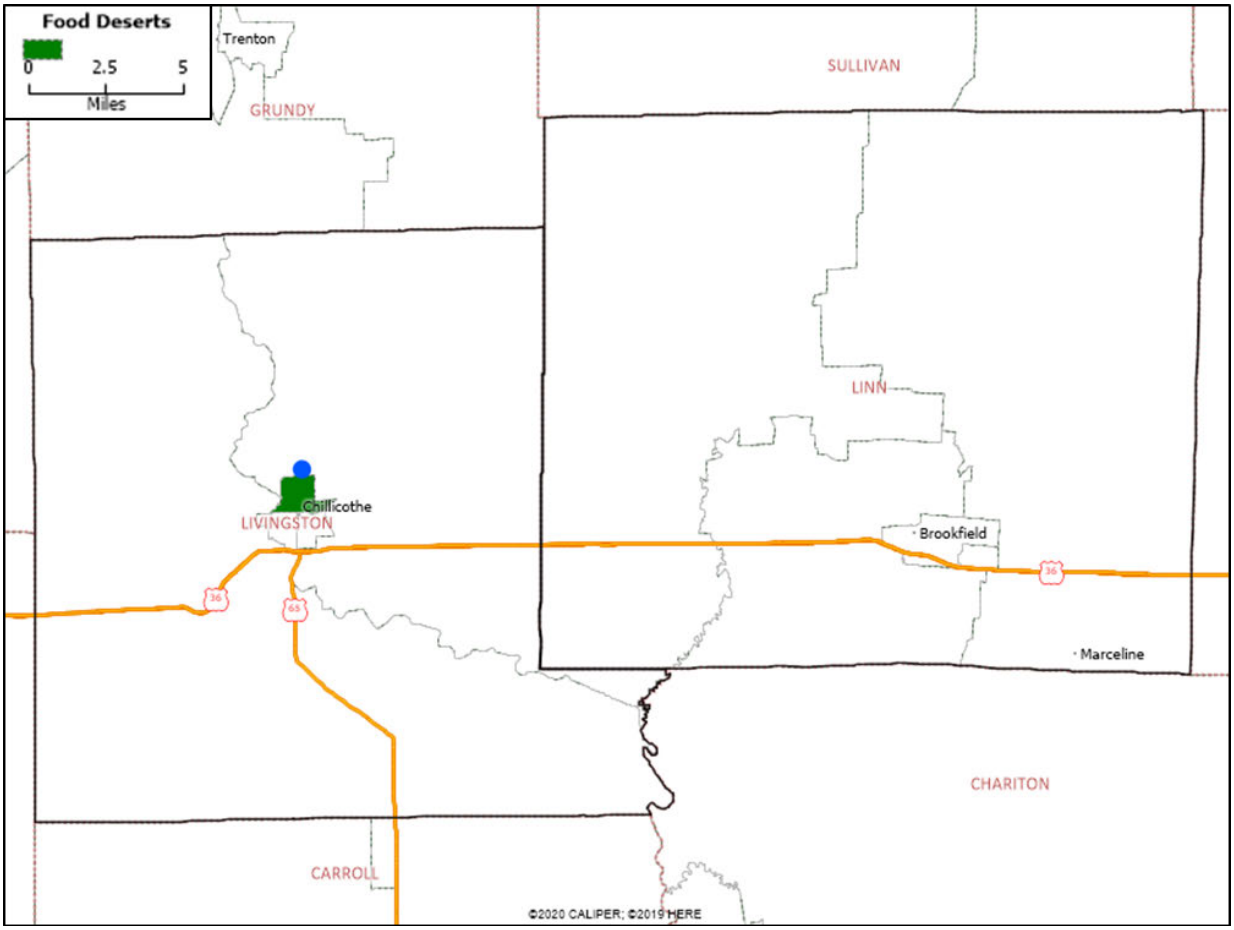
Observations

- The ACSC (PQI) analysis was based on discharges from Saint Luke's Health System hospitals only.
- About 22 percent of Livingston County's discharges were for ACSC – the highest of Missouri counties assessed. Linn had the lowest percentage at 12 percent.
- For the hospital, 18.5 percent of all discharges were for ACSCs, the second lowest of the four hospitals assessed.[14]

[13] Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.
[14] Hospitals assessed include four Saint Luke's Health critical access hospitals in KS and MO: Allen County Regional Hospital, Anderson County Hospital, Hedrick Medical Center, and Wright Memorial Hospital.

Food Deserts

Exhibit 41: Locations of Food Deserts, 2019



Source: Caliper Maptitude and U.S. Department of Agriculture, 2021.

Description

Exhibit 41 identifies where food deserts are present in the community.

The U.S. Department of Agriculture's Economic Research Service defines urban food deserts as low-income areas more than one mile from a supermarket or large grocery store, and rural food deserts as more than 10 miles from a supermarket or large grocery store. Many government-led initiatives aim to increase the availability of nutritious and affordable foods to people living in these areas.

Observations

- Food deserts are located in Livingston County in Chillicothe, proximate to the hospital.

Medically Underserved Areas and Populations

Exhibit 42: Medically Underserved Areas and Populations, 2021

Service Area Name	Designation Type	State	County
Benton - County Subdivision	Medically Underserved Area	Missouri	Linn County
Locust Creek - County Subdivision	Medically Underserved Area	Missouri	Linn County
Bucklin - County Subdivision	Medically Underserved Area	Missouri	Linn County
Jefferson - County Subdivision	Medically Underserved Area	Missouri	Linn County
Marceline - County Subdivision	Medically Underserved Area	Missouri	Linn County
Parson Creek - County Subdivision	Medically Underserved Area	Missouri	Linn County

Source: Caliper Maptitude and Health Resources and Services Administration, 2019.

Description

Exhibit 42 identifies Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs).

Medically Underserved Areas and Populations (MUA/Ps) are designated by HRSA based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[15] Areas with a score of 62 or less are considered "medically underserved."

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if "unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides."[16]

Observations

- County subdivisions throughout Linn County have been designated as Medically Underserved Areas.

[15] Heath Resources and Services Administration. See http://www.hrsa.gov/shortage/mua/index.html
[16] *Ibid.*

Health Professional Shortage Areas

Exhibit 43: Primary Care Health Professional Shortage Areas, 2021

HPSA Name	Designation Type	State	County
Hedrick Medical Center	Rural Health Clinic	Missouri	Livingston County
Low Income - Livingston County	Low Income Population HPSA	Missouri	Livingston County
Northwest Health Services, Inc.	Federally Qualified Health Center	Missouri	Livingston County
Compass Health, Inc.	Federally Qualified Health Center	Missouri	Linn County
Low Income - Linn County	Low Income Population HPSA	Missouri	Linn County

Source: Health Resources and Services Administration, 2021.

Description

Exhibits 43 through 45 identify the locations of federally designated primary care, dental care, and mental health Health Professional Shortage Areas (HPSAs).

A geographic area can be designated a HPSA if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can receive federal HPSA designation and an additional Medicare payment if it provides primary medical care services to an area or population group identified as having inadequate access to primary care, dental, or mental health services.

HPSAs can be: "(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility."[17]

Exhibit 43 provides a list of federally designated primary care HPSAs.

Observations

- The low income populations of Livingston and Linn counties were designated as Primary Care HPSAs.
- Three health clinics were also designated as Primary Care HPSAs.

[17] U.S. Health Resources and Services Administration, Bureau of Health Professionals. (n.d.). *Health Professional Shortage Area Designation Criteria.* Retrieved 2012, from http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/index.html

Exhibit 44: Dental Care Health Professional Shortage Areas, 2021

HPSA Name	Designation Type	State	County
Hedrick Medical Center	Rural Health Clinic	Missouri	Livingston County
Low Income - Livingston County	Low Income Population HPSA	Missouri	Livingston County
Northwest Health Services, Inc.	Federally Qualified Health Center	Missouri	Livingston County
Compass Health, Inc.	Federally Qualified Health Center	Missouri	Linn County
Low Income - Linn County	Low Income Population HPSA	Missouri	Linn County

Source: Health Resources and Services Administration, 2021.

Description

Exhibit 44 provides a list of federally designated dental care HPSAs.

Observations

- The low income populations of Livingston and Linn counties were designated as Dental Care HPSAs.
- Three health clinics were also designated as Dental Care HPSAs.

Exhibit 45: Mental Health Care Health Professional Shortage Areas, 2021

HPSA Name	Designation Type	State	County
Hedrick Medical Center	Rural Health Clinic	Missouri	Livingston County
Livingston County	High Needs Geographic HPSA	Missouri	Livingston County
Northwest Health Services, Inc.	Federally Qualified Health Center	Missouri	Livingston County
Compass Health, Inc.	Federally Qualified Health Center	Missouri	Linn County
Linn County	High Needs Geographic HPSA	Missouri	Linn County

Source: Health Resources and Services Administration, 2021.

Description

Exhibit 45 provides a list of federally designated mental health HPSAs.

Observations

- The entire populations of Livingston and Linn counties are designated as Mental Health Care HPSAs.
- Three health clinics were also designated as Mental Health Care HPSAs.

Findings of Other Assessments

CDC COVID-19 Prevalence and Mortality Findings

The Centers for Disease Control and Prevention (CDC) provides information, data, and guidance regarding the COVID-19 pandemic. The pandemic also has exposed the significance of problems associated with long-standing community health issues, including racial health inequities, chronic disease, access to health services, mental health, and related issues. Part of the CDC's work has included identifying certain populations that are most at risk for severe illness and death due to the pandemic. To date, the CDC's work has yielded the outlined below.

Underlying medical conditions may contribute. People with certain underlying medical conditions are at increased risk for severe illness and outcomes from COVID-19, including the following: [18]

- Cancer;
- Chronic kidney disease;
- Chronic obstructive pulmonary disease (COPD);
- Immunocompromised state from organ transplant;
- Obesity;
- Serious heart conditions, including heart failure, coronary artery disease, or cardiomyopathies;
- Sickle cell disease; and
- Type 2 diabetes mellitus.

Based on what is known at this time, people with other conditions might be at an increased risk for severe illness and outcomes from COVID-19, including:[19]

- Asthma (moderate-to-severe);
- Cerebrovascular disease (affects blood vessels and blood supply to the brain);
- Cystic fibrosis;
- Hypertension or high blood pressure;
- Immunocompromised state from blood or bone marrow transplant, immune deficiencies, HIV, use of corticosteroids, or use of other immune weakening medicines;
- Neurologic conditions, such as dementia;
- Liver disease;
- Pregnancy;
- Pulmonary fibrosis (having damaged or scarred lung tissues);
- Smoking;
- Thalassemia (a type of blood disorder); and
- Type 1 diabetes mellitus.

[18] https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html
[19] Ibid.

Older adults are at-risk. Older adults and the elderly are disproportionately at risk of severe illness and death from COVID-19. Risks increase with age, and those aged 85 and older are at the highest risk. At present time, eight out of 10 COVID-19 deaths have been in adults aged 65 or older.[20]

Men are at-risk. Data thus far indicate that men are more likely to die from COVID-19 than women. While the reasons for this disparity are unclear, a variety of biological factors, behavioral influences, and psychosocial elements may contribute.[21]

Racial and ethnic minorities are at-risk. According to the CDC, "Long-standing systemic health and social inequities have put some members of racial and ethnic minority groups at increased risk of getting COVID-19 or experiencing severe illness, regardless of age." Evidence points to higher rates of hospitalization or death among racial and ethnic minority groups, including non-Hispanic Black persons, Hispanics and Latinos, and American Indians or Alaska Natives.[22]

- Non-Hispanic American Indian or Alaska Native persons - incidence rate is approximately five times greater than non-Hispanic White persons.
- Non-Hispanic Black persons - incidence rate is approximately five times greater than non-Hispanic White persons.
- Hispanic or Latino persons - incidence rate is approximately four times greater than non-Hispanic White persons.

In explaining these differences of COVID-19 incidence rates, the CDC states: "Health differences between racial and ethnic groups result from inequities in living, working, health, and social conditions that have persisted across generations."[23]

Missouri Health Improvement Plan, 2013 – 2018, Revised 2017

In 2017, the Missouri Department of Health and Senior Services published its revised State Health Improvement Plan (SHIP) that documented its planned response to its 2013 State Health Assessment (SHA), developed with participation of partners and key stakeholders. The key strategic issues addressed by the SHIP are as follows.

1. Access to health care –enhancing access by increasing health insurance coverage among residents, reducing cost barriers, increasing the number of providers, and improving quality;
2. Modifiable risk factors – improving health outcomes by decreasing obesity, smoking, and misuse of alcohol and drugs; and

[20] https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/older-adults.html
[21] https://www.cdc.gov/pcd/issues/2020/20_0247.htm
[22] https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html
[23] *Ibid*.

3. Public health infrastructure – strengthening the public health system by mobilizing partnerships, performance management and quality improvement activities, and increasing the number of local public health agencies with workforce development plans.

Linn County Community Health Needs Assessment 2016

In 2016, the Linn County Community Health Needs Assessment was conducted on behalf of Pershing Memorial Hospital and Pershing Health System, in collaboration with Linn County Health Department. Identified needs within the community are as follows:

1. Access to affordable medical care,
2. Chronic disease;
3. Lack of recreational areas; and
4. Poverty.

Rural Action Plan – US Department of Health and Human Services, 2020

In September 2020, the US Department of Health and Human Services released their rural action plan and assessment of rural health. Key points from the plan include:

- Rural residents are more likely to die from heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke than their urban counterparts.
- A number of rural hospitals are closing (that is, ceasing to provide inpatient services) or have a high degree of financial risk. Between January 2010 and July 2020, 130 rural hospitals closed. The impacts of these closures vary by community.
- Financial distress is linked to closure risk. However, many rural hospitals lack enough patient volume to be sustainable under traditional health care reimbursement mechanisms. From 2015 to 2017, the average occupancy rate of a hospital that closed was only 22 percent. Factors contributing to reduced rural hospital volumes include, but are not limited to, declining population, market changes, and patient bypass to other facilities.
- Fewer facilities are delivering babies, which may adversely affect access to obstetric (OB) services in rural communities. The percentage of U.S. rural counties that lacked hospital OB services increased from 45 percent in 2004 to 54 percent in 2014, due to hospital and OB unit closures. Rural areas also have higher rates of maternal mortality and higher rates of infant mortality.
- The ability to recruit and retain physicians, nurses, and all other types of providers—long a challenge in rural America—continues to limit access to care. A lack of behavioral health providers is particularly pronounced in rural areas, with 17 percent of nonmetropolitan (non-core) counties lacking behavioral health providers contrasted with three percent in metropolitan counties.
- Specialty care is less accessible due to distance and travel required; people with disabilities and older Americans are disproportionately affected by these and other social determinants of health. According to results from a survey of Rural Health Clinics (RHCs) that was published in December 2019, respondents attributed access challenges

to a lack of specialty care providers in rural areas, with limited appointment availability, distance, and transportation being the other top reasons for having difficulty.

APPENDIX C – COMMUNITY INPUT PARTICIPANTS

Exhibit 46: Interviewee Organizational Affiliations

Organization
Community Action Partnership of North Central Missouri
Community Resource Center
Hedrick Family Care
Hedrick Medical Center
Livingston County Health Center
Saint Luke's Critical Access Region

Exhibit 47: Community Meeting Participants

Organization or Affiliation
Bank Midwest - Chillicothe
Chillicothe City Council
Chillicothe R-2 School District
Hedrick Medical Center
Main Street Chillicothe

APPENDIX D – CHSI PEER COUNTIES

County Health Rankings has assembled community health data for all 3,143 counties in the United States. Following a methodology developed by the Centers for Disease Control's *Community Health Status Indicators* Project (CHSI), County Health Rankings also publishes lists of "peer counties," so comparisons with peer counties in other states can be made. Each county in the U.S. is assigned 30 to 35 peer counties based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly, and poverty rates. **Exhibit 48** lists peer counties for Livingston and Linn counties.

Exhibit 48: CHSI Peer Counties – Livingston County

Livingston County, Missouri	
Arkansas County, Arkansas	Livingston County, Missouri
Randolph County, Arkansas	Vernon County, Missouri
Kit Carson County, Colorado	Chouteau County, Montana
Edgar County, Illinois	Hill County, Montana
Randolph County, Indiana	Pondera County, Montana
Rush County, Indiana	Craig County, Oklahoma
Clarke County, Iowa	Garvin County, Oklahoma
Decatur County, Iowa	Johnston County, Oklahoma
Montgomery County, Iowa	Kiowa County, Oklahoma
Bourbon County, Kansas	Latimer County, Oklahoma
Neosho County, Kansas	Marshall County, Oklahoma
Caldwell County, Kentucky	Charles Mix County, South Dakota
Logan County, Kentucky	Gregory County, South Dakota
Simpson County, Kentucky	Lyman County, South Dakota
Todd County, Kentucky	Roberts County, South Dakota
Jackson Parish, Louisiana	Tripp County, South Dakota
Wadena County, Minnesota	Lewis County, West Virginia
Barton County, Missouri	Ashland County, Wisconsin

Exhibit 48: CHSI Peer Counties – Linn County (continued)

Linn County, Missouri	
Dallas County, Arkansas	Grundy County, Missouri
Baca County, Colorado	Harrison County, Missouri
Lewis County, Idaho	Holt County, Missouri
Gallatin County, Illinois	Knox County, Missouri
White County, Illinois	Linn County, Missouri
Appanoose County, Iowa	Mercer County, Missouri
Taylor County, Iowa	Shelby County, Missouri
Wright County, Iowa	Brown County, Nebraska
Anderson County, Kansas	Jefferson County, Nebraska
Cloud County, Kansas	Richardson County, Nebraska
Greenwood County, Kansas	Sheridan County, Nebraska
Harper County, Kansas	Webster County, Nebraska
Wilson County, Kansas	Quay County, New Mexico
Woodson County, Kansas	Blaine County, Oklahoma
Pipestone County, Minnesota	Cameron County, Pennsylvania
Atchison County, Missouri	Walworth County, South Dakota
Carroll County, Missouri	Donley County, Texas
Dade County, Missouri	

APPENDIX E – IMPACT EVALUATION

This appendix highlights Hedrick Medical Center's initiatives and related impacts in addressing significant community health needs since the facility's previous Community Health Needs Assessment (CHNA) published in 2018. This is not an inclusive list of all initiatives aligned with the 2018 CHNA. Given that the process for evaluating the impact of various services and programs on health outcomes is longitudinal by nature, significant changes in health outcomes may not manifest for several community health needs assessment cycles. Each Saint Luke's facility continues to evaluate the cumulative impact.

The 2018 Hedrick Medical Center CHNA identified the following as significant needs and priority areas:

1. Behavioral Health Care
2. Increased Access to Physical Activity and Nutrition
3. Tobacco Cessation

Hedrick Medical Center (HMC)

Priority 1: Behavioral Health Care

Goal: Improve access to mental health services.

- Initiative: HMC employs a Psychiatric Mental Health Clinical Nurse Specialist (PMHCNS), available once a week via the tele-health program, to treat patients with mental health needs. In addition to the weekly visits, the specialist is also creating specific days to see new patients only.
- Highlighted Impact: HMC continued to expand its mental health services through telehealth offerings, connecting residents with specialized care from a variety of Saint Luke's Health System (SLHS) entities.

- Initiative: HMC will continue to offer a range of mental health services, including specialists and tele-health services. HMC also provides a mental health evaluation for patients who present themselves to the ED with psychological concerns or self-inflicted injuries.
- Highlighted Impact: HMC continued to expand its mental health services, connecting residents with specialized care from a variety of Saint Luke's Health System (SLHS) entities

- Initiative: HMC will start screening patients for Social Determinants of Health and connecting patients to valuable community resources that are outside the scope of the hospital's capacity.
- Highlighted Impact: SDoH screening is currently focused on access to food, housing, transportation, and social isolation. 1,193 HMC patients were screened for SDoH (June-Dec 2020). It is anticipated that SDoH needs are connected to mental health status.

- Initiative: HMC will start connecting qualifying patients with Senior Life Solutions, which is a geriatric intensive outpatient group counseling program.
- Highlighted Impact: HMC referred patients to Senior Life Solutions for intensive outpatient group counseling programs and other mental health services.

- Initiative: HMC and SLHS will continue to advocate on key health policy issues at the state and national level involving access to behavioral health services, especially for the low-income population.
- Highlighted Impact: HMC and SLHS Supported efforts to pass Missouri House Bill 432, which contains language enforcing the Federal Mental Health Parity and Addiction Equity Act. MO HB 432 was signed into law on July 14, 2021.

- Initiative: HMC will continue to be involved in and support a community Mental Health Coalition.
- Highlighted Impact: HMC continued its involvement in a community Mental Health Coalition.

- Initiative: HMC will help facilitate the Trauma Smart training for staff members of the local schools.
- Highlighted Impact: HMC and Crittenton Children's Center helped facilitate the Trauma Smart training until the program was no longer offered in local schools.

Goal: Reduce drug and substance abuse in Livingston County.

- Initiative: To help reduce substance abuse in the area, HMC is involved in the Opioid Limitation Program that will restrict the amount of opioids that are prescribed to any patient at a given time.
- Highlighted Impact: HMC continues to be involved in the Opioid Limitation Program.

- Initiative: HMC and SLHS will continue to advocate on key health policy issues at the state and national level involving Medicaid reform, access to care, and health care financing for the low-income population.
- Highlighted Impact: HMC and SLHS supported efforts to pass Missouri House Bill 432, which contains language enforcing the Federal Mental Health Parity and Addiction Equity Act. MO HB 432 was signed into law on July 14, 2021. HMC and SLHS also continued collaboration with local, state, and national partners, such as local chambers of commerce, the Missouri Hospital Association, and policymakers, fostering the environment necessary for positive movement on issues surrounding mental health and substance abuse.

Priority 2: Increased Access to Physical Activity and Nutrition

Goal: Reduce obesity in Livingston County.

- Initiative: HMC will continue to offer free access to walking paths in the healing gardens which are available to all community members.
- Highlighted Impact: HMC continued offering access to walking paths, available to and utilized by community members.

- Initiative: HMC offers free sports physicals to high school athletes in the community.
- Highlighted Impact: School physicals were held at Bishop Hogan Catholic School, Chillicothe Elementary, Chillicothe Middle School, Chillicothe High School, and others. In 2019, 669 sports physicals were performed. In 2020, 421 sports physicals were performed.

- Initiative: HMC will offer more healthy options in the hospital cafeteria that is utilized by the general public.
- Highlighted Impact: A Low Fat Entrees initiative began in 2019, and sugar-free dessert options began in 2021, with other healthy options available previously. Menus are posted on the HMC website and marked with "smart option". Nutrients are also posted in the café. 73,782 café transactions were processed in 2019 and 57,479 café transactions were processed in 2020.

- Initiative: HMC will develop a speaker's bureau in collaboration with Livingston County Health Center to present obesity-related topics six times a year.
- Highlighted Impact: No speaker's bureau was formed around obesity-related topics.

- Initiative: HMC will partner with the Livingston County Health Center to provide more exercise opportunities within the community.
- Highlighted Impact: HMC continues to explore partnerships with Livingston County Health Center.

- Initiative: HMC will offer quarterly *Lunch and Learn* sessions relating to wellness and obesity reduction.
- Highlighted Impact: Four *Lunch and Learn* sessions were completed in 2019, with 20 participants in each session. Two *Lunch and Learn* sessions were completed in 2020, with 20 participants in each session.

- Initiative: HMC will continue participation in the Community Wellness Committee sponsored by the Livingston County Health Center.
- Highlighted Impact: HMC continued participation in the Community Wellness Committee.

Goal: Reduce food insecurity in Livingston County.

- Initiative: HMC staff conducts an annual food drive for community members in need of healthy food.
- Highlighted Impact: HMC held a hospital food drive from April 1, 2019 to April 30, 2019. The donations from the drive were donated and delivered to the Livingston County Food Pantry, benefitting approximately 500 people or 200 families the pantry serves. In early 2020, during the start of the pandemic, the Livingston County Food Pantry was able to use a portion of 2019 donations to help support the 350 individuals served weekly.

- Initiative: HMC will continue to support Meals on Wheels for the Livingston County area.

- Highlighted Impact: Meals on Wheels provided lunch to participants, delivered by volunteers from churches in the community. The program provided 4,502 meals in 2019 and 3,583 meals in 2020.

- Initiative: HMC will screen patients for food insecurity and refer them to the appropriate community resources.
- Highlighted Impact: HMC screened 1,193 patients for SDoH (June 2020-Dec 2020), with 401 screening positive for food insecurity. Patients were referred and connected to available food resources.

Priority 3: Tobacco Cessation

Goal: Decrease the amount of tobacco utilizers in Livingston County.

- Initiative: HMC will partner with the Livingston County Health Center to provide Tobacco Cessation classes available to the community.
- Highlighted Impact: Tobacco cessation classes did not occur, but may be explored in the future.

- Initiative: HMC will provide a speaker to the created speaker's bureau about smoking cessation and avoidance.
- Highlighted Impact: Tobacco cessation speaker engagements did not occur, but may be explored in the future.

- Initiative: HMC will continue to educate patients about tobacco cessation options and benefits.
- Highlighted Impact: During routine patient visits, HMC providers educate patients on the importance of not smoking and encourage patients to quit. In 2019, providers documented speaking with 494 patients regarding smoking cessation. In 2020, providers documented speaking with 403 patients regarding smoking cessation.

- Initiative: HMC will collaborate with Livingston County Health Center to plan and execute a community activity for National Smoke-out Day.
- Highlighted Impact: A community activity for National Smoke-out Day did not occur. HMC continues to explore collaborations with Livingston County Health Center.

Goal: Decrease the amount of future tobacco users in Livingston County.

- Initiative: HMC will support community efforts to create non-smoking initiatives in public places.
- Highlighted Impact: Support of community efforts to create non-smoking initiatives did not occur, but may be resumed in the future.

- Initiative: HMC will collaborate with Livingston County Health Center to promote and pass Tobacco21 policies in the Livingston County areas.
- Highlighted Impact: No initiative around Tobacco21 policies was pursued. HMC continues to explore collaborations with Livingston County Health Center.

Contact us

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Hedrick Medical Center
SAINT LUKE'S HEALTH SYSTEM

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