

Hedrick Medical Center Community Health Needs Assessment

2024

◆ Hedrick Medical Center



Table of Contents

EXECUTIVE SUMMARY	4
Introduction	4
Community Assessed	4
Significant Community Health Needs.....	5
Significant Community Health Needs: Discussion.....	6
Access to Health and Preventive Services, including Maternal and Child Health.....	6
Injury and Violence	7
Mental Health	8
Needs of Older Adults	8
Nutrition, Physical Activity, and Chronic Conditions.....	9
Social Drivers of Health	10
Substance Use and Tobacco	11
DATA AND ANALYSIS	13
Community Definition	13
Secondary Data Summary	14
Demographics	14
Socioeconomic Indicators.....	15
Other Local Health Status and Access Indicators	16
Ambulatory Care Sensitive Conditions	19
Food Deserts	19
Medically Underserved Areas and Populations.....	20
Health Professional Shortage Areas	20
Findings of Other CHNAs.....	20
Community Input Summary	20
Key Stakeholder Interviews.....	21
Community and Internal Hospital Meetings	23
OTHER FACILITIES AND RESOURCES IN THE COMMUNITY	24
Hospitals	24
Federally Qualified Health Centers	24
Other Community Resources.....	24
APPENDIX A – OBJECTIVES AND METHODOLOGY	26
Regulatory Requirements.....	26
Methodology	26

Collaborating Organizations.....	27
Data Sources.....	27
Consultant Qualifications.....	28
APPENDIX B – SECONDARY DATA ASSESSMENT.....	29
Demographics.....	29
Socioeconomic indicators.....	36
People in Poverty.....	36
Unemployment.....	42
Health Insurance Status.....	43
Medical Debt.....	44
Crime Rates.....	45
Housing Affordability.....	46
Area Deprivation Index.....	48
Centers for Disease Control and Prevention Social Vulnerability Index (SVI).....	49
Other Health Status and Access Indicators.....	53
County Health Rankings.....	53
Community Health Status Indicators.....	58
Mortality Rates.....	62
Communicable Diseases.....	67
Maternal and Child Health.....	68
America’s Health Rankings.....	70
Centers for Disease Control and Prevention PLACES.....	73
Ambulatory Care Sensitive Conditions.....	80
Food Deserts.....	81
Medically Underserved Areas and Populations.....	82
Health Professional Shortage Areas.....	83
Findings of Other Assessments.....	84
Missouri State Health Improvement Plan.....	84
Missouri Maternal and Child Health Needs Assessment, Priorities and Action Plan.....	85
Rural Action Plan – US Department of Health and Human Services.....	85
APPENDIX C – COMMUNITY INPUT PARTICIPANTS.....	86
APPENDIX D – CHSI PEER COUNTIES.....	87
APPENDIX E – IMPACT EVALUATION.....	89

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 part of [Saint Luke’s](#), a faith-based, not-for-profit, aligned health system committed to providing the highest levels of excellence in compassionate health care and health-related services. With 14 hospital and campuses and more than 100 clinic locations across the Kansas City region, Saint Luke’s cares for patients in 65 specialties across 67 counties in Missouri and Kansas.

Saint Luke’s is the West Region of BJC Health System, one of the largest nonprofit health care organizations in the United States and the largest in the state of Missouri, serving urban, suburban, and rural communities across Missouri, southern Illinois, eastern Kansas, and the greater Midwest region. BJC operates as [BJC HealthCare](#) in its East Region.

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 the calendar year 2023. Livingston and Linn counties accounted for approximately 61 percent of the hospital’s 2023 inpatient cases and 79 percent of emergency room visits.

The total population of the HMC community in 2020 was 25,611.

EXECUTIVE SUMMARY

Significant Community Health Needs: Discussion

Access to Health and Preventive Services, including Maternal and Child Health

Accessing health care and preventive services is challenging for some members of the community, particularly those who are uninsured or underinsured, have limited financial resources, and with limited transportation options.

Secondary data indicate access to care and preventive services as a significant health need, including the following:

- The per-capita supply of primary care physicians, dentists, and mental health providers in Livingston and Linn counties is low compared to state and national averages.
- The federal government has designated both counties as a Health Professional Shortage Area (HPSA) for low-income residents seeking access to primary care physicians and dentists.
- Livingston and Linn counties have been designated as HPSAs for mental health professionals and Linn County has been designated a Medically Underserved Area (MUA) for low-income residents.
- A greater percentage of Livingston County residents were uninsured, 10.7 percent, compared to 9.5 percent in Missouri and 8.7 percent in the United States.
- Utilization of preventive services, such as cholesterol screening and mammograms, was lower in both counties than United States averages, as reported by CDC PLACES.
- The rate of teen births has been significantly higher in the community compared to Missouri and the United States.

Community representatives who provided input into this CHNA indicated the following:

- There is an undersupply of providers within the county, including primary care providers, specialists, and dentists.
- Women's health, obstetrics, oncology, neurology, pulmonary, and endocrinology services are particularly difficult to access.
- Access to maternal and infant services is especially challenging, impacting expecting mothers and families who need to travel to Kansas City or other urban areas for delivery services.
- Community-based family planning and related preventive services are lacking making it difficult to access birth control methods and supplies for residents without a physician.
- Teen pregnancy rates have been high in both counties with stigma, privacy concerns in a small community, and limited providers noted as barriers for young people accessing care.
- Access to mental health services, particularly crisis intervention and inpatient hospitalization, is limited. A lack of mental health providers contributes to long wait times and the need for residents to travel to providers outside of the community.
- Recruiting and retaining healthcare professionals, including physicians, is difficult.

EXECUTIVE SUMMARY

- Poverty, prevalence of uninsured residents, cost of care, transportation issues, limited health literacy, a lack of awareness of available resources, and cultural barriers exacerbate access to care issues.
- Transportation services are limited in the community and Medicaid transportation is often unreliable. EMS transportation cannot meet the demand, leading to patients being held in the emergency department for extended periods, particularly patients experiencing mental health crisis.
- Providers report having difficulty maintaining communication with less resourced patients due to interruptions in phone service and digital access.
- Residents are challenged to find providers who accept Medicaid and Marketplace® plans.
- Medicaid “unwinding” is reducing the number of lower income families and individuals with Medicaid coverage, including children.

Other community health needs assessments have identified improving access to affordable health care services and maternal and child health as a priority. The 2024 Missouri State Health Improvement Plan has prioritized advancing equitable health during the childbearing continuum, and increasing equitable access to medical, dental, maternal, and mental health services. The Maternal and Child Health (MCH) 2021-2025 Action Plan addresses improving access to services for women of childbearing age.

Injury and Violence

Experiencing injury and violence impacts community members’ health, their ability to engage in daily activities, can result in death, and have long-term effects on individuals and families.

Secondary data indicate injury and violence as a significant health need in the HMC community, including the following:

- Injury mortality was higher in Livingston (96.4 per 100,000) and Linn counties (93.6 per 100,000) compared to the U.S. (80.0 per 100,000).
- Motor vehicle accident mortality was higher in Livingston (12.5 per 100,000) and Linn (17.6 per 100,000) counties compared to U.S. averages (11.5 per 100,000).
- Transport accident mortality was higher in both counties (Livingston 13.3 per 100,000 and Linn 18.5 per 100,000) compared to the U.S. (12.3 per 100,000).
- At 54.5 percent, driving deaths with alcohol involvement were significantly higher in Livingston County compared to Missouri, 27.8 percent, and U.S, 26.0 percent.
- Disability rates were higher in all community ZIP Codes compared to the U.S., as reported by CDC PLACES.

Community input indicated the following:

- Travel time and driving distance in rural areas contribute to motor vehicle accidents.
- Participants note that injuries are higher due to living in an agricultural community.
- Crime rates have trended upward over time and are considered to be related to substance use, especially opioids and methamphetamines.

EXECUTIVE SUMMARY

Other community health assessments have identified reducing intentional and unintentional injuries as a priority in Missouri.

Mental Health

Poor mental health status and access to mental health care and services is a concern for many residents.

Secondary data indicate mental health is a significant need in the HMC community, including the following:

- The per-capita supply of mental health providers was significantly lower than overall per-capita supplies in Missouri and the United States.
- Both counties compared unfavorably to Missouri and the United States for prevalence of mentally unhealthy days among adults.
- The suicide mortality rate was significantly above state and national averages for both Livingston and Linn counties.

Community input indicated the following:

- Poor mental health status and suicide were identified by most community informants as the top health concerns impacting the community.
- Contributing factors include an under-supply of providers and facilities, stress, a lack of social connectedness, effects of the COVID-19 pandemic, and mental health stigma.
- Mental health is reported to present as anxiety, depression, and severe and persistent mental illness.
- Rising suicide rates have been a major concern, across all ages.
- Poor mental health affecting children and teens is a growing problem, with rates of anxiety and depression amongst adolescents being a primary concern for local high schools.
- Mental health crisis intervention, stabilization, and inpatient services are limited locally, and residents are often reluctant or unable to seek care outside the community.
- The relationship between mental health, substance use, and suicide is considered inextricable.
- Community informants indicate issues with self-medication due to the undersupply of professional mental health support creating compounding health problems.

Needs of Older Adults

The number of older adults in the community is growing while younger cohorts are declining. This growth will likely increase needed support for healthcare, housing, transportation, and nutrition assistance.

Secondary data indicate needs of older adults is a significant concern in the HMC community, including the following:

EXECUTIVE SUMMARY

- The population of adults 65 years of age and older in the HMC community is projected to grow 12.5 percent between 2020 and 2030 compared to a decline of 2.9 percent for the total population.
- The percentages of chronic conditions associated with aging, including arthritis, COPD, high cholesterol, and stroke, were higher in both counties, compared to the United States overall, as reported by CDC PLACES.
- Utilization of preventive and screening tests for older adults was lower in most ZIP Codes in the community compared to the United States, as reported by CDC PLACES.

Community input indicated the following:

- There is a greater concern about the increasing number and severity of health conditions with age.
- Older adults face social isolation and there is a remaining fear of COVID-19.
- It is more difficult for older adults to access specialty care in the rural community and traveling to more urban areas for care is challenging.
- Healthcare professionals and leaders note that meeting the increased needs and demands of older adults coupled with the decline in working-age population is likely to exacerbate problems with workforce shortages.
- Older adults have an increased risk of falling.
- Some older residents may face lessened family support to age in place.

Nutrition, Physical Activity, and Chronic Conditions

Rates of obesity and physical inactivity are high within the community. These issues can contribute to chronic conditions which are also comparatively high.

Secondary data indicate nutrition, physical activity, and chronic conditions as a significant health need in the HMC community, including the following:

- The percentage of adults with a BMI over 30, was higher in Livingston County (41.0 percent) and Linn County (38.3 percent) compared to the United States (34.0 percent).
- The rate of adults engaging in leisure time physical activity was lower in both counties compared to Missouri and the U.S.
- Adequate access to locations for exercise opportunities was lower in Livingston (65.1 percent) and Linn (66.2 percent) compared to the U.S. (84.0 percent).
- Mortality rates for chronic conditions associated with obesity, such as heart disease and diabetes, were above rates for the United States overall.

Community informants indicated the following:

- Community members frequently identified nutrition, physical activity (for adults and for children), and chronic conditions as major health concerns impacting the community.
- Food insecurity, nutrition knowledge, and cultural norms were cited as contributing factors.

EXECUTIVE SUMMARY

- High cost of food, especially fresh produce, makes it challenging for families to have healthy food available at home.
- There is concern with access to healthy food and the quality of children's diets at all grade levels.
- Food pantries rely on donations which are often less healthy, processed foods.

The most recently published Missouri State Health Assessment and Community Health Improvement Plan addressed reducing inequities in chronic disease rates by increasing access to healthy food and increasing safe places to be active.

Social Drivers of Health

Social drivers of health, also called social determinants of health, (SDOH), are conditions in the environment where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.¹ Social drivers of health play an important role in health equity.

Secondary data indicate SDOH are a significant health need in the HMC community, including the following:

- A higher percentage of Linn County residents lived in poverty, 16.7 percent, compared to 12.8 percent in Missouri and 12.5 percent in the U.S.
- At 43.2 percent, poverty rates for Black residents in Livingston County were significantly higher than for White residents and all races and ethnicities combined.
- In Linn County, poverty rates for Hispanic (or Latino) residents (53.8 percent) were significantly higher than rates for White residents (13.5 percent).
- A higher percentage of Linn County children lived in poverty, 28.8 percent, compared to 16.6 percent in Missouri and 16.7 percent in the United States.
- Several census tracts in the community were identified as low-income by the federal government.
- Census tracts in Chillicothe and Brookfield were in the bottom quartile nationally for socioeconomic status vulnerability, according to the CDC Social Vulnerability Index.
- Neighborhoods in Chillicothe, Brookfield, and Marceline were identified as having high levels of socioeconomic disadvantage, according to the University of Wisconsin's Area Deprivation Index.
- Census tracts in central and northwestern Livingston County, and in Brookfield, in Linn County, ranked in the bottom quartile nationally for housing type and transportation vulnerability.
- Both counties compared unfavorably to Missouri and the U.S. for the percentage of population that drives alone to work.

Community informants indicated the following:

¹ <https://health.gov/healthypeople/priority-areas/social-determinants-health>

EXECUTIVE SUMMARY

- Community input identified poverty, access to safe and affordable housing, and transportation among the most significant community health needs in Livingston and Linn counties.
- Lack of access to stable jobs that provide a living wage is a contributing factor to SDOH concerns.
- Participants indicate an increase in children living in poverty and concerns about home environments and family structure.
- Social drivers of health are noted as impacting the ability to access and navigate healthcare.
- Lack of transportation was identified as a significant need in Livingston and Linn counties. Community members refer to a lack of public, private, and ride-share options and the need to travel far for health services as problematic.
- Community input indicates that the recent rise in the cost of owning and operating a private vehicle contributes to transportation challenges. Older adult residents and low-income populations are particularly affected.
- Community input participants indicated a need for more community health workers (CHWs) and a need for culturally appropriate care for certain populations such as Amish and Tongan communities.

Other health assessments, including the Rural Action Plan have identified transportation-related challenges as significant community health concerns in the area.

Substance Use and Tobacco

Substance use disorders and smoking rates are significant, growing issues in Livingston and Linn counties. Disorders associated with opioids, alcohol, tobacco, and other substances are problematic.

Secondary data that indicate substance use and tobacco are significant health needs in the community, including the following:

- In Livingston County, driving deaths with alcohol involvement were significantly above Missouri and U.S. averages.
- Above average tobacco use and smoking rates have been persistent problems in both counties.
- The percentage of mothers who smoked while pregnant was significantly higher than the state average.

Community input indicated the following:

- There has been a normalization of smoking and vaping.
- The community has been greatly impacted by the opioid epidemic.
- Substance use is observed across all demographics and ages. The use of alcohol, marijuana, and fentanyl are reported to be prevalent amongst youth.
- Mental health and substance use are considered comorbid conditions.

EXECUTIVE SUMMARY

- There is a community need for addiction focused mental health services, medication assisted treatment programs, and peer support programs.

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 inpatient discharges and emergency room (ER) visits in the calendar year 2023.

HMC’s community was defined as Livingston and Linn counties in Missouri. The counties accounted for 61.3 percent of the hospital’s 2023 inpatient volumes and 78.8 percent of its emergency room visits (**Exhibit 1**).

Exhibit 1: HMC Discharges and Emergency Room Visits, 2023

County	Inpatient Discharges	Percent Discharges	ER Visits	Percent ER Visits
Livingston (MO)	581	48.5%	6,150	68.6%
Linn (MO)	154	12.8%	911	10.2%
Community	735	61.3%	7,061	78.8%
Other Areas	464	38.7%	1,903	21.3%
Hospital Total	1,199	100.0%	8,964	100.0%

Source: Analysis of Saint Luke’s utilization data, 2023.

The total population of the HMC community in 2020 was 25,611 persons (**Exhibit 2**).

Exhibit 2: Community Population by County, 2020

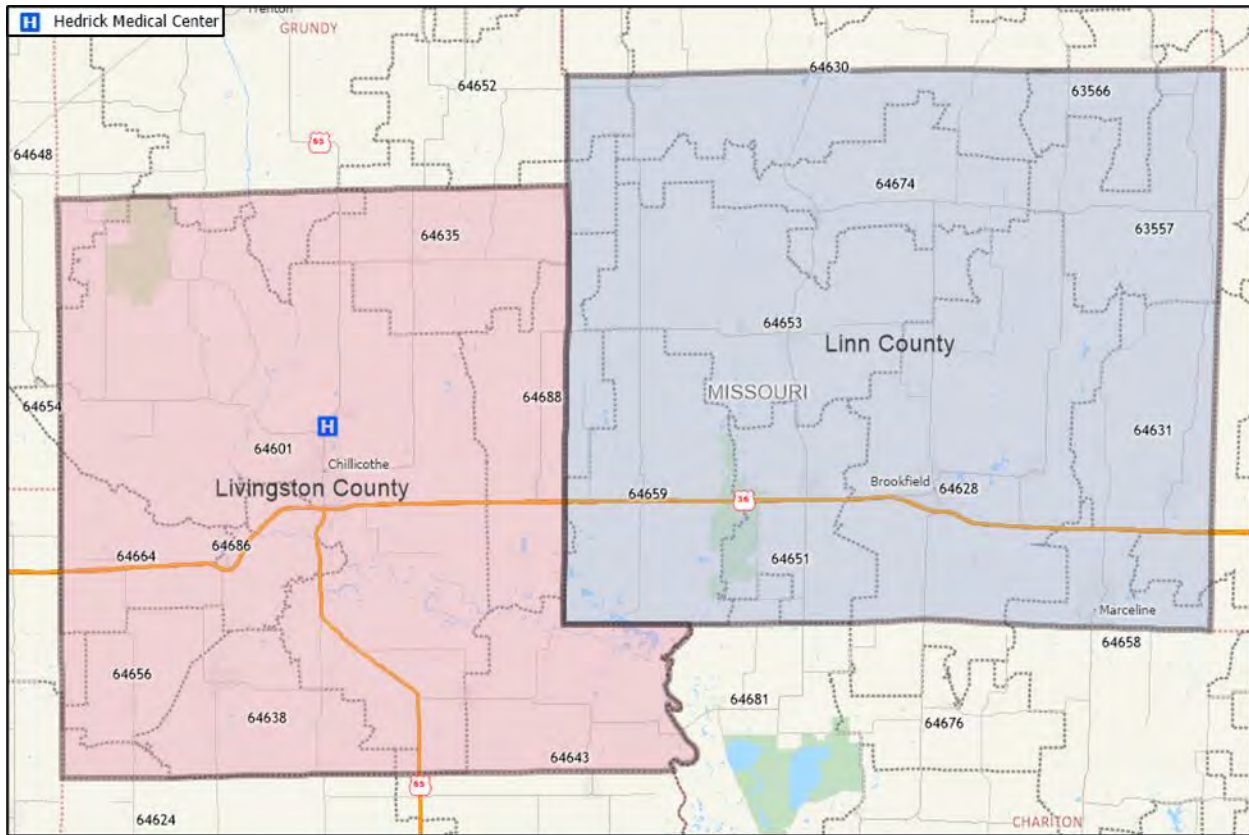
County	Total Population 2020	Percent of Total Population 2020
Livingston (MO)	14,134	55.2%
Linn (MO)	11,477	44.8%
Community	25,611	100.0%

Source: Missouri Office of Administration, Budget and Planning. Accessed via <https://oa.mo.gov/budget-planning/demographic-information/population-projections> on 4/18/24.

The hospital is in Chillicothe, Missouri (Livingston County, ZIP Code 64601). **Exhibit 3** portrays HMC’s community and ZIP Code boundaries within Livingston County.

DATA AND ANALYSIS

Exhibit 3: Hedrick Medical Center Community



Source: Caliper Maptitude, 2024.

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 2.9 percent from 2020 to 2030 (approximately 700 people). However, the population 65 years of age and older is anticipated to grow during the same period by 12.5 percent (or 770 people). This change will likely contribute to greater demand for health services as older adults typically need and use more services than younger people.

Demographic characteristics such as age, race/ethnicity, and income levels vary across the counties. In 2020, there was a variation of 7.5 years in life expectancy across census tracts in Livingston and Linn counties. The census tract including Chillicothe and the HMC campus had the lowest life expectancy in the community. Over 36 percent of residents in ZIP Code 63566 (Winigan, Linn County) were age 65 or older in 2022. This proportion is only 7.1 percent in ZIP Code 64638 (Dawn, Livingston County). Black residents comprised approximately 3.0 percent

DATA AND ANALYSIS

of the population in ZIP Codes 64601 and 64643, which includes Chillicothe and Hale (Livingston County). All other community ZIP Codes had less than 1.5 percent of residents identified as Black. Utica (ZIP Code 64686) had the highest proportion of Hispanic (or Latino) residents at 8.9 percent.

The percentage of adults without a high school diploma was higher in Linn County compared to Missouri and the United States. The proportion of residents living with a disability was higher in Livingston and Linn counties and Missouri compared to the U.S.

Socioeconomic Indicators

Poverty is correlated with negative health outcomes and people who live in poverty tend to have higher disease burden.² In 2018-2022, 10.4 percent of Livingston County residents and 16.7 percent of Linn County residents lived in poverty. Linn County's poverty rate was above Missouri and U.S. averages. Poverty rates for communities of color have been higher than rates for White residents in both counties.

At 28.8 percent, the percentage of children in poverty, in Linn County, has been well above the state (16.6 percent) and national average (16.7 percent).

Several census tracts in Livingston and Linn counties have been identified as "low-income". These census tracts surrounded Chillicothe in Livingston County and were in southcentral Linn County, including Brookfield.

In 2022, the child food insecurity rate in Linn County was above the Missouri average. In Missouri, the food insecurity rates for communities of color have been above U.S. averages.

Significant disparities in socioeconomic indicators exist between the LGBT community and the straight/heterosexual community. Missouri residents who identified as LGBT individuals were more likely to be unemployed, uninsured, food insecure, and experience low-income than residents who identified as straight/heterosexual.

Due to the COVID-19 pandemic, unemployment rates rose sharply from 2019 through 2020. In 2021, unemployment rates declined and fell below pre-pandemic levels in both counties, Missouri, and the United States.

Livingston and Linn counties have had a higher percentage of the population without health insurance than the United States. A June 2012 Supreme Court ruling provided states with discretion regarding whether to expand Medicaid eligibility. As of 2024, Missouri is among one of the forty states to have expanded Medicaid. According to the Centers for Medicare & Medicaid Services (CMS), 275,000 Missourians became eligible for comprehensive health coverage due to Medicaid expansion.

² <https://nationalhealthcouncil.org/blog/limited-access-poverty-and-barriers-to-accessible-health-care/>

DATA AND ANALYSIS

In 2022, Livingston and Linn counties' share of the population with medical debt in collections was lower than Missouri. In Missouri, medical debt has been much more prevalent in communities of color.

Overall crime rates in both counties have been below Missouri averages. Missouri crime rates have compared unfavorably to United States averages for most crime types.

The percentage of households designated as rent burdened in Livingston and Linn counties (approximately 29 percent) has been below the state (45.2 percent) and national average (49.9 percent). The percentage of households rent burdened was highest (46.3 percent) in ZIP Code 64658, near Marceline (Linn County).

The Area Deprivation Index (ADI) ranks neighborhoods by level of socioeconomic disadvantage and includes factors for income, education, employment, and housing quality. The highest ADI measures were in Chillicothe (Livingston County) and in southcentral Linn County, including Brookfield.

The Centers for Disease Control's Social Vulnerability Index indicated census tracts with the highest socioeconomic vulnerability were present Chillicothe (Livingston County) and Brookfield (Linn County).

Other Local Health Status and Access Indicators

In the 2024 *County Health Rankings*, for Health Outcomes, Livingston and Linn counties are faring better than the average county in Missouri and the nation. For Health Factors, Livingston and Linn counties are faring about the same as the average county in Missouri and the nation.

Livingston and Linn counties compared unfavorably to the United States for a variety of indicators including fair or poor health, number of mentally and physically unhealthy days, health behaviors (smoking, obesity, and physical activity), population without health insurance, supply of providers, flu vaccinations, adults with post-secondary education, children in poverty, injury deaths, air pollution, and driving alone to work.

Several indicators were significantly worse than U.S. averages including the percent of driving deaths with alcohol involvement (Livingston County), teen birth rate (Livingston County), per capita supply of primary care physicians and dentists (Linn County), and per capita supply of mental health providers (both counties).

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 benchmarked poorly compared to peer counties for several indicators, including:

DATA AND ANALYSIS

- Average number of mentally unhealthy days (Livingston)
- Percent driving deaths with alcohol involvement (Livingston)
- Percent of workforce that drives alone to work (Livingston)
- Adult smoking (Linn)
- Per capita supply of dentists (Linn)
- Per capita supply of mental health providers (both counties)

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, 41.0 percent of Livingston County's adults were obese; the average for the United States was 34.0 percent. The last column of the exhibit identifies where more information regarding the data sources can be found in this report.

DATA AND ANALYSIS

Exhibit 4: Significant Indicators

Indicator	Geographic Area	Area Value	Benchmark Value	Benchmark Area	Exhibit
65+ population change, 2020-2030	Community	12.5%	-2.9%	Community total	8
Poverty rate, overall, 2018-2022	Linn County	16.7%	12.5%	United States	15
Poverty rate, Black, 2018-2022	Linn County	43.2%	16.7%	Linn County, total	16
Poverty rate, Hispanic (or Latino), 2018-2022	Linn County	53.8%	16.7%	Linn County, total	16
Percent children in poverty, 2018-2022	Linn County	28.8%	16.7%	United States	17
LGBT population uninsured, 2019	Missouri	22%	11%	Straight/heterosexual Missouri	20
LGBT population food insecure, 2019	Missouri	27%	14%	Straight/heterosexual Missouri	20
Percent adults fair or poor health	Livingston County	18.5%	14.0%	United States	33
	Linn County	18.5%	14.0%	United States	33
Average number of mentally unhealthy days	Livingston County	5.9	4.8	United States	33
	Linn County	5.4	4.8	United States	33
Percent of adults who smoke	Livingston County	21.9%	15.0%	United States	33
	Linn County	22.3%	15.0%	United States	33
Obesity (percent adults with BMI>30)	Livingston County	41.0%	34.0%	United States	33
	Linn County	38.3%	34.0%	United States	33
Teen birth rate, per 1,000 female population, ages 15-19	Livingston County	26.3	17.0	United States	33
Ratio of population to primary care physicians	Linn County	2,961:1	1,330:1	United States	33
Ratio of population to dentists	Linn County	3,940:1	1,360:1	United States	33
Ratio of population to mental health providers	Livingston County	1,200:1	320:1	United States	33
	Linn County	2,955:1	320:1	United States	33
Injury mortality	Livingston County	96.4	80.0	United States	33
	Linn County	93.6	80.0	United States	33
Percent driving deaths with alcohol involvement	Livingston County	54.5%	29.4%	Peer Counties	34
COVID-19 mortality, per 100,000, 2023	Livingston County	719.7	337.9	United States	35
	Linn County	631.4	337.9	United States	35
Cardiovascular disease mortality, per 100,000, 2011-2020	Linn County	330.6	219.9	United States	36
Chronic lower respiratory disease mortality, per 100,000, 2011-2020	Livingston County	62.3	40.3	United States	36
	Linn County	89.8	40.3	United States	36
Renal failure mortality, per 100,000, 2011-2020	Livingston County	23.3	13.1	United States	36
	Linn County	32.8	13.1	United States	36
Suicide by discharge of firearms, per 100,000, 2011-2020	Livingston County	13.1	6.6	United States	36
	Linn County	17.4	6.6	United States	36
Percent mothers who smoked during pregnancy, 2021	Livingston County	18.2%	10.1%	Missouri	40
Infant mortality rate, Black, per 1,000 live births, 2016-2020	Missouri	11.2	5.5	United States, overall	41

Source: Verité Analysis.

DATA AND ANALYSIS

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

- Asthma ER visits,
- Avoided care due to cost,
- Cancer screenings,
- Crowded housing and severe housing problems,
- Drug deaths,
- Educational attainment,
- Firearm deaths,
- Food insecurity,
- Homicide,
- Infant mortality,
- Low birth weight babies,
- Medical debt in collections,
- Poverty rates,
- Preventable hospitalizations,
- Sexually transmitted infections,
- Teen births, and
- Unemployment.

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.”³ Among these conditions are: diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

Livingston County had a proportionately higher rate of discharges for ACSCs compared to Linn County, 28.7 percent compared to 18.5 percent. ACSC discharge rates in the HMC community were comparatively high (the average for all SLHS metro hospitals in 2022 was 12.9 percent).

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. In 2019, a census tract in Chillicothe (Livingston County), proximate to the HMC campus, was a federally designated food desert.

³Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

DATA AND ANALYSIS

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.” The Benton Service area, comprised of six county subdivisions in Linn County, has been designated as a medically underserved area.

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. Both counties have been designated as mental health care HPSAs.

Findings of Other CHNAs

The State of Missouri, local community organizations, 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):

- Equitable access to health care services,
- Health behaviors including chronic disease, access to healthy food, and physical activity,
- Health equity,
- Maternal and child health,
- Prevention of tobacco related illness and death,
- Public health threat preparedness, and
- Social drivers of health.

Community Input Summary

Community input was gathered through key stakeholder interviews and community meetings. Two community meetings relevant to HMC were conducted, including one focused on Livingston and Linn County stakeholders and another meeting with HMC staff members. Interviews were conducted in-person and via online video conferences. Staff meetings were conducted by online video conference and community meetings were conducted in person.

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

DATA AND ANALYSIS

Key Stakeholder Interviews

Five (5) individuals from four (4) organizations were interviewed to learn about community health issues in Livingston and Linn counties. Participants included individuals representing public health departments, social service organizations, public schools, community health centers, and similar organizations.

Questions focused on identifying and discussing significant health issues in the community and significant barriers to accessing health resources. Interviewees were asked a question about the pandemic's impacts and on what has been learned about the community's health given those impacts. Community partners were also 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.

Interview participants most frequently identified the following issues as current *significant health concerns* in the community:

- **Mental Health** is a significant issue, presenting as depression, anxiety, and severe and persistent mental illness. Rising rates of suicide across all ages is a major concern. **Access to mental health services** is also limited due to a lack of providers and facilities (particularly for inpatient hospitalization) leading to long wait times. Crisis intervention, stabilization care, and addiction focus mental health support are also noted as significant needs. Participants indicate that telehealth and virtual consultations have helped improve access and reduce some barriers to care by providing anonymity.

Participants noted that mental health is a growing concern among youth, with constant digital and social media access presenting an increasing public health challenge. Interview participants refer to the younger generation's ease and knowledge to seek mental health support as a potential protective factor.

- Issues with **substance use disorders** persist, with the use of opioids, alcohol, and tobacco cited as significant and growing concerns. Treatment for substance use disorder is also limited and often has long wait or travel times. The relationship between mental health, substance use, and suicide is considered inextricable.
- The **needs of older adults** are significant as the population ages. Older adults tend to have an increasing number of health conditions and therefore an increased demand for services. Social isolation impacts older adults as they may have mobility and transportation concerns. COVID-19 remains a fear for many older adults, creating further barriers to socialization.
- **Transportation** is a significant concern, limiting the ability to access basic needs and medical services (particularly specialty providers in larger metro areas) due to limited public options. Community partners note that distance to appointments and services is the primary access problem. Older adults and low-income populations are most affected by transportation issues.

DATA AND ANALYSIS

- There is a **lack of health care providers and healthcare workforce issues** throughout the region, limiting access for many residents. This issue is particularly pronounced for **specialty providers** such as gynecology, obstetrics, and oncology. Due to the low supply of physicians, residents must travel far for care. There are recruitment and retention issues in the rural community, and it's reported that healthcare workers chose to leave professions or retire due to the COVID-19 pandemic.
- **Access to healthy foods** is an issue for many residents due to the high cost of healthy food, and the prevalence of less expensive, poor quality nutrition choices. Access to nutrition education, registered dietitians, and chronic disease management is limited. Health professionals indicate a need for more diabetes specialists in the community.
- **Poverty** is a significant concern, often systemic and generational throughout the area. Many job opportunities offer low wages, making it difficult for families to overcome poverty. Low-income residents and “working poor” have limited access to many resources, including basic needs and health care. Interviewees state that social influences of health and **basic needs insecurity** have many impacts on health and wellbeing. Transportation and affordable housing were the most identified concerns.
- Despite resources being available, for some residents, **low health literacy, lack of knowledge of resources, and difficulty navigating a complex health system** leads to poorer health. Poor **internet access and connectivity issues** contribute to challenges with obtaining information and residents connecting with healthcare providers.
- The **health and wellbeing of children** is a concern, with issues around healthy eating, smoking and vaping, substance use, and mental health issues. Poverty plays a large role in child vulnerability as well.
- **Lack of health insurance** limits access to care for residents, with few options available to those without health coverage. Additionally, residents are challenged to find providers who accept Medicaid and Marketplace® plans.

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

- **Isolation** was widespread and impacting the **mental health** of many residents, particularly among older adults, children, and more rural populations.
- 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.
- **Telehealth represented one of the successes** of the pandemic, with many residents having increased access to health services due to an increasingly online model.

DATA AND ANALYSIS

Community and Internal Hospital Meetings

From May 2 through June 7, 2024, six 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 counties⁴, and two meetings were comprised of staff from HMC and from other Saint Luke’s Health System critical access hospital facilities.

Twenty (20) 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 administration, and local policymakers.

Each meeting began with a presentation that discussed the CHNA process and purpose, an overview of secondary data, and a preliminary summary of unfavorable community health indicators. Meeting participants were then asked to choose the “top five” community health concerns, identify access to care issues, and identify geographic areas and/or populations with the greatest unmet needs via an individual online survey. After completion of the online survey, meeting participants engaged in a facilitated group discussion of the most significant health needs, barriers to accessing care, underlying issues impacting health and wellbeing, and strengths and resources available in the community.

The table below presents the percentage of prioritization votes in the selection of “top five” most significant health issues impacting health and wellbeing in the community.

Health Need	Percent of HMC Staff Votes (N=12)	Percent of Community Votes (N=8)
Mental Health	100.0%	87.5%
Social Drivers of Health	91.7%	75.0%
Nutrition, Physical Activity, and Obesity	75.0%	25.0%
Substance Abuse	58.3%	62.5%
Maternal, Infant, and Child Health	50.0%	87.5%
Access to Health Services	41.7%	50.0%
Tobacco	41.7%	37.5%
Preventive Services and Health Literacy	16.7%	25.0%
Injury and Violence	0.0%	25.0%

⁴ 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, 2024

Hospital	Address	City (State)	County	ZIP Code
Hedrick Medical Center	2799 North Washington Street	Chillicothe (MO)	Livingston	64601
Pershing Memorial Hospital	130 East Lockling	Brookfield (MO)	Linn	64628

Source: Missouri Department of Health and Senior Services, 2024.

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 are currently two FQHC sites operating in the community (**Exhibit 6**).

Exhibit 6: Federally Qualified Health Centers Located in Community, 2024

Name	Address	City	County	ZIP Code
Northwest Health Services – Chillicothe	300 W Business 36	Chillicothe (MO)	Livingston	64601
Compass Health, Inc.	1600 N Missouri Avenue	Marceline (MO)	Linn	64658

Source: Health Resources and Services Administration, 2024.

Other Community Resources

Many social services and resources are available throughout Missouri to assist residents. The Heart of Missouri United Way 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:

- Clothing and Household Items
- Consumer, Information, and Municipal Services
- COVID-19 Resources
- Disaster Services
- Education
- Employment
- Environment, Arts, and Recreation

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

- Food
- Health, Wellness, and Dental
- Housing and Utilities
- Income Support
- Individual and Family Support
- Legal and Public Safety
- Mental Health and Addictions
- Transportation

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: [Saint Luke's Community Resource Hub](#)

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.⁵ 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

⁵ Internal Revenue Code, Section 501(r).

APPENDIX A – OBJECTIVES AND METHODOLOGY

facility’s principal functions (e.g., focus on a particular specialty area or targeted disease).”⁶ 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 data⁷ 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.

⁶ 501(r) Final Rule, 2014.

⁷ “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.

APPENDIX A – OBJECTIVES AND METHODOLOGY

Input from people representing the broad interests of the community was considered through key informant interviews (5 participants) and community meetings (20 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 [Community Health Needs Assessments & Implementation Plans | Saint Luke's Health System \(saintlukeskc.org\)](http://CommunityHealthNeedsAssessments&ImplementationPlans|SaintLukesHealthSystem.saintlukeskc.org).

Consultant Qualifications

Verité Healthcare Consulting, LLC (Verité) was founded in May 2006 and is 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 150 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 and Linn counties, Missouri.

Demographics

Exhibit 7: Change in Community Population by County, 2020 to 2030

Area	Total Population 2020	Total Projected Population 2030	Percent Change 2020-2030
Livingston (MO)	14,134	14,193	0.4%
Linn (MO)	11,477	10,696	-7.3%
Community	25,611	24,889	-2.9%

Source: Missouri Office of Administration, Budget and Planning. Accessed via <https://oa.mo.gov/budget-planning/demographic-information/population-projections> on 4/18/24.

Description: Exhibit 7 portrays the estimated population by county in 2020 and projected to 2030.

Observations

- Between 2020 and 2030, the HMC community is projected to decline by 722 persons (2.9 percent).
- Livingston County is expected to grow slightly (0.4 percent), while Linn County is expected to decline in population by 7.3 percent.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 8: Change in Community Population by Age and Sex Cohort, 2020 to 2030

Age/Sex Cohort	Population 2020	Projected Population 2030	Percent Change 2020-2030
0-19	6,640	6,339	-4.7%
Female 20 - 44	3,972	3,768	-5.4%
Male 20 - 44	3,438	3,293	-4.4%
45 - 64	6,191	5,350	-15.7%
65+	5,370	6,139	12.5%
Community Total	25,611	24,889	-2.9%

Source: Missouri Office of Administration, Budget and Planning. Accessed via <https://oa.mo.gov/budget-planning/demographic-information/population-projections> on 4/18/24.

Description: Exhibit 8 shows the HMC community population for certain age and sex cohorts in 2020, with projections to 2030.

Observations

- While the total population is expected to decrease, the population aged 65 and older is expected to increase by 12.5 percent during the period.
- The growth of older populations is likely to lead to greater demand for health services, since older individuals typically need and use more services than younger people.

Exhibit 9: Population by Race and Ethnicity, 2022

Race	Livingston (MO)	Linn (MO)	Missouri	United States
White	96.2%	92.3%	79.4%	65.9%
Black or African American	0.7%	2.9%	11.3%	12.5%
Asian	0.4%	0.9%	2.1%	5.8%
Two or More Races	2.1%	3.3%	5.4%	8.8%
Hispanic (or Latino)	2.9%	2.1%	4.6%	18.7%

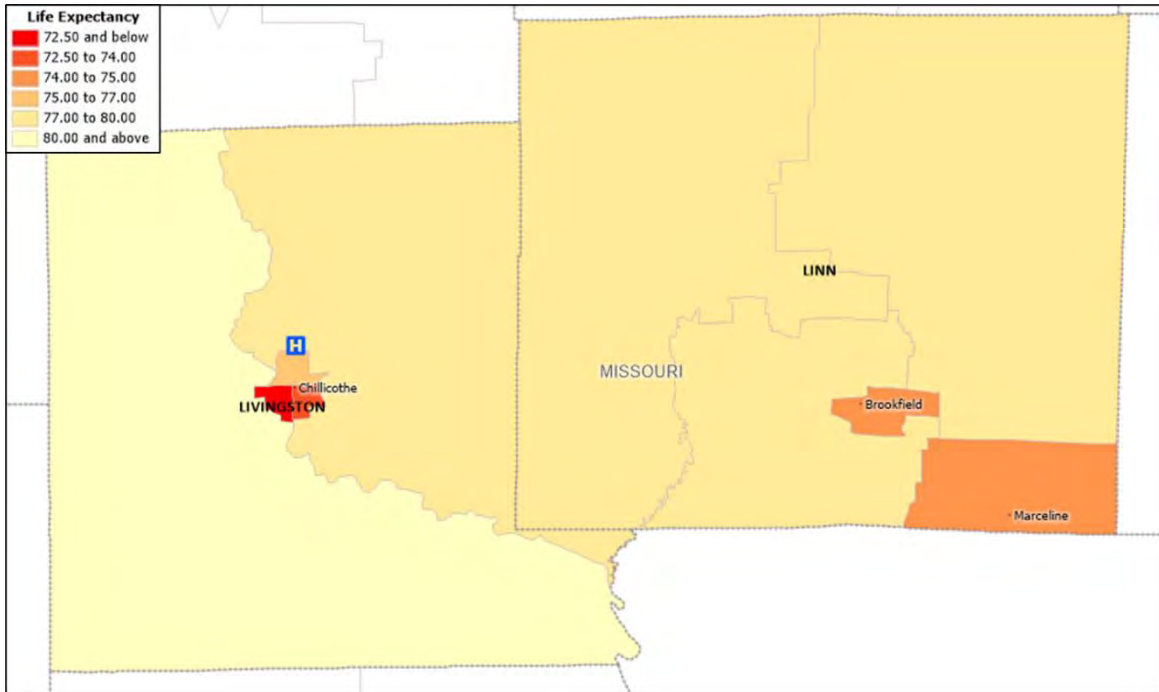
Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Description: Exhibit 9 presents the percentage distribution of the population by race and ethnicity for Livingston County, Linn County, Missouri, and the U.S.

Observations

- In 2022, over 90 percent of Livingston and Linn County residents identified as White (96.2 and 92.3 percent).

Exhibit 10: Life Expectancy by Census Tract, 2020



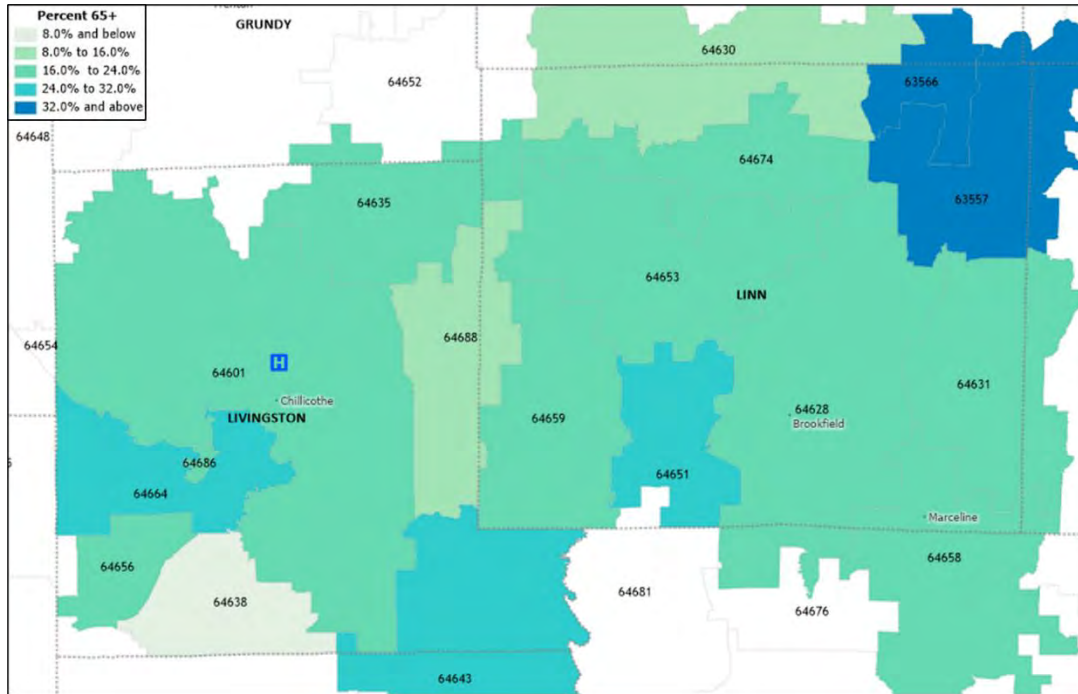
Source: Life Expectancy Estimates by U.S. Census Tract, 2010-2015. National Center for Health Statistics, 2020, and Caliper Maptitude, 2024.

Description: Exhibit 10 presents estimated life expectancy by census tract for Livingston and Linn counties.

Observations

- In 2020, there was a variation of 7.5 years in life expectancy across census tracts in Livingston and Linn counties.
- Census tracts near Chillicothe in Livingston County, and near Brookfield and Marceline in Linn County had comparatively lower life expectancy.

Exhibit 11: Percent of Population – Aged 65+, 2022



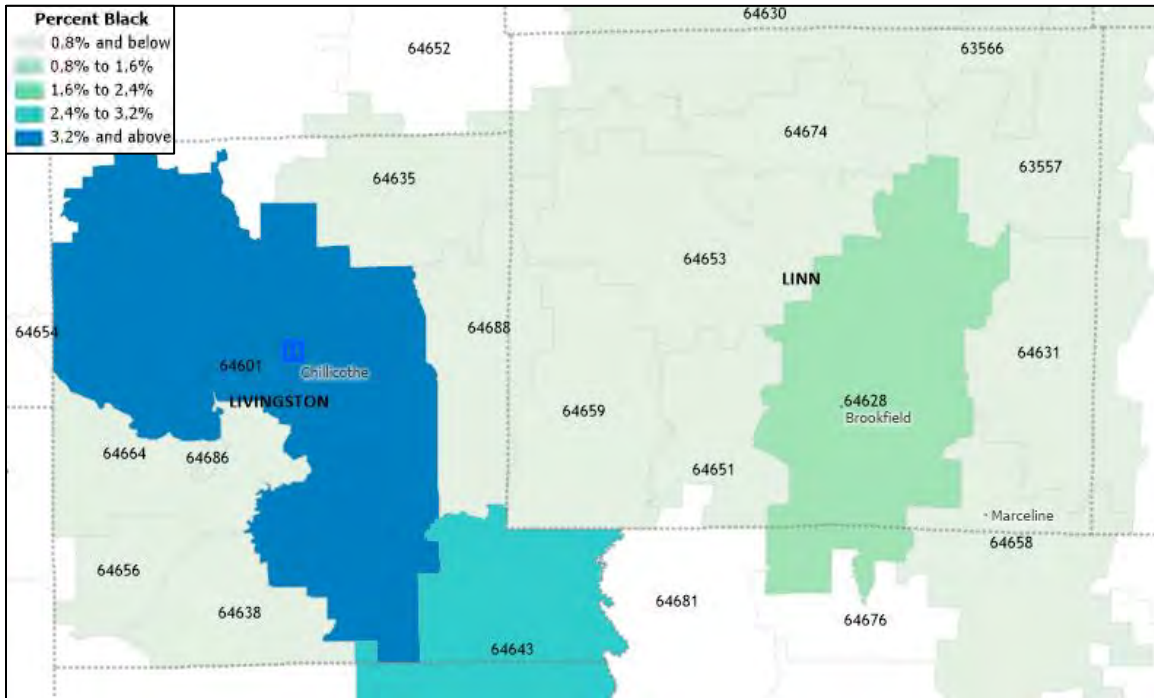
Source: U.S. Census Bureau, 2018-2022, American Community Survey 5-Year Estimates, and Caliper Maptitude, 2024.

Description: Exhibit 11 portrays the percentage of the population 65 years of age and older by ZIP Code.

Observations

- ZIP Code 63566 and 63557 (Winigan and New Boston, Linn County) had the highest proportions (36.2 and 32.7 percent) of residents 65 and older.
- ZIP Code 64638 (Dawn in Livingston County) had the lowest proportion of residents 65 and older (7.1 percent).

Exhibit 12: Percent of Population – Black, 2022



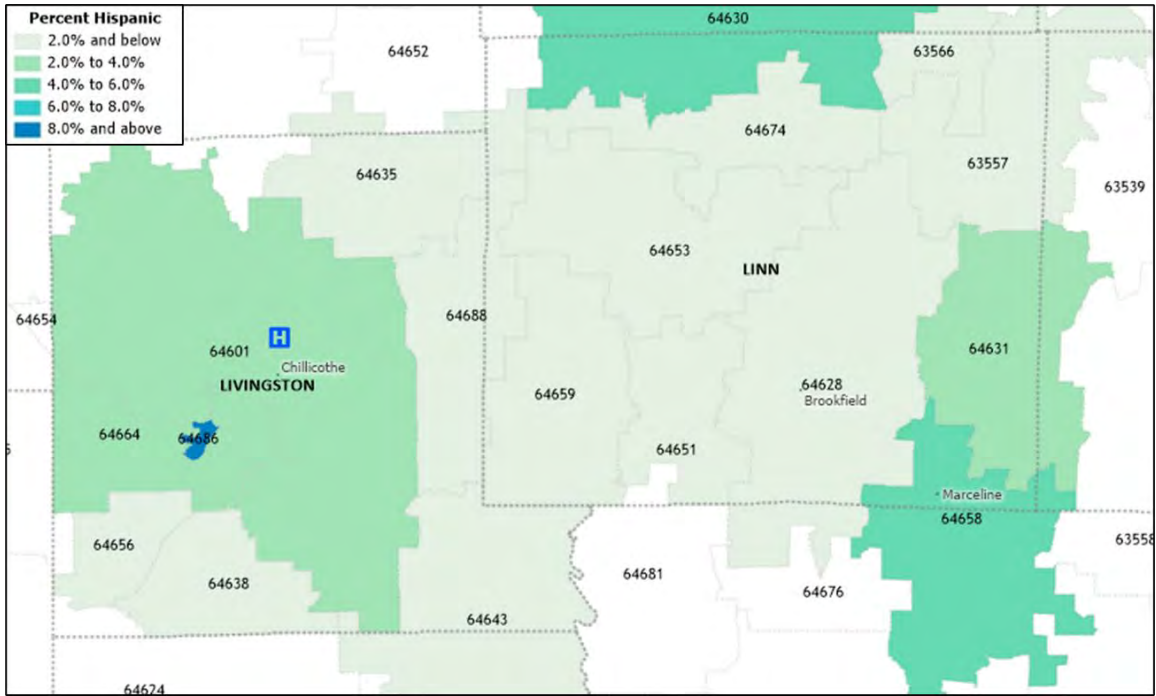
Source: U.S. Census Bureau, 2018-2022, American Community Survey 5-Year Estimates, and Caliper Maptitude, 2024.

Description: Exhibit 12 portrays the percent of the population – Black by ZIP Code.

Observations

- ZIP Codes 64601 and 64643 (Chillicothe and Hale, Livingston County) had the highest proportion of Black residents at 3.4 and 3.1 percent.
- All other ZIP Codes had proportions of Black residents of 1.3 percent or below.

Exhibit 13: Percent of Population – Hispanic (or Latino), 2022



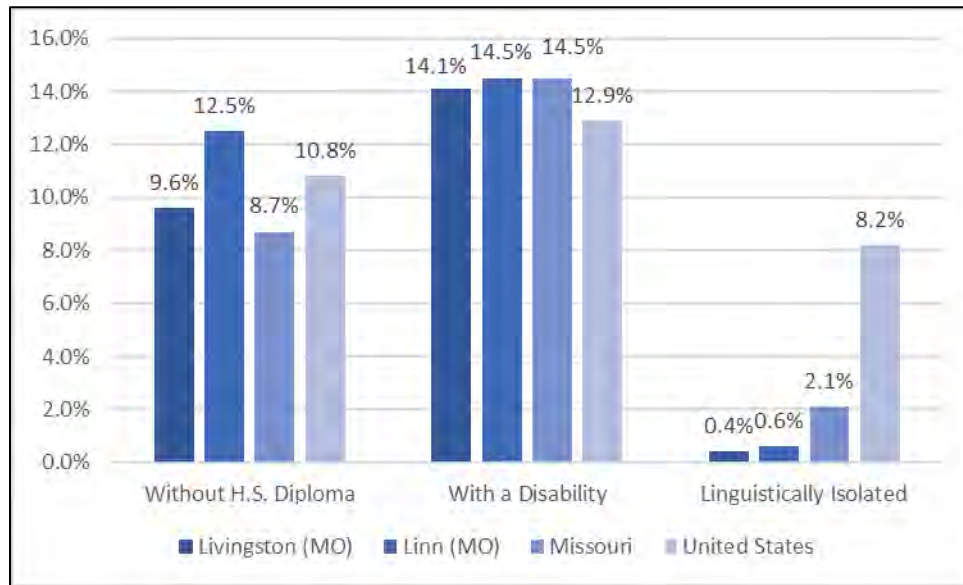
Source: U.S. Census Bureau, 2018-2022, American Community Survey 5-Year Estimates, and Caliper Maptitude, 2024.

Description: Exhibit 13 portrays the percent of the population – Hispanic (or Latino) by ZIP Code.

Observations

- ZIP Code 64686 (Utica in Livingston County) had the highest proportion of Hispanic (or Latino) residents at 8.9 percent.

Exhibit 14: Selected Socioeconomic Indicators, 2018-2022



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Description: Exhibit 14 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated in the 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

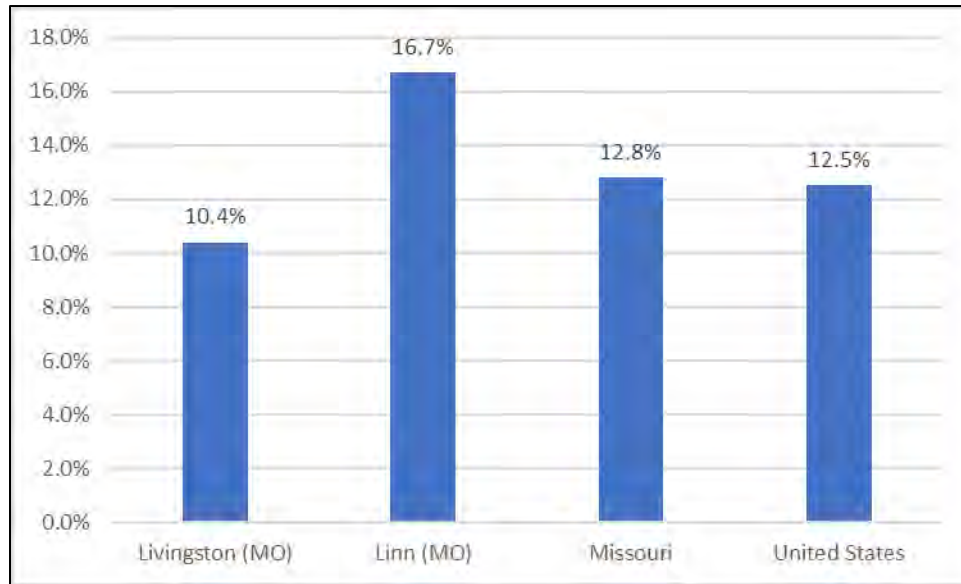
- In 2018-2022, a higher percentage of Linn County adults were without a high school diploma than residents of Missouri and the United States.
- Proportionately more people were living with a disability in both counties and Missouri compared to the United States.
- Compared to the United States, proportionately fewer people in the HMC community and Missouri were 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 15: Percent of People in Poverty, 2018-2022



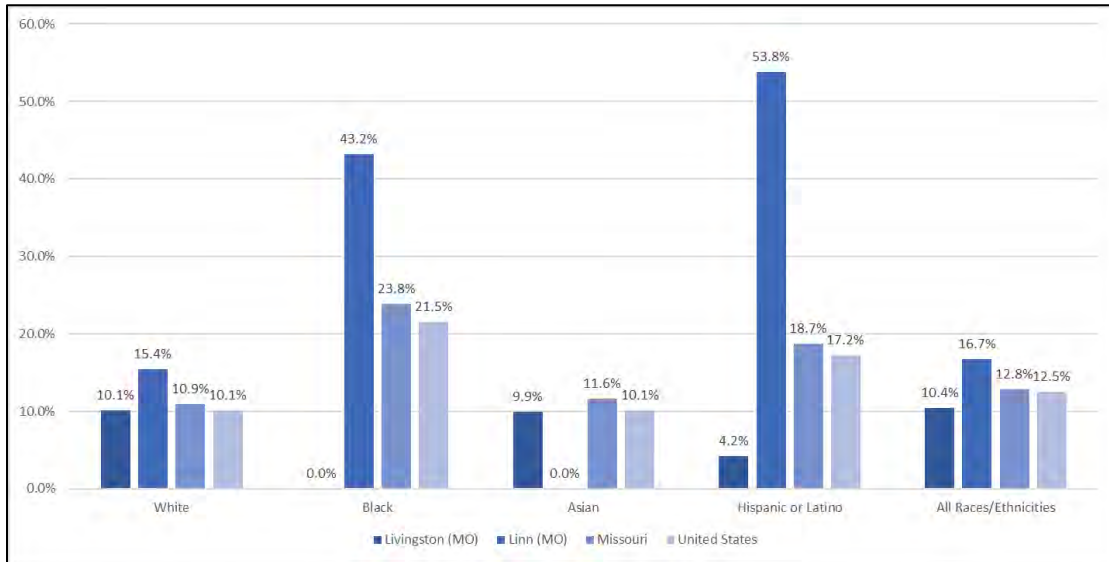
Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Description: Exhibit 15 portrays poverty rates in the two counties, Missouri, and the United States.

Observations

- In 2018-2022, the overall poverty rate in Linn County was above Missouri and national averages.

Exhibit 16: Poverty Rates by Race and Ethnicity, 2018-2022



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates.

Description: Exhibit 16 portrays poverty rates by race and ethnicity in the two counties, Missouri, and the United States.

Observations

- In 2018-2022, poverty rates in Linn County were higher than state and national benchmarks for all cohorts except Asian populations.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 17: Child Poverty Rates, 2018-2022

Area	Child Population (aged 0-17)	Percent of Population (aged 0-17)	Percent Children in Poverty
Livingston (MO)	3,102	23.5%	9.6%
Linn (MO)	2,784	23.7%	28.8%
Missouri	1,345,323	22.5%	16.6%
United States	72,035,358	22.3%	16.7%

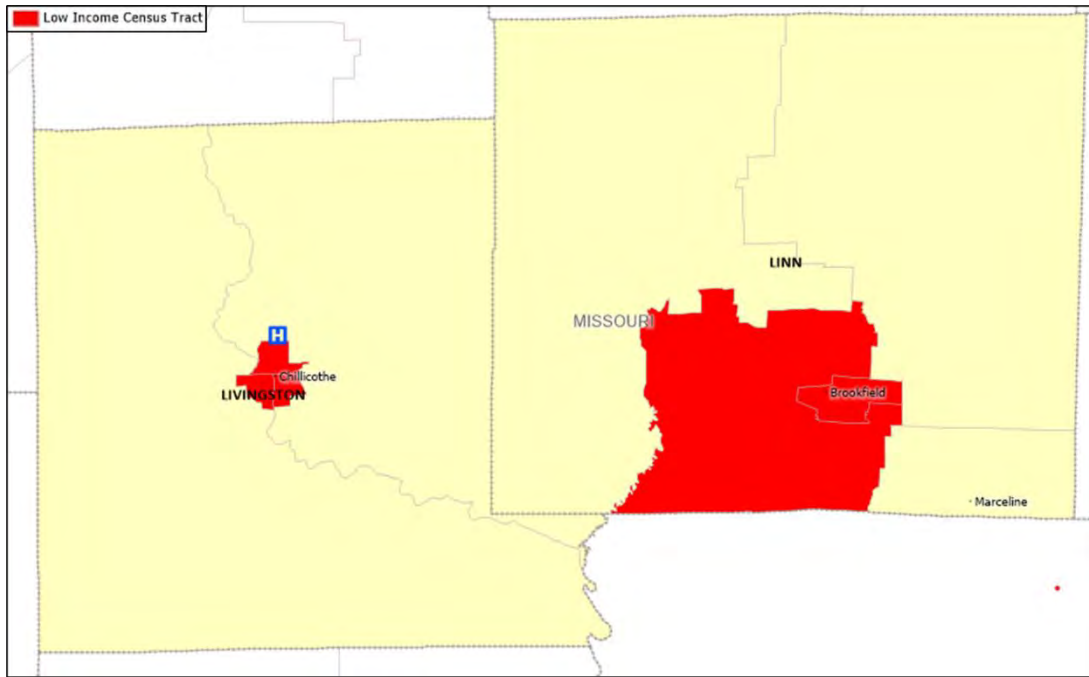
Source: U.S. Census Bureau, 2018-2022, American Community Survey 5-Year Estimates.

Description: Exhibit 17 portrays poverty rates for children (aged 0-17). Light grey shading indicates rates 0-50 percent above the U.S. average (16.7 percent for all children).

Observations

- In 2018-2022, the percentage of children in poverty in Linn County was significantly higher than the state and national average.

Exhibit 18: Low Income Census Tracts, 2019



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

Description: Exhibit 18 portrays the location of federally designated low-income census tracts.

Observations

- In 2019, low-income census tracts were present near Chillicothe in Livingston County and in southcentral Linn County, including Brookfield.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 19: Food Insecurity by Race and Ethnicity, Feeding America, Map the Meal Gap, 2021-2022

Area	Overall Food Insecurity Rate	Food Insecurity Rate (Black, all ethnicities)	Food Insecurity Rate (Hispanic, any race)	Food Insecurity Rate (White, non-Hispanic)	Child Food Insecurity Rate
Livingston (MO)	11.3%	N/A	N/A	10.0%	9.7%
Linn (MO)	12.9%	N/A	N/A	9.0%	14.8%
Missouri	11.6%	26.0%	12.0%	10.0%	12.8%
United States	13.5%	23.0%	21.0%	10.0%	18.5%

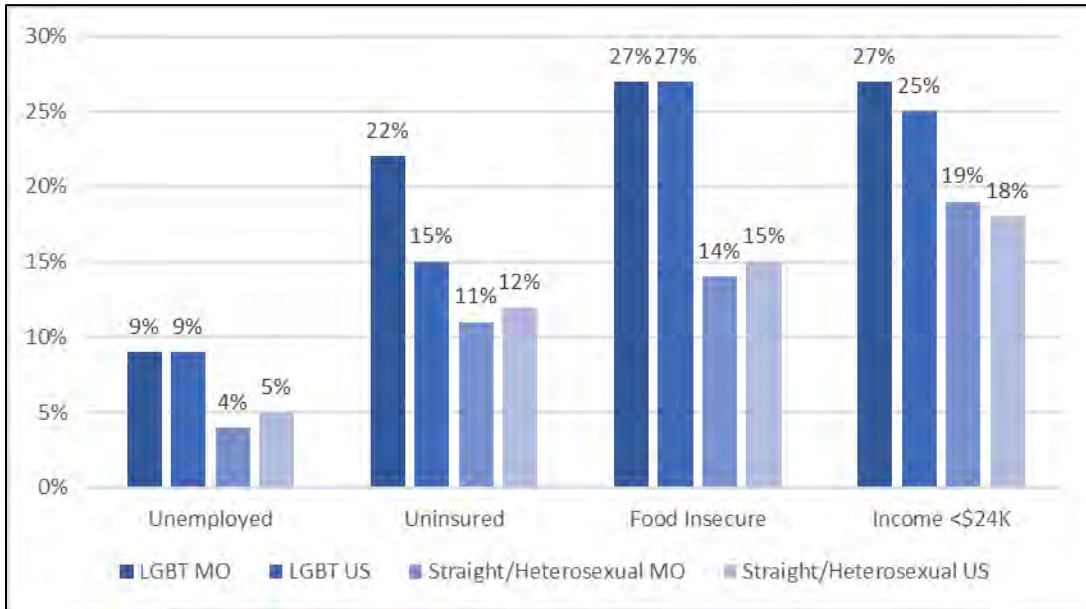
Source: Dewey, A., Harris, V., Hake, M., & Engelhard, E. (2024). Map the Meal Gap 2024: An Analysis of County and Congressional District Food Insecurity and County Food Cost in the United States in 2022. Feeding America. Note: County and state data (2021); national data (2022).

Description: Exhibit 19 portrays food insecurity estimates disaggregated by race and ethnicity and overall food insecurity rates for children in Livingston County, Linn County, Missouri, and the United States. Dark grey shading indicates rates 50 percent or more above the U.S.-wide average (13.5 percent for all persons). Light grey shading indicates rates 0-50 percent above the U.S. average.

Observations

- In 2021, the overall food insecurity rates in Livingston and Linn counties and Missouri were lower than the national average for all persons.
- Food insecurity rates for Black residents were higher in Missouri compared to the U.S.-wide rate for all persons.

Exhibit 20: Select Socioeconomic Characteristics, Missouri, Lesbian, Gay, Bisexual, or Transgender, 2019



LGBT Demographic Data Interactive, January 2019, Los Angeles, CA: The Williams Institute, UCLA School of Law.

Description: Exhibit 20 portrays select socioeconomic indicators for Lesbian, Gay, Bisexual, or Transgender (LGBT) and straight/heterosexual people in Missouri and the United States.

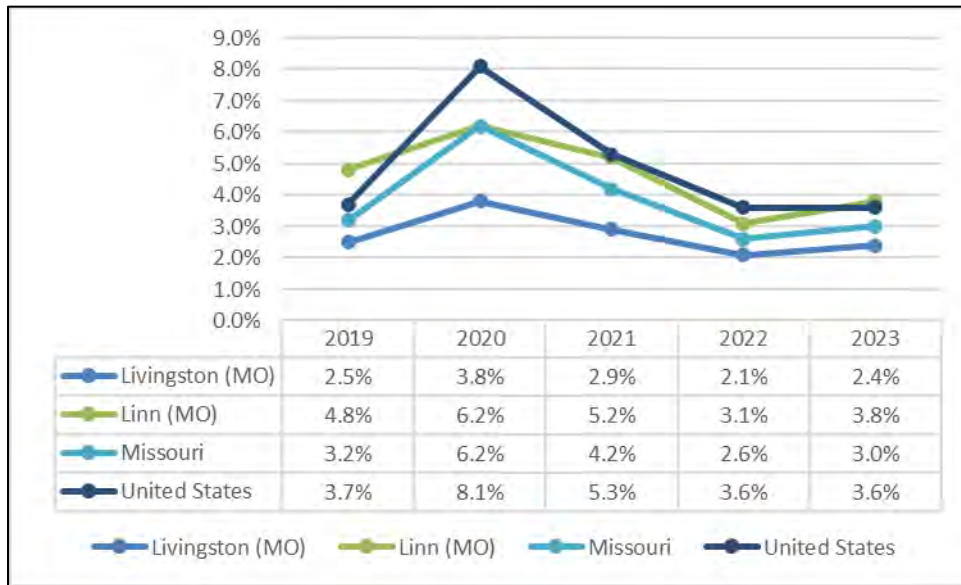
Observations

- In 2019, Missouri residents who identified as LGBT were more likely to be unemployed, uninsured, food insecure, and have lower incomes than Missouri and U.S. residents who identified as straight/heterosexual.

APPENDIX B – SECONDARY DATA ASSESSMENT

Unemployment

Exhibit 21: Annual Unemployment Rates, 2019 to 2023



Source: Bureau of Labor Statistics, 2023.

Description: Exhibit 21 shows annual unemployment rates for the two counties, Missouri, and the United States for 2019 through 2023.

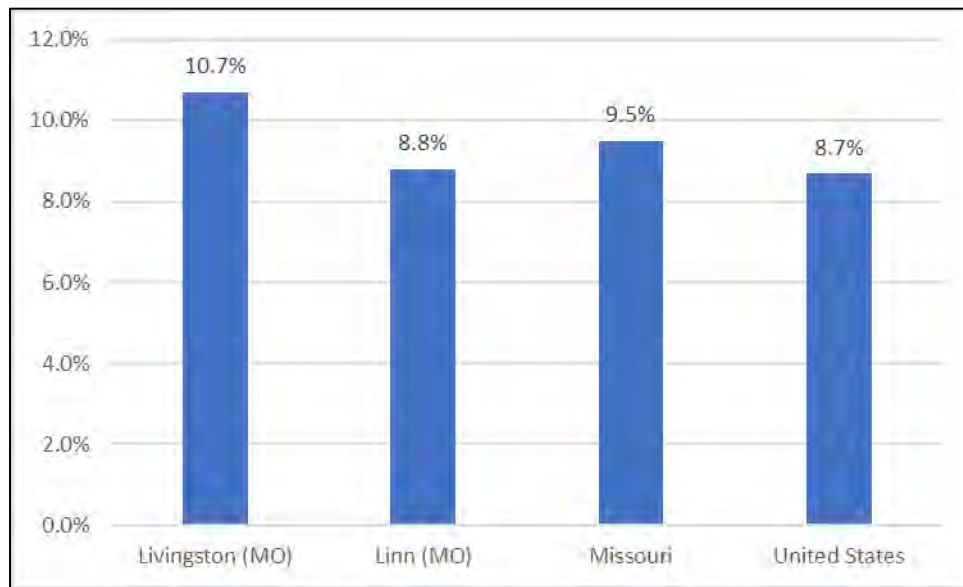
Observations

- Unemployment rates rose substantially from 2019 to 2020 due to the COVID-19 pandemic; however, declined steadily from 2020 to 2023.
- In 2023, unemployment rates were lower in Livingston County compared to the United States and lower than pre-pandemic rates for all areas presented.
- In 2023, Linn County unemployment rates were above state and national levels but lower than Linn County pre-pandemic rates.

APPENDIX B – SECONDARY DATA ASSESSMENT

Health Insurance Status

Exhibit 22: Percent of Population without Health Insurance, 2018-2022



Source: U.S. Census Bureau, 2018-2022, American Community Survey 5-Year Estimates.

Description: Exhibit 22 presents the estimated percentage of the population without health insurance.

Observations

- In 2018-2022, Livingston County had a higher percentage of the population without health insurance than Missouri and the United States.

APPENDIX B – SECONDARY DATA ASSESSMENT

Medical Debt

Exhibit 23: Share of People with a Credit Bureau Record with Medical Debt in Collections, 2022

Area	Medical Debt in Collections	Medical Debt in Collections (POC)	Medical Debt in Collections (Majority White)
Livingston (MO)	12.6%	N/A	12.6%
Linn (MO)	10.7%	N/A	10.7%
Missouri	16.4%	31.6%	14.6%
United States	12.6%	14.6%	11.4%

Source: Jennifer Andre, Miranda Santillo, Kassandra Martinchek, Breno Braga, and Signe-Mary McKernan. 2023. Debt in America 2023. Accessible from <https://datacatalog.urban.org/dataset/debt-america-2023>

Description: Exhibit 23 portrays the estimated share of the people with a credit bureau record who have medical debt in collections in the two counties, Missouri, and the United States. Dark grey shading indicates rates 50 percent or more above the U.S-wide average (12.6 percent for all persons). Light grey shading indicates rates 0-50 percent above the U.S. average.

Observations

- In 2022 and in Livingston County, the share of the population with credit bureau records and with medical debt in collections was lower than Missouri and the same as the U.S. average for all persons. Linn County rates were lower than state and national averages.
- The prevalence of medical debt for communities of color has been significantly higher in Missouri than in the nation.

APPENDIX B – SECONDARY DATA ASSESSMENT

Crime Rates

Exhibit 24: Crime Rates by Type, Per 100,000, 2022

Offense Type	Livingston (MO)	Linn (MO)	Missouri	United States
Violent Crime	69	118	488	370
Murder	-	-	10	6
Rape	-	25	49	40
Robbery	7	8	55	66
Aggravated Assault	63	84	374	268
Property Crime	222	101	2,340	1,954
Burglary	63	25	296	270
Larceny Theft	146	59	1,557	1,402
Motor Vehicle Theft	14	17	487	283

Source: Federal Bureau of Investigation, 2022.

Description: Exhibit 24 provides crime statistics and rates, per 100,000 population, available from the Federal Bureau of Investigation. Light grey shading indicates rates above the United States average; dark grey shading indicates rates more than 50 percent above the average.

Observations

- In 2022 crime rates in Livingston and Linn counties were favorable compared to Missouri and the United states for all offense types.
- In 2022, crime rates were higher in Missouri for most offense types compared to the national average.

APPENDIX B – SECONDARY DATA ASSESSMENT

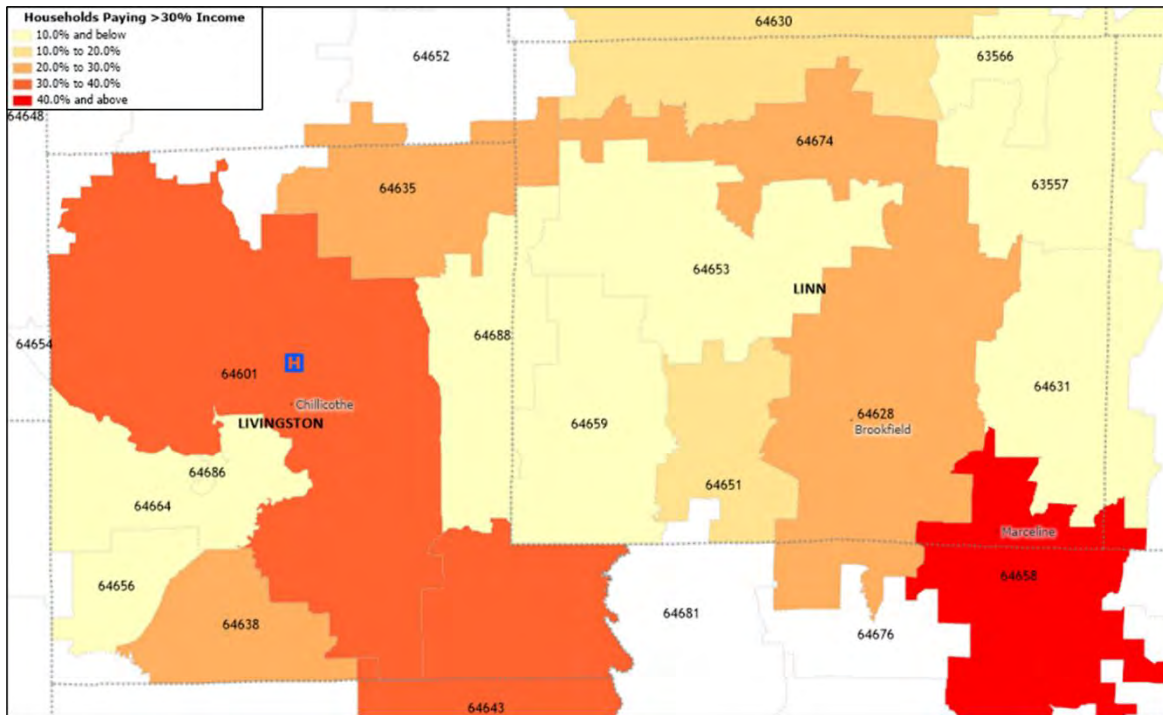
Housing Affordability

Exhibit 25: Percent of Rented Households Rent Burdened, 2018-2022

Area	Households Paying Rent	Households Paying >30% of Income for Rent	Percent of Households Rent Burdened
Livingston (MO)	1,547	448	29.0%
Linn (MO)	969	285	29.4%
Missouri	733,379	331,537	45.2%
United States	41,167,877	20,547,938	49.9%

Source: U.S. Census Bureau, 2018-2022, American Community Survey 5-Year Estimates.

Exhibit 26: Map of Percent of Rented Households Rent Burdened, 2018-2022



Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates, and Caliper Maptitude, 2024.

APPENDIX B – SECONDARY DATA ASSESSMENT

Description: The U.S. Department of Housing and Urban Development (HUD) has defined “rent burdened” households as those spending more than 30 percent of income on housing.⁸

Exhibits 25 and 26 portray the percentage of rented households that meet this definition. ZIP Codes highlighted in red are where over 40 percent of households have been rent burdened.

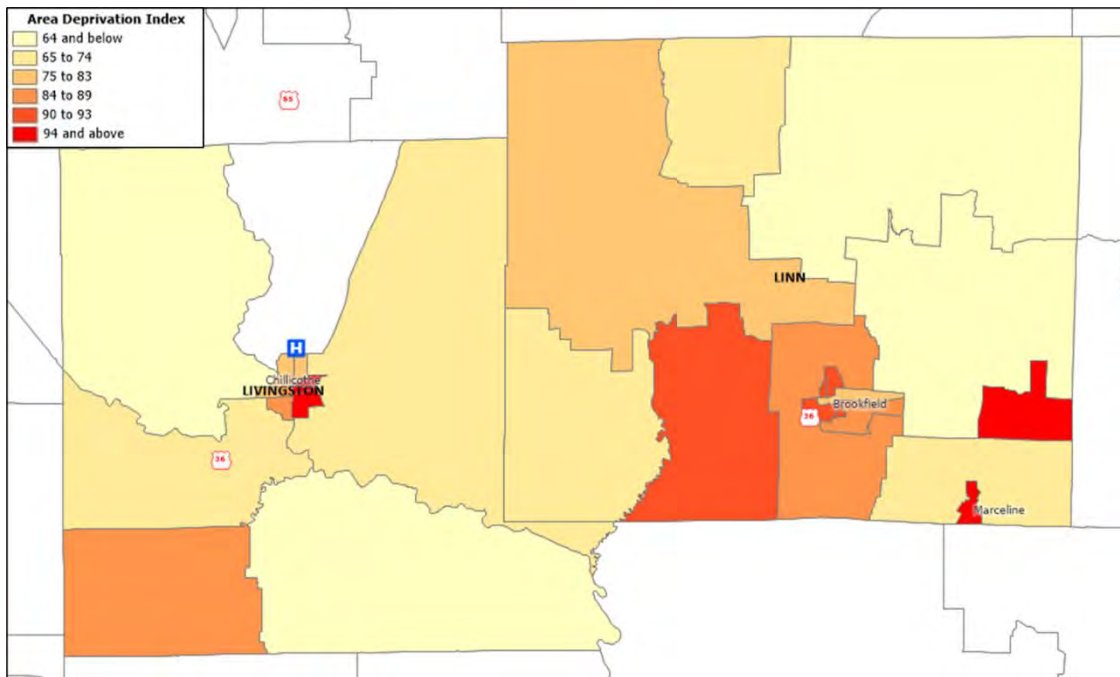
Observations

- In 2018-2022, approximately 29 percent of households in Livingston and Linn counties were designated as “rent burdened,” a level below the Missouri and national average.
- The percentage of occupied households rent burdened was highest (46.3 percent) in ZIP Code 64658 near Marceline, in Linn County.
- ZIP Codes 64643 and 64601, in Chillicothe and near the HMC campus, had more than 30 percent households rent burdened.

⁸ <https://www.federalreserve.gov/econres/notes/feds-notes/assessing-the-severity-of-rent-burden-on-low-income-families-20171222.htm>

Area Deprivation Index

Exhibit 27: Area Deprivation Index by Census Block Group, 2020



Source: University of Wisconsin School of Medicine and Public Health. Area Deprivation Index, 2021. Downloaded from <https://www.neighborhoodatlas.medicine.wisc.edu/>, March 21, 2024, and Caliper Maptitude, 2024.

Description: Exhibit 27 presents the University of Wisconsin, School of Medicine and Public Health, Center for Health Disparities Research’s Area Deprivation Index (ADI). The ADI ranks neighborhoods by level of socioeconomic disadvantage and includes factors for income, education, employment, and housing quality.

ADIs are calculated for census block groups in national percentile rankings from 1 to 100. A block group ranking of 1 indicates the lowest level of disadvantage within the nation and an ADI ranking of 100 indicates the highest level of disadvantage.

Observations

- In 2020, Chillicothe and southwestern Livingston County, Brookfield, Marceline, and southcentral Linn County had the highest levels of socioeconomic disadvantage.

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

Exhibit 28: Socioeconomic Status - Bottom Quartile Census Tracts, 2020



Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude, 2022.

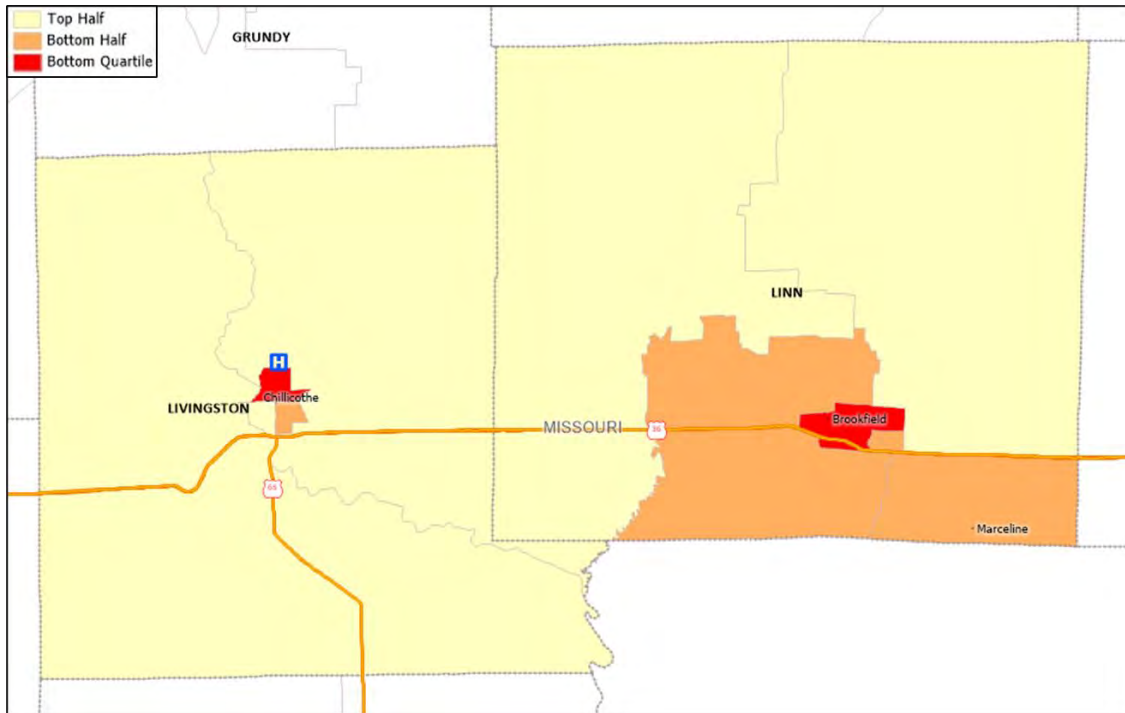
Description: Exhibits 28 through 31 are maps that show Centers for Disease Control and Prevention’s Social Vulnerability Index (SVI) scores by census tract. Red highlighted census tracts indicate scores that are in the bottom quartile nationally. The SVI is based on 15 variables derived from U.S. census data and grouped into four themes, including Socioeconomic Status; Household Characteristics; Racial & Ethnic Minority Status; and Housing Type & Transportation.

Exhibit 28 identifies census tracts in the bottom half and bottom quartile for “socioeconomic characteristics” (below 150% poverty, unemployment, housing cost burden, no high school diploma, no health insurance).

Observations

- Census tracts with the highest socioeconomic vulnerability were present in Chillicothe and Brookfield.

Exhibit 29: Household Characteristics – Bottom Quartile Census Tracts, 2020



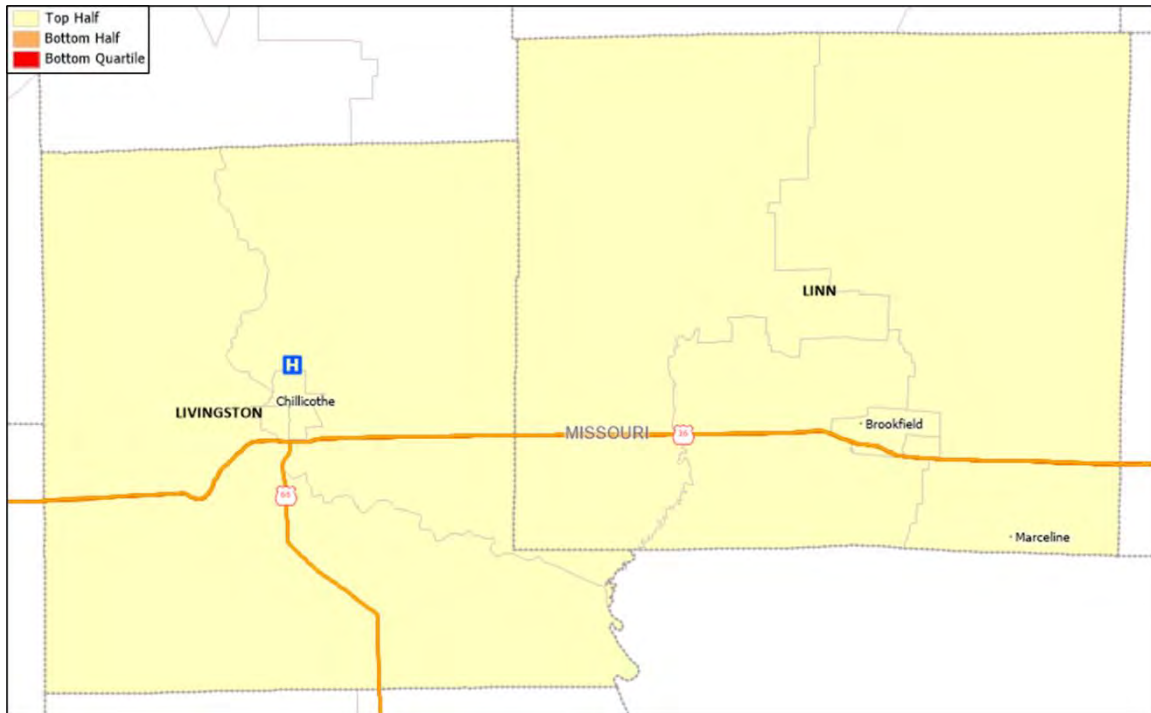
Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude, 2022.

Description: Exhibit 29 identifies census tracts in the bottom half and bottom quartile nationally for “household characteristics” (percent of people 65 years of age or older, 17 years of age or younger, civilian with a disability, single-parent households, and with Limited English Proficiency).

Observations

- In 2020, census tracts with household characteristics vulnerability were present in Chillicothe, Brookfield, Marceline, and southcentral Linn County.

Exhibit 30: Racial and Ethnic Minority Status – Bottom Quartile Census Tracts, 2020



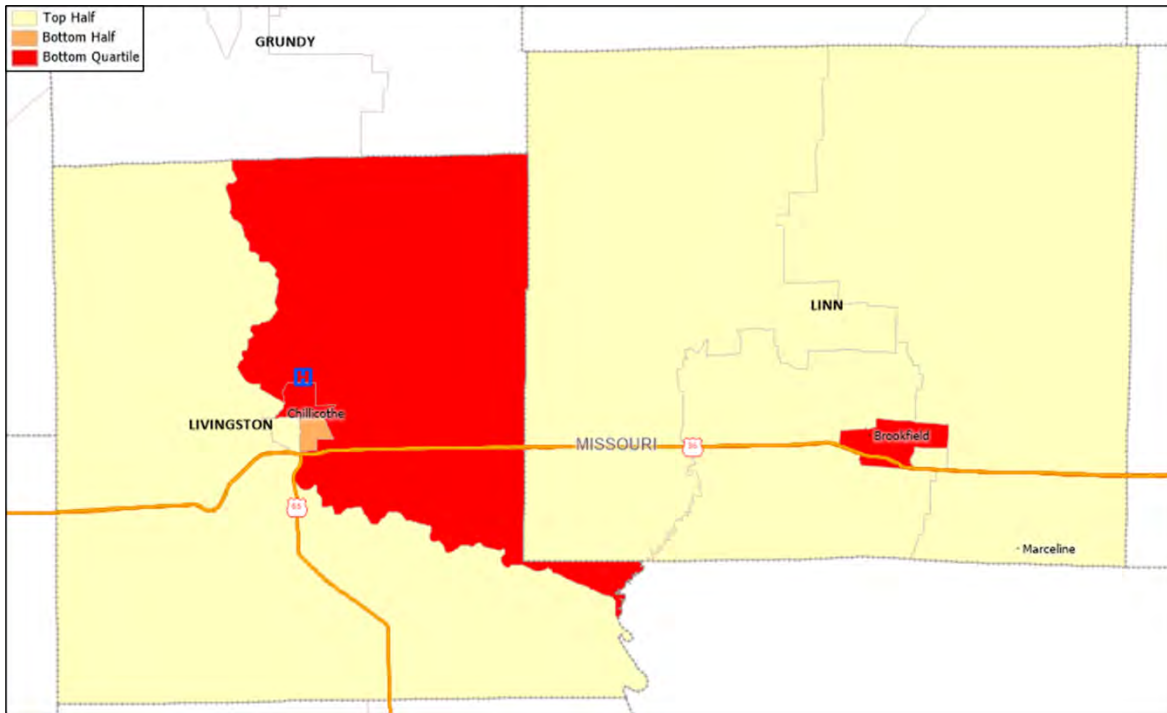
Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude, 2022.

Description: Exhibit 30 identifies census tracts in the bottom half and bottom quartile for “racial and ethnic minority status” (percent of people non-White).

Observations

- In 2020, there were no census tracts with racial and ethnic minority status vulnerability in the HMC community.

Exhibit 31: Housing Type and Transportation – Bottom Quartile Census Tracts, 2020



Source: Centers for Disease Control and Prevention, 2020, and Caliper Maptitude, 2022.

Description: Exhibit 31 identifies census tracts in the bottom half and bottom quartile nationally for “housing type and transportation vulnerability” (people living in multi-unit structures, in mobile homes, in crowded households, in group quarters, and with no vehicle).

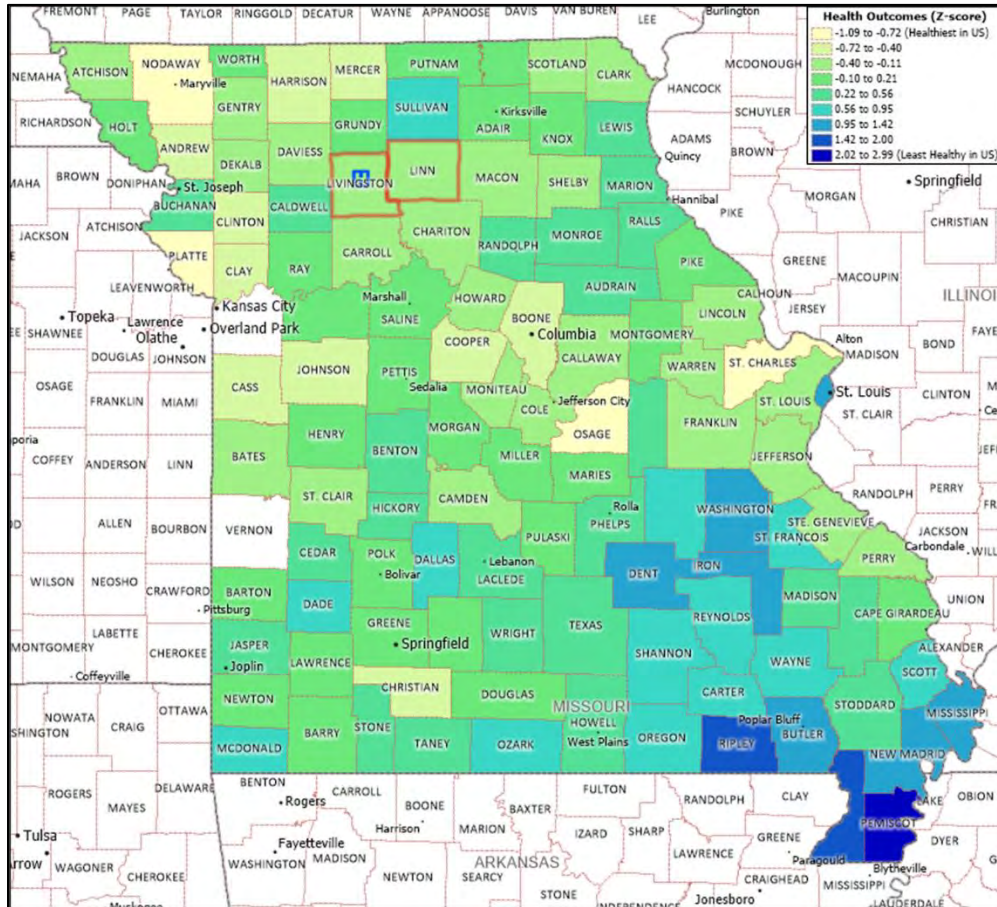
Observations

- In 2020, census tracts designated as vulnerable for housing type and transportation were present in Chillicothe, northeastern Livingston County, and Brookfield in Linn County.

Other Health Status and Access Indicators

County Health Rankings

Exhibit 32: County Health Rankings, Health Outcomes, 2024



Source: County Health Rankings, 2024 and Caliper Maptitude, 2024.

Description: Exhibit 32 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 places each county within each state on a continuum from least healthy to healthiest in the nation, 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,⁹ social and economic factors, and physical environment.¹⁰ *County Health Rankings* is updated

⁹A 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.

¹⁰A 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.

APPENDIX B – SECONDARY DATA ASSESSMENT

annually. *County Health Rankings 2024* relies on data from 2015 to 2023. Most data are from 2018 to 2022.

The exhibit presents how Missouri counties fare relative to other counties in the state and the nation for health outcomes composite measures. The graphic also displays how Livingston and Linn counties fare on a national continuum of health.

Observations

- In 2024, for Health Outcomes, Livingston and Linn counties are faring better than the average county in Missouri and the nation.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 33: County Health Rankings Data Compared to State and U.S. Averages, 2024

Indicator Category	Data	Livingston (MO)	Linn (MO)	Missouri	United States
Health Outcomes					
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,541	8,370	9,478	8,000
Quality of Life	% adults reporting fair or poor health	18.5%	18.5%	16.4%	14.0%
	Ave number of physically unhealthy days past 30 days	4.4	4.2	3.7	3.3
	Ave number of mentally unhealthy days past 30 days	5.9	5.4	5.2	4.8
	% live births with low birthweight (<2500 grams)	7.2%	6.1%	8.8%	8.0%
Health Factors					
Health Behaviors					
Adult Smoking	% adults smoking >= 100 cigarettes & currently smoking	21.9%	22.3%	18.1%	15.0%
Adult Obesity	Percent of adults that report a BMI >= 30	41.0%	38.3%	37.6%	34.0%
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	8.1	7.3	6.9	7.7
Physical Inactivity	% adults aged 20 and over reporting no leisure-time physical activity	26.9%	26.7%	24.2%	23.0%
Access to Exercise Opportunities	% population with adequate access to locations for physical activity	65.1%	66.2%	76.9%	84.0%
Excessive Drinking	Binge plus heavy drinking	15.9%	15.5%	19.3%	18.0%
Alcohol-Impaired Driving Deaths	% driving deaths with alcohol involvement	54.5%	18.2%	27.8%	26.0%
STDs	Chlamydia rate per 100,000 population	338.9	253.3	517.4	495.5
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	26.3	19.6	20.0	17.0

Source: County Health Rankings, 2024.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 33: County Health Rankings Data Compared to State and U.S. Averages, 2024 (continued)

Indicator Category	Data	Livingston (MO)	Linn (MO)	Missouri	United States
Clinical Care					
Uninsured	% population under age 65 without health insurance	12.2%	12.7%	11.4%	10.0%
Primary Care Physicians	Ratio of population to primary care physicians	1,341:1	2,961:1	1,421:1	1,330:1
Dentists	Ratio of population to dentists	1,600:1	3,940:1	1,596:1	1,360:1
Mental Health Providers	Ratio of population to mental health providers	1,200:1	2,955:1	406:1	320:1
Preventable Hospital Stays	Hospitalization rate for preventable conditions, per 100,000, Medicare	2,089	2,323	3,016	2,681
Mammography Screening	% female Medicare enrollees, ages 67-69, with mammography screening	44.0%	38.0%	45.0%	43.0%
Flu Vaccinations	% Medicare enrollees that had an annual flu vaccination	45.0%	39.0%	45.0%	46.0%
Social and Economic Factors					
High School Graduation	% adults ages 25 and over with a high school diploma or equivalent	87.5%	90.4%	91.3%	89.0%
Some College	% adults aged 25-44 years with some post-secondary education	51.2%	49.4%	67.1%	68.0%
Unemployment	% population age 16+ unemployed but seeking work	2.0%	2.9%	2.5%	3.7%
Children in Poverty	% children under age 18 in poverty	16.7%	19.2%	16.8%	16.0%
Income Inequality	Ratio of household income at the 80th percentile to the 20th percentile	3.9	4.6	4.5	4.9
Children in Single-Parent Households	% children that live in a household headed by single parent	20.2%	16.4%	24.0%	25.0%
Social Associations	Number of associations per 10,000 population	16.3	16.9	11.4	9.1
Injury Deaths	Injury mortality per 100,000	96.4	93.6	100.0	80.0
Physical Environment					
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	7.1	7.3	7.6	7.4
Severe Housing Problems	% households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	11.1%	8.4%	12.7%	17.0%
Driving Alone to Work	% workforce that drives alone to work	84.9%	82.5%	78.0%	72.0%
Long Commute – Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	17.6%	28.1%	31.7%	36.0%

Source: County Health Rankings, 2024.

APPENDIX B – SECONDARY DATA ASSESSMENT

Description: Exhibit 33 provides data that underlie the County Health Rankings and compares indicators to statewide and national averages.¹¹ 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

- The following indicators compared unfavorably to U.S. averages for both Livingston and Linn counties:
 - Percent adults reporting fair or poor health
 - Average number of physically and mentally unhealthy days
 - Health behaviors including adult smoking, adult obesity, and physical inactivity
 - Teen births (ages 15-19, per 1,000 female population)
 - Percent of population under age 65 without health insurance
 - The ratio of population to primary care, dentists, and mental health providers
 - Flu vaccinations
 - Adults with some post-secondary education
 - Children in poverty
 - Injury deaths
 - Air pollution
 - Driving alone to work
- The following indicator compared particularly unfavorably (more than 50 worse than the national average):
 - Percent driving deaths with alcohol involvement (Livingston)
 - Teen birth rate (Livingston)
 - Ratio of population to primary care physicians and dentists (Linn)
 - Ratio of population to mental health providers (both counties)

¹¹ <https://www.countyhealthrankings.org/health-data/county-health-rankings-measures>

APPENDIX B – SECONDARY DATA ASSESSMENT

Community Health Status Indicators

Exhibit 34: Community Health Status Indicators, 2024

Category	Indicator	Livingston (MO)	Peer Counties	Linn (MO)	Peer Counties
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,540.9	11,204.7	8,370.1	9,907.8
Quality of Life	Percent of adults reporting fair or poor health	18.5%	19.0%	18.5%	17.4%
	Average number of physically unhealthy days	4.4	4.2	4.2	3.9
	Average number of mentally unhealthy days	5.9	5.4	5.4	5.1
	Percent of live births with low birthweight (<2500 grams)	7.2%	7.9%	6.1%	7.1%
Health Behaviors	Percent adults smoking >= 100 cigarettes & currently smoking	21.9%	21.9%	22.3%	20.7%
	Percent of adults that report a BMI >= 30	41.0%	39.6%	38.3%	39.2%
	Healthy food environment, 0 (worst) to 10 (best)	8.1	7.2	7.3	7.2
	Percent adults reporting no leisure-time physical activity	26.9%	28.8%	26.7%	27.8%
	Percent with adequate access to locations for physical activity	65.1%	49.9%	66.2%	49.9%
	Binge plus heavy drinking	15.9%	16.4%	15.5%	16.3%
	Percent of driving deaths with alcohol involvement	54.5%	29.4%	18.2%	23.3%
	Chlamydia rate per 100,000 population	338.9	385.2	253.3	282.9
Clinical Care	Teen birth rate per 1,000 female population, ages 15-19	26.3	30.1	19.6	23.1
	Percent of population under age 65 without health insurance	12.2%	12.3%	12.7%	11.7%
	Ratio of population to primary care physicians	1,341:1	2,255:1	2,961:1	2,236:1
	Ratio of population to dentists	1,600:1	2,263:1	3,940:1	2,499:1
	Ratio of population to mental health providers	1,200:1	476:1	2,955:1	676:1
	Preventable hospital stays per 100,000 Medicare enrollees	2,089.0	3,071.2	2,323.0	2,510.1
	Percent of female Medicare enrollees with mammography screening	44.0%	41.2%	38.0%	41.6%
Medicare enrollees that had an annual flu vaccination	45.0%	36.0%	39.0%	31.9%	

Source: County Health Rankings and Verité Analysis, 2024.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 34: Community Health Status Indicators, 2024 (continued)

Category	Indicator	Livingston (MO)	Peer Counties	Linn (MO)	Peer Counties
Social & Economic Factors	Percent adults ages 25+ with a high school diploma or equivalent.	87.5%	88.2%	90.4%	89.9%
	Percent of adults (25-44) with some post-secondary education	51.2%	54.5%	49.4%	57.2%
	Percent of population age 16+ unemployed but seeking work	2.0%	3.0%	2.9%	2.8%
	Percent of children under age 18 in poverty	16.7%	22.9%	19.2%	20.3%
	Income equality ratio	3.9	4.5	4.6	4.4
	Percent of children that live in a household headed by single parent	20.2%	23.0%	16.4%	21.0%
	Number of associations per 10,000 population	16.3	13.1	16.89	18.39
	Injury mortality per 100,000 population	96.4	107.9	93.6	101.63
Physical Environment	Fine particulate matter in mcg/cubic meter (PM2.5)	7.1	7.2	7.3	7.1
	1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	11.1%	11.3%	8.4%	9.9%
	Percent of the workforce that drives alone to work	84.9%	78.4%	82.5%	79.8%
	Workers who commute alone and more than 30 minutes	17.6%	27.4%	28.1%	26.3%

Source: County Health Rankings and Verité Analysis, 2024.

APPENDIX B – SECONDARY DATA ASSESSMENT

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 (CDC) *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 34 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 Livingston and Linn counties’ peer 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 compared unfavorably to peer counties for thirteen (13) of the 33 benchmark indicators and ranked in the bottom quartile of peer counties for the following four (4) indicators:
 - Average number of mentally unhealthy days
 - Percent driving deaths with alcohol involvement
 - Ratio of population to mental health providers
 - The percent of workers who commute alone
- Linn County compared unfavorably to peer counties for twenty (20) of the 33 benchmark indicators and ranked in the bottom quartile of peer counties for the following four (4) indicators:
 - Adult smoking
 - Ratio of population to dentists
 - Ratio of population to mental health providers

APPENDIX B – SECONDARY DATA ASSESSMENT

- Percent of adults with some post-secondary education

Exhibit 35: COVID-19 Incidence and Mortality, 2023

Indicator	Livingston (MO)	Linn (MO)	Missouri	United States
Total Confirmed Cases	4,454	3,167	1,637,608	101,470,604
Confirmed Cases (per 100,000 population)	29,407.1	26,310.5	26,730.1	31,100.9
Total Deaths	109	76	21,520	1,102,319
Deaths (per 100,000 population)	719.7	631.4	351.3	337.9

Source: Johns Hopkins University. Accessed via ESRI. Additional data analysis by CARES, 2022. Last update 3/10/23.

Description: Exhibit 35 presents data for COVID-19 incidence and mortality. Light grey shading highlights indicators found to be worse than the national average. Dark grey shading highlights indicators that are more than 50 percent worse than the national average.

Observations

- Livingston and Linn counties experienced a COVID-19 mortality rate (per 100,000 population) more than 50 percent above the national average.

APPENDIX B – SECONDARY DATA ASSESSMENT

Mortality Rates

Exhibit 36: Causes of Death (Age-adjusted, per 100,000), 2011-2020

Cause of Death	Livingston (MO)	Linn (MO)	Missouri	United States
Major cardiovascular diseases	218.4	330.6	248.1	219.9
Diseases of heart	170.0	270.6	193.2	167.2
Malignant neoplasms	181.1	187.2	170.6	156.1
Ischemic heart diseases	106.1	169.4	111.4	96.8
All other diseases (Residual)	93.2	75.3	90.1	87.9
Other heart diseases	59.1	90.1	69.1	55.9
Accidents (unintentional injuries)	50.1	39.4	55.2	45.4
Chronic lower respiratory diseases	62.3	89.8	50.5	40.3
Acute myocardial infarction	54.4	111.2	49.7	29.6
Malignant neoplasms of trachea, bronchus and lung	56.3	47.3	49.1	38.9
Other chronic lower respiratory diseases	60.7	87.7	46.5	37.1
Cerebrovascular diseases	40.2	44.3	40.6	37.3
Non-transport accidents	36.8	20.9	39.7	33.1
Alzheimer’s disease	33.2	19.9	30.2	28.3
Heart failure	30.4	43.3	27.8	19.4
Diabetes mellitus	22.6	18.1	20.6	21.7
All other and unspecified malignant neoplasms	19.8	24.2	20.2	18.7
Accidental poisoning and exposure to noxious substances	15.6	N/A	20.2	16.9
Nephritis, nephrotic syndrome and nephrosis	23.6	34.7	19.1	13.1
Renal failure	23.3	32.8	18.9	12.8
Intentional self-harm (suicide)	16.8	25.2	17.2	13.3
Influenza and pneumonia	16.0	16.6	16.6	14.4
Malignant neoplasms of lymphoid, hematopoietic and related tissue	21.4	24.3	16.0	15.4
Transport accidents	13.3	18.5	15.5	12.3
Pneumonia	14.7	11.9	14.9	13.1
Malignant neoplasms of colon, rectum and anus	12.4	21.2	14.8	14.0
Motor vehicle accidents	12.5	17.6	14.8	11.5
Other diseases of respiratory system	13.0	11.8	13.7	10.4
Other & unspecified infectious/ parasitic diseases & their sequelae	12.8	9.9	11.7	11.3
Malignant neoplasm of breast	12.9	Unreliable	11.7	11.2
Malignant neoplasm of pancreas	13.1	11.7	11.3	11.0
Septicemia	10.1	12.9	11.3	10.4
Intentional self-harm (suicide) by discharge of firearms	13.1	17.4	9.9	6.6
Falls	13.0	Unreliable	9.7	9.1
COVID-19	11.6	Unreliable	9.4	9.3

Source: Centers for Disease Control and Prevention, National Center for Health Statistics System, Mortality 1999-2020 on CDC WONDE online database, released in 2021.

APPENDIX B – SECONDARY DATA ASSESSMENT

Description: Exhibit 36 provides age-adjusted mortality rates (2011-2020) for a variety of causes in the two counties, Missouri, and the United States. Light grey shading highlights indicators found to be worse than the U.S. average; dark grey shading highlights indicators more than 50 percent worse than the U.S. average.

Observations

- From 2011-2020, mortality rates for chronic lower respiratory diseases, acute myocardial infarction, heart failure, kidney diseases/failure, and suicide by discharge of a firearm were more than 50 percent higher in both Livingston and Linn counties compared to U.S. averages.
- Many causes of death were higher in Livingston and Linn counties, and in Missouri, compared to United States averages.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 37: Cancer Mortality Rates (Age-adjusted, per 100,000 population), 2018-2022

Type of Cancer	Livingston (MO)	Linn (MO)	Missouri	United States
All Cancer Sites Combined	170.8	182.7	161.3	145.4
Lung and Bronchus	50.8	43.6	42.0	32.3
Female Breast	N/A	N/A	19.8	19.2
Prostate	N/A	N/A	18.1	18.8
Colon and Rectum	N/A	19.5	14.0	12.8
Pancreas	N/A	18.5	11.7	11.1
Liver and Intrahepatic Bile Duct	N/A	N/A	6.8	6.6
Leukemias	N/A	N/A	6.2	5.8
Ovary	N/A	N/A	5.6	6.0
Non-Hodgkin Lymphoma	N/A	N/A	5.3	4.9
Corpus and Uterus, NOS	N/A	N/A	5.1	5.2
Brain and Other Nervous System	N/A	N/A	4.7	4.4
Esophagus	N/A	N/A	4.3	3.7
Urinary Bladder	N/A	N/A	4.2	4.1
Kidney and Renal Pelvis	N/A	N/A	4.0	3.4
Myeloma	N/A	N/A	3.0	3.0
Oral Cavity and Pharynx	N/A	N/A	2.9	2.6
Cervix	N/A	N/A	2.5	2.2
Melanomas of the Skin	N/A	N/A	2.3	2.0
Stomach	N/A	N/A	2.2	2.7
Larynx	N/A	N/A	1.1	0.9

Source: Centers for Disease Control and Prevention, 2023.

Description: Exhibit 37 provides age-adjusted mortality rates for selected forms of cancer in 2018-2022.

Observations

- In 2018-2022, Livingston and Linn counties’ overall cancer (all sites combined) and lung and bronchus cancer mortality rates were above the state and national averages.
- In Linn County, rates for colon and rectum cancer and pancreatic cancer were more than 50 percent above U.S. averages.
- Cancer mortality were higher in Missouri compared to United States averages for most cancer types.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 38: Age-adjusted Drug and Alcohol Induced Causes of Death (per 100,000 population), 2011-2020

Area	Death Rate
Livingston (MO)	24.6
Linn (MO)	Unreliable
Missouri	30.6
United States	28.8

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System, Mortality 1999-2020 on CDC WONDER Database, released in 2021.

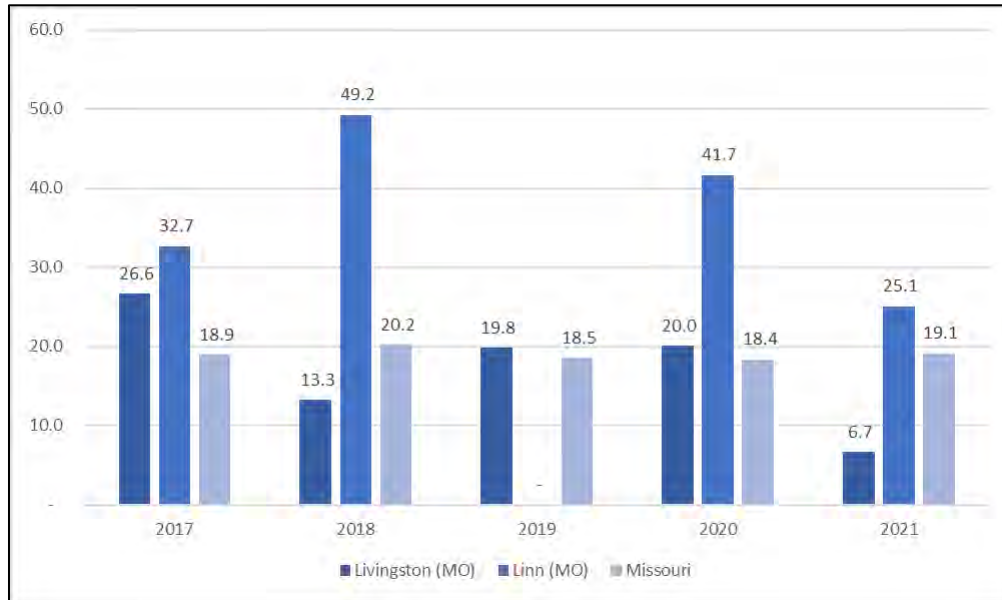
Description: Exhibit 38 provides mortality rates for drug and alcohol induced causes of death for 2011-2020 in the two counties, Missouri, and the United States.

Observations

- In 2011-2020, drug and alcohol induced death rates were lower in Livingston County compared to Missouri and the United States. Rates for Linn County were unreliable.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 39: Suicide Deaths (per 100,000 population), 2017-2021



Source: Missouri Department of Mental Health, State Agency Data/Data for DMH Status Report, Accessed at seow.dmh.mo.gov on 5/27/2024.

Description: Exhibit 39 provides mortality rates for suicide for 2017-2021 in the two counties and Missouri.

Observations

- In 2017 to 2021, suicide rates have been significantly higher in Linn County compared to Missouri.

APPENDIX B – SECONDARY DATA ASSESSMENT

Communicable Diseases

Exhibit 40: Communicable Disease Incidence Rates per 100,000 Population, 2021-2022

Measure	Livingston (MO)	Linn (MO)	Missouri	United States
HIV diagnoses	-	N/A	10.6	12.7
HIV prevalence	88.3	N/A	252.3	382.2
Tuberculosis	N/A	N/A	1.1	2.5
Chlamydia	338.9	253.3	517.4	495.5
Early Non-Primary, Non-Secondary Syphilis	6.8	8.4	12.8	15.6
Gonorrhea	61.0	42.2	254.8	214.0
Primary and Secondary Syphilis	6.8	8.4	21.3	16.2

Source: Centers for Disease Control and Prevention, 2022.
 Note: Tuberculosis data (2022); all other measures (2021).

Description: Exhibit 40 presents incidence rates for certain communicable diseases in the two counties, Missouri, and the United States.

Observations

- Livingston and Linn counties’ incidence rates for communicable diseases were below state and national averages for all indicators.

APPENDIX B – SECONDARY DATA ASSESSMENT

Maternal and Child Health

Exhibit 41: Maternal and Child Health Indicators, by Race, 2015-2021

Indicator	Data Years	All Residents	White	Black
Asthma ER Visits (per 1,000 under 18)				
Livingston (MO)	2015	9.9	N/A	N/A
Linn (MO)	2015	7.4	N/A	N/A
Missouri	2015	9.2	4.1	31.7
Healthy Live Births (Percent)				
Livingston (MO)	2020	88.4%	N/A	N/A
Linn (MO)	2020	91.1%	N/A	N/A
Missouri	2020	85.5%	87.7%	75.8%
Care Began First Trimester (Percent)				
Livingston (MO)	2021	81.9%	N/A	N/A
Linn (MO)	2021	77.8%	N/A	N/A
Missouri	2021	73.1%	76.4%	60.7%
Mother Smoked During Pregnancy (Percent)				
Livingston (MO)	2021	18.2%	N/A	N/A
Linn (MO)	2021	14.7%	N/A	N/A
Missouri	2021	10.1%	11.1%	7.9%
Low Birth Weight (per 1,000 Live Births)				
Livingston (MO)	2017 - 2021	7.8	N/A	N/A
Linn (MO)	2017 - 2021	5.2	N/A	N/A
Missouri	2017 - 2021	8.8	7.4	15.4
Infant Deaths (per 1,000)				
Livingston (MO)	2010 - 2020	6.2	N/A	N/A
Linn (MO)	2010 - 2020	5.3	N/A	N/A
Missouri	2010 - 2020	6.3	5.2	11.8

Source: Missouri Department of Health and Senior Services, Community Data Profiles, Accessed at dhss.mo.gov on 4/23/24.

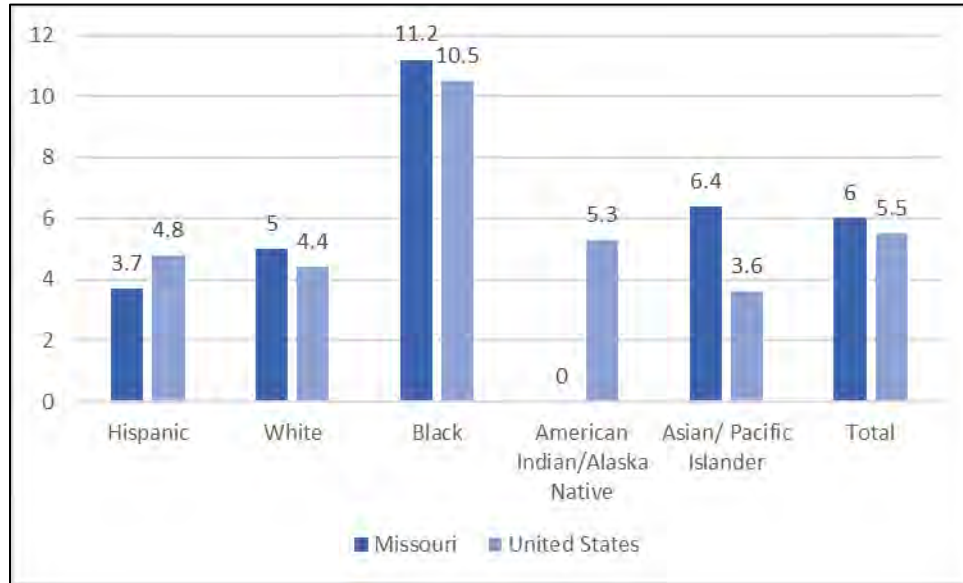
Description: Exhibit 41 compares various maternal and child health indicators for Livingston and Linn counties with Missouri averages.

Observations

- In 2021, Livingston and Linn counties compared unfavorably to state averages for mothers who smoked while pregnant. Livingston County’s rate was more than 50 percent above the Missouri average.
- Black residents in Missouri compared unfavorably for most indicators compared to Missouri averages for all residents. Low birth weight babies, infant deaths, and asthma ER visits for children were more than 50 percent above Missouri averages for all residents.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 42: Missouri Infant Mortality Rates per 1,000 Live Births by Race/Ethnicity, 2019-2021



Source: CDC, National Center for Health Statistics, National Vital Statistics System, 2021.

Description: Exhibit 42 provides infant mortality data by race and ethnicity for Missouri and the United States.

Observations

- In 2019-2021, infant mortality rates were generally higher in Missouri compared to United States averages.
- Infant mortality rates were significantly higher for Black and Asian/Pacific Islander infants compared to the U.S. rate for infants of all races/ethnicities (5.5 per 1,000).

APPENDIX B – SECONDARY DATA ASSESSMENT

America’s Health Rankings

Exhibit 43: America’s Health Rankings, Missouri Underlying Data by Race/Ethnicity, 2023

Measure Name	Black	Hispanic	Multiracial	White	Overall
Arthritis	27.2%	16.9%	38.5%	30.7%	29.8%
Asthma	16.6%	13.4%	12.9%	9.4%	10.4%
Avoided Care Due to Cost	14.0%	20.6%	24.2%	9.8%	11.3%
Breast Cancer Screening	76.7%	0.0%	0.0%	72.0%	72.1%
Cancer	4.8%	0.0%	12.6%	9.1%	8.3%
Cancer Screenings	58.2%	47.3%	44.9%	58.5%	57.3%
Cardiovascular Diseases	9.3%	0.0%	14.2%	10.6%	10.3%
Chlamydia	1,703.5	N/A	439.1	259.6	517.4
Chronic Kidney Disease	3.1%	0.0%	0.0%	3.4%	3.4%
Chronic Obstructive Pulmonary Disease	8.1%	6.4%	11.6%	8.5%	8.4%
Colorectal Cancer Screening	59.6%	53.0%	51.0%	64.3%	62.4%
Crowded Housing	3.0%	6.6%	N/A	1.3%	1.8%
Dedicated Health Care Provider	80.6%	68.8%	75.6%	84.4%	82.3%
Dental Visit	57.9%	58.5%	44.7%	62.7%	61.2%
Dependency	38.1%	39.7%	N/A	40.2%	40.1%
Depression	16.1%	27.1%	38.3%	21.8%	21.8%
Diabetes	15.9%	10.4%	16.1%	11.1%	11.7%
Drug Deaths	80.4	14.7	20.1	32.1	35.6
E-Cigarette Use	6.9%	15.0%	12.4%	7.6%	8.1%
Education - Less Than High School	10.8%	21.6%	N/A	7.4%	8.4%
Excessive Drinking	15.4%	31.3%	29.0%	20.1%	20.2%
Exercise	20.3%	23.1%	17.6%	16.3%	17.1%
Firearm Deaths	68.4%	9.3%	0.0%	17.3%	23.2%
Flu Vaccination	43.4%	28.8%	31.3%	45.7%	44.4%
Fourth Grade Reading Proficiency	9.6%	24.4%	N/A	35.1%	30.3%
Frequent Mental Distress	21.2%	20.8%	28.1%	16.3%	17.3%
Frequent Physical Distress	12.9%	9.3%	26.6%	14.3%	14.1%
Fruit and Vegetable Consumption	5.7%	0.0%	0.0%	5.0%	5.1%
High Health Status	39.2%	53.8%	39.8%	47.3%	46.4%
High School Completion	89.2%	78.4%	87.0%	92.6%	91.6%
High School Graduation	78.8%	86.6%	N/A	92.2%	89.5%
High-Risk HIV Behaviors	9.5%	9.8%	0.0%	5.7%	6.5%
High-Speed Internet	89.9%	92.5%	93.5%	91.7%	91.6%
Homeownership	41.2%	56.3%	59.2%	72.5%	67.6%

Source: America’s Health Rankings, 2023.

APPENDIX B – SECONDARY DATA ASSESSMENT

**Exhibit 43: America’s Health Rankings, Missouri Underlying Data by Race/Ethnicity, 2023
(continued)**

Measure Name	Black	Hispanic	Multiracial	White	Overall
Homicide	70.8%	8.0%	0.0%	4.5%	12.3%
Insufficient Sleep	45.5%	38.6%	45.1%	35.3%	36.8%
Low Birth Weight	16.1%	8.1%	10.2%	7.5%	8.9%
Multiple Chronic Conditions	13.8%	8.8%	19.7%	12.1%	12.3%
Non-Medical Drug Use	13.2%	17.4%	N/A	15.1%	15.1%
Obesity	41.8%	37.2%	44.2%	35.9%	36.4%
Per Capita Income	26,193	23,656	N/A	39,350	36,640
Physical Inactivity	32.4%	25.8%	29.5%	24.3%	25.3%
Premature Death	15,759	5,030	N/A	9,169	11,082
Preventable Hospitalizations	5,408	2,663	N/A	2,869	3,036
Severe Housing Problems	23.0%	18.3%	N/A	10.9%	12.7%
Smoking	17.8%	13.3%	21.5%	16.5%	16.8%
Suicide	12.6%	0.0%	0.0%	21.7%	19.2%
Teen Births	26.4%	24.1%	23.5%	14.7%	17.1%
Unemployment	6.5%	3.3%	N/A	3.3%	3.7%
Uninsured	9.7%	18.2%	11.4%	7.8%	8.6%

Source: America’s Health Rankings, 2023.

Description: Exhibit 43 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 unfavorably to state averages for many indicators, with rates more than 50 percent worse than overall for asthma, STIs, crowded housing, drug deaths, firearm deaths, fourth grade reading proficiency, homicide, low birth weight, preventable hospitalizations, severe housing problems, teen births, and unemployment.
- Hispanic populations compared significantly worse (more than 50 percent worse than overall) for a variety of indicators, including avoided care due to cost, breast cancer screening, crowded housing, E-cigarette use, high school graduation, excessive drinking, fruit and vegetable consumption, high risk HIV behaviors, and lack of health insurance.
- Multiracial populations compared significantly worse (more than 50 percent worse than overall) for a variety of indicators including asthma, avoided care due to cost, breast cancer screening, cancer, depression, E-cigarette use, frequent mental and physical distress, fruit and vegetable consumption, and multiple chronic conditions.
- White populations compared worse than state averages for many indicators including arthritis, breast cancer screening, cancer, cardiovascular diseases, COPD, dependency,

APPENDIX B – SECONDARY DATA ASSESSMENT

exercise, frequent physical distress, fruit and vegetable consumption, and suicide. No indicators compared significantly worse (more than 50 percent above Missouri overall rates) for White populations.

APPENDIX B – SECONDARY DATA ASSESSMENT

Centers for Disease Control and Prevention PLACES

Exhibit 44: CDC PLACES, Health Outcomes Measure, 2023

Location	County	All Teeth Lost 65+	Arthritis	Cancer	Chronic Kidney Disease	COPD	Coronary Heart Disease	Current Asthma	Depression	Diagnosed Diabetes	High Blood Pressure	High Cholesterol	Obesity	Stroke
64601 (Chillicothe)	Livingston	21.4%	30.8%	8.0%	3.4%	10.1%	7.7%	10.3%	25.7%	12.0%	36.0%	37.8%	41.2%	3.8%
64635 (Chula)	Livingston	19.5%	28.6%	7.2%	3.0%	9.2%	7.1%	9.7%	25.1%	10.9%	34.1%	37.3%	40.1%	3.4%
64638 (Dawn)	Livingston	18.1%	30.0%	8.1%	3.2%	8.9%	7.5%	9.3%	23.6%	11.1%	35.4%	38.3%	39.2%	3.5%
64643 (Hale)	Livingston	18.4%	31.0%	8.5%	3.4%	9.3%	8.0%	9.3%	23.2%	11.6%	36.7%	38.7%	39.3%	3.7%
64656 (Ludlow)	Livingston	18.3%	30.7%	8.4%	3.3%	9.2%	8.1%	9.4%	23.7%	11.6%	36.4%	39.3%	39.1%	3.7%
64664 (Mooresville)	Livingston	18.3%	33.2%	9.1%	3.5%	9.7%	8.5%	9.2%	22.9%	12.3%	38.7%	40.8%	40.0%	4.0%
64686 (Utica)	Livingston	18.6%	29.0%	7.5%	3.0%	8.6%	7.0%	9.3%	23.7%	10.9%	34.5%	37.9%	39.9%	3.3%
64688 (Wheeling)	Livingston	19.8%	30.6%	8.0%	3.3%	9.8%	7.8%	9.7%	24.6%	11.8%	36.4%	38.8%	40.6%	3.7%
63557 (New Boston)	Linn	16.6%	34.0%	9.3%	3.6%	10.2%	8.8%	9.4%	22.7%	13.1%	42.2%	41.7%	38.5%	4.0%
63566 (Winigan)	Linn	20.3%	37.4%	10.1%	4.1%	11.2%	10.1%	9.2%	22.3%	14.6%	43.5%	43.2%	41.2%	4.6%
64628 (Brookfield)	Linn	24.1%	32.6%	8.6%	3.8%	11.6%	9.0%	10.3%	25.1%	13.6%	41.1%	39.7%	39.4%	4.4%
64630 (Browning)	Linn	17.2%	32.1%	8.5%	3.4%	9.5%	7.7%	9.4%	23.4%	12.2%	39.0%	39.7%	40.0%	3.7%
64631 (Bucklin)	Linn	17.5%	32.5%	9.1%	3.5%	9.7%	8.3%	9.4%	22.8%	12.4%	40.5%	40.2%	37.8%	3.9%
64651 (Laclede)	Linn	18.9%	31.8%	8.8%	3.5%	9.9%	8.3%	9.6%	23.6%	12.5%	40.4%	39.7%	38.1%	3.9%
64653 (Linneus)	Linn	17.0%	29.4%	7.7%	3.1%	8.9%	6.9%	9.6%	23.8%	11.3%	37.7%	37.9%	38.3%	3.4%
64658 (Marceline)	Linn	18.5%	30.1%	8.2%	3.3%	9.5%	7.5%	9.8%	24.1%	11.6%	37.7%	38.3%	37.9%	3.6%
64659 (Meadville)	Linn	17.9%	30.0%	8.3%	3.3%	9.0%	7.7%	9.5%	23.7%	11.3%	38.2%	38.0%	37.2%	3.6%
64674 (Purdin)	Linn	16.2%	31.6%	8.8%	3.4%	9.4%	7.9%	9.4%	23.3%	12.0%	39.7%	39.9%	37.2%	3.7%
Livingston (MO)		15.4%	30.9%	8.2%	3.4%	9.6%	7.8%	10.0%	24.9%	12.0%	36.3%	38.3%	40.8%	3.8%
Linn (MO)		15.7%	31.7%	8.6%	3.6%	10.3%	8.4%	9.8%	24.2%	12.9%	40.2%	39.8%	38.1%	4.0%
United States		13.4%	25.2%	7.0%	3.1%	6.4%	6.1%	9.7%	19.5%	11.3%	32.7%	36.4%	33.0%	3.3%

Source: CDC, 2023, and Verité analysis.

APPENDIX B – SECONDARY DATA ASSESSMENT

Description: Exhibits 44 through 48 present Centers for Disease Control and Prevention (CDC) PLACES data. PLACES data are derived from BRFSS and are available for every U.S. ZIP Code, census tract, county, and state. Thirty measures are grouped into five categories: Health Outcomes (13 measures), Prevention (10 measures), Health Risk Behaviors (4 measures), Health Status (3 measures), and Disability (7 measures). Light grey shading highlights indicators found to be worse than the national average; dark grey shading highlights indicators more than 50 percent worse.

Exhibit 44 provides data that underlie the Health Outcomes Measure and compares indicators to national averages.¹²

Observations

- In 2023, health outcomes measures were comparatively worse than U.S. averages throughout ZIP Codes in Livingston and Linn counties.
- Rates of chronic obstructive pulmonary disease (COPD) were particularly problematic in many ZIP Codes and overall, for Linn County.

¹² <https://www.cdc.gov/places/methodology/index.html>

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 45: CDC PLACES, Prevention Measure, 2023

Location	County	Cervical Cancer Screening	Cholesterol Screening	Current Lack of Health Insurance	Colon Cancer Test	Mammo-gram	Preventive Services in Men	Preventive Services in Women	High Blood Pressure Rx	Dental Visit	Routine Checkup
64601 (Chillicothe)	Livingston	79.4%	81.5%	13.5%	65.6%	73.3%	42.5%	36.8%	79.9%	54.2%	75.4%
64635 (Chula)	Livingston	79.5%	80.5%	13.4%	67.8%	74.1%	42.6%	38.8%	77.8%	55.3%	73.5%
64638 (Dawn)	Livingston	81.8%	82.8%	11.6%	67.8%	72.2%	45.7%	39.8%	79.8%	58.5%	75.3%
64643 (Hale)	Livingston	82.3%	83.7%	11.9%	66.7%	74.5%	46.2%	37.5%	80.6%	58.7%	76.4%
64656 (Ludlow)	Livingston	79.4%	83.3%	11.4%	68.5%	72.2%	45.9%	42.1%	80.7%	58.2%	75.7%
64664 (Mooreville)	Livingston	80.8%	86.0%	10.9%	68.3%	75.0%	44.1%	38.9%	81.8%	58.5%	76.8%
64686 (Utica)	Livingston	82.2%	82.8%	11.6%	65.7%	73.2%	44.3%	41.7%	78.9%	58.3%	74.5%
64688 (Wheeling)	Livingston	80.6%	82.5%	12.9%	67.4%	72.3%	43.6%	39.7%	79.6%	55.4%	74.9%
63557 (New Boston)	Linn	79.9%	86.4%	10.5%	70.0%	75.2%	45.8%	41.2%	83.0%	59.2%	78.8%
63566 (Winigan)	Linn	80.1%	87.2%	12.0%	68.7%	68.9%	47.3%	39.4%	84.2%	58.1%	79.2%
64628 (Brookfield)	Linn	77.6%	81.6%	14.3%	63.5%	72.9%	45.5%	34.1%	81.3%	52.0%	77.0%
64630 (Browning)	Linn	81.8%	84.7%	11.9%	67.4%	73.0%	47.3%	40.1%	80.9%	58.3%	77.0%
64631 (Bucklin)	Linn	80.2%	85.2%	10.8%	67.5%	74.5%	49.5%	38.4%	82.2%	59.4%	78.2%
64651 (Laclede)	Linn	79.4%	83.8%	11.6%	66.4%	72.1%	48.9%	39.6%	81.6%	56.8%	77.3%
64653 (Linneus)	Linn	81.1%	83.7%	10.9%	65.6%	75.2%	48.2%	37.9%	79.5%	58.4%	76.3%
64658 (Marceline)	Linn	79.7%	82.6%	12.1%	66.9%	73.3%	47.1%	37.7%	80.1%	57.2%	76.2%
64659 (Meadville)	Linn	79.9%	83.5%	11.3%	64.9%	74.5%	49.1%	36.7%	80.3%	58.3%	76.8%
64674 (Purdin)	Linn	80.1%	84.4%	11.0%	68.7%	73.8%	48.5%	39.7%	81.7%	59.0%	77.6%
Livingston (MO)		79.4%	82.6%	12.8%	68.3%	69.4%	43.4%	38.4%	80.3%	55.3%	75.8%
Linn (MO)		78.2%	82.5%	13.0%	67.6%	70.1%	47.3%	37.7%	81.4%	55.2%	77.1%
United States		82.8%	86.4%	10.8%	72.4%	78.2%	43.7%	37.9%	78.2%	64.8%	73.6%

Source: CDC, 2023, and Verité analysis.

Exhibit 45 provides data that underlie the Prevention Measure and compares indicators to national averages.

APPENDIX B – SECONDARY DATA ASSESSMENT

Observations

- In 2023, numerous indicators for routine screenings including cervical cancer screening, colon cancer test, mammogram, and dental visit measures were worse than national averages in all ZIP Codes in Livingston and Linn counties.
- All ZIP Codes in the HMC community, except, ZIP Code 64635 (Chula), compared favorably to U.S. averages for compliance with blood pressure medications and for routine checkups.
- Many ZIP Codes compared favorably for preventive services for men and women.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 46: CDC PLACES, Health Risk Behaviors Measure, 2023

Location	County	Binge Drinking	Current Smoking	No Leisure-Time Physical Activity	Sleeping Less Than 7 Hours
64601 (Chillicothe)	Livingston	15.0%	22.3%	29.4%	34.5%
64635 (Chula)	Livingston	17.0%	22.2%	27.0%	34.2%
64638 (Dawn)	Livingston	16.4%	19.8%	26.3%	33.2%
64643 (Hale)	Livingston	16.0%	20.0%	27.3%	33.3%
64656 (Ludlow)	Livingston	15.7%	19.5%	26.3%	33.0%
64664 (Mooresville)	Livingston	14.9%	20.3%	27.4%	33.2%
64686 (Utica)	Livingston	16.8%	20.3%	25.7%	33.6%
64688 (Wheeling)	Livingston	16.1%	22.1%	27.9%	34.0%
63557 (New Boston)	Linn	14.3%	19.8%	27.3%	30.9%
63566 (Winigan)	Linn	13.3%	20.1%	31.5%	31.9%
64628 (Brookfield)	Linn	14.3%	23.6%	31.5%	32.6%
64630 (Browning)	Linn	15.5%	20.6%	27.8%	32.4%
64631 (Bucklin)	Linn	14.8%	19.3%	27.0%	30.9%
64651 (Laclede)	Linn	15.1%	20.7%	27.8%	31.8%
64653 (Linneus)	Linn	16.2%	20.9%	25.9%	32.2%
64658 (Marceline)	Linn	15.7%	21.0%	27.3%	32.1%
64659 (Meadville)	Linn	15.6%	19.8%	26.5%	31.5%
64674 (Purdin)	Linn	15.1%	19.3%	26.2%	31.0%
Livingston (MO)		15.0%	21.0%	28.4%	34.1%
Linn (MO)		14.7%	21.0%	28.6%	31.7%
United States		15.5%	13.5%	23.7%	32.7%

Source: CDC, 2023, and Verité analysis.

Exhibit 46 provides data that underlie the Health Risk Behaviors Measure and compares indicators to national averages.

Observations

- In 2023, all Livingston and Linn County ZIP Codes compared unfavorably to U.S. averages for smoking and physical activity.
- Smoking rates were significantly worse (more than 50 percent above) than U.S. averages in many ZIP Codes.
- Linn County ZIP Codes compared favorably to Livingston County and to U.S. averages for adequate sleep.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 47: CDC PLACES, Health Status Measure, 2023

Location	County	Fair or poor self-rated health status	Mental health not good for 14 days or more	Physical health not good for 14 days or more
64601 (Chillicothe)	Livingston	21.1%	18.2%	15.0%
64635 (Chula)	Livingston	19.4%	17.6%	13.9%
64638 (Dawn)	Livingston	18.3%	16.1%	13.4%
64643 (Hale)	Livingston	18.8%	15.8%	13.7%
64656 (Ludlow)	Livingston	18.6%	16.2%	13.6%
64664 (Mooreville)	Livingston	19.5%	15.3%	14.4%
64686 (Utica)	Livingston	18.2%	16.3%	13.4%
64688 (Wheeling)	Livingston	20.0%	17.0%	14.4%
63557 (New Boston)	Linn	19.6%	14.7%	14.2%
63566 (Winigan)	Linn	22.0%	14.8%	15.4%
64628 (Brookfield)	Linn	23.2%	17.7%	15.9%
64630 (Browning)	Linn	19.1%	15.6%	13.8%
64631 (Bucklin)	Linn	19.1%	15.1%	13.8%
64651 (Laclede)	Linn	19.5%	16.0%	14.1%
64653 (Linneus)	Linn	18.2%	16.0%	13.3%
64658 (Marceline)	Linn	19.2%	16.7%	13.8%
64659 (Meadville)	Linn	18.3%	16.0%	13.2%
64674 (Purdin)	Linn	18.4%	15.3%	13.4%
Livingston (MO)		20.1%	17.4%	14.3%
Linn (MO)		20.7%	16.6%	14.5%
United States		16.1%	14.7%	10.9%

Source: CDC, 2023, and Verité analysis.

Exhibit 47 provides data that underlie the Health Status Measure and compares indicators to national averages.

Observations

- In 2023, all Livingston and Linn County ZIP Codes compared unfavorably to U.S. averages for fair or poor self-rated health status and physical health not good for 14 or more days.

APPENDIX B – SECONDARY DATA ASSESSMENT

Exhibit 48: CDC PLACES, Disability Measure, 2023

Location	County	Any Disability	Cognitive Disability	Hearing Disability	Independent Living Disability	Mobility Disability	Self-Care Disability	Vision Disability
64601 (Chillicothe)	Livingston	37.5%	17.5%	9.5%	10.6%	19.2%	4.7%	6.0%
64635 (Chula)	Livingston	35.0%	16.6%	8.8%	9.1%	16.6%	4.0%	4.9%
64638 (Dawn)	Livingston	34.1%	14.9%	9.2%	8.4%	16.8%	3.8%	4.7%
64643 (Hale)	Livingston	34.7%	14.9%	9.8%	8.6%	17.4%	3.9%	4.8%
64656 (Ludlow)	Livingston	34.8%	14.9%	9.8%	8.4%	17.1%	3.8%	4.7%
64664 (Mooresville)	Livingston	35.5%	14.4%	10.3%	8.8%	18.8%	4.2%	5.0%
64686 (Utica)	Livingston	33.2%	15.0%	8.6%	8.3%	16.2%	3.8%	4.5%
64688 (Wheeling)	Livingston	35.8%	16.1%	9.5%	9.2%	17.9%	4.2%	5.1%
63557 (New Boston)	Linn	35.9%	14.2%	10.5%	8.5%	18.7%	4.2%	5.0%
63566 (Winigan)	Linn	38.8%	15.0%	12.3%	9.8%	21.2%	4.9%	5.9%
64628 (Brookfield)	Linn	40.7%	18.5%	11.2%	11.6%	21.3%	5.5%	6.9%
64630 (Browning)	Linn	34.9%	14.8%	9.6%	8.6%	17.5%	4.1%	4.9%
64631 (Bucklin)	Linn	35.6%	14.5%	10.2%	8.7%	18.1%	4.1%	5.0%
64651 (Laclede)	Linn	36.6%	15.5%	10.3%	9.1%	18.4%	4.2%	5.2%
64653 (Linneus)	Linn	33.8%	15.1%	8.7%	8.4%	16.4%	3.9%	4.7%
64658 (Marceline)	Linn	35.7%	16.0%	9.4%	9.2%	17.5%	4.1%	5.1%
64659 (Meadville)	Linn	35.1%	15.3%	9.8%	8.8%	17.0%	3.9%	4.9%
64674 (Purdin)	Linn	35.0%	14.6%	9.8%	8.4%	17.4%	3.9%	4.8%
Livingston (MO)		36.3%	16.3%	9.4%	9.6%	18.4%	4.2%	5.3%
Linn (MO)		37.8%	16.5%	10.4%	9.7%	19.0%	4.5%	5.6%
United States		28.3%	12.4%	6.9%	7.4%	13.5%	3.9%	5.0%

Source: CDC, 2023, and Verité analysis.

Exhibit 48 provides data that underlie the Disability Measure and compares indicators to national averages.

Observations

- In 2023, all Livingston and Linn County ZIP Codes compared unfavorably to U.S. averages for any disability, cognitive, hearing, independent living, and mobility disabilities.
- ZIP Code 64628 (Brookfield), in Linn County, compared particularly unfavorably for hearing, independent living, and mobility disabilities.

Ambulatory Care Sensitive Conditions

Exhibit 49: Saint Luke’s Health System ACSC (PQI) Discharges, 2023

Condition	Livingston (MO)	Linn (MO)	HMC
Heart Failure	22	4	34
Bacterial Pneumonia	19	3	35
Chronic Obstructive Pulmonary Disease (COPD)	28	1	33
Urinary Tract Infection	13	2	19
Diabetes Long-Term Complications	4	-	15
Diabetes Short-Term Complications	5	-	13
Uncontrolled Diabetes	1	-	2
Hypertension	-	-	2
Lower-Extremity Amputation among Patients with Diabetes	-	-	2
Asthma in Younger Adults	-	-	-
Total ACSC Discharges	92	10	155
Total Adult Discharges	321	54	575
Percent	28.7%	18.5%	27.0%

Source: Analysis of Saint Luke’s Health System Discharges, 2023.

Description: Exhibit 49 provides 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.

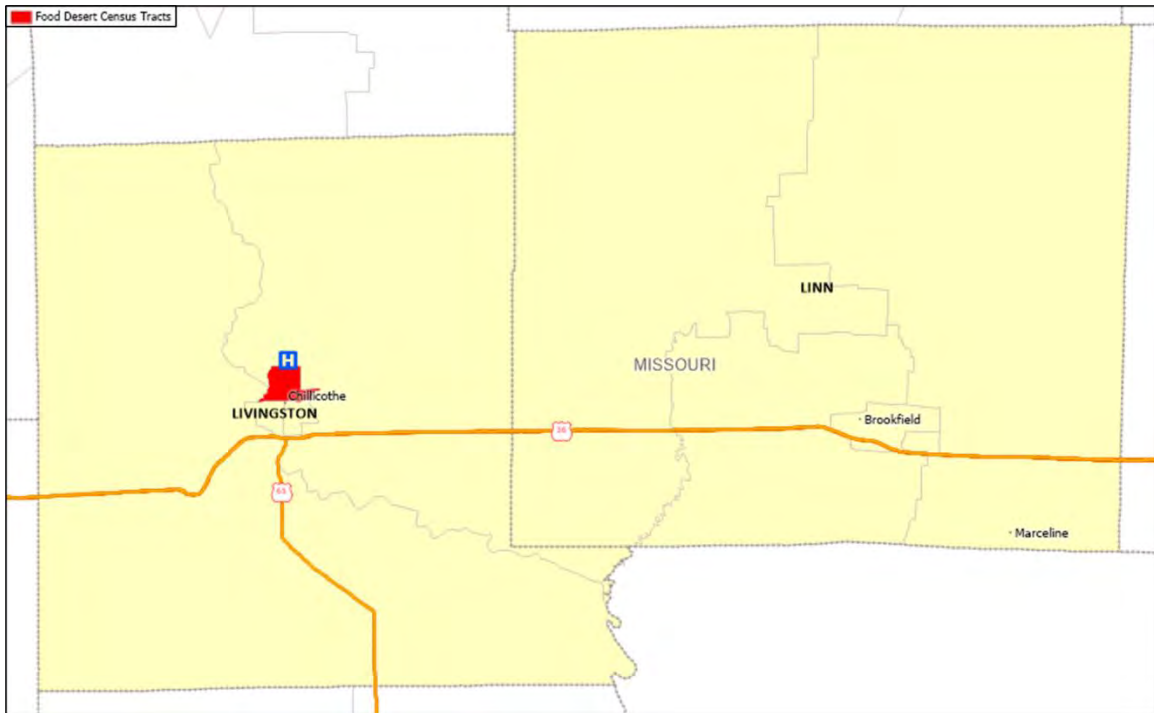
¹³Agency for Health care Research and Quality (AHRQ) Prevention Quality Indicators.

APPENDIX B – SECONDARY DATA ASSESSMENT

- Livingston County had a proportionately higher rate of discharges for ACSCs compared to Linn County, 28.7 percent compared to 18.5 percent.
- ACSC discharge rates in the HMC community were comparatively high (the average for all SLHS metro hospitals in 2022 was 12.9 percent).

Food Deserts

Exhibit 50: Locations of Food Deserts, 2019



Source: U.S. Department of Agriculture, 2021, and Caliper Maptitude, 2024.

Description: Exhibit 50 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

- In 2019, a census tract in Chillicothe (Livingston County), proximate to the HMC campus, was a federally designated food desert.

Medically Underserved Areas and Populations

Exhibit 51: Medically Underserved Areas and Populations, 2024

Service Area Name	County Subdivision	Designation Type	County (State)
Benton Service Area	Benton	Medically Underserved Area	Linn (MO)
	Locust Creek	Medically Underserved Area	Linn (MO)
	Bucklin	Medically Underserved Area	Linn (MO)
	Jefferson	Medically Underserved Area	Linn (MO)
	Marceline	Medically Underserved Area	Linn (MO)
	Parson Creek	Medically Underserved Area	Linn (MO)

Source: Health Resources and Services Administration, 2024.

Description: Exhibit 51 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.¹⁴ 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.”¹⁵

Observations

- The Benton Service Area, comprised of six county subdivisions in Linn County, has been designated as a Medically Underserved Area (MUA).

¹⁴ Heath Resources and Services Administration. See <http://www.hrsa.gov/shortage/mua/index.html>

¹⁵*Ibid.*

APPENDIX B – SECONDARY DATA ASSESSMENT

Health Professional Shortage Areas

Exhibit 52: Population and Facility HPSA Designations, 2024

HPSA Name	County (State)	HPSA Type Description	Primary Care	Mental Health	Dental Health
Hedrick Medical Center	Livingston (MO)	Low Income Population HPSA	•	•	
Low-Income Carroll/Livingston Counties	Livingston (MO)	Low Income Population HPSA	•		•
Chillicothe Service Area	Livingston (MO)	High Needs Geographic HPSA		•	
CF-Chillicothe Correctional Facility	Livingston (MO)	Geographic Population	•	•	
Low-Income Chariton/Linn Counties	Linn (MO)	Low Income Population HPSA			•
Low-Income Macon/Linn Counties	Linn (MO)	Low Income Population HPSA	•		
Chillicothe Service Area	Linn (MO)	High Needs Geographic HPSA		•	

Source: Health Resources and Services Administration, 2024.

Description: Exhibit 52 identifies the locations of federally designated Health Professional Shortage Areas (HPSAs) for primary care, dental care, and mental health.

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.”¹⁶

Observations

- The low-income population of Livingston and Linn counties has been designated as a primary care and dental health HPSA.
- Hedrick Medical Center has been designated as a Low-Income Population HPSA for primary care and mental health providers.
- Livingston and Linn counties were designated as High Needs Geographic HPSAs for mental health.

¹⁶ 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>

Findings of Other Assessments

Missouri State Health Improvement Plan

In 2024, the Missouri Department of Health and Senior Services (DHSS) developed the State Health Improvement Plan (SHIP) document in response to the Missouri State Health Assessment (SHA). The SHA used multiple data sources including an online survey and listening sessions in communities across the state to identify leading health issues in Missouri. The SHIP is a five-year systematic plan created to address the issues identified in the SHA. The SHIP was developed by the State Health Partner Group (SHPG) comprised of local public health agencies, academic institutions, non-profits, and other state agencies.

The SHPG organized issues into the following six SHIP priority issues:

1. Public Health System Building
 1. Integrate the Missouri Foundational Public Health Services model throughout the Missouri public health system.
 2. Strengthen Missouri’s public health system by increasing the number of accredited local public health agencies in Missouri.
 3. Improve the Missouri public health data landscape.
2. Infant and Maternal Health
 1. Advance equitable infant health to decrease infant mortality and improve overall infant health.
 2. Advance/ensure equitable health during the childbearing continuum to improve health outcomes of childbearing people.
3. Health Behaviors
 1. Reduce the inequities in chronic disease rates and support optimal health by increasing access to healthy foods that enable consuming a diet consistent with the Dietary Guidelines for Americans.
 2. Reduce inequities in disease, disability, and injury to improve health outcomes by increasing access to safe places to be physically active.
 3. Prevent tobacco-related illness and death by decreasing commercial tobacco product use and related inequities and disparities.
4. Emerging Public Health Threat Preparedness
 1. Improve the effectiveness and efficiency of the Missouri public health data systems to allow for early identification of emerging public health threats through better epidemiological and syndromic surveillance.
 2. Mitigate emerging public health threats by helping build community resilience.
5. Social Drivers of Health
 1. Advance health equity in Missouri by creating and promoting a set of actionable resources that address the social drivers of health.
 2. Improve health equity by building and leveraging collaborative public health efforts.
6. Whole Person Health Access
 1. Improve the health of Missourians by increasing equitable access to medical, dental, maternal, and mental health services.

APPENDIX B – SECONDARY DATA ASSESSMENT

Missouri Maternal and Child Health Needs Assessment, Priorities and Action Plan

For the federal Title V program, Missouri conducts a 5-year needs assessment to identify maternal and child health (MCH) priorities. The goal of the five-year needs assessment is to identify and contextualize areas of risk, progress, and ongoing need within the maternal and child population.

The Missouri Title V Program identified the following eight state priority needs for the upcoming 2021-2025 five-year grant cycle:

- Women/Maternal Health: Improve pre-conception, prenatal, and postpartum health care services for women of childbearing age (Well-Woman Visit)
- Perinatal/Infant Health: Promote safe sleep practices among newborns to reduce sleep-related infant deaths (Safe Sleep)
- Child Health:
 - Reduce obesity among children and adolescents (Physical Activity)
 - Enhance access to oral health care services for children (Preventive Dental Visit)
- Adolescent Health:
 - Reduce intentional and unintentional injuries among children and adolescents (Injury Hospitalization)
 - Promote protective Factors for Youth and Families (Youth Suicide & Self Harm)
- CSHCN: Ensure coordinated, comprehensive, and ongoing health care services for children with and without special health care needs (Medical Home)
- Cross-Cutting and Systems Building: Address Social Determinants of Health Inequities (Training & Health Literacy)

Rural Action Plan – US Department of Health and Human Services

In September 2020, the U.S. Department of Health and Human Services released their rural action plan and assessment of rural health. The HHS Rural Task Force developed a “Four Point Strategy to Transform Rural Health and Human Services.”

1. Build a Sustainable Health and Human Services Model for Rural Communities by empowering rural providers to transform service delivery on a broad scale.
2. Leverage Technology and Innovation to deliver quality care and services to rural communities more efficiently and cost-effectively.
3. Focus on Preventing Disease and Mortality by developing rural-specific efforts to improve health outcomes.
4. Increase Rural Access to Care by eliminating regulatory burdens that limit the availability of needed clinical professionals.

APPENDIX C – COMMUNITY INPUT PARTICIPANTS

Exhibit 53: Community Input Participant Affiliations

Organization
Chillicothe Fire Department
Chillicothe R-II School District
Hedrick Medical Center
Livingston County Health Center
Livingston County Public Administration
Saint Luke’s – BJC Health System

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 54** lists peer counties for Livingston County (MO) and Linn County (MO).

Exhibit 54: CHSI Peer Counties

Livingston (MO)	Linn (MO)
Arkansas County, Arkansas	Dallas County, Arkansas
Randolph County, Arkansas	Baca County, Colorado
Kit Carson County, Colorado	Lewis County, Idaho
Edgar County, Illinois	Gallatin County, Illinois
Randolph County, Indiana	White County, Illinois
Rush County, Indiana	Appanoose County, Iowa
Clarke County, Iowa	Taylor County, Iowa
Decatur County, Iowa	Wright County, Iowa
Montgomery County, Iowa	Anderson County, Kansas
Bourbon County, Kansas	Cloud County, Kansas
Neosho County, Kansas	Greenwood County, Kansas
Caldwell County, Kentucky	Harper County, Kansas
Logan County, Kentucky	Wilson County, Kansas
Simpson County, Kentucky	Woodson County, Kansas
Todd County, Kentucky	Pipestone County, Minnesota
Jackson Parish, Louisiana	Atchison County, Missouri
Wadena County, Minnesota	Carroll County, Missouri
Barton County, Missouri	Dade County, Missouri
Vernon County, Missouri	Grundy County, Missouri
Chouteau County, Montana	Harrison County, Missouri
Hill County, Montana	Holt County, Missouri
Pondera County, Montana	Knox County, Missouri
Craig County, Oklahoma	Mercer County, Missouri
Garvin County, Oklahoma	Shelby County, Missouri
Johnston County, Oklahoma	Brown County, Nebraska
Kiowa County, Oklahoma	Jefferson County, Nebraska
Latimer County, Oklahoma	Richardson County, Nebraska
Marshall County, Oklahoma	Sheridan County, Nebraska

APPENDIX D – CHSI PEER COUNTIES

Exhibit 54: CHSI Peer Counties (continued)

Livingston (MO)	Linn (MO)
Charles Mix County, South Dakota	Webster County, Nebraska
Gregory County, South Dakota	Quay County, New Mexico
Lyman County, South Dakota	Blaine County, Oklahoma
Roberts County, South Dakota	Cameron County, Pennsylvania
Tripp County, South Dakota	Walworth County, South Dakota
Lewis County, West Virginia	Donley County, Texas
Ashland County, Wisconsin	

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 2021. This is not an inclusive list of all initiatives aligned with the 2021 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 2021 Hedrick Medical Center CHNA identified the following as significant needs and priority areas for the 2022-2024 Implementation Strategy:

1. Access to Care and Health Insurance (Including Transportation and Access to COVID-19 Treatment and Testing Services)
2. Mental Health and Access to Mental Health Services
3. Obesity, Physical Inactivity, and Chronic Conditions

Priority 1: Access to Care and Health Insurance (Including Transportation and Access to COVID-19 Treatment and Testing Services)

Initiative: HMC continues to accept Missouri Medicaid by helping patients as they complete the Medicaid application process.

Highlighted Impact: HMC enrolled 1,197 patients in Medicaid with the assistance of staff.

Initiative: HMC will continue efforts to recruit primary care physicians and specialists into the community.

Highlighted Impact: Recruiting primary care physicians and specialists is ongoing in order to meet the needs of patients and community members.

Initiative: HMC will continue operating Rural Health Clinics.

Highlighted Impact: By continuing to operate the Rural Health Clinics it will provide vaccinations and telehealth services for all community members including low-income communities.

Initiative: HMC will continue supporting the Livingston County Healthy Baby Shower for expectant mothers and the Breastfeeding Taskforce.

Highlighted Impact: Hedrick Medical Center’s partnership with Livingston County assisted 74 expectant mothers by providing community health education and birthing workshops. Information and services were provided by Hedrick OB/GYN Associates at Hedrick Medical Center. The events were sponsored & organized by the Livingston County Health Department. Gift baskets containing supplies were provided on behalf of Hedrick OB/GYN Associates.

Initiative: HMC will continue providing flu vaccinations in area schools.

APPENDIX E – IMPACT EVALUATION

Highlighted Impact: HMC provided 437 flu vaccinations in area schools for students/staff. Notable schools, Chillicothe RII School District, Bishop Hogan Memorial School, Southwest School and Chula Schools - elementary through high school.

Initiative: HMC will continue providing Head Start and sports physicals for area schools.

Highlighted Impact: HMC provided 1,202 athletic sport physicals. Notable schools, organizations, and health department include Braymer High School and Middle Schools, Chula Schools, Bishop Hogan Memorial School, Southwest School District, Chillicothe High School, YMCA football team and gymnastics teams, Livingston County Health.

Note: All physicals did not pertain to just sports.

Initiative: HMC will continue providing health services for area schools using telehealth resources.

Highlighted Impact: Continue to offer a range of services for area schools, including specialists and telehealth services for students and staff.

Initiative: HMC will continue conducting Community Blood Center Drives.

Highlighted Impact: Blood drives were conducted at and by Hedrick Medical Center.

Initiative: Continue screening patients for transportation needs and providing referrals to appropriate community resources, including OATS Transit.

Highlighted Impact: HMC is screening for Social Drivers of Health (SDOH), focused on transportation, and referring patients to community resources, such as OATS Transit.

Initiative: HMC will continue to conduct community health education through social media and marketing.

Highlighted Impact: HMC continues to use social media to market different events and highlight their successes.

Priority 2: Mental Health and Access to Mental Health Services

Initiative: HMC will actively recruit mental health providers to serve diverse populations.

Highlighted Impact: HMC actively recruits mental health providers to serve the community.

Initiative: HMC will continue screening patients for social isolation risks and make referrals to appropriate community resources.

Highlighted Impact: HMC is screening for Social Drivers of Health (SDOH), focused on Social Isolation, and referring patients to community resources, such as Senior Life Solutions programs.

Initiative: HMC will explore providing virtual access to social workers in the emergency room.

Highlighted Impact: This is an ongoing initiative. Having virtual access to social workers strengthens care and provides resources for patients who may not be able to see a social worker in person.

Initiative: HMC will continue participation in Green Hills Regional Crisis Intervention Team Council.

APPENDIX E – IMPACT EVALUATION

Highlighted Impact: HMC continued partnership and collaboration, while providing mental health education to community members.

Initiative: HMC will collaborate with the HMC Foundation in support of D.A.R.E. programs.

Highlighted Impact: On going initiative.

Priority 3: Obesity, Physical Inactivity, and Chronic Conditions

Initiative: HMC will expand efforts to screen patients for food insecurity and provide referrals to appropriate community resources.

Highlighted Impact: HMC continues to use the Social Drivers of Health (SDOH) screening tool to determine patients with food insecurities and refer them to community resources such as food pantries with the help of the HMC social worker.

Initiative: HMC will continue maintaining community walking trails.

Highlighted Impact: HMC continued offering access to walking trails, available to and utilized by community members in conjunction with Livingston County Health Center.

Initiative: HMC will Restart the hospital's fall prevention program, in partnership with the Livingston County Health Center.

Highlighted Impact: The annual Fall Prevention Fair was held in the Gardens at Hedrick Medical Center in collaboration with the Livingston County Health Center.

◆ **Contact us**

Hedrick Medical Center

2799 N. Washington St.
Chillicothe, MO 64601

660-646-1480

saintlukeskc.org/locations/hedrick-medical-center



Download the [SaintLukesKC app](#)

