Mental Health Inequity in St. Louis:

A Spatial Analysis

Report & Recommendations JUNE 2023

KCCGF CHIRON
Community Giving Foundation

Acknowledgements

The project team would like to extend our sincere gratitude and appreciation to the following individuals who provided valuable data resources, insights, and expertise:

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This report was produced by Center for Civic Research and Innovation (CCRI) researchers, David Leipholtz, Marius Johnson-Malone, and Kyle Juvers, in collaboration with Matthew Ellis, PhD, MPE.

Graphic design services provided by Acton Circle.

Copy editing by Nicole Guenther.

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A Letter from Chiron Community Giving Foundation Leaders

"History, despite its wrenching pain, cannot be unlived, but if faced with courage, need not be lived again."

Maya Angelou

When our family moved to the St. Louis area almost two decades ago, a press release caught our attention. It proclaimed St. Louis to be one of the most violent places in the United States. Understanding the sensationalized nature of city rankings, we attributed this information to statistical manipulations and overzealous reporting. However, as we settled in and adjusted to life in St. Louis, we began to learn that the challenges of the area run deep, rooted in long-running systemic racism, injustice, and seemingly intractable disenfranchisement of those struggling to meet basic needs.

Community violence, which the Centers for Disease Control and Prevention (CDC) defines as action such as "action such as assaults or shootings that happen between unrelated individuals", touches all residents of St. Louis, whether directly or indirectly. Violence often stems from inequity, and the perpetuation of racial and economic segregation continues to cause negative outcomes and life experiences for many communities, including disparities in physical and mental health and access to care.

Recent years have emphasized that the relationship between mental health and violence is bi-directional; lack of access to mental healthcare contributes to community violence, and community violence contributes to declining mental health outcomes and increased need for services. Many experts and advocates in the fields of mental health, public health officials, and policy makers have worked in various ways to increase awareness of these relationships. The increasing recognition of the role mental health plays in the perpetuation of violence, trauma, and intersecting facets of health for both individuals and communities have led the federal government and many states to emphasize the crisis of mental health in the United States. As a result, these institutions have disseminated many forms of public information designed to help individuals better understand how to care for their mental health. The aims of these federal, state, and local media campaigns and related programming are to address increasing rates of depression and anxiety, and to encourage focus upon addressing the massive shortfall in the behavioral health workforce.

As individuals increasingly seek out access to mental healthcare, disparities continue to play a large role in determining outcomes. Inequities in insurance coverage, long waiting lists, difficulties in finding affordable providers that are appropriate for a person's lived experiences and needs, and stigma associated with seeking help can all reduce utilization of mental health services. The barriers to accessing clinical care for mental health also include overcoming the significant impact of chronic stress, traumatic experiences, and limited time and resources. Importantly, those most afflicted are focused on meeting their basic needs such as food and shelter, which often require full-time attention and leave little room for mental or physical health concerns. For young people transitioning to adulthood, elderly people, newly arrived immigrants, people directly impacted by interpersonal or community violence, and other marginalized groups facing specific challenges, it can be especially difficult to access high-quality, affordable mental healthcare in St. Louis.

Our goal in commissioning this report was to help define the mental health needs of St. Louis residents through

(continued)

a broad lens, and to better understand inequities in mental healthcare access by publishing a snapshot of current data relevant to organizations dedicated to supporting mental health in St. Louis. The data we have chosen to include provide some information on social determinants of mental health as well; education, employment, transportation, adverse childhood experiences, and characteristics of the place one resides are all known to have an impact on mental health. Many additional factors that impact mental health remain unexplored in this report: impacts of food insecurity; inadequate housing; unhealthy built environments; lack of social connectedness; social exclusion based on race, ethnicity, gender, sexual orientation, disability status; and unequal opportunity for political voice.

Chiron Community Giving Foundation envisions communities that are healthy, safe, and engaging. Our primary area of interest is mental health, as it touches all our lives through many pathways, and is an integral force in promoting a flourishing and safe community. The foundation uses a data-driven approach to promote effective collaboration by providing access to data for decision making, and funding for both organizational capacity-building and implementation of mental health services. St. Louis is well known as being a community dedicated to volunteerism, community organizing, and social justice. We acknowledge the prior work many have already accomplished in this area as we work to foster collaboration among diverse stakeholders, professionals, and most importantly, community members. All of us working together can accomplish more than if we work independently.

We share the data and recommendations assembled in these pages as an invitation for you to consider how you or your organization may join the effort or ask for what you need to be more effective in your approach to the mental health crisis. Whatever the work you are engaged in to address and strengthen mental healthcare access, we want to hear about your successes and challenges. Please use this report to make the case for your work, and please be in touch with us with your thoughts and ideas for data analyses that may be of help to your work in the future. Working together, we can create a new reality in the St. Louis region, in which we all receive the mental health support we need when we need it and can take actions that create a positive future for our community.

Sincerely,

Kris Lewis

President, Chiron Community Giving Foundation (CCGF)

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About Us

The Chiron Fund began as a component fund of the St. Louis Community Foundation in 2019 and served as the incubator for what is today the Chiron Community Giving Foundation (CCGF).

MISSION

To promote effective collaboration that transforms communities and life for the people within them.

VISION

Communities that are healthy, safe, and engaging for all people.

CHIRON COMMUNITY GIVING FOUNDATION'S IMPACT STRATEGY

Chiron Community Giving Foundation is implementing a 10-year giving strategy focused on providing funding to support increased access to high-quality, affordable mental healthcare for St. Louis' most vulnerable populations. We are choosing to focus on increasing access to clinical mental health services by developing grants and furnishing capacity-building services that:

- **Reduce the shortage of clinical mental health providers effectively serving culturally diverse clients.**
- **Increase access to high-quality, affordable, mental healthcare for those ages 0–26 and their family members.**

We are actively working to develop a strong, collegial, sustainable network of grantee organizations that are committed to similar outcomes. We are seeking to collaborate in thought partnership, advocacy, and encouragement of each other's efforts.

Our ideal partners demonstrate readiness to implement effective mental health-related projects and are organizations who receive broad-based community support and participation. Each of the project partners we select shares a primary focus on serving low-income or otherwise marginalized individuals and/or families who reside in St. Louis City and/or St. Louis County.

CCGF'S GRANTMAKING PROGRAM PRIORITIES

1. Increase access to high-quality, affordable mental healthcare.
2. Educate grassroots and community-based organization staff and clients about mitigating the impacts of chronic stress/traumatic experiences and fostering wellness.
3. Support development, scaling, and replication of high-quality mental health programs and services.
4. Provide ongoing training and support for mental health clinicians and non-clinical staff that increases professional efficacy at all career stages and retains diverse, talented clinicians in the St. Louis region.
5. Support organizations that have ongoing and effective advocacy efforts related to increasing access to high-quality, affordable mental healthcare.

Photo credit: wikimedia.org

Executive Summary

This report builds upon prior work and identifies gaps in the evidence base on inequities in mental healthcare access in the St. Louis area.

In particular, this report discusses disparities and relationships between mental healthcare access and social determinants of mental health. Social determinants of mental health include conditions in which people are born, grow, work, live, and age that may impact a person's mental health and/or their ability to access care for their mental health. The data in this report may be used by individuals, organizations, stakeholders, or policymakers to collaborate and innovate to create solutions to address the current mental health crisis. This crisis exists throughout the U.S., and is especially pronounced in St. Louis, where a history of spatial, racial, and economic segregation has presented unique challenges for addressing mental health.

This report is meant to serve as a resource to members of the community who may not have specialized knowledge of mental health concerns or the lack of access to mental healthcare services in St. Louis. With this in mind, this report presents data analyses in three key areas: mental health related outcomes, mental healthcare access, and social determinants of mental health.

For data to be generalizable and spatially focused, we only analyzed data that was available for all, or nearly all, zip codes in St. Louis City and St. Louis County. When displayed by zip code, the data visualizations underscore how much location matters and is consistent with current estimates that up to 60% of one's health is attributable to the zip code where they live, work and play.[1]

Finally, this report focuses on clinical mental healthcare services available in St. Louis City and St. Louis County, and complements previous work focused on data collected from hospitalizations or through specific treatment providers. The report allows us to view the current landscape of access to mental healthcare services that are designed to provide intervention and to avert the need for acute mental health services or crisis care.

KEY FINDINGS

LOCATION & PLACE MATTER

Location refers to the geographical area an individual resides in, such as a county, a census tract, or a zip code. Consistently throughout our data analyses, nearly every metric analyzed identified worse outcomes in zip codes primarily located in north St. Louis City, followed closely by north St. Louis County. These analyses include mental health outcomes, experiences of trauma and violence, mental healthcare availability, and social determinants of mental health. These data reinforce the need to address both access to mental healthcare and access to basic needs through approaches that target areas of St. Louis where the highest concentrations of vulnerable individuals reside.

It should also be acknowledged that negative outcomes were not limited to north St. Louis City and north St. Louis County. Southern St. Louis City, in particular zip code 63111, shared many of the same outcomes as north St. Louis City. Southern edges of St. Louis County, had relatively worse outcomes compared to central and western St. Louis City and St. Louis County. These data suggest that customized interventions or collaborations may be necessary to address disparities in different geographical "hot spots" of need within St. Louis.

Place, or the physical and human characteristics of a geographical area, also matters. While the data help us to see where the greatest concentrations of need reside, the question remains: *Why are these specific geographic locations beset with both poor mental health and lack of mental healthcare access?* The following data help us to understand the intersecting factors that result in this concentration. Place is not simply a geographic location. We use it here to reflect the way systemic disparity results in community vulnerability.

RACIAL DISPARITIES

While these data highlight how location matters, it is important to acknowledge that the zip codes that were identified with the greatest inequities were those that comprise the greatest concentrations of Black, Indigenous, Latinx and People of Color (BILPOC) populations. St. Louis has a long and intractable history of spatial segregation and discrimination, negatively impacting many members of the region's Black communities. Systemic racism has led to concentrations of poverty and less access to both resources and investment. Systemic racism has perpetuated disparities in terms of social determinants of mental health, mental health outcomes, and mental healthcare access, as identified in this report.

60% of one's health is estimated to be attributable to the zip code where one lives, works, and plays.

– S.A. Schroeder (2007)

Areas with the greatest proportion of uninsured residents overlapped with areas with greatest rates of poor mental health.

SOCIAL DETERMINANTS OF MENTAL HEALTH

Mental distress and trauma can sustain a feedback loop as related to issues such as substance use and community violence, especially when inequities in education, employment, housing, healthcare coverage, transportation, and other social determinants are not addressed. In fact, when social determinants are not addressed, they continue to perpetuate poor mental health outcomes, and vice-versa.

These data demonstrate significant overlap in social determinants of mental health, location, and racial makeup of communities. Areas with the greatest proportion of uninsured residents overlapped with areas with the greatest rates of poor mental health. Lack of computer or internet access were concentrated in zip codes in north St. Louis City, restricting the ability of residents to access telehealth services, which otherwise can help mitigate other barriers such as transportation. These zip codes also overlap with those with the lowest proportion of car ownership, which highlights multiple barriers to accessing mental healthcare. *How do we provide accessible mental healthcare when transportation and telehealth are both limited?* There is a need to address these social determinants, as well as others that will require significant, long-term investment, such as employment and education or improvement in housing and neighborhood environments. All of these factors can impact an individual's ability to improve their mental health.

It should be noted that the social determinants of mental health analyzed in this report are by no means exhaustive. There are multiple determinants that we are unable to measure but continue to play significant roles in mental health and mental healthcare access. For instance, this report does not specifically consider the role played by social exclusion or social isolation, particularly in the wake of the COVID-19 pandemic, as mitigation strategies included lockdowns and self-isolation. Stigma is also an important social determinant to consider when assessing mental healthcare access. Where stigma is a barrier to receiving mental healthcare, it is not uncommon to find that individuals have been disenfranchised by structural racism or affected by distrust resulting from prior negative experiences within institutions, in many cases those related to healthcare. While stigma and trust are difficult to measure at a broad, generalizable level, greater efforts are needed to understand their role in the mental health landscape of St. Louis.

GAPS IN THE DATA

While the data in this report represent what is available at a broad level, inclusive of all, or nearly all, zip codes in St. Louis City and St. Louis County, there are data that are unavailable that could help shed even more light on these issues. Access to clinical mental health services, particularly early intervention care, is fragmented, and little information is collected to allow for an understanding of the number of providers, providers' fee structures, provider modalities or theoretical orientations, provider attrition, service areas, and patient pools that exist in a given area. In addition, it is important to acknowledge that not all care is equal; there is a lack of clarity about what "high-quality" mental healthcare means even amongst providers. We struggle, therefore, to answer such questions as, "How can 'high-quality mental healthcare' be measured?" Individuals seeking out mental healthcare deserve high-quality, ethical care in a safe environment, but what information is available to help individuals make informed choices on their care provider, particularly if that care needs to be tailored to their lived experience or identities?

There is no "one size fits all" approach when it comes to high-quality mental healthcare. Mental healthcare is personal and individualized, and while national data can provide helpful insights to develop planning and programming applicable to the St. Louis region, it is necessary to develop customized treatments and interventions that are tailored to specific groups, communities, or geographic areas. Our goal in issuing this report is to collect and disseminate locally useful and demographically specific data to advocate for and to promote investment in strategies that go beyond the status quo and can better respond to unserved and underserved communities in the St. Louis region.

RECOMMENDATIONS

Our insights and findings bring us to six key recommendations, for which we will lay the groundwork and discuss in more depth later in the report. These recommendations will take strategic collaboration and long-term investment to achieve. This report provides multifaceted recommendations and calls to action, which we explore in depth on page 61.

RECOMMENDATION 1:

Acknowledge and address spatial differences in community needs and their relationships to mental health and social justice.

RECOMMENDATION 2:

Improve collaboration across stakeholders and communities to improve mental healthcare access.

RECOMMENDATION 3:

Establish a community-wide definition of "high-quality" mental healthcare.

RECOMMENDATION 4:

Develop interventions to address mental healthcare workforce shortages.

RECOMMENDATION 5:

Address gaps in data informatics.

RECOMMENDATION 6:

Support community programs and policies that provide safe and healthy conditions for all children and families.

Introduction

BACKGROUND

There is growing recognition that mental health plays a crucial role in our ability to live healthy and productive lives, and yet significant barriers exist to acknowledging and managing mental health in the United States. Chronic stress and traumatic experience are increasingly being associated with broader public health issues such as physical illnesses like heart disease and diabetes,[2] community and gun violence,[3-4] substance use,[5-6] and suicidality.[7-8] Mental health challenges everyone to one degree or another, but the need is particularly acute in groups that experience systemic oppression and discrimination, such as people of color[9-10] and gender and sexual minorities,[11-13] as well as adolescents and young adults.[14] There are many studies linking the rise of social media and worsening mental health.[15] Populations such as recently arrived immigrants, unhoused individuals, individuals with substance use disorders, and older adults may experience mental health services that are not helpful or encounter systems that often are not adequately designed to provide appropriate care.

Poor mental health is noted by the World Health Organization as the leading cause of disability in the United States, accounting for 40% of medical disability in those aged 15–44.[16-17] Approximately 1 in 5 adults in the U.S. are experiencing a mental illness, defined as a diagnosable mental, behavioral or emotional disorder, other than a developmental or substance use disorder.[18-20] Mental health issues have consistently increased over the past few decades in the U.S. Total

Expenditures for health services in the U.S. have increased from $31.8 billion in 1986, to $225.1 billion in 2020.[21]

Approximately 1 in 5 adults in the U.S. are experiencing a mental illness.[18-20]

Counselors and social workers with master's degrees earn approximately 33–45% less than other health professionals with a comparable education.[28]

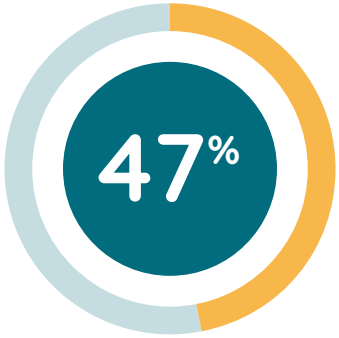
expenditures for mental health services in the U.S. have increased from $31.8 billion in 1986 to $225.1 billion in 2020.[21] In 2022, Missouri ranked 44 out of 50 states (and Washington D.C.) for percent of adults with mental illness (indicating higher rates of mental illness than other states), ranked 41 for access to mental healthcare (indicating less access than other states),[18] and ranked 46 for those with mental illness reporting being able to access care.

There is a crisis in the mental health of youth and adolescents in the United States. Recently released data from the Centers for Disease Control and Prevention (CDC) indicate several troubling trends among high school students. The percentage of high school students who experience persistent feelings of sadness and hopelessness has drastically increased from 28% in 2011 to 42% in 2021. Suicidal ideation and attempted suicides have increased from 16–22% and 8–10%, respectively.[22]

BARRIERS TO ACCESS

Despite increases in the reported prevalence of mental health issues, particularly in the wake of the COVID-19 pandemic, over half of individuals who need mental healthcare do not receive it.[16,20] Even among those receiving mental healthcare, it is estimated that just 20% receive care considered to be "minimally adequate."[16,20] Access, as defined by the St. Louis Regional Health Commission, reflects "a patient's ability to get healthcare when and where they need it and at a price they can afford."[16] When it comes to mental healthcare, there are multiple levels at which barriers occur, meaning that individuals are prevented from accessing mental healthcare due to a range of factors.

One of the primary factors hindering access to mental healthcare in the U.S. is a significant workforce shortage of mental health professionals. It is estimated that the U.S. needs 4.4 million more behavioral health practitioners (i.e., those that provide care for mental health and/or substance use) to meet the current demand.[23] It is estimated 47% of Americans live in a mental health workforce shortage area.[24] In fact, one report noted that for every 10 clinicians entering the mental health workforce, 13 leave, suggesting that this shortage will



47% of Americans are estimated to live in a mental health workforce shortage area.[24]

continue to increase if not addressed.[25] These shortages have been attributed to a variety of factors, including high rates of attrition due to provider burnout, low or delayed reimbursement payments by insurance companies, and lack of appropriate pay.[26-27] For instance, counselors and social workers with master's degrees earn approximately 33-45% less than other health professionals with a comparable education.[28]

Navigating the mental healthcare providers who are available, patients experience limited opportunities for provider engagement due to long wait lists and high staff turnover.

Since the COVID-19 pandemic began, the American Psychological Association reported that 62% of providers have experienced increases in patient referrals, and 65% indicated they had no capacity for new patients.[29]

There are also significant issues in the pay structures and insurance provision for mental healthcare. While mental health parity laws that require insurance companies to place mental health on par with physical health are an attempt to mitigate barriers to access, many mental healthcare providers do not take insurance due to low, delayed, or burdensome reimbursement policies. For those that do, *individuals are five times more likely to have to use an out-of-network behavioral healthcare provider* than they would if seeking a medical service provider.[30] There is also significant variability in the quality and delivery of evidence-based mental healthcare (i.e., care based on high-quality scientific research) and a lack of care integration with other services deemed to be essential for improving overall health.

Outside of these organizational and policy level barriers, individuals confront a range of other obstacles that may impede access to mental healthcare. Stigma, or negative attitudes resulting from prior experiences toward mental health and mental healthcare, can play a significant role in deterring people from seeking clinical care or other forms of support for their mental health concerns. Stigma may also be result from distrust of institutions or systems with a history of structural racism, as well as an individual's prior negative experiences with inadequate, racist, or culturally insensitive care. Cultural stigma also may negatively impact help-seeking behaviors if mental health is thought to be something not to be discussed, acknowledged, or addressed because doing so goes against the prevalent attitudes or norms of one's culture.[31]

Photo credit: Midtown St. Louis / wikipedia.org

In addition, other factors influencing daily life play a role in individual mental health. These factors are called social determinants of mental health. There are experiences, influences, or components of life that can influence an individual's mental health, risk of developing mental health issues, and ability to seek and access care for mental health concerns:

- **Lack of physical safety and/or the presence of community violence, which disproportionately affects racially segregated and high-poverty neighborhoods, can cause mental health conditions such as depression, anxiety, and post-traumatic stress disorder (PTSD).**
- **Systemic policies that led to racial segregation and racial injustice prevent access to health insurance or money to pay for mental healthcare by perpetuating inequities in education, employment, income, and wealth.**
- **Disparities in accessible locations of clinical mental health services can lead to barriers in increased time commitment and/or lack of transportation to attend such treatment.**
- **Lack of access to internet or computers can prevent uptake of more readily accessible telehealth, or the provision of health services over phone, internet, or video.**
- **Lack of availability of culturally responsive mental healthcare providers can present as a barrier for many members of marginalized groups in finding suitable care in which a client is likely to feel safe and supported and make progress.**
- **Stress and related trauma associated with the daily challenge of meeting one's basic needs such as shelter or food, which necessitates prioritization over mental or physical healthcare.**

Disparities in social determinants of mental health are well established as leading to disparities in health outcomes, both physical and mental. Rates of mental illness are higher in those living in underserved or low-income communities,[19-20] and the prevalence of mental illness during COVID-19 was greater among Black and Hispanic populations.[32] Community violence also leaves people at risk of grief, trauma, depression, and anxiety.[33] Homicides and other acts of violence cause substantial harm in communities across the country; the prevalence of this form of harm is substantially higher in racially segregated and high-poverty neighborhoods.[33]

Rates of access to culturally responsive care and providers with shared identities and experiences show disparities across racial groups. On average, people of color have a greater unmet need for mental healthcare than white populations.[20] The 2021 National Healthcare Quality and Disparities report identified several barriers to accessing mental healthcare among racial/ethnic minority populations such as stigma, cultural attitudes, lack of insurance coverage, and lack of racial/ethnic diversity in the workforce.[20,34] To this latter point, the American Psychological Association notes that the U.S. Psychology Workforce consists of 4.2% Black/African American and 6.2% Hispanic workers.[35]

THE CONTEXT OF ST. LOUIS

The St. Louis region is one of the most racially segregated areas of the country. Multiple books, documentaries, and media reports have outlined the history of St. Louis as one of the primary examples of how systemic racial policies such as redlining (i.e., denial of services such as mortgages to residents of certain areas, often based on race), displacement of Black communities through urban renewal such as Mill Creek Valley, and concentration of poverty such as the Pruitt-Igoe public housing project have led to racial disparities in health outcomes and social determinants that continue to impact residents today. St. Louis

is a city of spatial segregation. Prior reports, such as the *For the Sake of All* report and the findings and calls to action resulting from the Ferguson Comission following the shooting of Michael Brown, a watershed moment for St. Louis, highlight the multiple areas for which disparities exist between Black and White populations, rooted in history but affecting the lives of those born today.[36-39]

Prior reports from multiple stakeholder groups have addressed various aspects of the mental health needs of the St. Louis area. These include:

- **2015, *St. Louis Adult Behavioral Health Needs Assessment,* St. Louis Mental Health Board**
- **2017, *Service Provider Network Needs Assessment,* United Way of Greater St. Louis**
- **2018, *St. Louis Adult Behavioral Health Community Needs Assessment,* St. Louis Mental Health Board**
- **2021, *Missouri Behavioral Health System Asset Mapping Foundation,* Missouri Foundation for Health and Health Forward Foundation**
- **2022, *Progress Toward Building a Healthier St. Louis Access Care Book,* St. Louis Regional Health Commission**
- **Regular community health needs assessments led by St. Louis City and St. Louis County health departments, as well as three major hospital systems, each approximately every three years.**

Each of these reports provides valuable information toward understanding the landscape of mental health in the St. Louis region. This report was developed to focus on two key areas that address gaps in previous reports. Our first goal is to report what data are and are not available on this topic to identify significant gaps in the data on mental healthcare. Second, this report is predicated on the understanding that "place matters" when it comes to mental health.

Many of the reports currently available on the St. Louis region utilize data on hospital admissions, emergency room utilization, or care provided by individual or select organizations. Our aim in this report is to provide a broad, generalizable lens toward understanding mental health and mental healthcare access, to the extent possible, by utilizing large-scale, publicly available databases that can provide a look into clinical mental healthcare services. Clinical mental healthcare services can be viewed as both what is referred to as "early intervention care" (in advance of further development of serious mental illness or crisis care) or treatment for mild to moderate mental distress. Early intervention care provided through individual practitioners of counseling or therapy are important mental healthcare services that are not often analyzed due to a lack of data collection.

Photo credits: Wikipedia.org

The purpose of this report was to understand spatial inequity of mental healthcare access in the St. Louis area. As an addition to the existing evidence base, the hope is to inspire informed innovation and decision-making that will improve the lives of St. Louis and its residents.

Approach and Methodology

APPROACH

The approach of this report is rooted in the growing understanding that where one lives matters. It has been estimated that one's zip code may account for up to 60% of one's health.[1] As noted in the introduction, St. Louis has a significant history of structural racism, reflected in a region still suffering from de facto segregation. The data presented in this report allow us to better examine public health issues related to mental health and mental healthcare access through the specific lens of *"how location and place matter."*

GEOGRAPHIC AREA OF INTEREST

This report utilizes publicly available secondary data sources (i.e., data collected by other organizations) that report information for all or nearly all zip codes in St. Louis City and St. Louis County. While mobility (i.e., one's ability to move to and from neighboring zip codes and counties) can impact these data, disparities in mobility also exist that allow mobility for some, while not others. In addition, some zip codes may include their own within-zip code disparities. However, to keep the data concise and understandable, and to highlight the specific needs of the area, this report only presents information at the zip code level from St. Louis City and St. Louis County.

TIMEFRAME

Geographic areas also undergo their own unique transitions over time. Place-based social, economic, and legislative changes can impact both the needs and the health outcomes of a region. The recent COVID-19 pandemic has further disrupted patterns in many areas of society. Taking this into account, data from 2020–2022 were primarily used to understand the most current needs, characteristics, and behaviors of the St. Louis area. However, in certain instances, the most recent data available was utilized, even if outside these parameters.

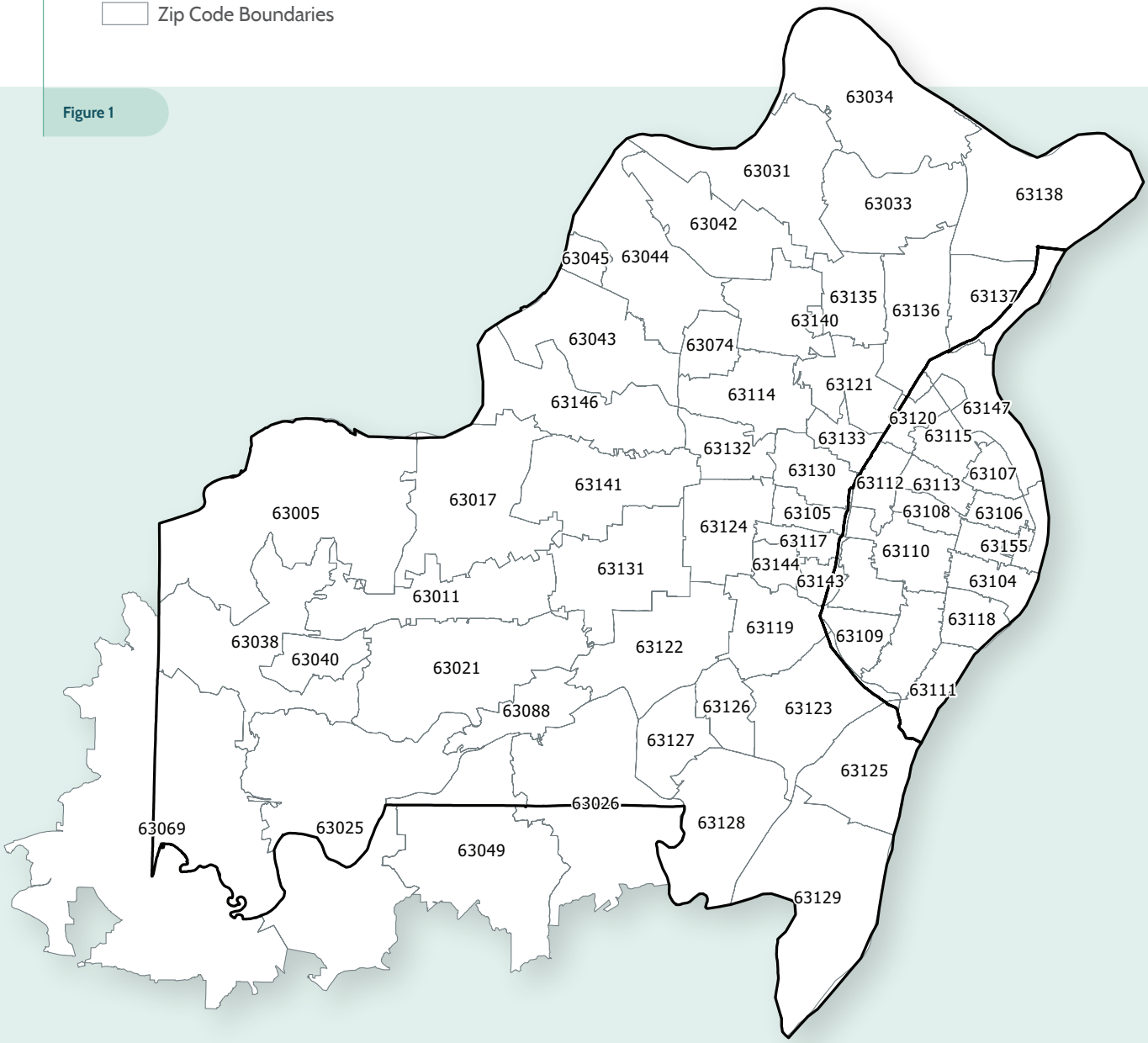
SCOPE OF ANALYSIS

To present as inclusive a report as possible, data were utilized that reflect the entire area, which means that the data sets included were available for all, or nearly all, zip codes within St. Louis City and St. Louis County *(Figure 1)*. While data from specific single or multi-site centers such as hospitals or specific mental health treatment centers provide significant and meaningful information, it is difficult to generalize information from these sites to the entire St. Louis area.

St. Louis City and County Boundaries

Zip Code Boundaries

Figure 1



A broad analysis was decided upon for several reasons. First, providing an initial understanding of what data are and are not available can accurately and appropriately describe issues surrounding mental health that can be generalized to the entire area of interest. Second, although there are distinct needs and issues for specific populations such as children, immigrants, LGBTQIA+ persons, etc., data were focused on the general population level to get an initial sense of the broad needs of the region, which can then be further delineated in future analyses. Finally, mental healthcare was viewed from the perspective of an average person who may be suffering from mental distress, focusing on clinical mental health services accessible in the community, particularly those likely to be involved in "early intervention care" (i.e., care outside of large treatment centers and hospital settings that may help to avert more serious mental health conditions). Although it is important to understand crisis care and the need to address serious mental illness, data in these arenas are limited in their data collection, making it difficult to generalize information to the entire region. In addition, as with all datasets, there are biases and limitations to what the data can tell us, which are noted where appropriate.

Publicly available data in three key areas were considered for inclusion: indicators of mental health related outcomes, access to mental health, and social determinants of mental health that may influence mental health and/or mental healthcare access. Social determinants include conditions in which people are born, grow, work, live, and age that may influence mental health outcomes or access to mental healthcare.

ANALYSIS PRESENTATION

Data are primarily presented through geospatial mapping to provide visual understanding of how the data are reflected across the zip codes of St. Louis City and St. Louis County. For most indicators, data were split at natural breaks (e.g., separation of data into groups with similar characteristics) to indicate varying levels or degrees to which an outcome was present in each zip code.

DATA SOURCES

The following data sources were identified as providing indicators relevant to the scope of this report:

- **2016-2020 *American Community Survey,* U.S. Census Bureau**
- **2020 *CDC/ATSDR Social Vulnerability Index,* Centers for Disease Control and Prevention**
- **2020, data from *Missouri DHSS Patient Abstract System***
- **2021, data from Hospital Industry Data Institute**
- **2021, *PLACES Data,* Centers for Disease Control and Prevention**
- **2022, *211 Data,* United Way of Greater St. Louis**
- **2022, *Behavioral Health Treatment Services Locator,* Substance Abuse and Mental Health Services Administration**
- **2022, data from Missouri Division of Professional Registration.**

Data Summary

DEMOGRAPHICS

Before reporting data on key indicators of mental health, mental healthcare access, and social determinants of health, it is important to understand some basic information about the individuals who live in St. Louis City and County. This information provides a foundation to compare how the zip code distribution of key indicators may also reflect on the population characteristics of those zip codes.

POPULATION

Differences in population size and characteristics between zip codes may impact the resources available to communities, such as differences in the number of mental health providers available or the number of individuals needing mental healthcare.

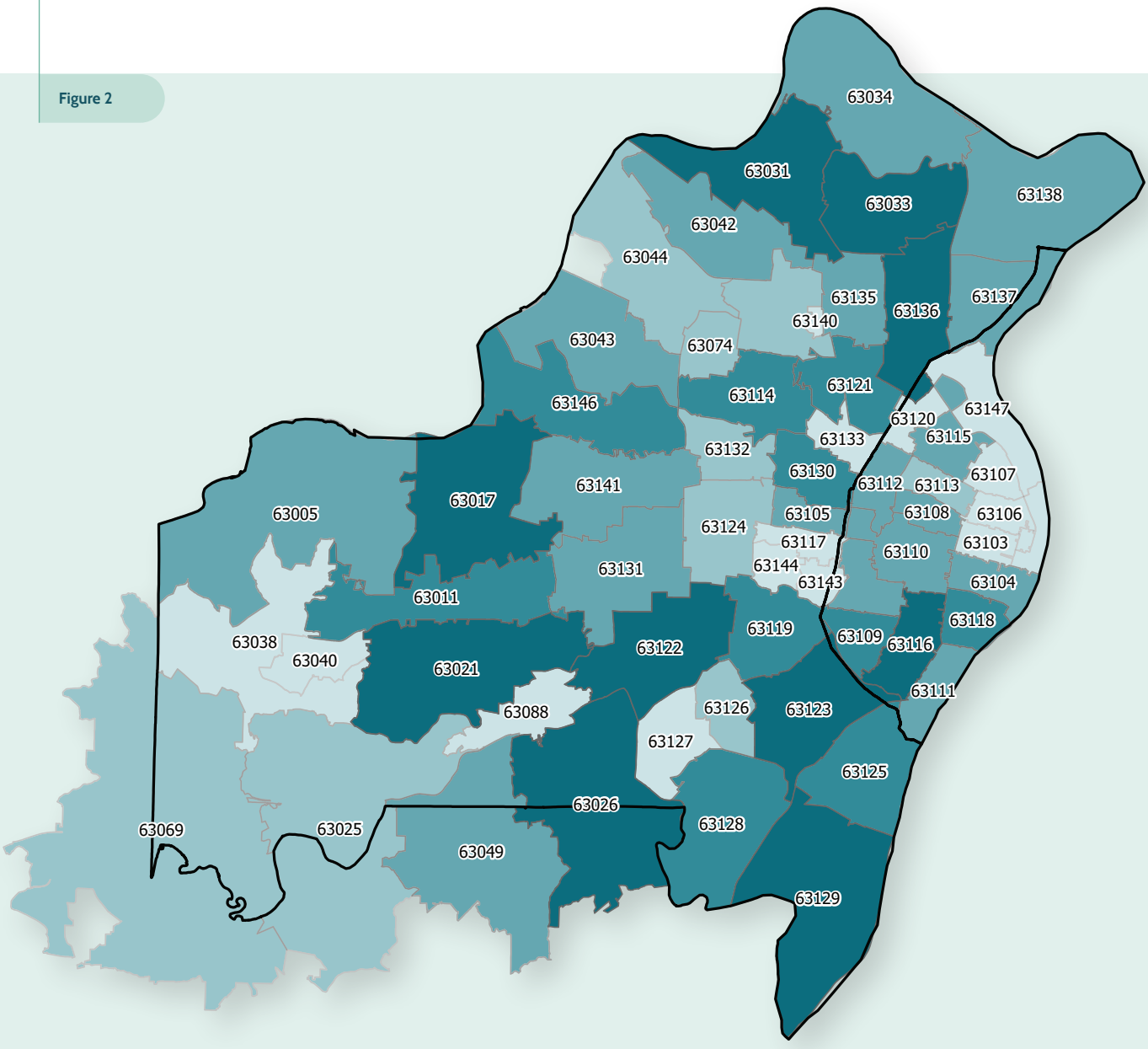
As of 2021, the population estimate of St. Louis City was 293,310 and 997,187 for St. Louis County, for a total area population of 1,290,497. However, the population is not evenly distributed across all zip codes. Looking at total numbers of individuals living in a certain zip code *(Figure 2)*, zip codes in the northern and south/ southwestern regions of St. Louis County have a greater number of residents than St. Louis City and central St. Louis County.

Population by Zip Code

Total Population

- 337 – 9,967
- 9,968 – 15,450
- 15,451 – 22,143
- 22,144 – 37,298
- 37,299 – 56,154
- St. Louis City and County Boundaries

Figure 2



2016-2020, American Community Survey, US Census Bureau

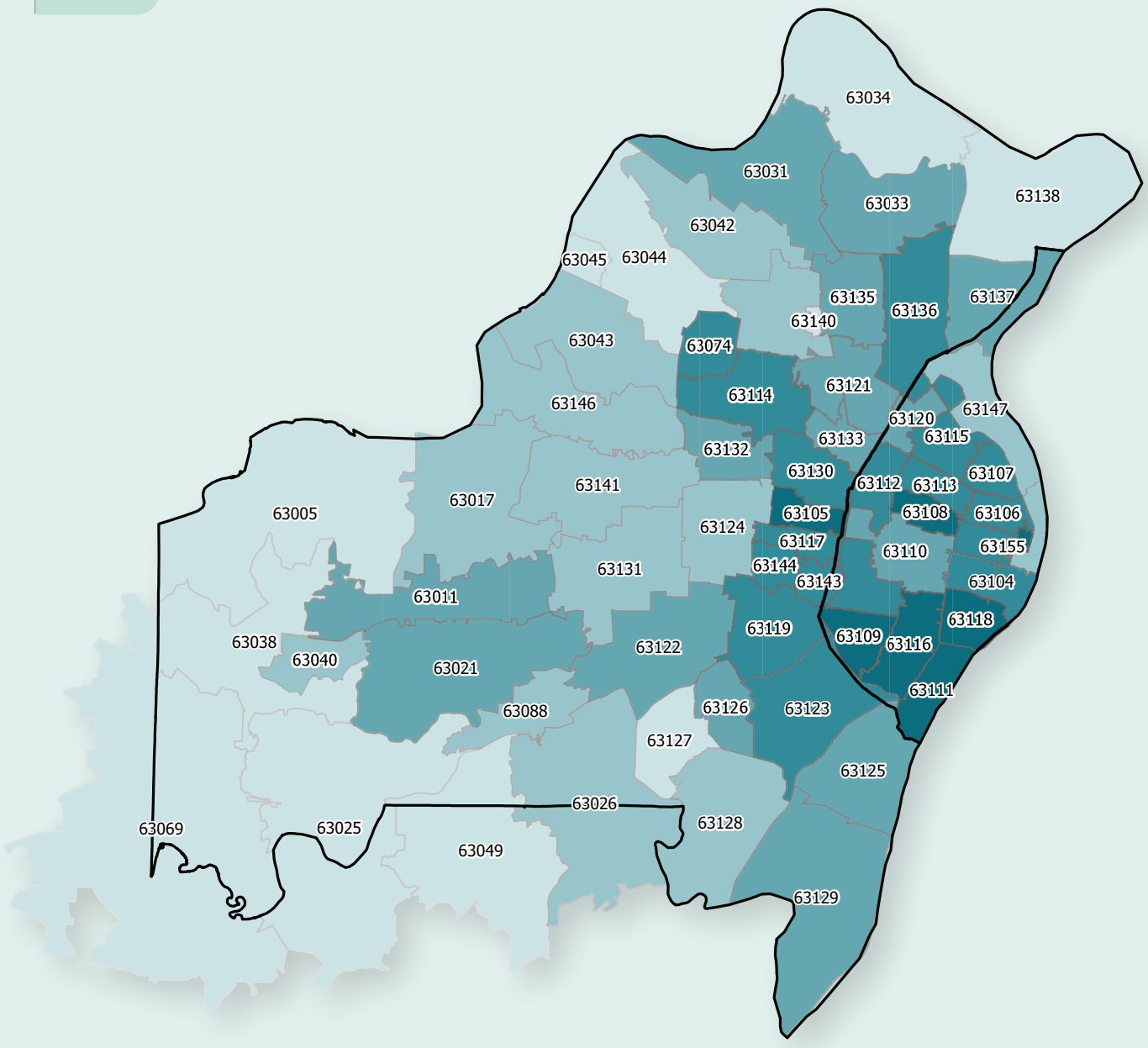
To account for the possibility that this could be due to these zip codes simply being larger and thus able to hold more individuals, *Figure 3* presents population density, which is the number of residents per square mile of land. Population density is greatest in central and south St. Louis city, with density decreasing the further west a zip code is located.

Figure 3

Population Density by Zip Code

Population Density (square miles)

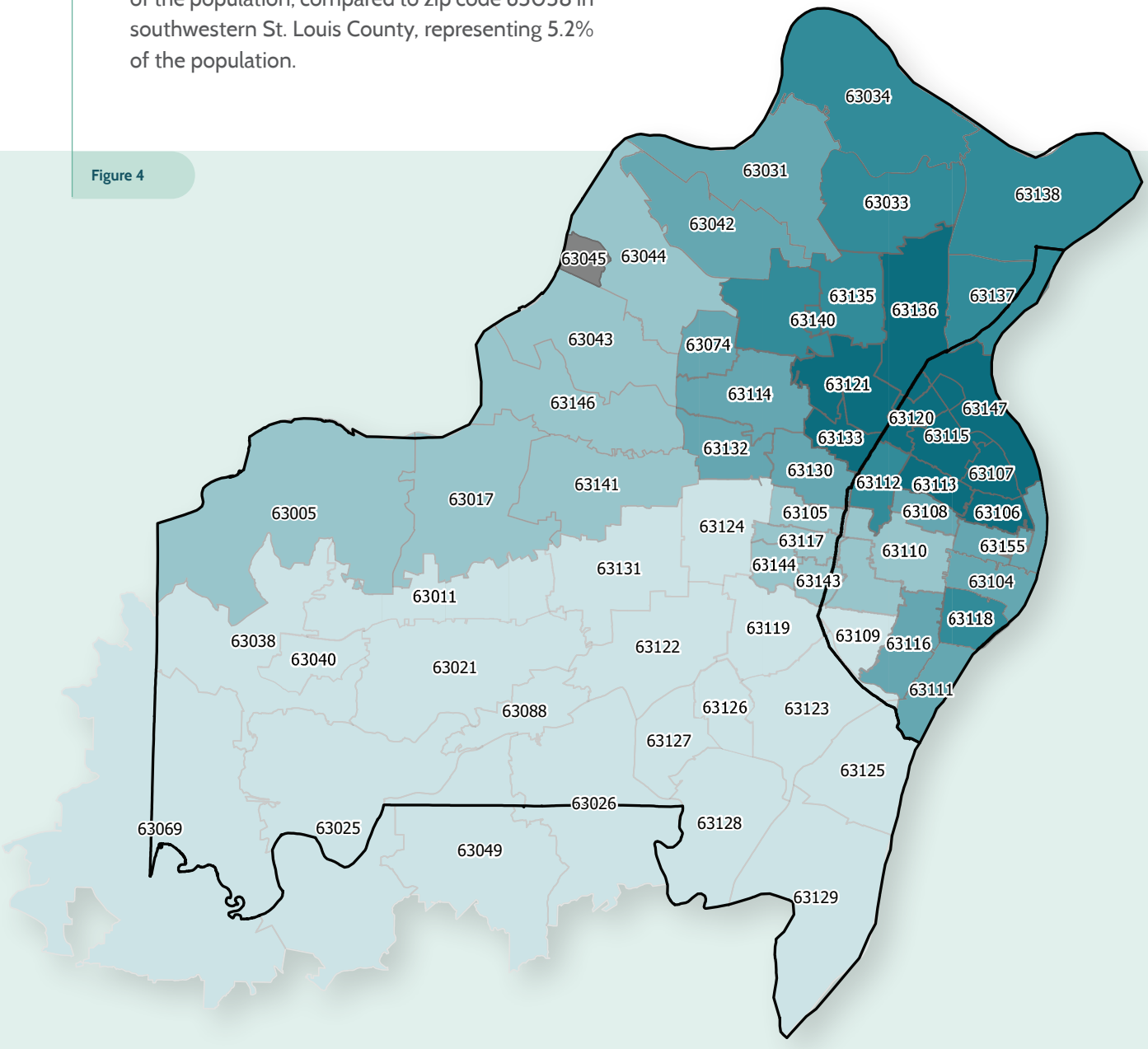
- 0 – 994
- > 994 – 2,234
- > 2,234 – 3,538
- > 3,538 – 5,831
- > 5,831 – 9,342
- St. Louis City and County Boundaries



RACE/ETHNICITY

Given the history of segregation and persistence of segregated housing patterns in St. Louis, it is necessary to understand how populations of racial/ethnic minorities are distributed across the region. *Figure 4* reinforces this point, suggesting that spatial segregation continues to exist in St. Louis, with concentrations of Black, Indigenous, Latinx, People of Color (BILPOC) populations greatest in north St. Louis City and County. BILPOC populations are estimated to be highest in zip code 63115 in north St. Louis City, representing 99.4% of the population, compared to zip code 63038 in southwestern St. Louis County, representing 5.2% of the population.

Figure 4

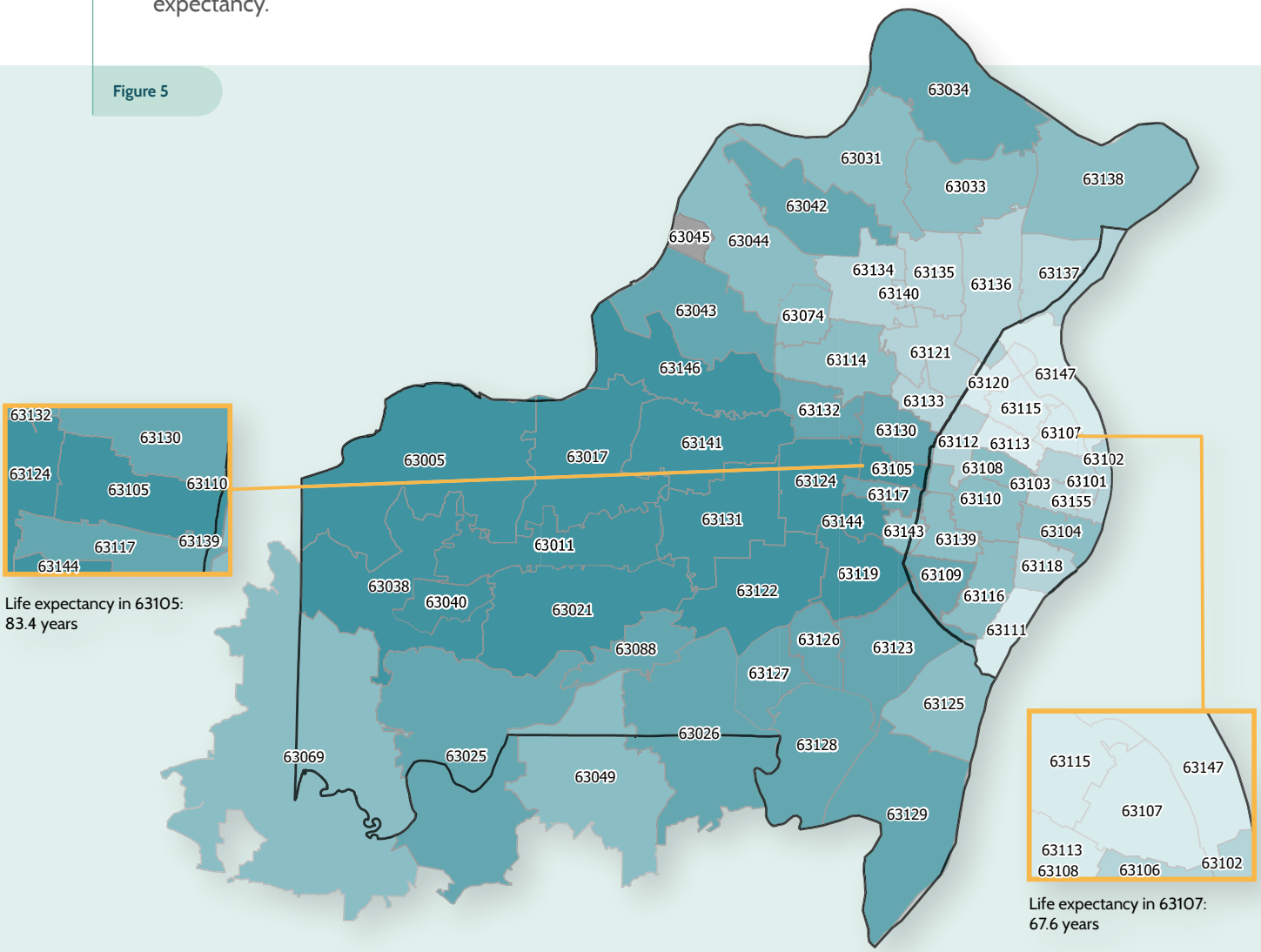


2016-2020, American Community Survey, US Census Bureau

LIFE EXPECTANCY

Life expectancy in this data analysis represents how long someone born between 2010–2015 in a specific zip code is expected to live. In *Figure 5,* the darker the shaded zip code, the lower the expected life expectancies. The lowest life expectancies were found to be among the zip codes in north St. Louis City, yet these zip codes were geographically close to zip codes with the highest life expectancy rates. Zip code 63107 had the lowest life expectancy of 67.6 years, compared to 63105, which had a life expectancy of 83.8 years. Comparatively, a distance of roughly eight miles can be associated with a difference of sixteen years in one's life expectancy.

Figure 5



MAPPING NEED

To understand the current landscape of mental healthcare access, data must be collected on information describing the need for mental healthcare services. Therefore, these analyses present the distributions and estimated rates of mental health issues and risk factors associated with mental health across zip codes in St. Louis. These analyses help to identify which communities in St. Louis may be experiencing the greatest need for mental healthcare services. Data were focused on four key areas: 1) usage of acute mental healthcare services; 2) prevalence of self-reported poor mental health; 3) likelihood of having experienced ACES (adverse childhood experiences); and 4) rates of hospitalizations resulting from assault.

HOSPITALIZATIONS FOR MENTAL HEALTH DISORDERS

Data from the 2021 Hospital Industry Data Institute was used to map rates of hospitalizations for mental health disorders in St. Louis. Use of hospitalization for mental health services is often an indicator of severe need, which may reflect an inability to access early intervention (or preventive) mental healthcare. *Figure 6* depicts the rate of mental disorder hospitalizations (per 1,000 residents), which was overall greater in the northern region of both St. Louis City and County, with highest rates observed in St. Louis City. Zip code 63107 had the highest rate, 55.2 hospitalizations per 1,000 residents, over four times higher than the lowest rate of 11.5 per 1,000 in zip code 63105.

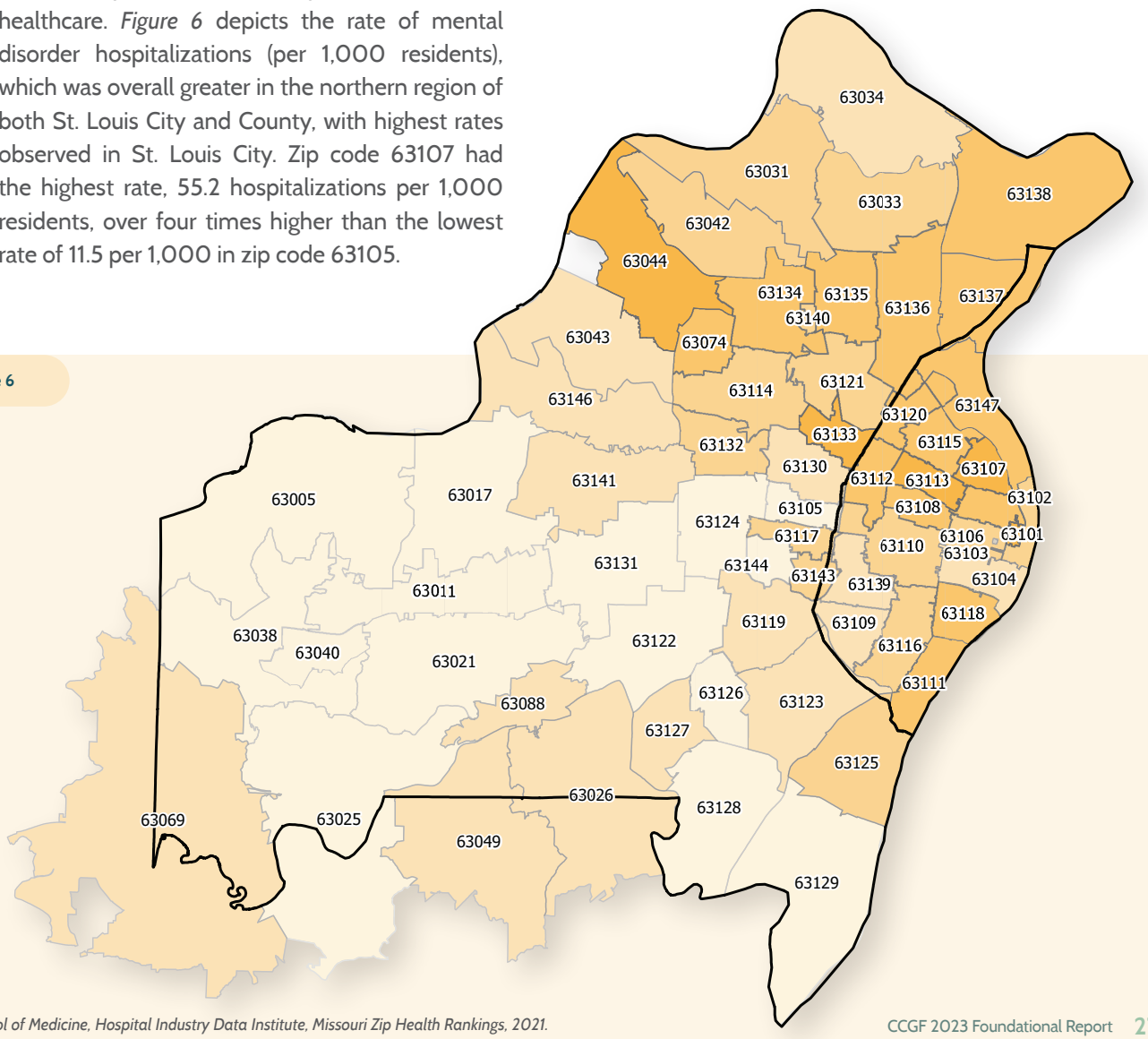


Figure 6

Washington University School of Medicine, Hospital Industry Data Institute, Missouri Zip Health Rankings, 2021.

POOR MENTAL HEALTH

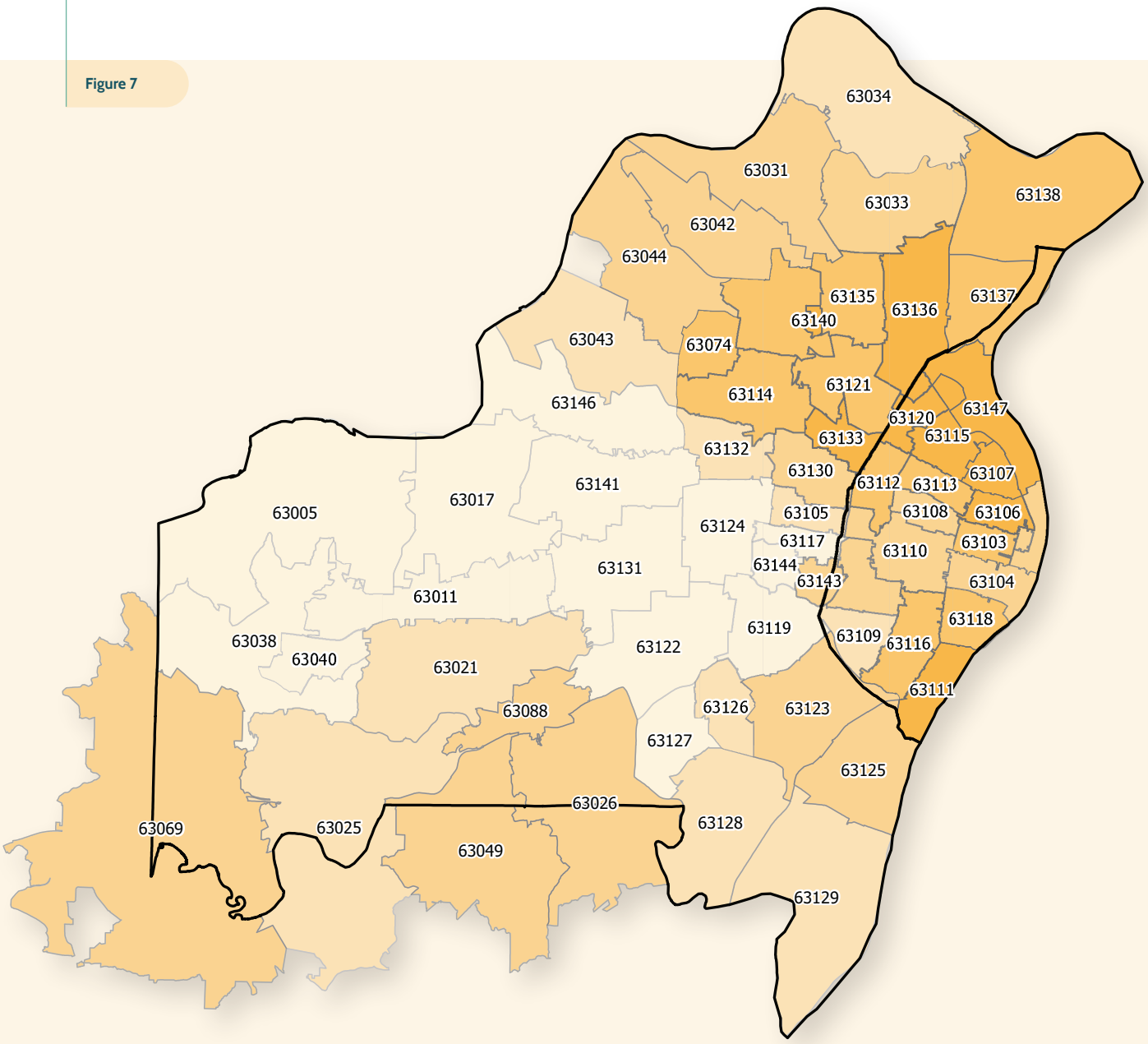
The CDC's 2021 PLACES dataset estimates the percentage of individuals in a zip code that report fourteen or more days of mental health being "not good" in the past month. Elevated rates (16–22%) were found throughout St. Louis City *(Figure 7)*, as well as the northern zip codes of St. Louis County, compared to lower rates (9–11%) observed in the central regions of St. Louis County. Elevated rates were also noted in the southernmost zip codes of St. Louis County as well, though they did not reach the levels of north St. Louis City and County.

PLACES Poor Mental Health Prevalence

% Adults with ≥14 Days Poor Mental Health

- 9.1% - 11.8%
- 11.9% - 13.6%
- 13.7% - 16.2%
- 16.3% - 18.9%
- 19% - 22.1%
- St. Louis City and County Boundaries

Figure 7



ADVERSE CHILDHOOD EXPERIENCES

Adverse Childhood Experiences, known as ACEs, are potentially traumatic events that occur in childhood. The widely used ACEs assessment tool measures a variety of factors that could constitute trauma in children ages 0–17, such as emotional, physical and sexual abuse, or living in environments where mental health issues, substance use, or engagements with the criminal justice system are present, just to name a few.[40] ACEs have been linked to a number of negative health outcomes such as poor mental health, substance use, infectious disease, cancer, diabetes, heart disease and suicide.[40] Data from the 2016 Hospital Data Industry Institute estimates a childhood ACEs risk score at a zip code level *(Figure 8).*[41] All zip codes with the highest ACEs risk scores (0.74–1.63) except for one, were located within the boundaries of St. Louis City, although elevated risk scores were present throughout north St. Louis County zip codes as well, compared to zip codes in central and southern St. Louis County, which had the lowest risk scores (-1.10 – -0.81).

ACE Risk Score by Zip Code

Weighted Overall ACE Risk Score

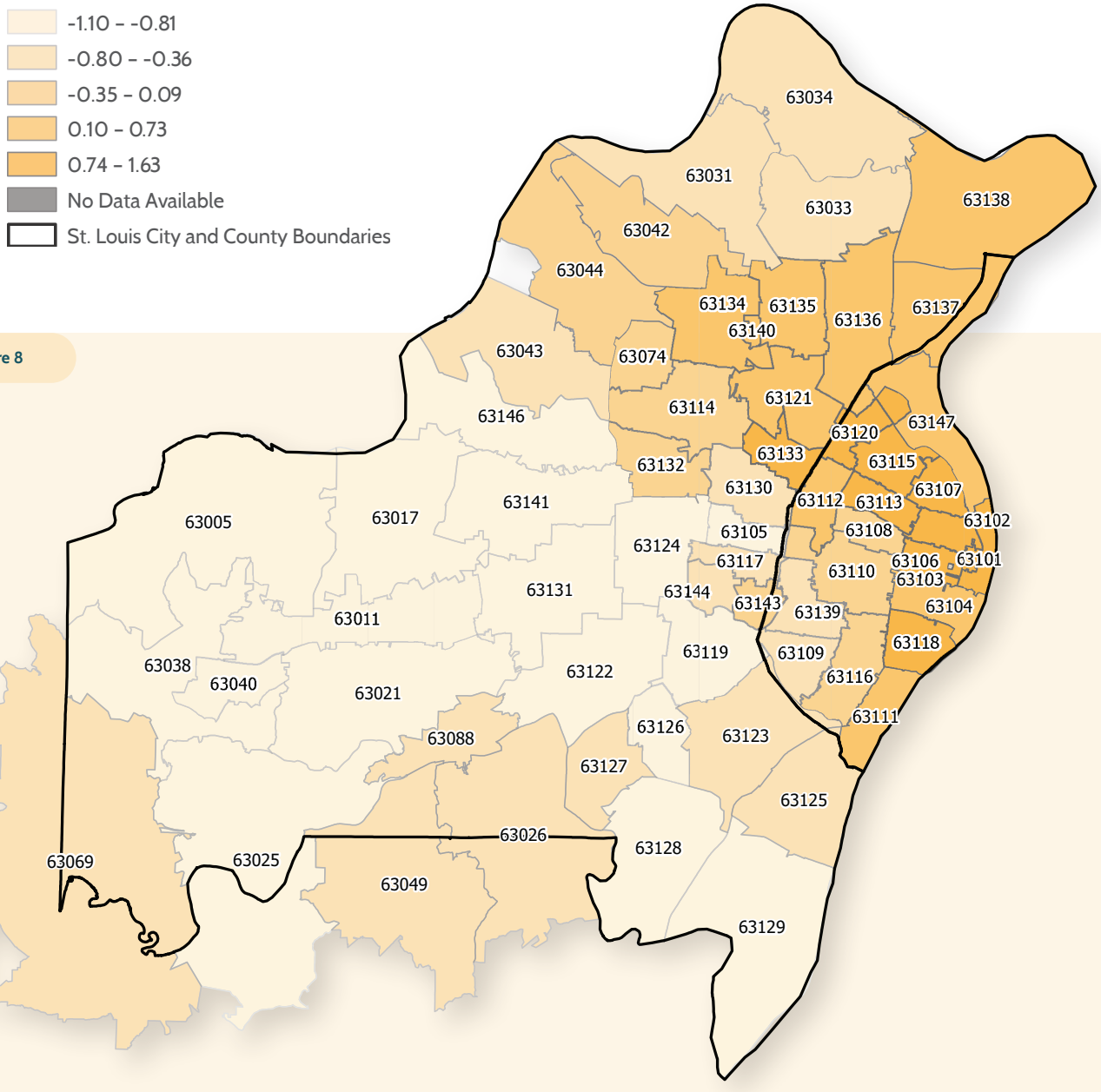


Figure 8

October 2016 Missouri Hospital Association, Hospital Industry Data Institute Healthstats

ASSAULT DIAGNOSES

The presence of community violence may play a significant role in impacting the mental and physical health of individual residents. Experiencing physical safety is a basic human need and exposure to acts of violence can cause harm, as discussed in relation to ACEs. Community violence can also affect neighborhoods by impacting businesses, educational outcomes, community building efforts, social connection of residents, and engagement. Therefore, where community violence is prevalent both individual mental health and resources/services available within the community can suffer. Community violence may also result from the effects of systemic racism that have led to racial segregation, lower infrastructure investment, fewer resources, substandard built environment, and concentrations of poverty and unemployment.[33] Using data on hospital inpatient, outpatient, and emergency service diagnoses of assault per 1,000 residents from 2018 and 2020, *Figure 9* shows that assault diagnoses were greatest (15.7–22.1 per 1,000) for residents of zip codes in north St. Louis City and adjacent zip codes in St. Louis County, compared to central and southern St. Louis County, whose rates were drastically lower, at 0.4–2.7 per 1,000 residents. It should be noted that these data reflect zip codes where individuals who experienced violence have their place of residence, not zip codes where the violence occurred.

Assault Rate by Residence of Victim

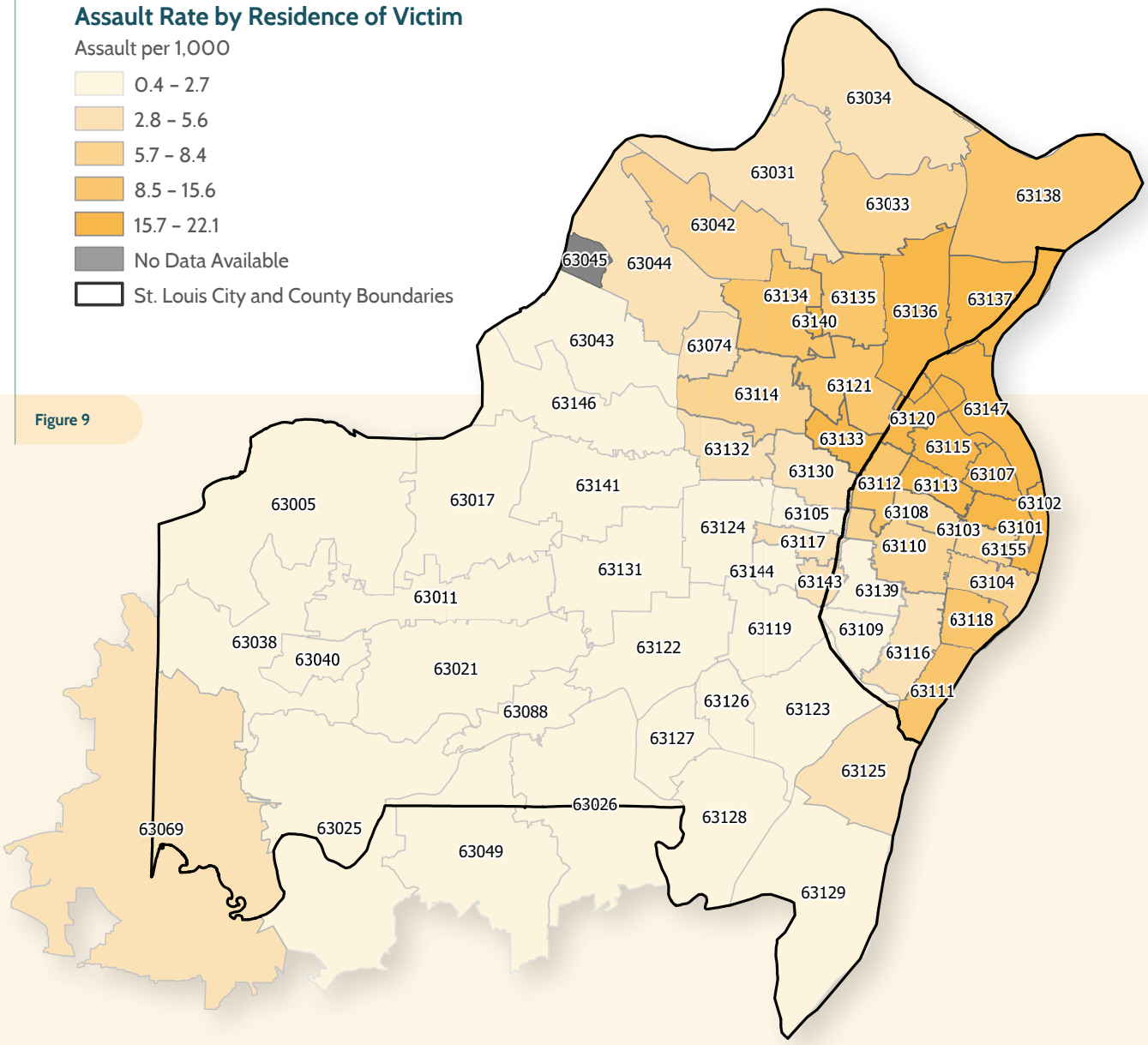


Figure 9

Washington University School of Medicine, Hospital Industry Data Institute, Missouri ZIP Health Rankings, 2021

MAPPING ACCESS

The second set of analyses provides further detail about current access to clinical mental healthcare services in St. Louis. Previous reports have highlighted indicators of mental health access in St. Louis through the lens of severe (or more advanced) mental health issues. To add to this evidence-base, this report addresses mental healthcare access as an intervention to mitigate more severe outcomes and patterns of seeking clinical mental health services for non-critical mental distress.

Since many mental health clinicians provide care in individual practices with varying pay structures and treatment modalities, this form of mental health service provision can be difficult to assess and measure. Analyses presented here include three types of data: rates of usage of hospital services (inpatient, outpatient, or emergency room) for mental healthcare, location of registrations of individual providers of mental health services, and locations of larger organizations and treatment centers that provide clinical mental healthcare services.

HOSPITAL UTILIZATION FOR MENTAL HEALTH SERVICES

Data from the Missouri Department of Health and Senior Services from 2020 *(Figure 10)* provide an overview of utilization of hospital inpatient, outpatient, and emergency mental health services in St. Louis City and St. Louis County. This measure of access demonstrates the use of hospital mental health services due to acute need and not early intervention (preventive) services such as therapy or counseling. In some instances, use of hospital services may be indicative of not knowing where else to access mental healthcare, or it may signify the use of services only when a serious issue arises. This map indicates that hospital mental health service usage was greater in areas of St. Louis City overall, but particularly in several zip codes in north St. Louis City and north St. Louis County. These data highlight the need for more mental healthcare service options in these areas.

Emergency Room, Outpatient, and Inpatient Utilization for Mental Health Services

Age Adjusted Rate per 10,000

- 71 – 188
- 189 – 298
- 299 – 467
- 468 – 970
- 971 – 1413
- 1414 – 1956
- No Data Available
- St. Louis City and County Boundaries

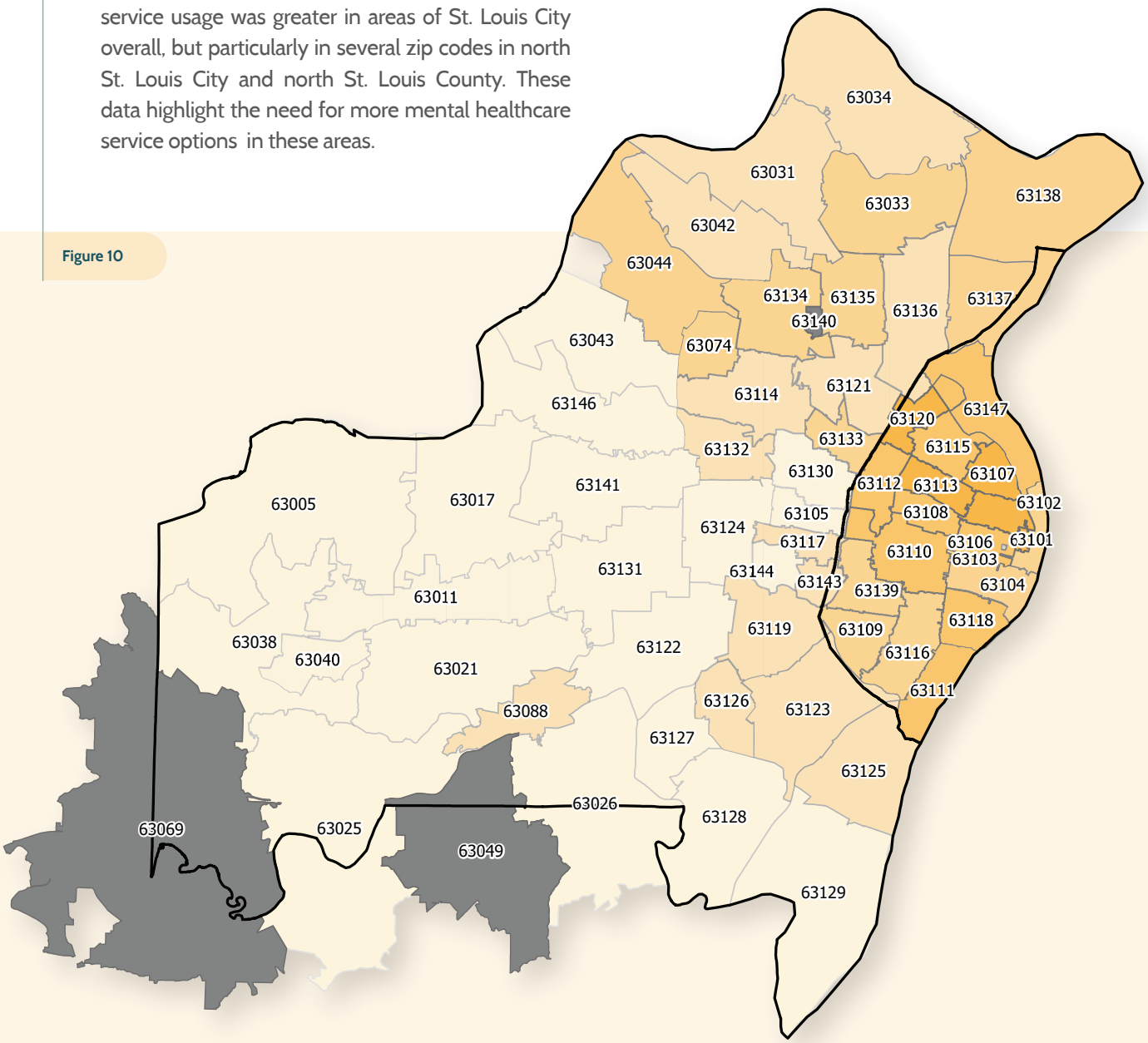


Figure 10

Missouri Department of Health and Senior Services, 2020

PROVIDER REGISTRATIONS

Members of certain professions, including mental health clinicians, are required to register with the State of Missouri's Division of Professional Registration to maintain a valid license to practice. For this report, zip codes of 2022 provider registrations were tagged and counted for the following professions: psychologists, behavioral analysts, marital and family therapists, professional counselors, and clinical social workers. With the exception of professional counselors, for whom it is not specified, these data reflect the "business address" of the registrant. The list is subject to potential limitations, however, that should be noted when interpreting these data. Registrants may no longer be practicing despite holding a valid license, may work in several physical locations, may provide telehealth services statewide, or may not provide any services in the zip code where the registrant's mailing address on file with the state is located. Additionally, the license registration and renewal process does not ask clinicians to detail the zip codes of the individuals to whom services are provided (i.e., service areas). However, professional registration data provide some insight into where clinical providers are located, which may influence accessibility of services by individuals in the St. Louis Area.

COMBINED PROFESSIONAL LICENSES

Figure 11 depicts the rate of all types of mental healthcare professional licenses combined that existed in 2022 by zip code. In this analysis, the rate utilized is the number of combined licenses per 10,000 residents. As noted above, the zip code is the one noted for the business address of a provider. Most professionals licensed to provide clinical mental health services were found in the central corridor of St. Louis City and St. Louis County, which includes many of the major hospital systems of the region. Elevated rates were also found in the central western area of St. Louis County. Rates of licensed professionals was found to be lowest in northern St. Louis City and northwestern St. Louis County.

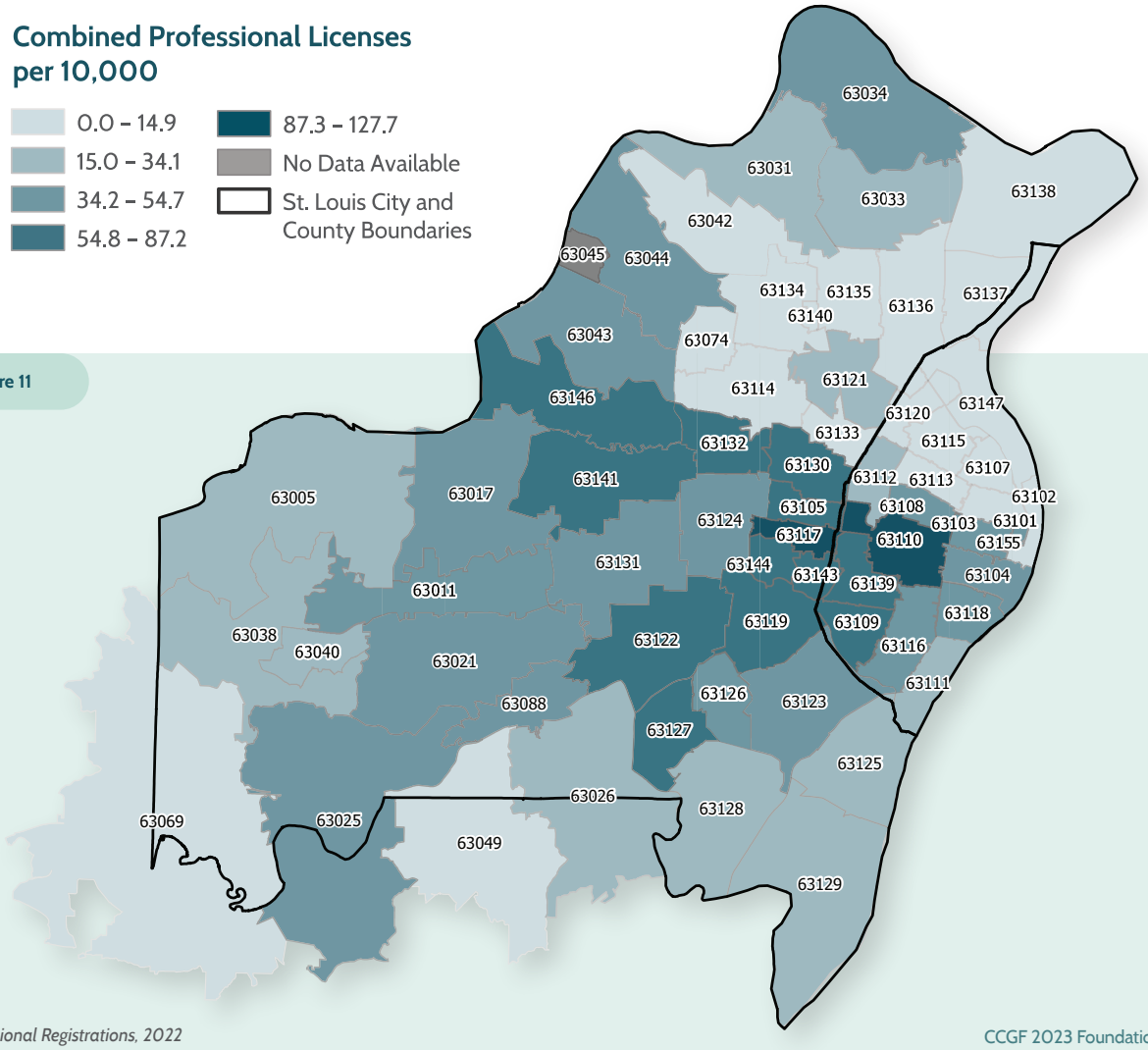


Figure 11

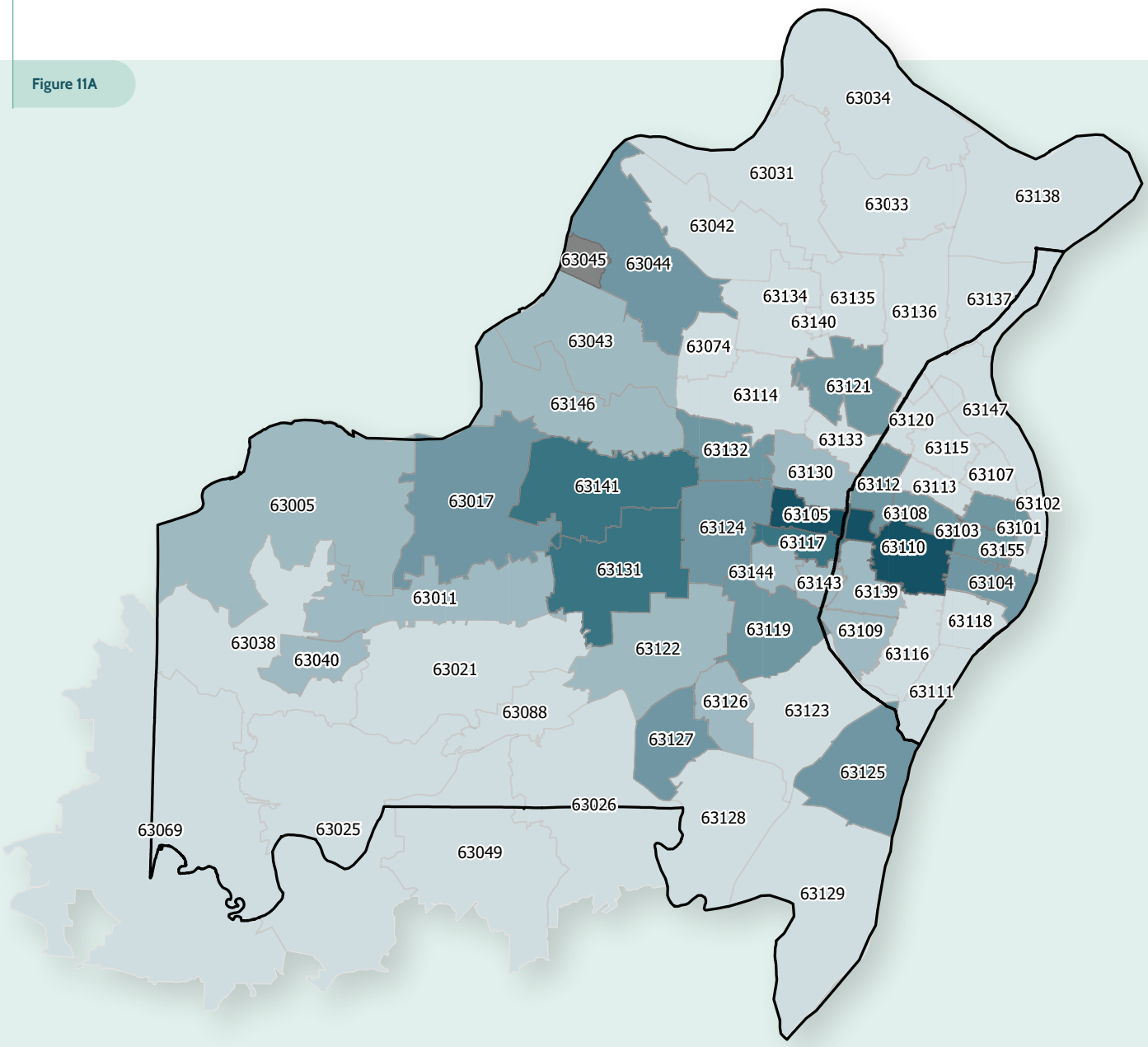
Missouri Division of Professional Registrations, 2022

These trends persist regardless of the individual profession type. The following maps detail the rates of various professional licenses by license type in zip codes across St. Louis.

PSYCHOLOGISTS

Clinical psychologists are licensed, doctoral-level clinicians (Ph.D. or Psy.D.) trained to diagnose and treat mental health concerns and to provide comprehensive psychological testing and evaluation. Most psychologists develop areas of specialization in their field. *Figure 11A* shows that the overall prevalence of clinical psychologists is low in the northern and southern areas of the region and are primarily found in the central corridor of St. Louis City and the central and western areas of St. Louis County.

Figure 11A

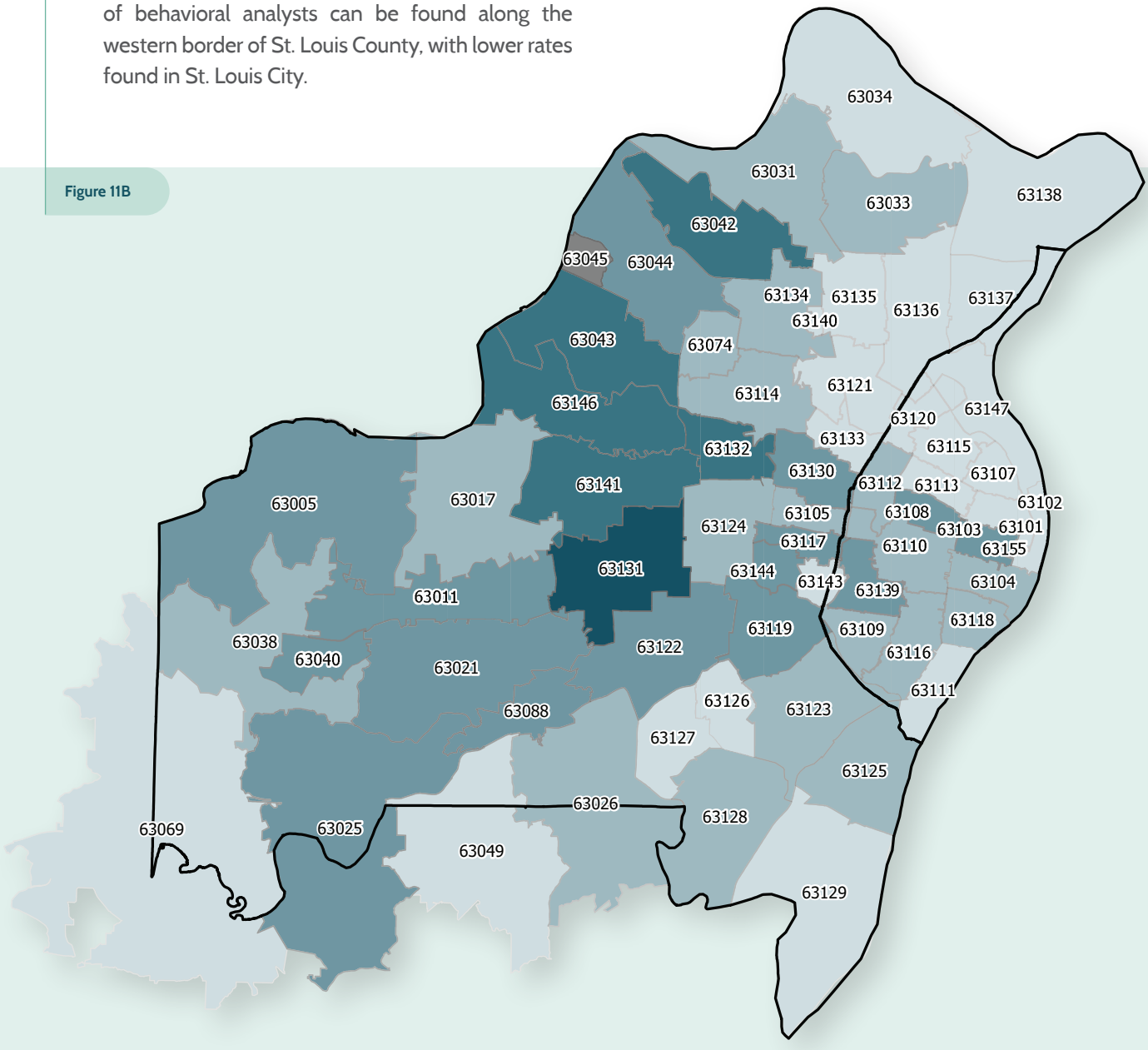


Missouri Division of Professional Registrations, 2022

BEHAVIORAL ANALYSTS

Applied Behavioral Analysts provide support to individuals, often those with autism spectrum diagnoses, in the areas of behavioral, social, and communication skills. Providers must hold a master's or doctoral degree and be licensed in the state of Missouri as a Behavioral Analyst, Assistant Behavioral Analyst, Psychologist, Professional Counselor, or Social Worker with training and certification in Applied Behavioral Analysis. *Figure 11B* shows that, as opposed to other types of licenses that have greater rates throughout central St. Louis City and St. Louis County, the greatest prevalence of behavioral analysts can be found along the western border of St. Louis County, with lower rates found in St. Louis City.

Figure 11B



Missouri Division of Professional Registrations, 2022

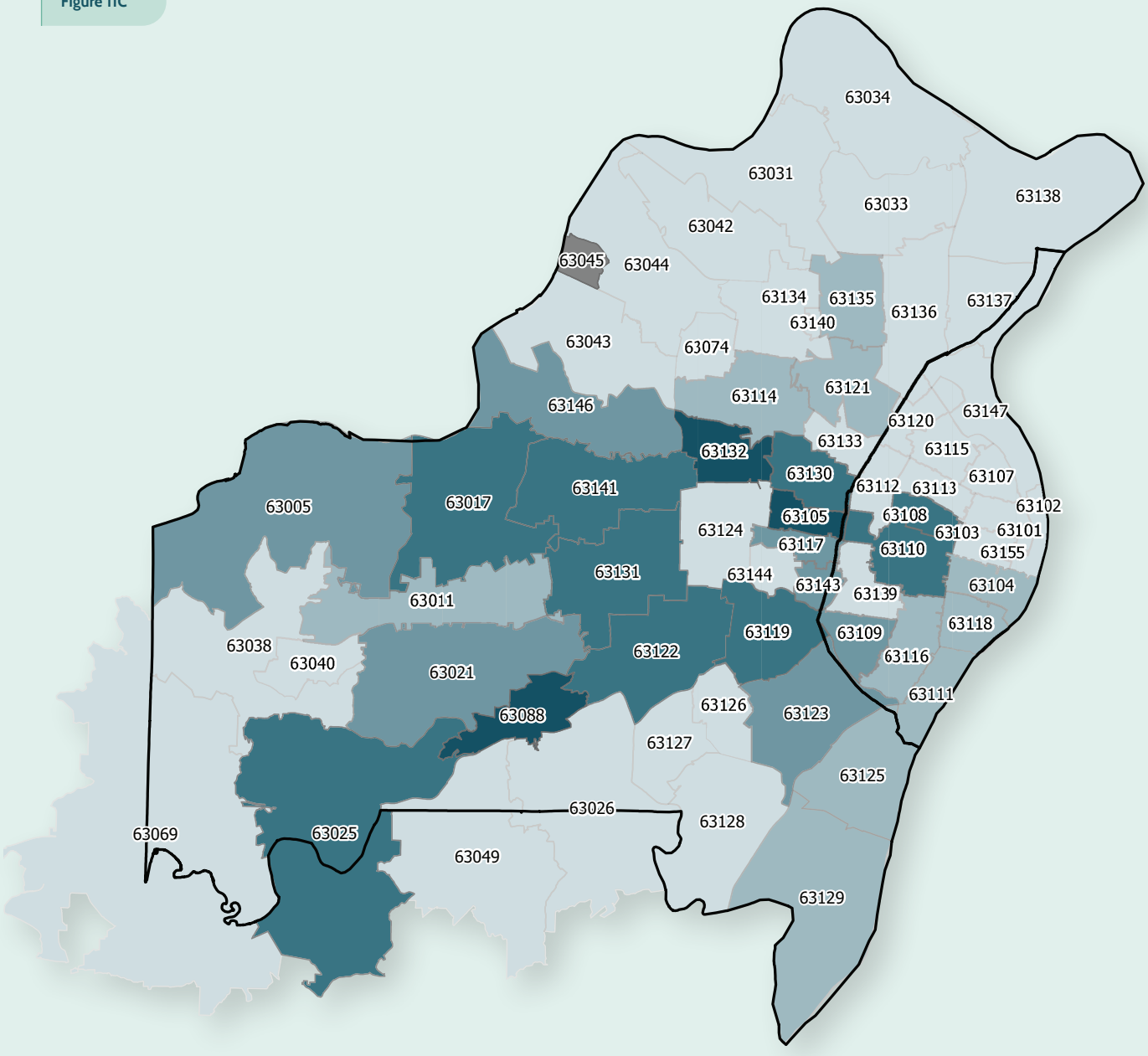
MARITAL AND FAMILY THERAPISTS

Licensed Marriage and Family Therapists (LMFTs) may hold a master's degree or a doctoral degree with training specific to providing psychotherapy in the context of marital and/or family systems. *Figure 11C* shows that greater rates of LMFTs exist along the central corridor of St. Louis City and County, but also throughout the southwestern area of St. Louis County.

Marital and Family Therapists per 10,000

- 0.00 – 0.21
- 0.22 – 0.55
- 0.56 – 1.13
- 1.14 – 1.79
- 1.80 – 2.83
- No Data Available
- St. Louis City and County Boundaries

Figure 11C



PROFESSIONAL COUNSELORS

Licensed Professional Counselors (LPCs) hold master's degrees or doctoral degrees and are trained to provide clinical psychotherapy services to individuals, families, and groups in the treatment of mental, emotional, and behavioral concerns. *Figure 11D* shows that professional counselors have the greatest density of all the license types and are found throughout central and southern St. Louis City and St. Louis County, with notably lower rates in north St. Louis City and St. Louis County. As noted above, these data are subject to the limitation of not defining a "business address" on the registration, and thus may reflect the residential or business address of the individual.

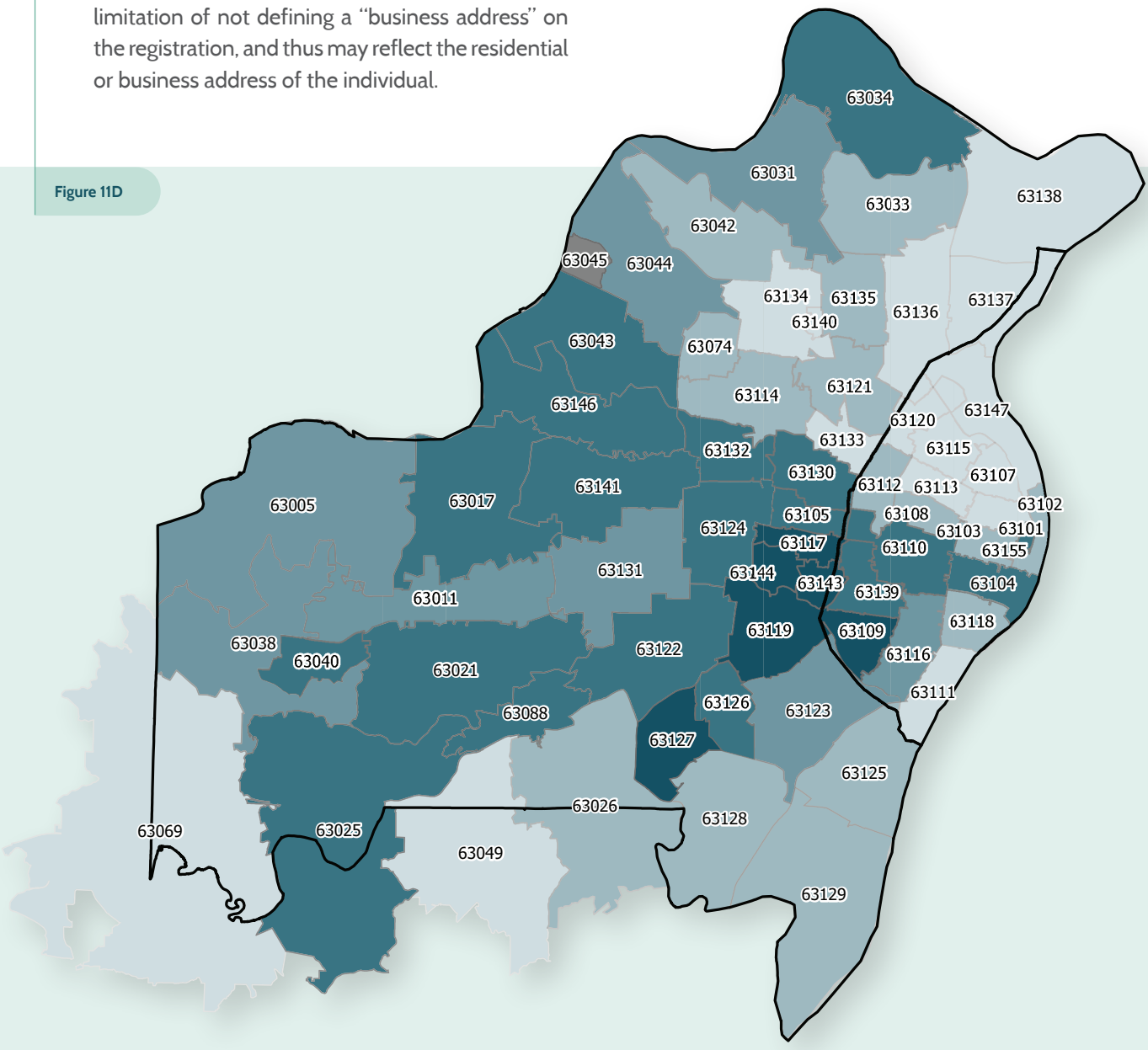


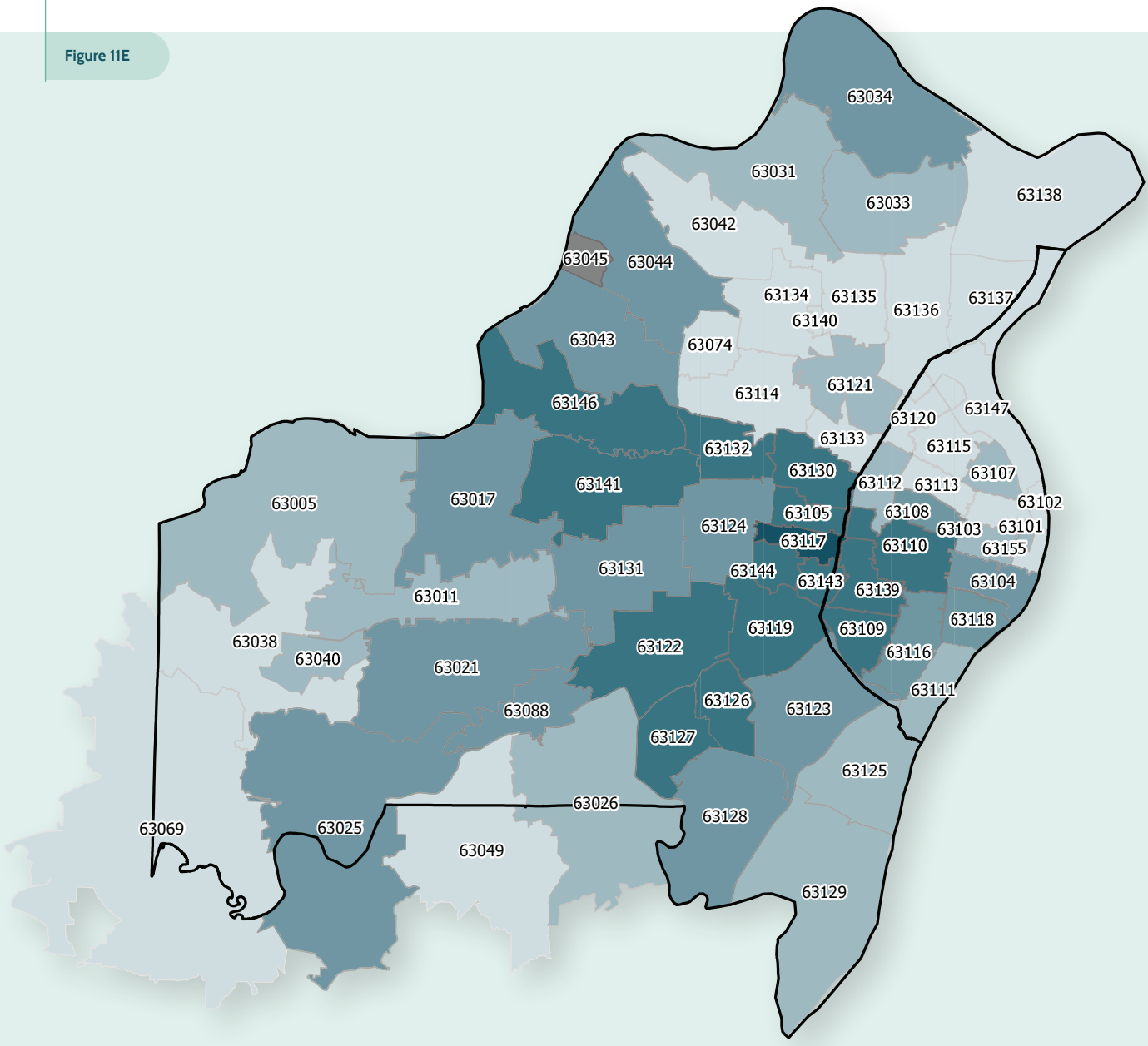
Figure 11D

Missouri Division of Professional Registrations, 2022

CLINICAL SOCIAL WORKERS

Licensed Clinical Social Workers (LCSWs) hold master's or doctoral degrees and are trained to deliver evidence-based mental health interventions, counseling services, and connect individuals and families to community resources. Similar to counselors, *Figure 11E* shows that LCSWs are primarily distributed throughout central and southern St. Louis City and St. Louis County, with lower rates found throughout northern St. Louis City and St. Louis County.

Figure 11E



Missouri Division of Professional Registrations, 2022

MENTAL HEALTH TREATMENT LOCATIONS

To understand access to clinical mental health services, it is important to consider the ways community members may search for such services. While there are several pathways to accessing a clinical provider such as online listings, lists of clinicians provided by health insurance companies, word of mouth, or leveraging one's social network, data about how people locate mental healthcare cannot be found in any broad, publicly available database. Provider registrations, as noted previously, include only generalized information about the potential practice location of each licensed clinician. However, there are also some larger-scale, publicly available databases where one may search for mental health service providers, and such searches are location-based, which means search listings can narrow down treatment locations within the proximity of where one works or lives. This report presents data pulled from the Substance Abuse and Mental Health Services Administration (SAMHSA) Treatment Services Locator and United Way's 211 database.

SAMHSA TREATMENT SERVICES LOCATOR

The SAMHSA Treatment Services Locator is a free, publicly available database sponsored by the federal government where one can search for mental health treatment locations within a geographic area. SAMHSA provides a broad overview of the characteristics and services of each treatment location, including types of services (e.g., mental health, substance use, etc.) different theoretical orientations to treatment (e.g., cognitive behavioral therapy, solution-focused brief therapy, etc.), and pay structure (e.g., private insurance, Medicaid/Medicare, sliding scale fees, etc.). Treatment locations must be licensed to provide mental health services by the state or an accredited organization and must register with SAMHSA to be listed on the website. Thus, while the SAMHSA tool does not include all mental health treatment locations, it is a database those seeking mental healthcare services may choose to utilize.

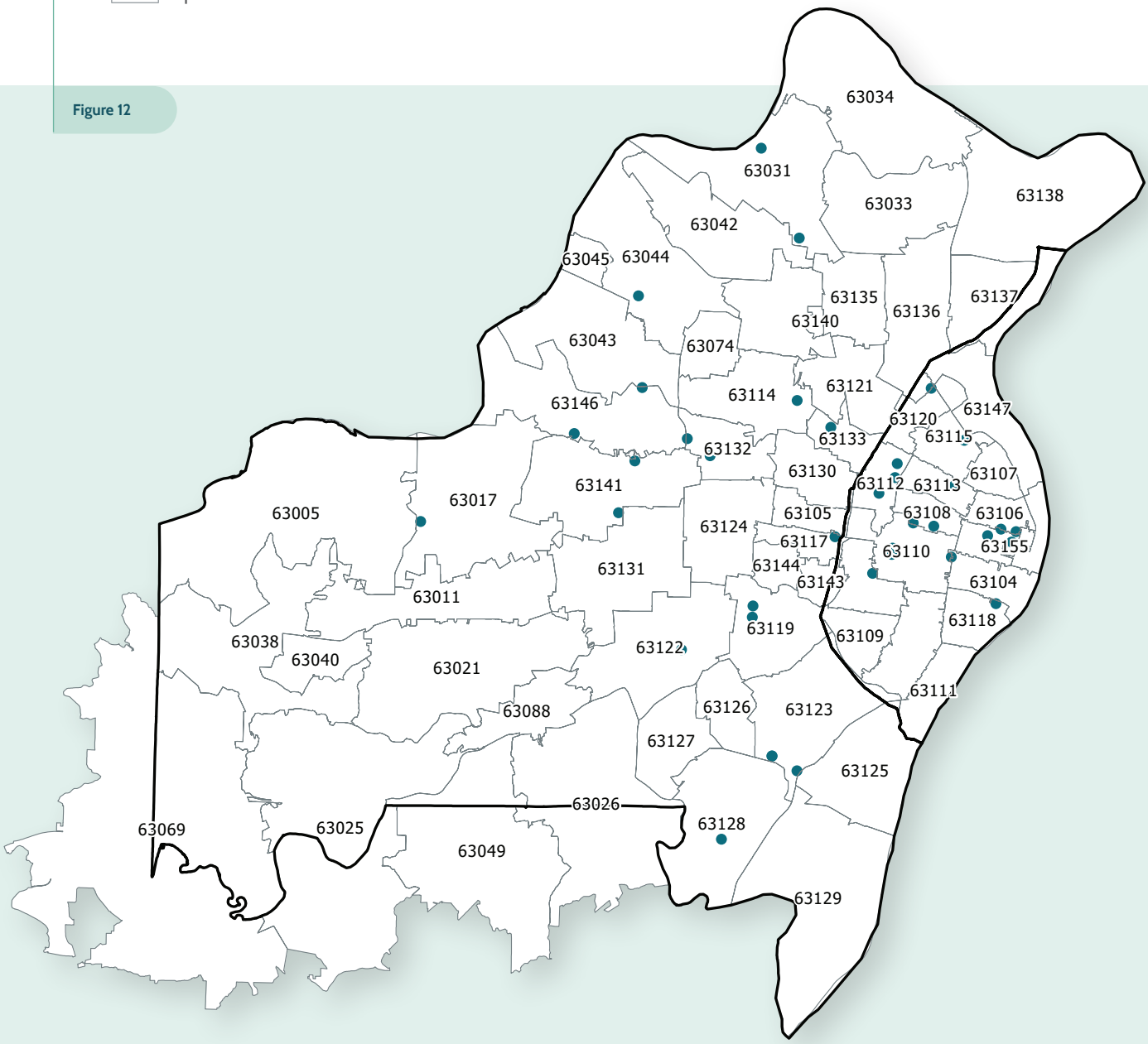
(continued)

As shown in *Figure 12,* 37 mental health treatment service locations were identified, primarily clustered in central St. Louis City and central St. Louis County. Treatment locations are sparse the further north and further south one travels, with a sizable gap in any locations within the southeastern and northwestern regions of St. Louis County.

SAMHSA Mental Health Treatment Facilities

- SAMHSA Mental Health Treatment Facilities
- St. Louis City and County Boundaries
- Zip Code Boundaries

Figure 12



To put the location of these treatment sites into context, in our visuals we first overlay population size *(Figure 12A)* and then overlay rates of poor mental health (those self-reporting 14 or more days in the past month with poor mental health) *(Figure 12B).* Of the nine zip codes with the largest number of residents, five had no mental health treatment locations within their zip codes. When comparing treatment locations against rates of poor mental health, there were noticeable gaps in areas with higher rates, an indicator of greater need for mental healthcare services. Notably, south St. Louis City, including zip code 63111, had one of the highest rates of poor mental health and a great need for services. Similarly, northwest St. Louis County, where there were no mental health treatment sites across a span of connected zip codes, had the highest rates of poor mental health in St. Louis County.

Population by Zip Code

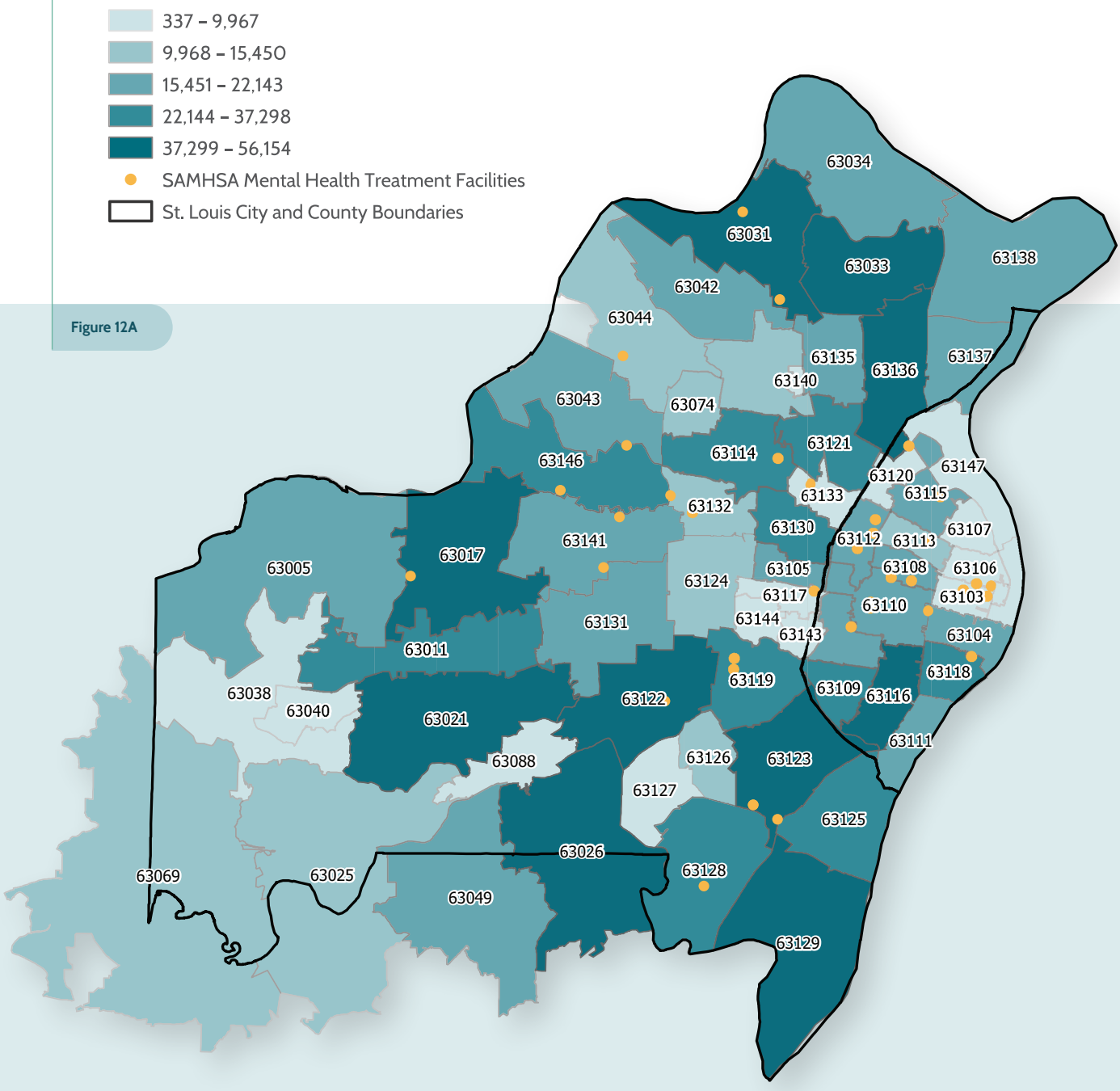


Figure 12A

SAMHSA National Directory of Mental Health Treatment Facilities – 2022 and 2016-2020, American Community Survey, US Census Bureau

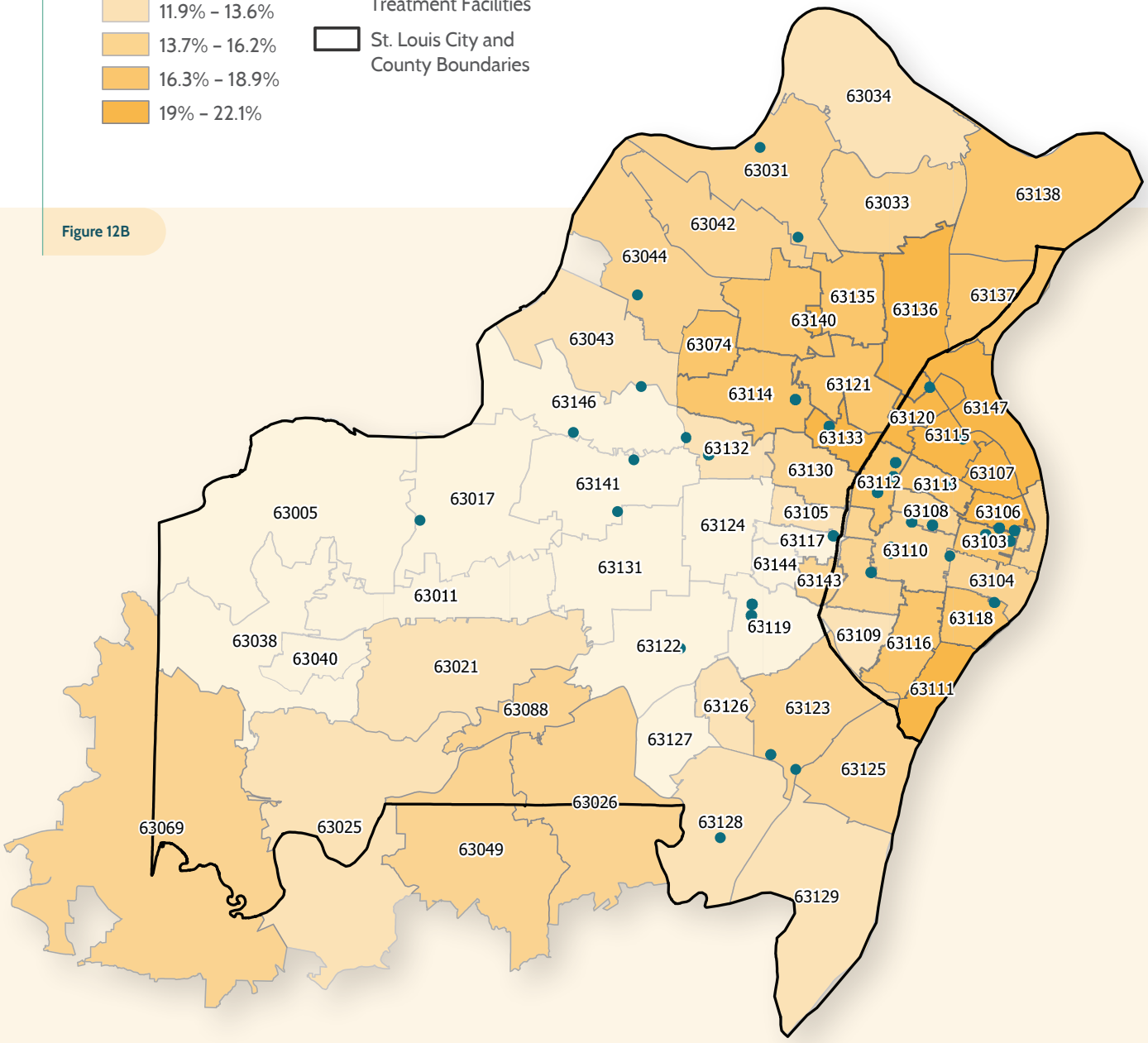
PLACES Poor Mental Health Prevalence

% Adults with ≥14 Days Poor Mental Health

- 9.1% – 11.8%
- 11.9% – 13.6%
- 13.7% – 16.2%
- 16.3% – 18.9%
- 19% – 22.1%

- SAMHSA Mental Health Treatment Facilities
- St. Louis City and County Boundaries

Figure 12B



211 RESOURCE DIRECTORY, UNITED WAY OF GREATER ST. LOUIS

The United Way of Greater St. Louis, in association with Behavioral Health Response, provides a comprehensive, robust, searchable database in the region, the 211 Resource Directory. This database provides information for a range of services residents may be seeking such as assistance with housing, employment, education, and healthcare. The 211 Resource Directory provides a listing of organizations that can provide mental health services or linkages to mental healthcare. While the SAMHSA database is more focused on organizations dedicated to mental healthcare, the 211 Resource Directory also includes organizations whose purposes are outside of mental healthcare or broader than linkages to mental healthcare alone. Community organizations often leverage engagement with individuals seeking one type of assistance or service to also help them to access needed services of another type. For instance, a community member who receives food assistance from an organization may be supported by that organization to connect with a provider of mental health services if needed. It should be acknowledged that these data do not reflect the quality of 211-affiliated organizations, or how 211 is actually utilized by community members. However, the 211 Resource Directory includes a broad range of potential access points for mental healthcare that are not limited to organizations that provide direct mental healthcare services themselves.

As shown in *Figure 13*, there were 103 organizations identified in the 211 Resource Directory that provided or linked individuals to mental healthcare. Like the SAMHSA data provided in the previous section of this report, these organizations were primarily concentrated in central St. Louis City and central St. Louis County, with sparse or no resource organizations in northern parts of St. Louis City and St. Louis County, and particularly southwestern St. Louis County.

211 Mental Health Organizations

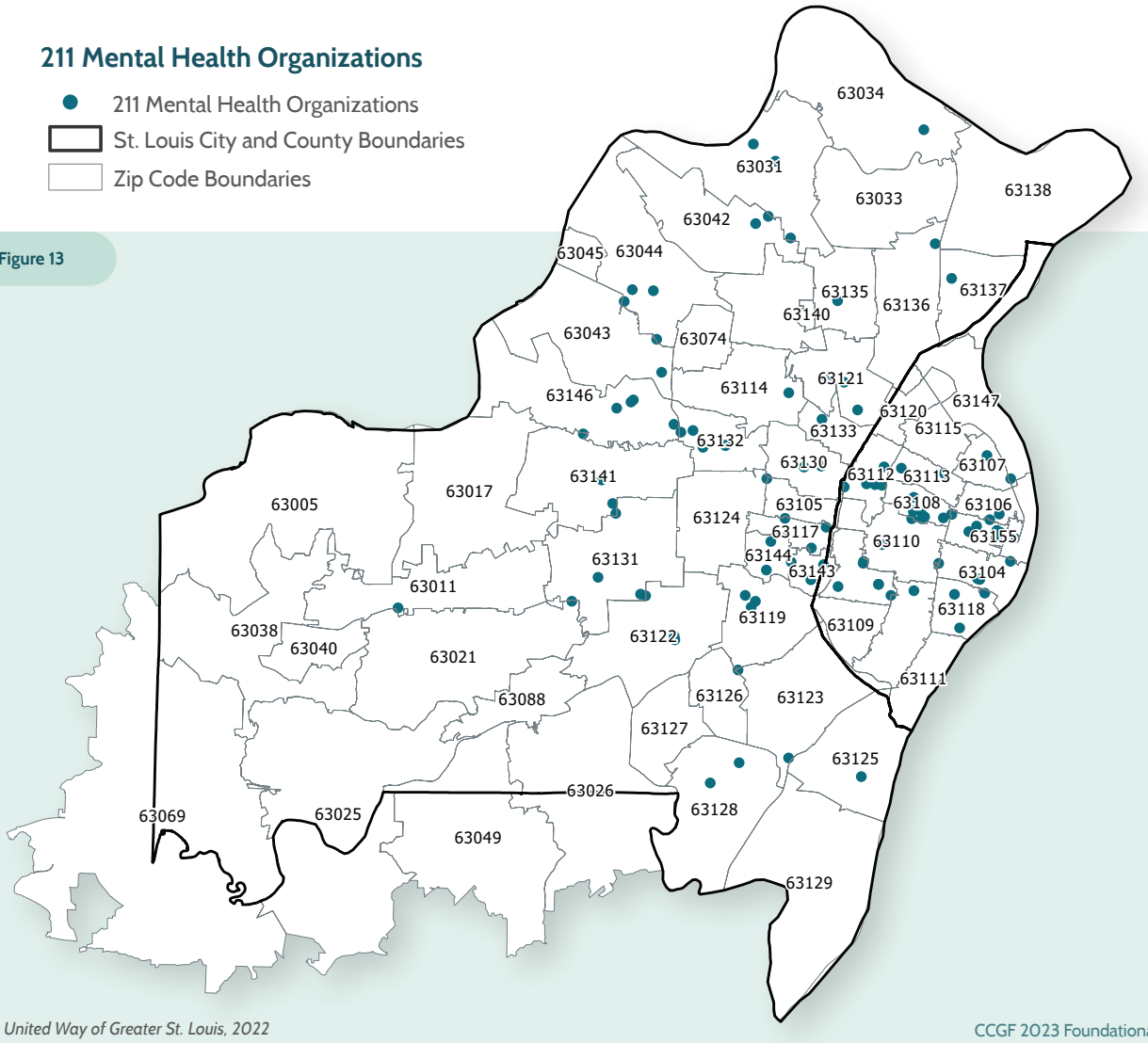
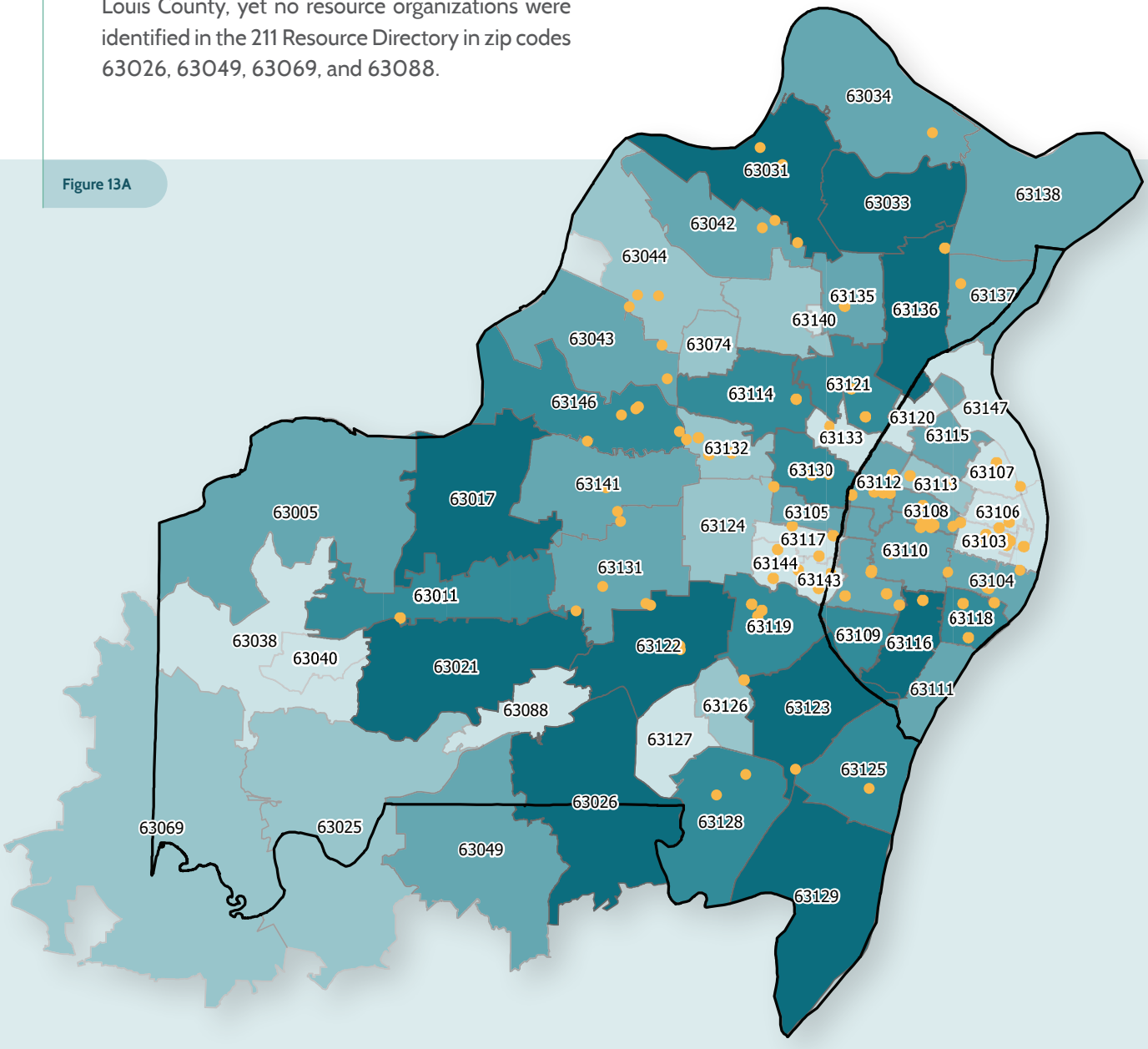


Figure 13

211 Resource Directory, United Way of Greater St. Louis, 2022

Also, like the SAMHSA data, zip codes with the greatest number of residents *(Figure 13A)* had fewer resource organizations compared to zip codes with smaller populations. Despite the data containing a larger number of organizations overall, there were still several zip codes in north St. Louis City and north St. Louis County with high rates of poor mental health (i.e., 14 or more days in the past month of poor mental health) that had no resource organization listed in the 211 Resource Directory *(Figure 13B);* in particular, zip codes 63115, 63138, and 63147. Also notable, the southernmost zip codes of St. Louis County had elevated rates of poor mental health compared to central St. Louis County, yet no resource organizations were identified in the 211 Resource Directory in zip codes 63026, 63049, 63069, and 63088.

Figure 13A



211 Resource Directory, United Way of Greater St. Louis, 2022 and 2016-2020, American Community Survey, US Census Bureau

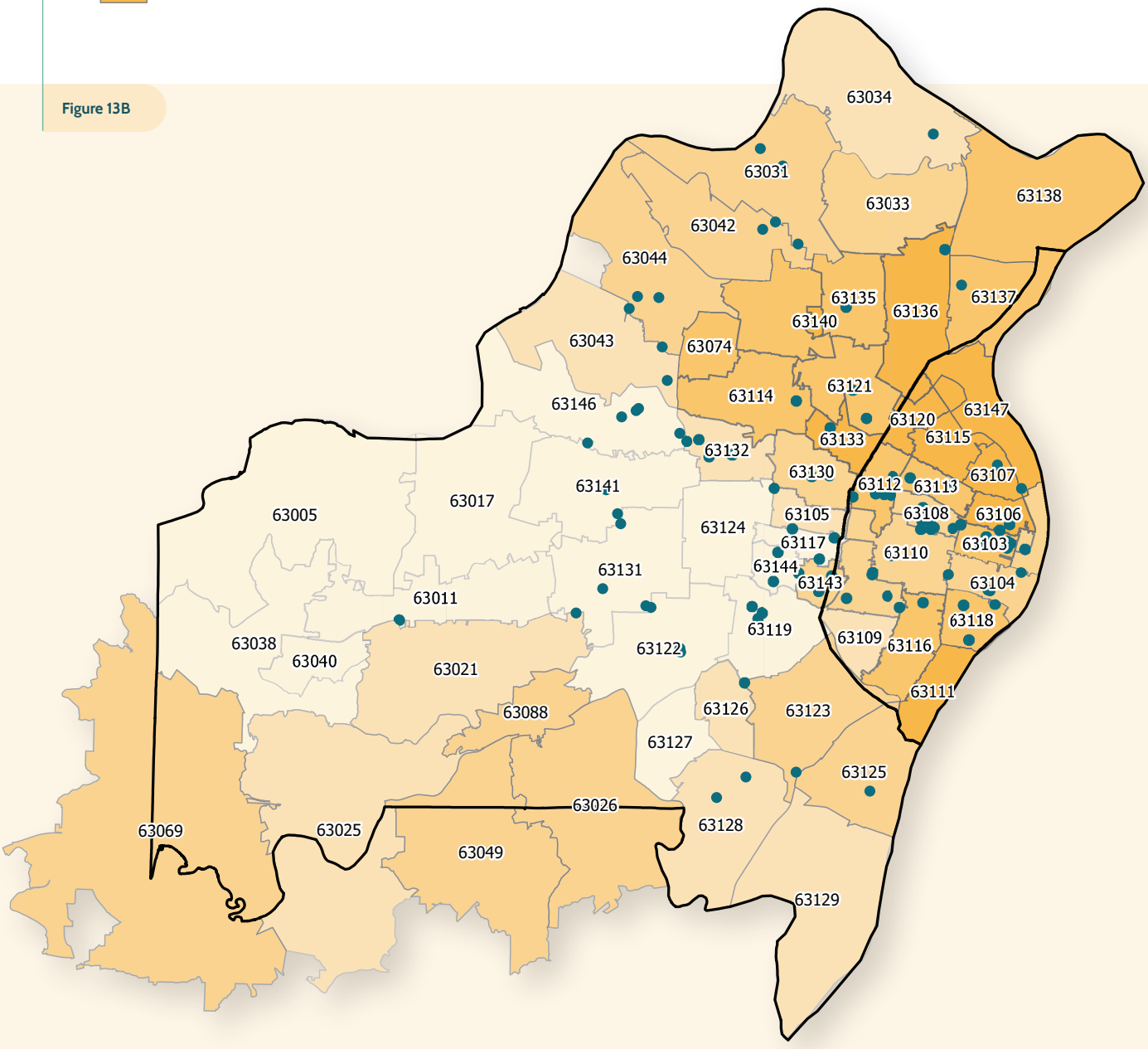
PLACES Poor Mental Health Prevalence

% Adults with 14 Days Poor Mental Health

- 9.1% – 11.8%
- 11.9% – 13.6%
- 13.7% – 16.2%
- 16.3% – 18.9%
- 19% – 22.1%

- 211 Mental Health Organizations
- St. Louis City and County Boundaries

Figure 13B



211 Resource Directory, United Way of Greater St. Louis, 2022 and CDC PLACES: Local Data for Better Health, ZCTA Data 2021 release

ACCESS TO TELEHEALTH

Telehealth, or accessing healthcare using telecommunication, is becoming increasingly popular because it can reduce some of the barriers people experience when trying to access healthcare such as time needed to attend appointments, transportation issues, lack of nearby clinical specialists, lack of childcare or elder-care, and difficulties related to physical disability. The COVID-19 pandemic rapidly progressed the use of telehealth, primarily through internet videoconferencing, where individuals could speak with a healthcare provider via video rather than traveling in person and potentially exposing themselves to COVID-19. The use of telehealth platforms for delivery of mental health services is commonly referred to as "Tele Mental Health (TMH)."

While such virtual clinical services broaden the potential access points of mental healthcare, barriers to this type of service do exist for many people in the St. Louis region due to limited access to internet or computer services and/or lack of devices or lack of a confidential location to use a connected device. As a proxy to understanding access to telehealth, we analyzed data on access to computer devices *(Figure 14)* and internet service areas *(Figure 15)* using the 2016–2020 American Community Survey of the United States Census Bureau, which also included access to smartphones.

Household Computer Access by Zip Code

% Households with No Computer

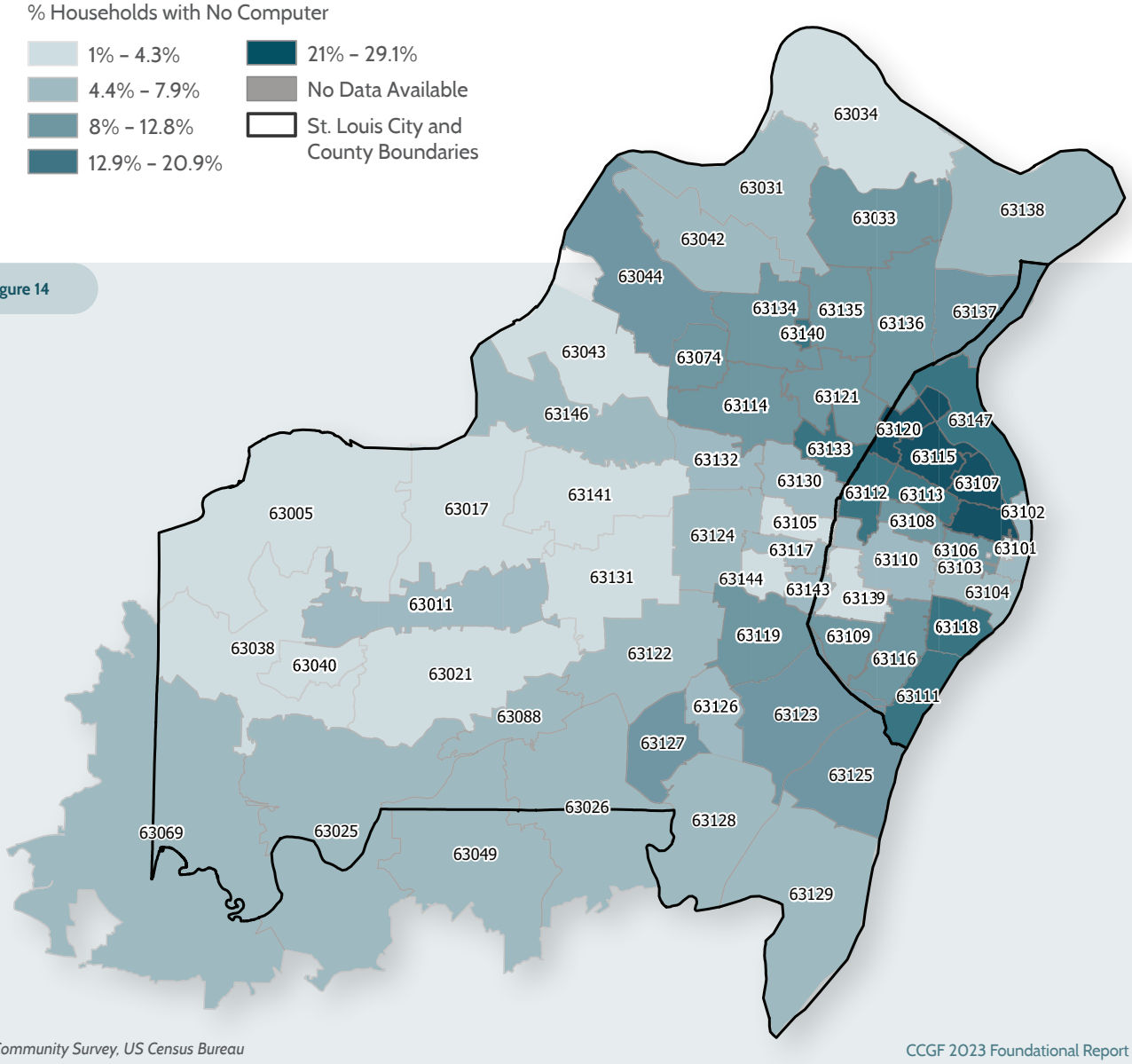


Figure 14

2016-2020, American Community Survey, US Census Bureau

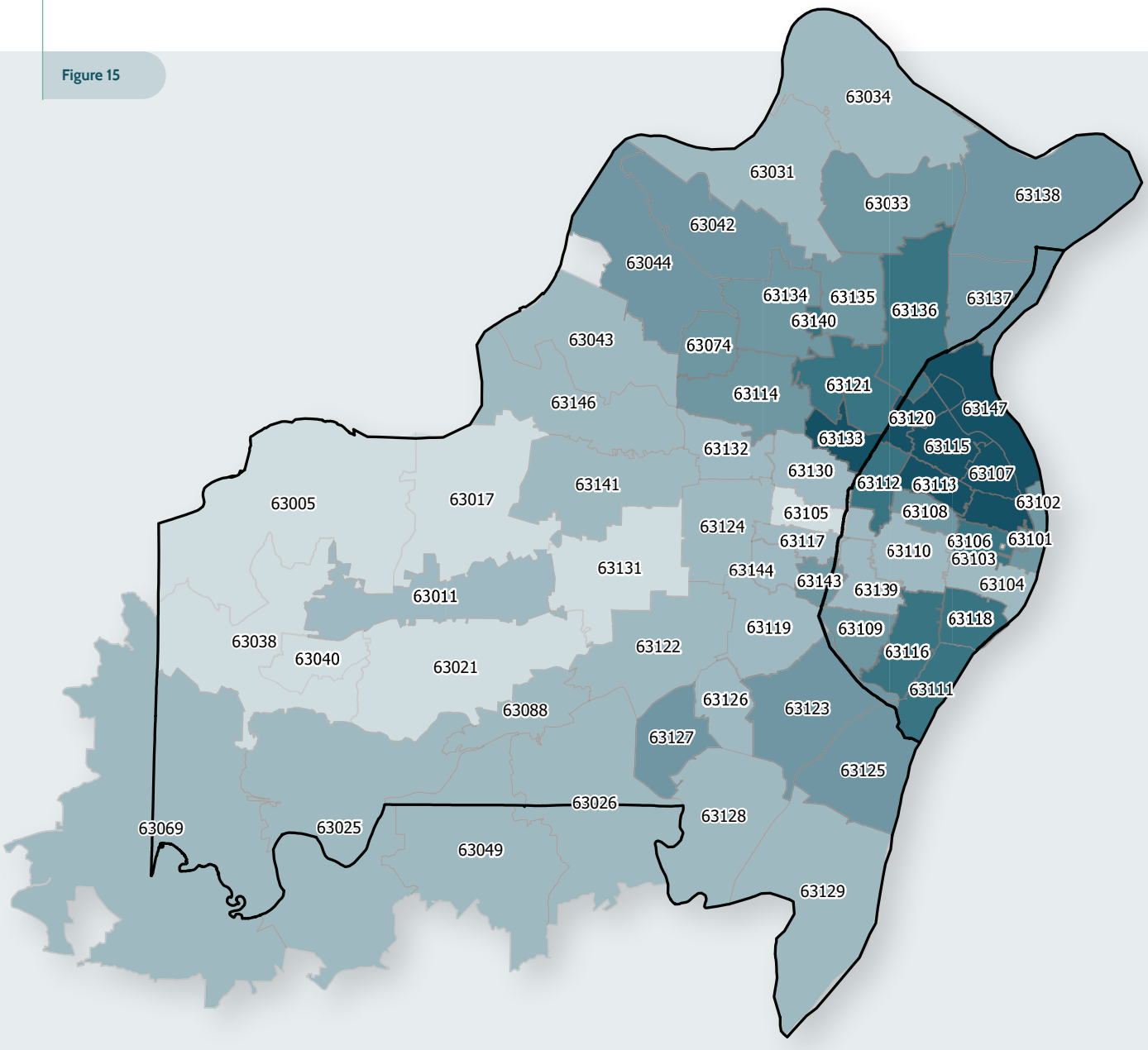
Zip codes with the highest percentage of households with no computer (21–29.1%) or internet access (23.2–41.8%) were primarily concentrated in north St. Louis City, in particular zip codes 63106, 63107, 63115 and 63120. Lack of access to computers and/or internet was also elevated in northwestern St. Louis County, and the southern border of St. Louis City and St. Louis County.

Figure 15

Household Internet Access by Zip Code

% Households with No Internet Access

- 1.4% – 4.7%
- 4.8% – 9.4%
- 9.5% – 15.1%
- 15.2% – 23.1%
- 23.2% – 41.8%
- No Data Available
- St. Louis City and County Boundaries



2016-2020, American Community Survey, US Census Bureau

SOCIAL DETERMINANTS OF MENTAL HEALTH

The third key area of analysis includes understanding social determinants of health. Social determinants of health are defined by the Centers for Disease Control and Prevention as nonmedical factors that may influence one's health.[42] They include conditions in which people are born, grow, work, live, and age. Examples of social determinants of health include education, employment, transportation, and characteristics of where one lives. There is significant research connecting many social determinants not just to physical health but also to mental health, in terms of the risk or experience of mental health issues, or in accessing healthcare services to attain or maintain mental health.[43] In this report, we focus our attention on several of the many social determinants of mental health.

EDUCATION

Education can impact knowledge, awareness, and attitudes of both mental health and mental healthcare. It also has the potential to influence employment and income, which tend to impact an individual's ability to access all forms of healthcare in the United States, including mental healthcare services. Level of education (e.g., literacy, English-language skills and fluency, computer literacy, etc.) affects one's ability to search for potential providers and to navigate systems for enrollment or participate fully in intake processes to establish care. All these factors are directly and indirectly related to mental health outcomes. As shown in *Figure 16,* Zip codes with the greatest proportion of residents without a high school diploma were identified (15.3-24.1%) in the zip codes in north St. Louis City, although south St. Louis City, north St. Louis County, and the southern edges of St. Louis County all had lower education rates than central and western St. Louis County.

Low Education Population by Zip Code

% Age 25+ with Less than High School Education

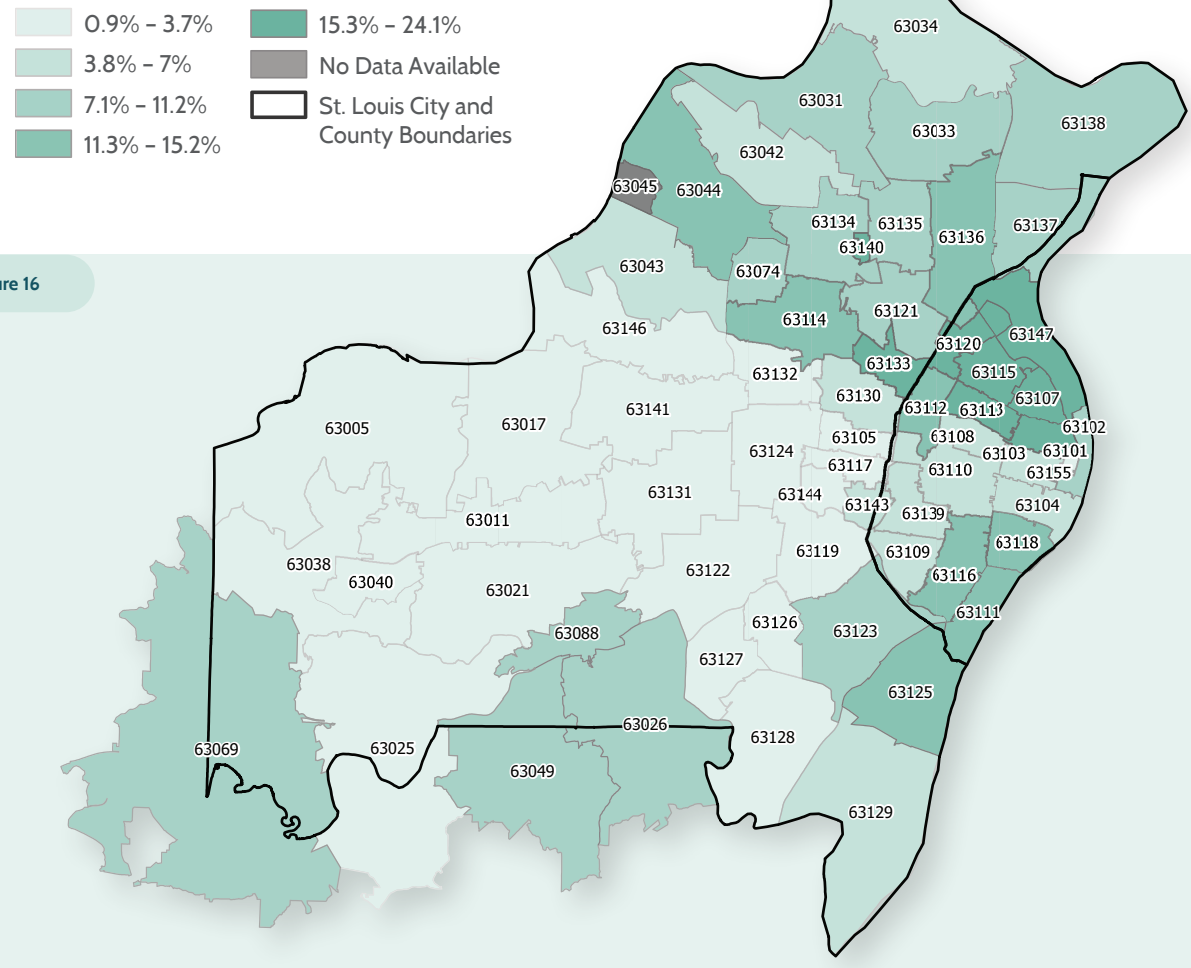


Figure 16

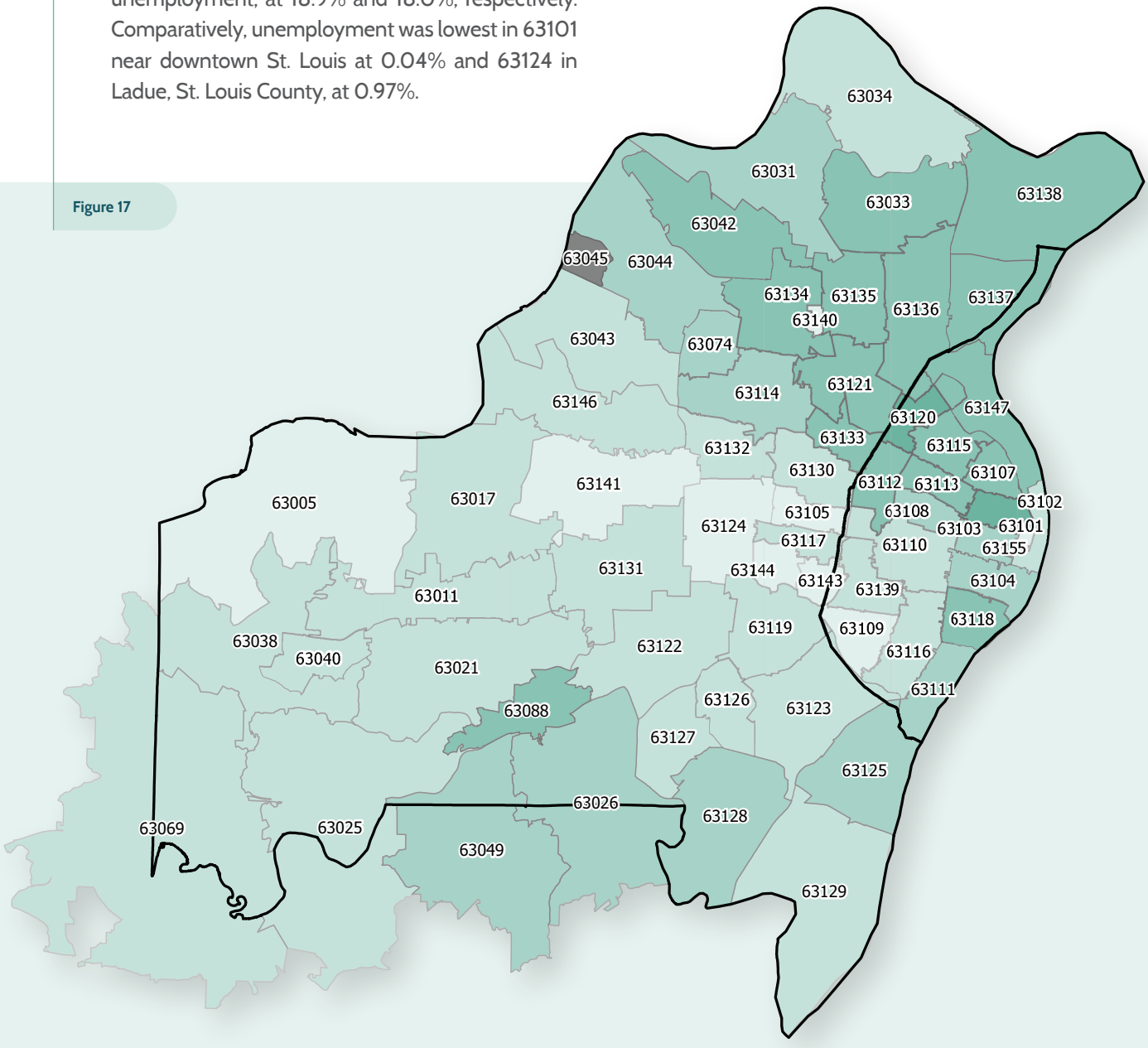
Washington University School of Medicine, Hospital Industry Data Institute, Missouri ZIP Health Rankings. 2021

UNEMPLOYMENT

Employment status can affect an individual's access to mental healthcare (and impact other social determinants), through income or health insurance coverage. Employment and unemployment patterns also typically map onto social identities, with higher unemployment rates for members of marginalized groups by race and gender identity.[41]

Figure 17 shows that unemployment was more prevalent in north St. Louis City and north St. Louis County, and two zip codes in north St. Louis City, 63120 and 63106 had the highest rates of unemployment, at 18.9% and 18.0%, respectively. Comparatively, unemployment was lowest in 63101 near downtown St. Louis at 0.04% and 63124 in Ladue, St. Louis County, at 0.97%.

Figure 17



2016-2020, American Community Survey, US Census Bureau

INCOME

Median household income (median means half are above and half are below the number) for zip codes in the St. Louis area increased the further west a zip code was located. *Figure 18* shows that zip codes in central and western St. Louis County had the highest median household incomes (between $117,000 and $165,000), compared to zip codes in north St. Louis City and adjacent St. Louis County zip codes, which had median household incomes between $21,000 and $37,000).

Median Household Income by Zip Code

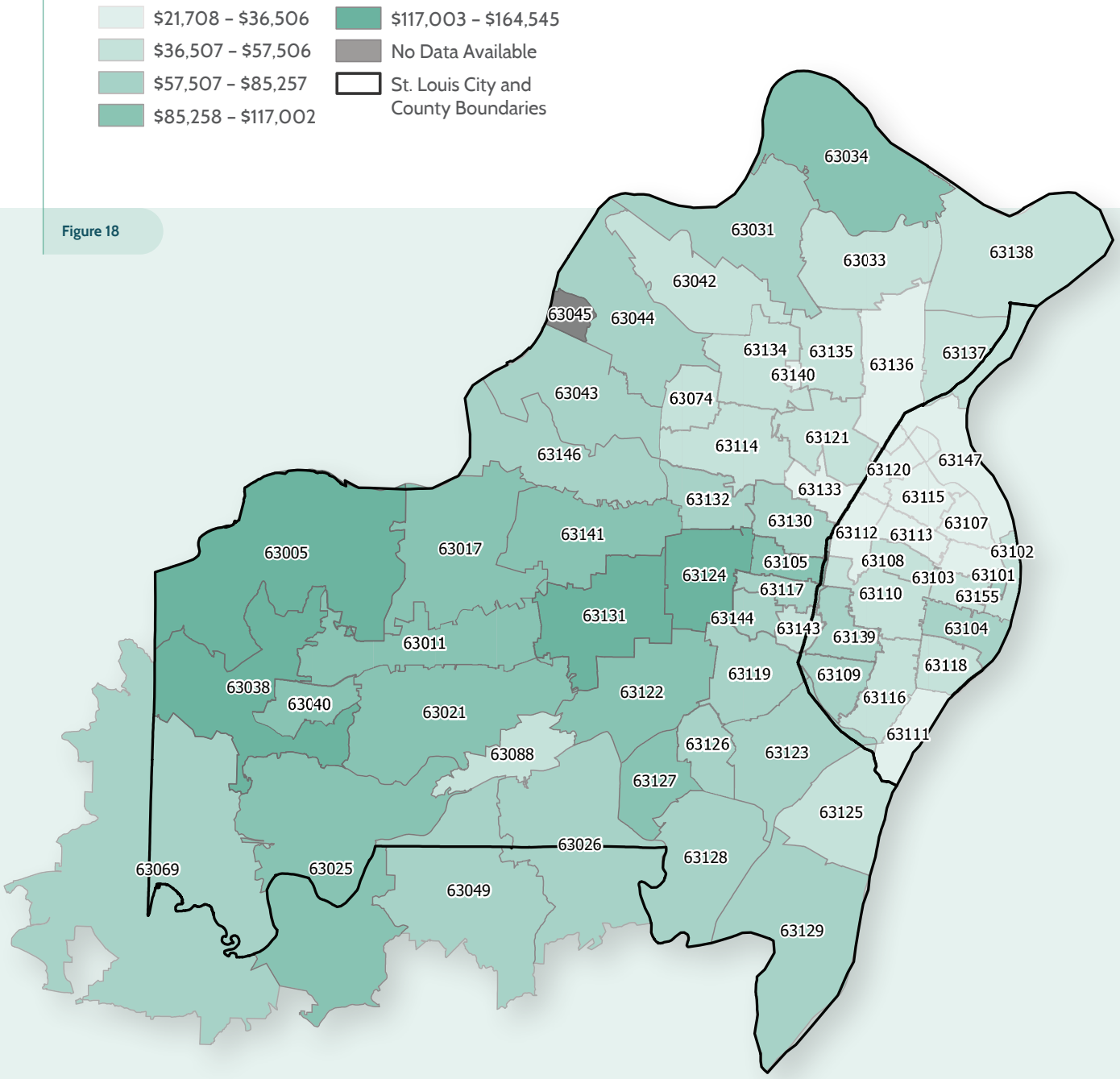


Figure 18

2016-2020, American Community Survey, US Census Bureau

A country's poverty level is the determined minimum dollar amount a person or family needs to earn to adequately meet basic needs. *Figure 19* shows the percent of households in a zip code that are living below the federal poverty line. Zip codes with the greatest proportion of residents living below the poverty level were primarily found in north St. Louis City. However, zip code 63140, in St. Louis County, had the highest rate, with 54.6% of households below the poverty level, compared to 63025, which had the lowest rate at 0.9% of households living below the poverty level.

Population in Poverty by Zip Code

% Population Below Poverty Level

- 0.9% – 5%
- 5.1% – 9.1%
- 9.2% – 17.2%
- 17.3% – 30.1%
- 30.2% – 54.6%
- No Data Available
- St. Louis City and County Boundaries

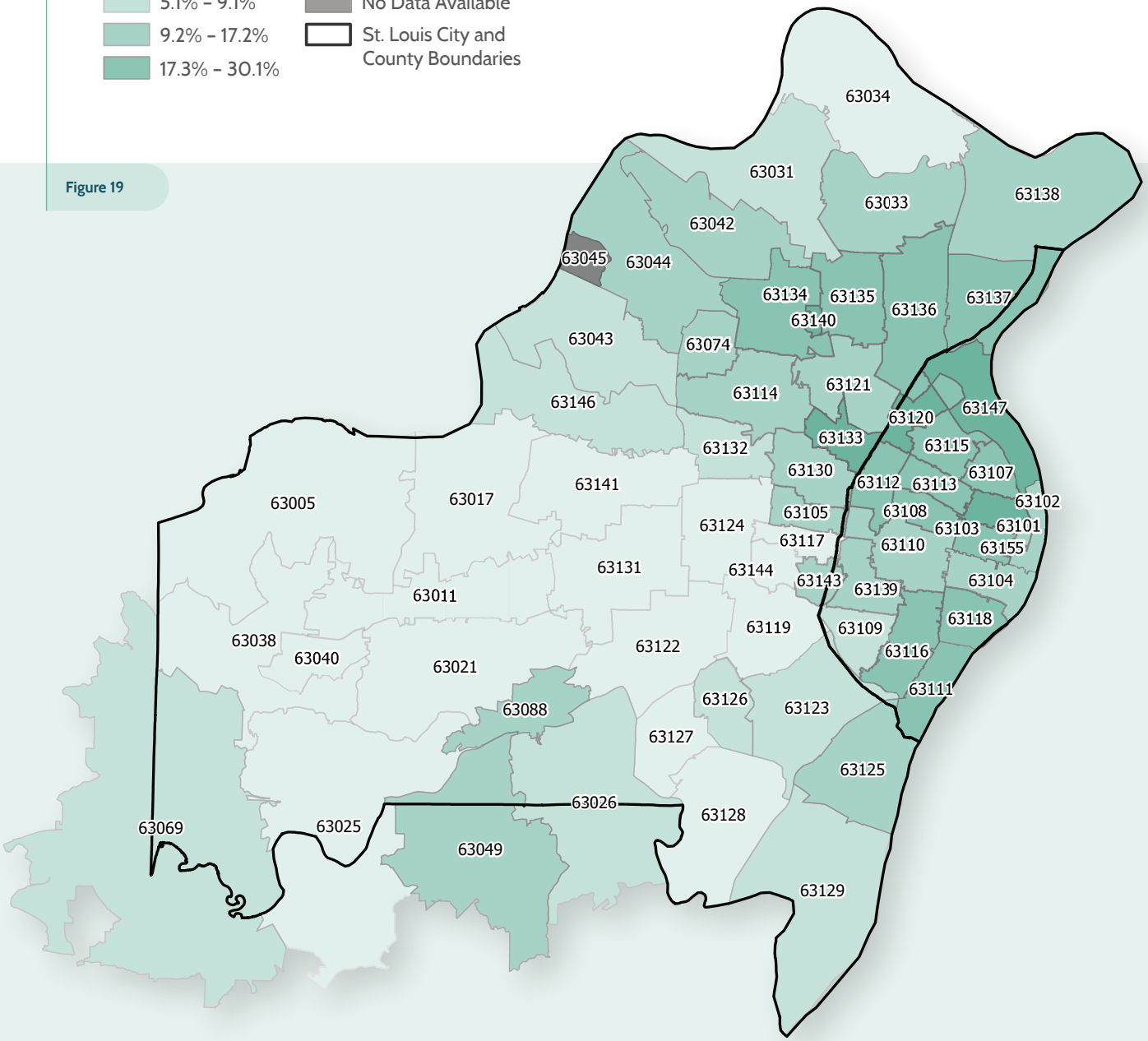


Figure 19

HEALTH INSURANCE

Zip codes with the greatest percentage of residents on Medicare/Medicaid were primarily in northern St. Louis City *(Figure 20).* Zip code 63106 ranked the highest with nearly half (46.5%) of all residents utilizing subsidized healthcare. The majority of north St. Louis County also had elevated rates of Medicare/Medicaid coverage. The lowest rates were found in the zip codes adjacent to western St. Louis City, in particular 63144, with just 5.9% of its residents covered by Medicare/Medicaid.

Population with Medicare or Medicaid by Zip Code

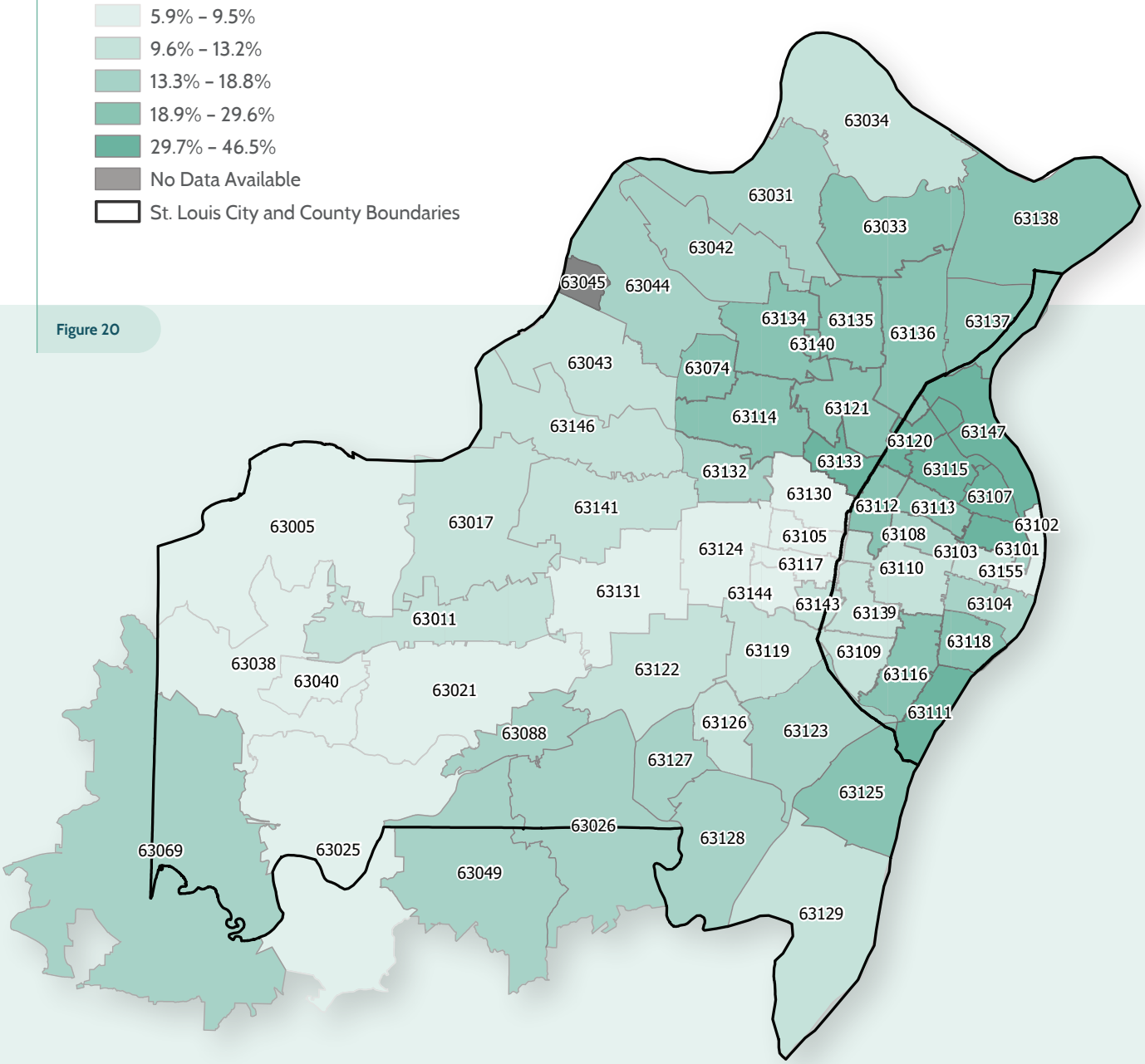


Figure 20

2016-2020, American Community Survey, US Census Bureau

Lack of any health insurance coverage, including Medicare or Medicaid, *(Figure 21)* was highest in north St. Louis City, followed closely by North St. Louis County. Zip code 63120, in north St. Louis City, had the greatest proportion of uninsured individuals, at nearly 1 in 5 (18.4%), compared to 63102, located in downtown St. Louis, which had just 0.5% of uninsured individuals, about 1 in 200. In general, central and western St. Louis County had the lowest rates of both subsidized healthcare *(Figure 20)* or no healthcare coverage *(Figure 21)*.

Figure 21

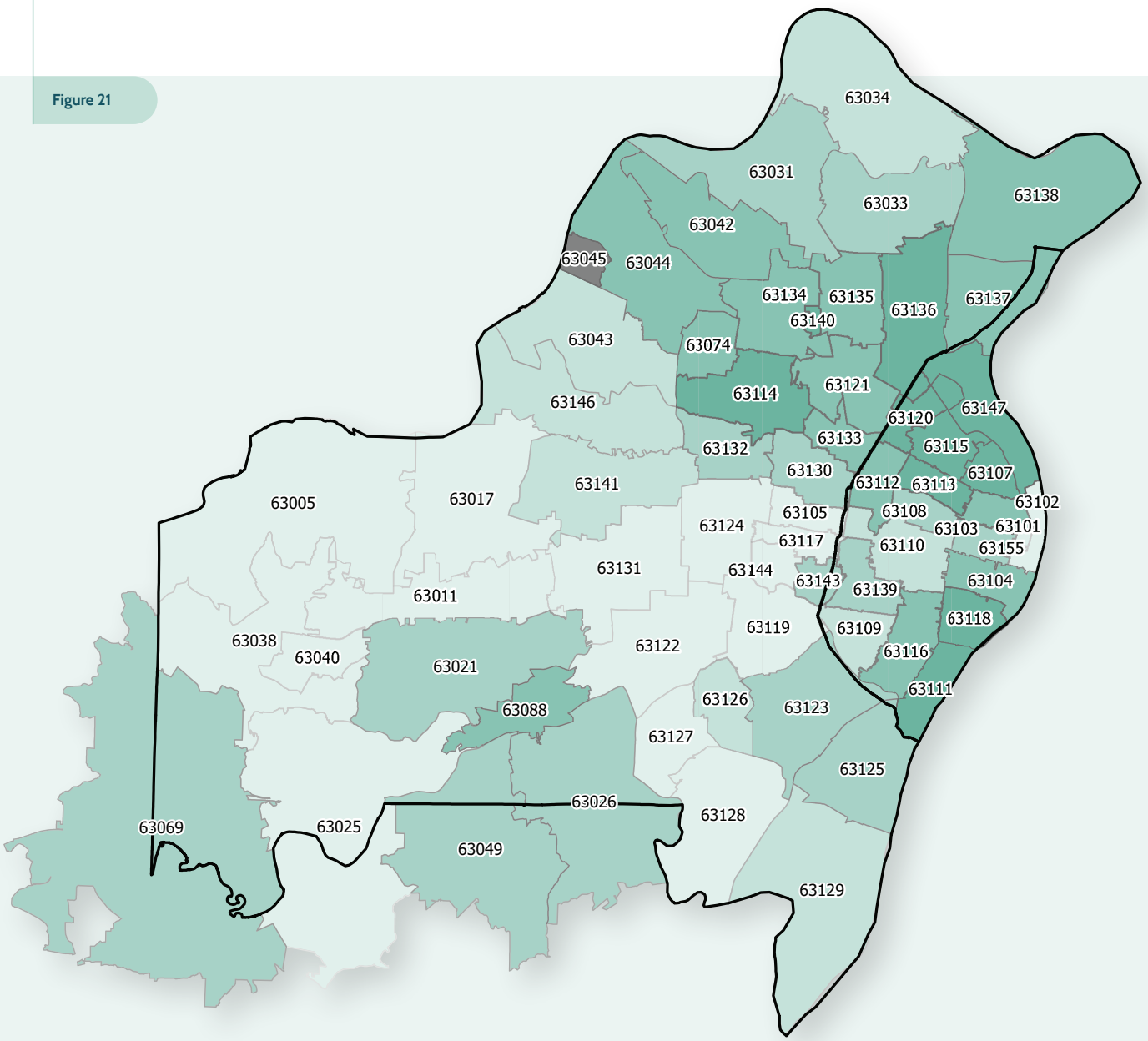


Figure 22 compares zip code level rates of uninsured residents next to rates of poor mental health, showing how the variations mirror each other closely, not only in northern St. Louis City and County, but also in the central and southern regions of St. Louis County as well.

Figure 22

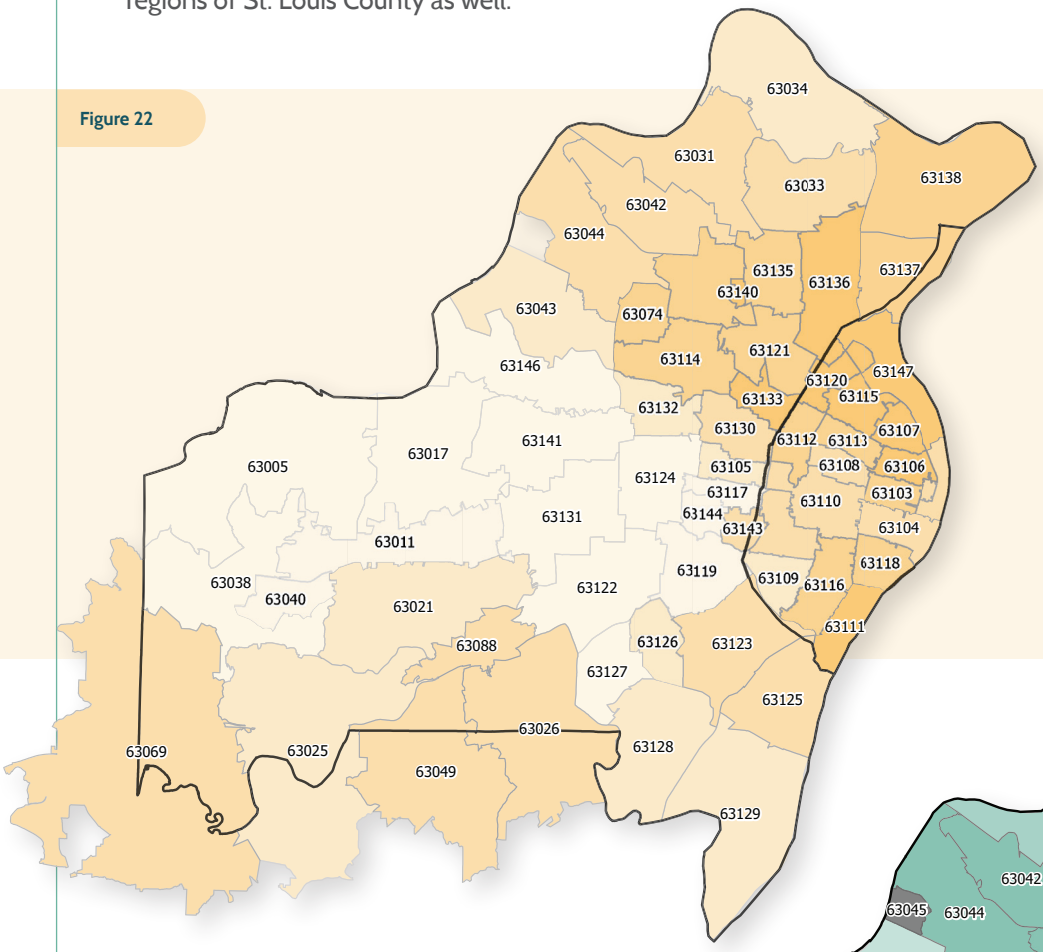
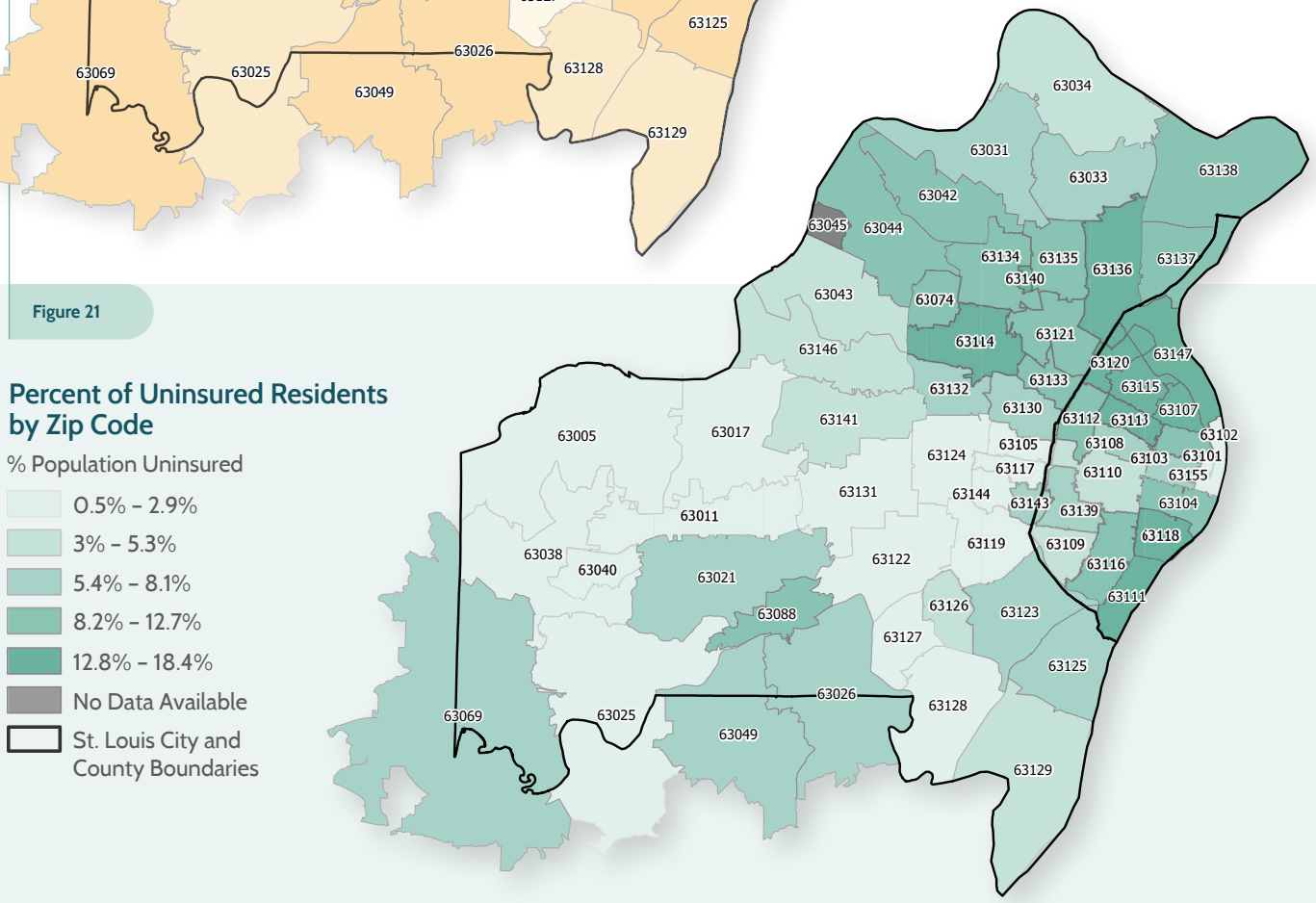


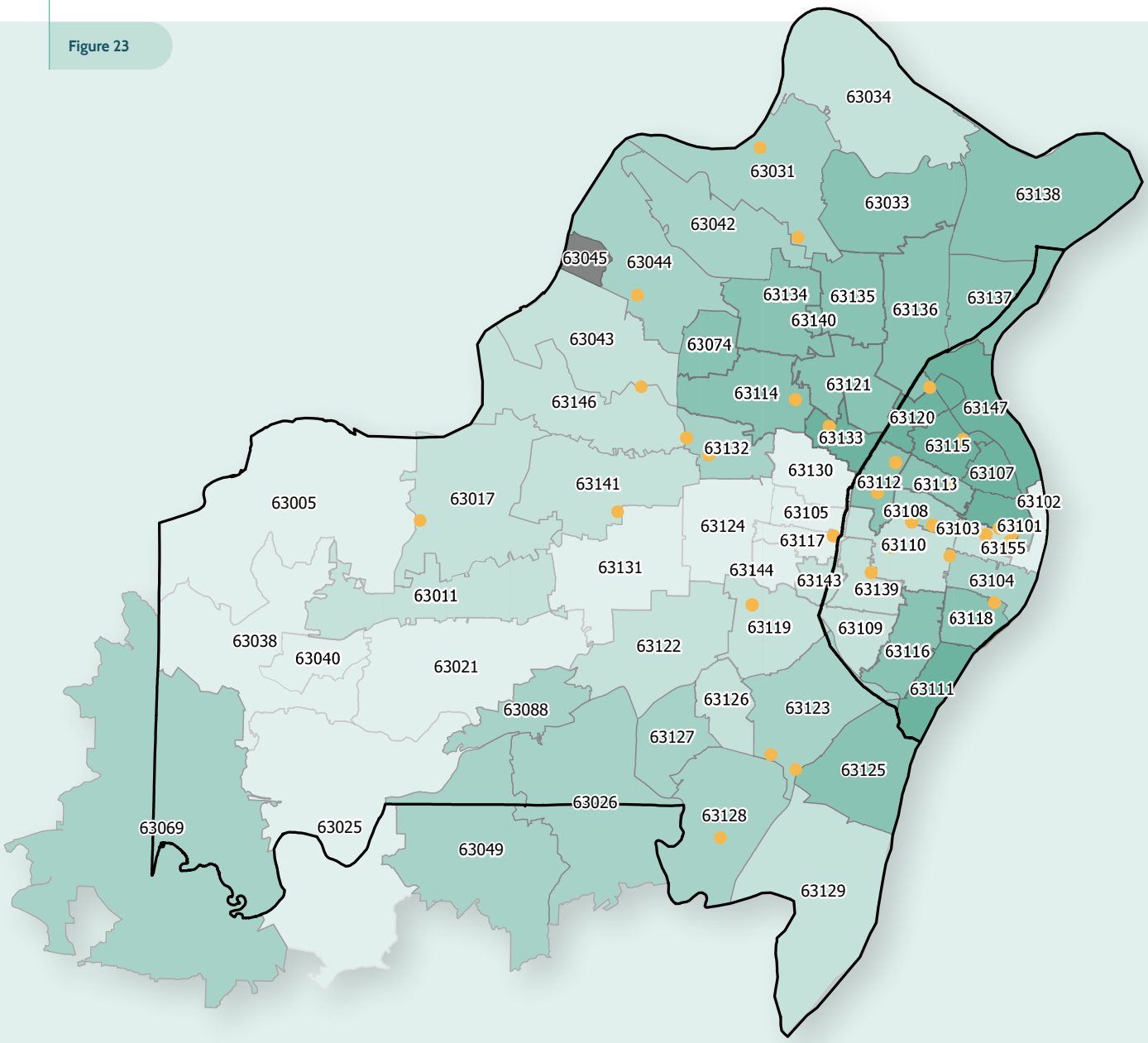
Figure 21



CDC PLACES: Local Data for Better Health, ZCTA Data 2021 release and 2016-2020, American Community Survey, US Census Bureau

Figure 23 shows locations of SAMHSA mental health treatment locations that accept Medicaid, overlaid with the proportion of zip code residents that have Medicaid. As can be seen, most sites that take Medicaid are not in locations with high rates of Medicaid, suggesting a lack of mental healthcare access for areas where Medicaid is highly prevalent.

Figure 23



SAMHSA SITES THAT TAKE MEDICAID/MEDICARE ZIP CODE RATES

Figure 24 overlays locations of SAMHSA mental health treatment locations that accept fees on a "sliding scale," which means payment amounts are based upon the client's income or ability to pay, with the proportion of a zip code that is uninsured. While sliding scale sites were primarily located in areas where a lack of health insurance was high, overall, the number of sites that accept sliding scale payment was very small considering the overall number of SAMHSA sites.

Percent of Uninsured Residents by Zip Code

% Population Uninsured

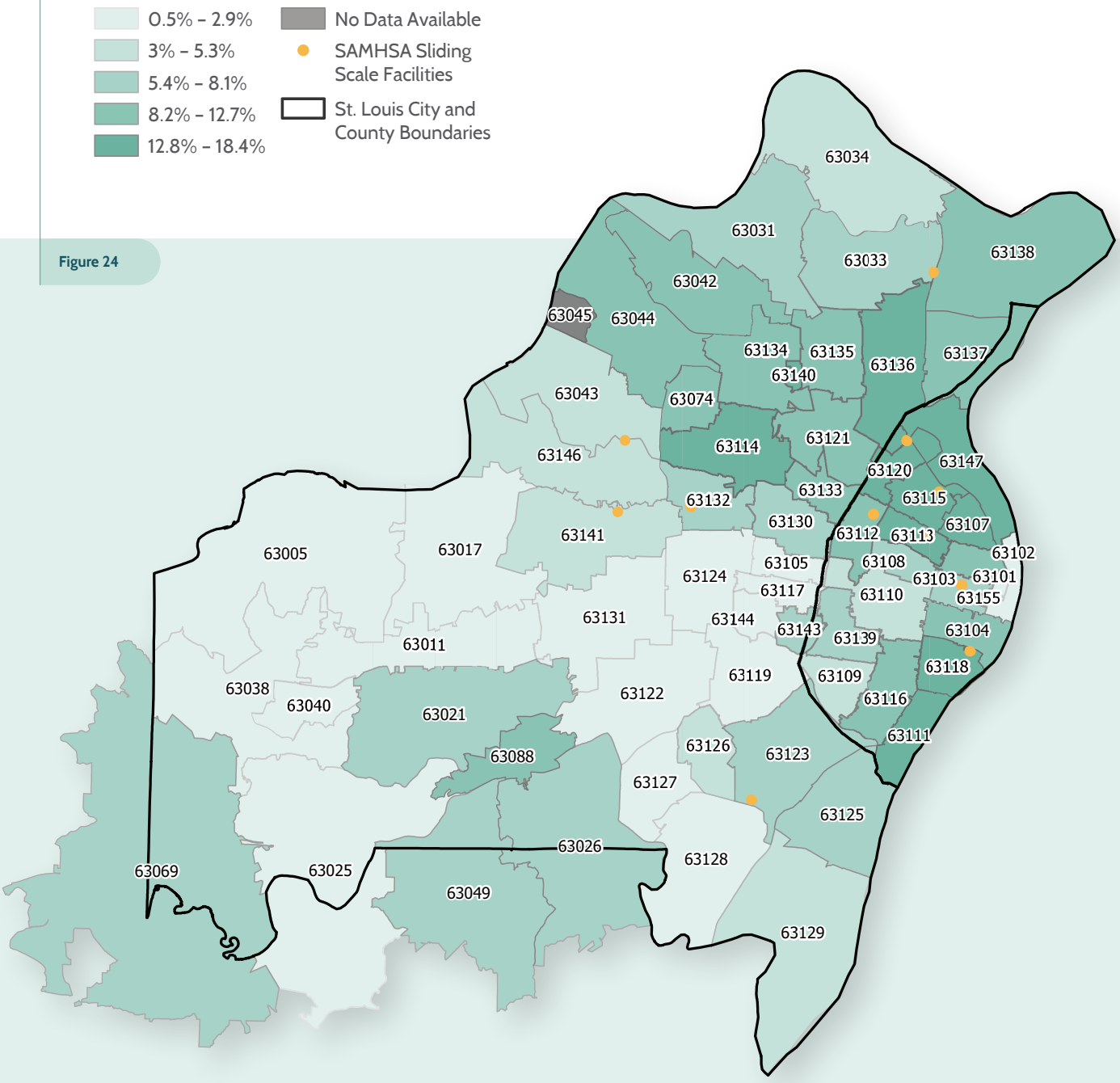


Figure 24

SAMHSA National Directory of Mental Health Treatment Facilities – 2022 and 2016-2020, American Community Survey, US Census Bureau

TRANSPORTATION

Specific measures from the United States Census Bureau's 2016-2020 American Community Survey help shed a light on potential barriers involving transportation, such as a reliance on public transportation. *Figure 25* shows that zip codes in north St. Louis City had the greatest percentages of households with no motor vehicle, with 40.5% of households in 63106 (just north of downtown St. Louis) lacking a motor vehicle, compared to 0.7% of households without a motor vehicle in 63131 (in Town and Country in St. Louis County.)

Households with No Motor Vehicles by Zip Code

% Households with No Motor Vehicle

- 0.7% – 2.1%
- 2.2% – 6%
- 6.1% – 11%
- 11.1% – 19.1%
- 19.2% – 40.5%
- St. Louis City and County Boundaries

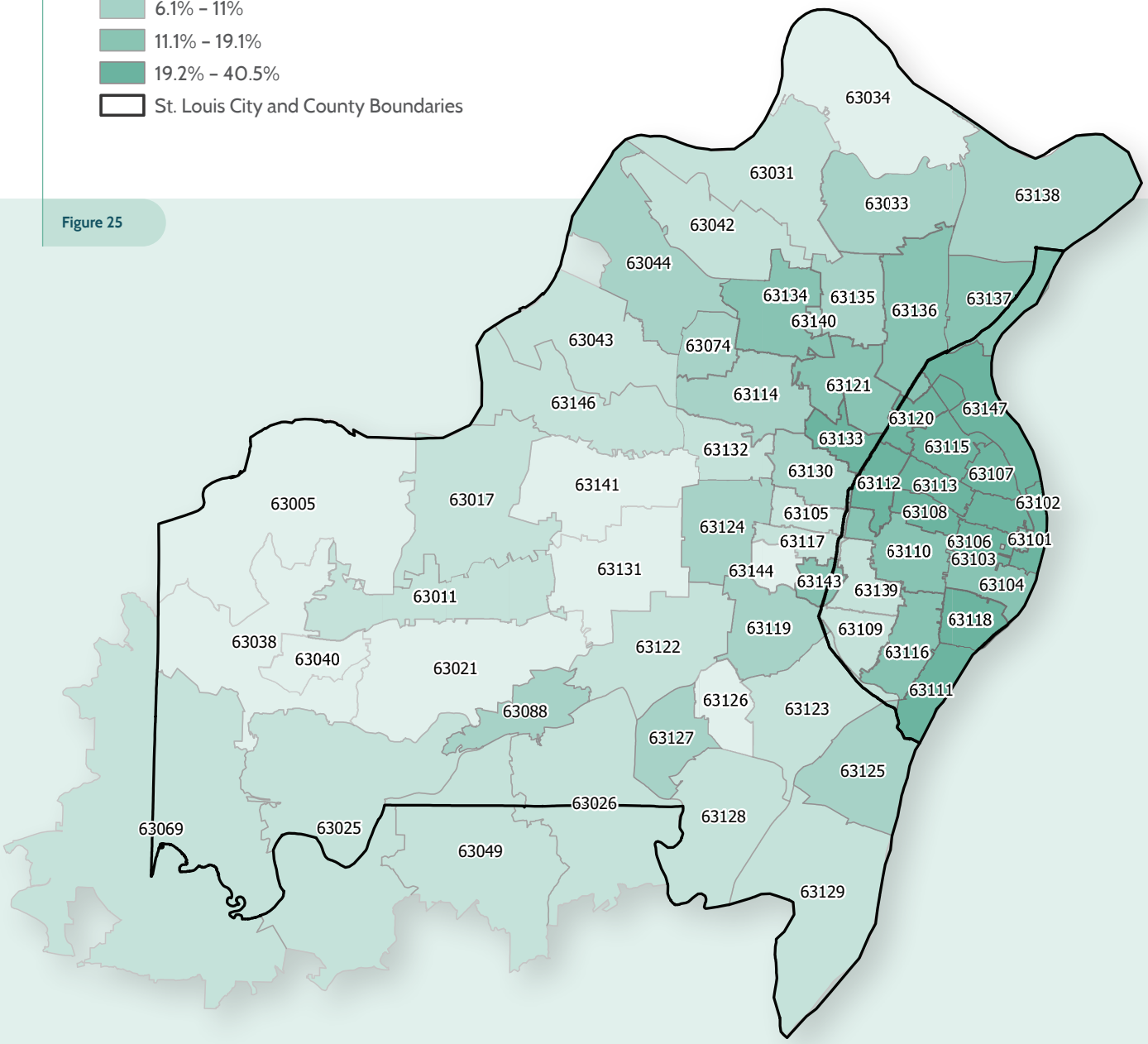


Figure 25

2016-2020, American Community Survey, US Census Bureau

PUBLIC TRANSPORTATION

While the figure above suggests disparities in vehicle ownership, it is also important to account for accessibility through public transit. When overlaying sites that provide mental healthcare service provision or referral from the SAMHSA and 211 databases *(Figure 26)* onto public transportation routes (i.e., bus and light rail), it appears that many sites are accessible by public transit routes, except for those sites furthest north and furthest south in St. Louis County. Further insights may be gathered from users of public transit on the extent to which available public transportation creates actual accessibility for these sites.

Access to Mental Health Facilities by Transit

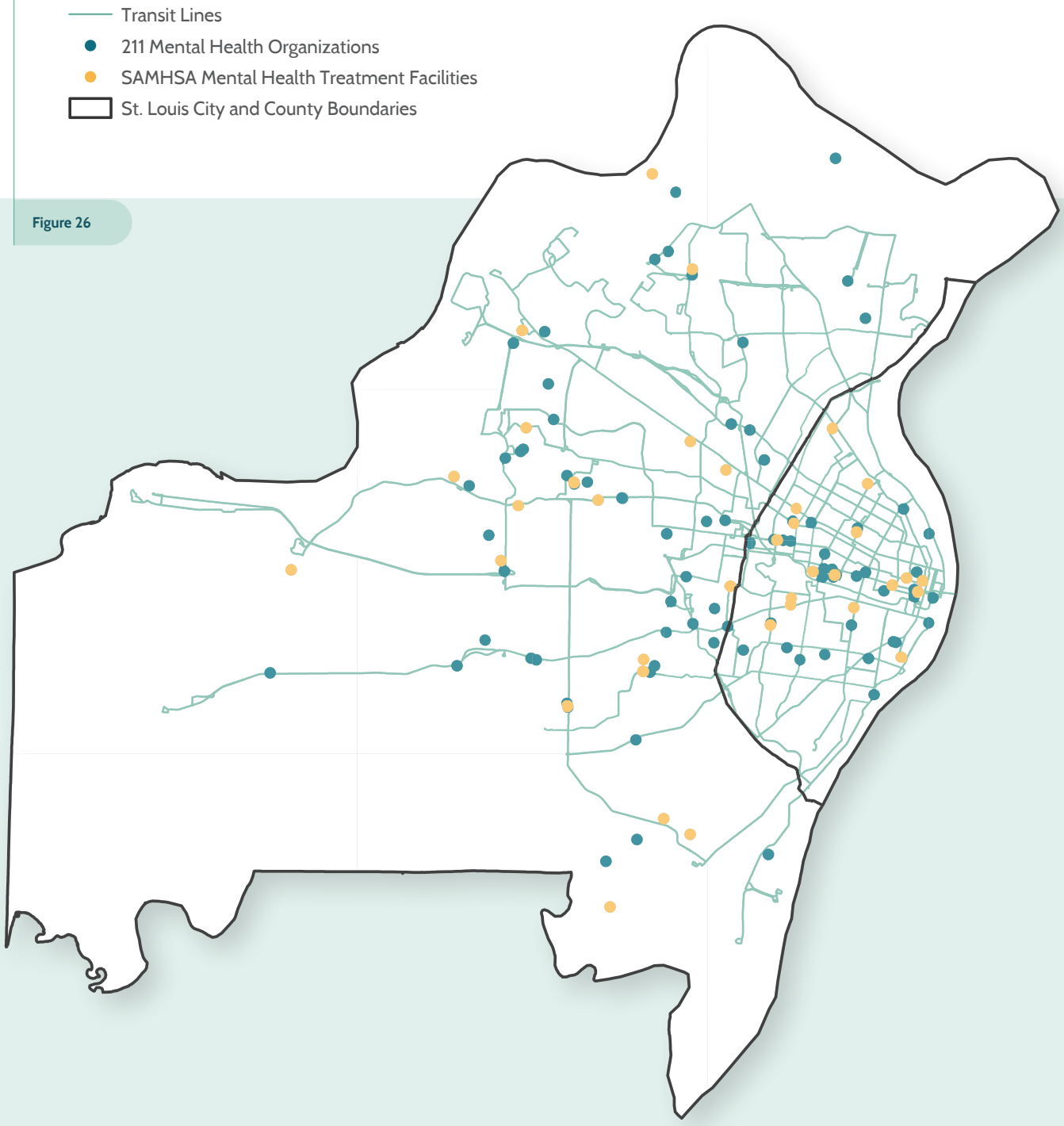


Figure 26

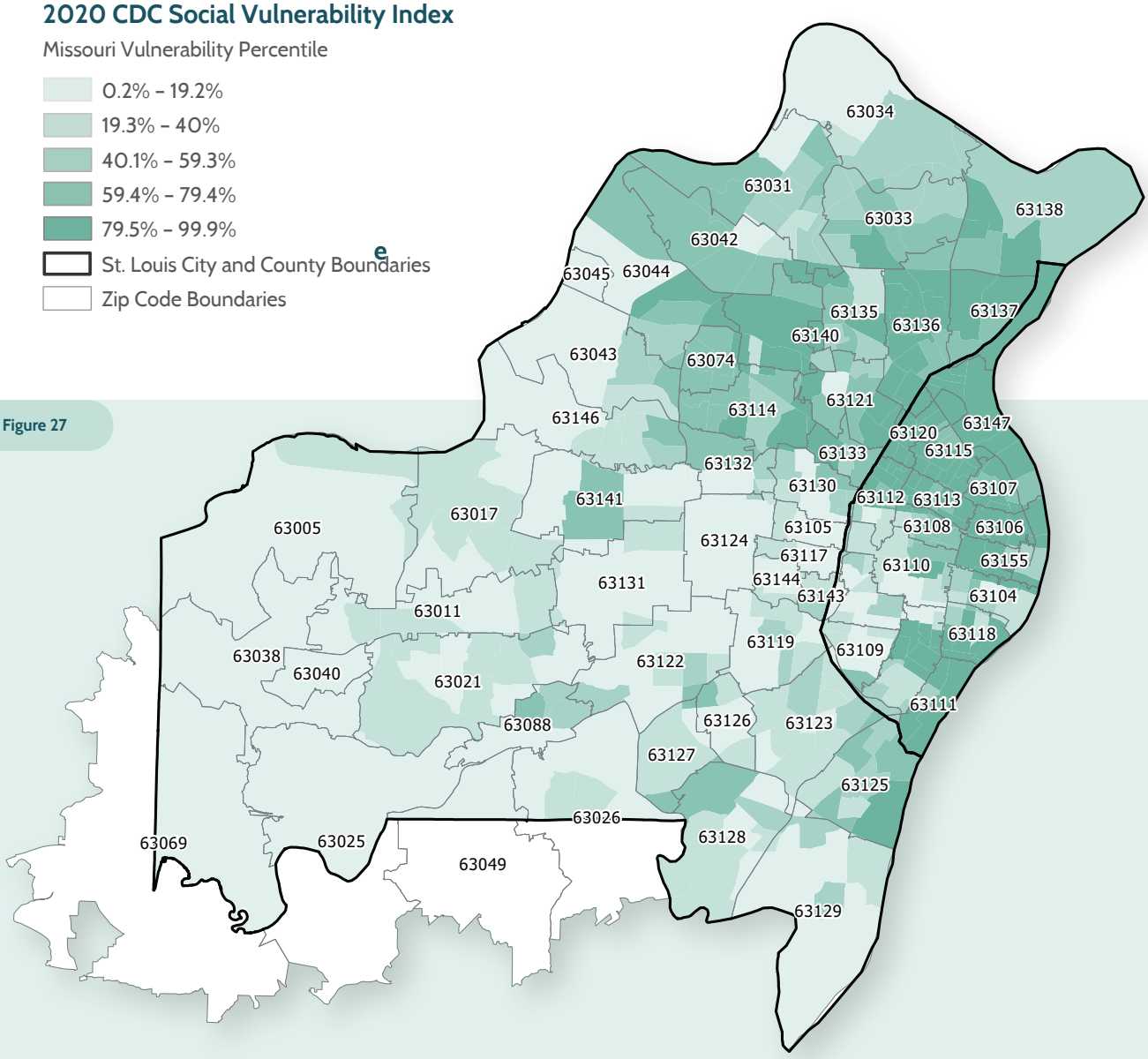
11 Resource Directory, United Way of Greater St. Louis, 2022, SAMHSA National Directory of Mental Health Treatment Facilities – 2022, and National Transit Map Routes, U.S. Department of Transportation (USDOT)/Bureau of Transportation Statistics (BTS) National Transportation Atlas Database (NTAD), April 2023

SOCIAL VULNERABILITY INDEX

The Centers for Disease Control and Prevention's Social Vulnerability Index (SVI) utilizes sixteen variables to assess a community's risk of negative effects caused by external, or outside, stressors, with greater vulnerability represented by greater score on a scale of 0–1. These variables are categorized into four groups as shown in *Figure 27*: socioeconomic status, household characteristics, racial and ethnic minority status, and housing type and transportation.[44] What makes the SVI unique is that it provides a more comprehensive assessment of multiple social determinants of health that are often dependent on one another, providing a way to aggregate how social determinants may build on one another to increase the risk of vulnerability to social issues such as lack of connectedness, lack of social mobility, low perceptions of agency or autonomy. In addition, the SVI also includes other factors that encompass the chronic stress of marginalization, such as English language proficiency, racial identity, and disability. The SVI has been found to be associated with both inequalities in mental health healthcare,[45] as well as mental health outcomes such as suicidality and depression.[46-47]

SVIs are based on census tracts rather than zip codes, so *Figure 27* overlays the SVIs on the zip code borders of St. Louis. Zip codes in north St. Louis City and north St. Louis County had the highest SVIs, as well as zip codes along the riverfront in St. Louis City and the eastern edges of St. Louis County.

Figure 27



Centers for Disease Control and Prevention/ Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index 2020 Database Missouri.

AMERICAN COMMUNITY SURVEY (ACS), 2016 – 2020 (5-YEAR) DATA FOR THE FOLLOWING ESTIMATES:

OVERALL VULNERABILITY

SOCIOECONOMIC STATUS	Below 150% Poverty
	Unemployed
	Housing Cost Burden
	No High School Diploma
	No Health Insurance
HOUSEHOLD CHARACTERISTICS	Aged 65 and Older
	Aged 17 and Younger
	Civilian with a Disability
	Single-Parent Households
	English Language Proficiency
RACIAL AND ETHIC MINORITY STATUS	Hispanic or Latino (of any race) Black or African American, Not Hispanic or Latino Asian, Not Hispanic or Latino American Indian or Alaska Native, Not Hispanic or Latino Native Hawaiian or Pacific Islander, Not Hispanic or Latino Two or More Races, Not Hispanic or Latino Other Races, Not Hispanic or Latino
HOUSING TYPE AND TRANSPORTATION	Multi-Unit Structures
	Mobile Homes
	Crowding
	No Vehicle
	Group Quarters

2020, CDC/ATSDR Social Vulnerability Index, CDC

Conclusions & Recommendations

The data in this report not only highlight the spatial differences that exist in the St. Louis area, but how mental health needs, mental healthcare access, and social determinants of mental health overlap with one another in specific zip codes.

Poor mental health was found to be highest in zip codes with the greatest risk of Adverse Childhood Experiences and highest rates of community violence, primarily zip codes in north St. Louis City and north St. Louis County. Despite this need and understanding that an absence of services can contribute to poor mental health and greater community violence, clinical mental healthcare services and licensed providers were found to be sparse in these high-need zip codes, compared to zip codes with lower mental health need. The high-need zip codes were also those with lower education, greater unemployment, greater lack of healthcare insurance, lower access to computers/internet, lower rates of vehicle ownership, and greater social/environmental vulnerability.

The significant interplay between mental health needs, access to mental healthcare, and social determinants of mental health reinforces the notion that there is no "quick fix." These are complicated, intertwined factors that cannot be addressed through single interventions. Improving mental health will require concerted efforts to address multiple complex issues at the same time. It is not coincidental that the zip codes with the greatest need are those which have concentrated populations of Black, Indigenous, Latinx, and other People of Color (BILPOC). Systemic racism has a long history and continues to perpetuate disparities and exclusionary practices in the St. Louis region.[36-39] Effectively addressing mental health inequity in St. Louis is not possible without also addressing issues of social justice and community violence.

Collaboration will be fundamental and necessary in addressing the mental health crisis. Policies will need to address the lack of investment and resources in high-need zip codes. Organizations, including health care, community, educational, academic, and philanthropic, will need to develop programs, policies, and interventions that can build off one another to address the many issues that lead to mental health challenges, limited mental healthcare access, and social vulnerability. Many individuals and organizations working alongside one another toward the same goals will be required to provide comprehensive access to

basic needs such as education, employment, and telecommunications. Community members must be welcomed into dialogue to inform the change process and potential solutions. Only by working to understand the lived experiences of St. Louis' most vulnerable residents can we more fully understand and effectively address the barriers that exist in addressing and caring for mental health.

We share the following recommendations developed from the data in this report.

RECOMMENDATION 1:

Acknowledge and address spatial differences in community needs, and their relationships to mental health and social justice.

The data visualizations in this report reinforce the notion that location and place matter. The consistency throughout the analyses of zip codes (i.e., location) with the greatest needs aligns with the estimate that 60% of one's health may be attributable to the zip code where one lives, works, and plays.[1] The overlap between need, access and social determinants of mental health helps to illustrate on how these issues are intertwined. Furthermore, due to the history of spatial segregation in St. Louis, concentrations of need exist in the zip codes of north St. Louis City and north St. Louis County. While there is a need to address mental health and access to mental healthcare everywhere in St. Louis, it is most urgent in areas of St. Louis where populations of Black, Indigenous, Latinx, and other people of color (BILPOC) continue to experience the ramifications of systemic racism. Action taken to address mental health must acknowledge this long history and seek to intervene through an anti-racist lens of social justice and with an equity mindset.

RECOMMENDATION 2:

Improve collaboration across stakeholders and communities to improve mental healthcare access.

The needs and issues surrounding mental healthcare are so diverse and intertwined that a concerted effort across multiple levels of people, organizations, and systems is necessary to adequately address mental health in St. Louis. Community organizations, legislative and administrative systems, educational institutions, philanthropic groups, healthcare systems, and individual community members must find ways to work together to address broad issues of systemic racism, social injustice, under-resourced areas, and community violence, at the same time as more immediate issues such as employment, education, provision of basic needs, transportation and internet accessibility are approached and mitigated. As evidenced by the research on social vulnerability, each of these plays a role in mental health outcomes and accessibility of mental healthcare. There have been several prior reports on the issue of mental health in St. Louis, all working towards the same goal of improving mental health outcomes. The overlapping areas of need shown in this and previous reports demonstrate the importance of avoiding fractured or territorial groups working in this space. While it may not be an easy path, collaboration provides the best possible opportunity to strengthen access to mental healthcare in St. Louis.

Significant collaborative efforts are already underway, such as disseminating reports of needs assessments by local health departments and hospital systems, the development of clinical mental health resource linkages through collaborative efforts of Behavioral Health Response and United Way of Greater St. Louis, and professional organizations that bring together clinical mental health providers for continuing education and training. Collaboration needs to be considered in the context of how existing community organizations can be leveraged in their critical role in the St. Louis landscape. There are multiple opportunities for these organizations to play a role. For instance, many organizations, like those providing basic needs or addressing social determinants of health, can build capacity to act as touchpoints to screen or refer individuals they already interact with to mental healthcare when requested. Through investment, mental health services could possibly

be co-located within existing organizations to reduce barriers of time and transportation and provide individuals with the opportunity to meet multiple needs in a single space.

RECOMMENDATION 3:

Establish a community-wide definition of "high-quality" mental healthcare.

Not all mental healthcare is equal. Evidence-based interventions are provided to varying degrees and levels of quality. Some providers may not be equipped to provide care to populations that have certain lived experiences or cultural identities. However, little information exists on how "high-quality" mental healthcare can be defined in consideration of multiple modalities of mental healthcare, or what information can be collected to better elucidate differences in quality of care. A collaborative effort of St. Louis area policymakers, stakeholders, organizations, professionals, and community members should be undertaken to better describe variations in mental healthcare quality and develop plans to collect data from large samples of both patients and providers to identify differences in quality of care. In addition, care of vulnerable populations requires a more nuanced understanding of cultural humility and cultural identities by providers. Ongoing effort in training and continuing education of culturally responsive, evidence-based mental healthcare clinicians is needed. Additionally, encouraging individuals who represent diverse cultural identities from marginalized populations to enter the mental health field will enhance quality of care in their ability to speak to the specific needs of their communities.

RECOMMENDATION 4:

Develop interventions to address mental healthcare workforce shortages.

There is a clear deficit in the mental health workforce in the United States. There are not enough providers to meet the current demand for mental healthcare. Attrition remains high due to provider burnout, low or delayed reimbursement plans by insurance companies, and lack of appropriate pay. Policymakers have a significant role in mental health reimbursement and coverage, which directly impacts provider retention.

In addition, there is an urgent need to address provider burnout. Providers in mental healthcare are subject to significant secondary trauma from their client interactions. It is crucial that these providers are equipped with support structures to help mitigate burnout and prevent depletion in the mental health workforce. In addition, St. Louis should make concerted efforts to attract and retain individuals who come to the area in search of training in mental healthcare. Graduate and postgraduate training can foster more meaningful engagement with the St. Louis community; the connection and sense of belonging to a multi-disciplinary community of practice that could be fostered can mitigate attrition of providers who might otherwise leave the area upon completion of school. Finally, concerted efforts should be made to integrate the voices and experiences of community members not only in the development of mental health training and curriculum building, but through recruitment of community members to participate in training programs and

education surrounding mental health. Investing in the residents of St. Louis, and specifically those from marginalized communities, may produce a greater proportion of trained professionals who will, in turn, invest their careers in the St. Louis region.

RECOMMENDATION 5:

Address gaps in data informatics.

Our ability to address these issues is predicated upon data that can be collected and analyzed. There is an urgent need to collect more information about clinical mental health services, particularly non-acute care. St. Louis needs to better understand the mental health workforce, including the quantity and quality of individual clinical providers, their service areas, their modalities of care, and importantly their pay structures, including sliding-scales and insurance policies. Conversations on how to implement data policies that involve consistent and timely publication of data, alignment of metrics across multiple systems, and shared understanding of key concepts and measures should be initiated and acted upon. In addition, it is important that the voices of those in need are heard, respected, and acted upon to further develop potential activities aimed at addressing mental health in St. Louis. This will require a community-based participatory framework in which stakeholders across legislative, organizational, and community levels work together to advocate and develop innovative systems of data collection and dissemination.

RECOMMENDATION 6:

Support community programs and policies that provide safe and healthy conditions for all children and families.

Programs and policies that create protective community environments and those that curtail community violence are directly related to better mental health. The Centers for Disease Control and Prevention recommend strategies that include promoting family environments that support healthy development; providing quality education early in life; strengthening youth's skills; connecting youth to caring adults and activities; and intervening to lessen harms and prevent future risk. It is our recommendation that the entities involved in these efforts create a region-wide response to the current mental health crisis affecting St. Louis' youth, working together across mental health disciplines and through varied types of organizations (including health care, community, educational, academic, and philanthropic organizations).

CALL TO ACTION

The mental health crisis in the United States, including St. Louis, shows no signs of abating. This report demonstrates the multifaceted approach that will be needed to effectively address and strengthen mental health in St. Louis, acknowledging the nuanced characteristics that define the issue in the region. St. Louis must come together, across many levels, across diverse viewpoints, and across varied areas of interest, not only to address mental health, but provide hope that change is both possible and worth working towards. Change is a collaborative endeavor, and there are many opportunities to expand current efforts and innovate new ones. Specifically, we propose the following actions:

- **Acknowledging the roles that discrimination, oppression, and social injustice have played in the development and persistence of disparities in social determinants of mental health that significantly impact both disruption of mental health and mental healthcare access. Similarly, acknowledging the**

impact of systemic racism as a function of the current state of mental healthcare access, provision, and quality.

- Advocating at the legislative level by systems, organizations and community members can highlight disparities and the need for policy shifts and data collection that can improve mental healthcare access and the social determinants that are deeply intertwined such as public transportation, internet access expansion, educational reform and economic injustice.
- Investing in philanthropic efforts that are long-term, geared toward demonstrable change, and do not act above the community with a charitable orientation, but rather are informed by guidance from community engagement and community leadership as a fundamental part of giving. There is an opportunity to innovate and model new ways for philanthropy to work and effect change.
- Engaging with systems such as education and hospitals that are central to the community and can provide unique lenses and resources to innovate and develop community-driven care models.
- Addressing shortfalls of mental health providers by understanding the experiences, needs and challenges providers face in providing culturally competent care, reducing burnout and attrition, and managing their way through a deficit of care providers in the region.
- Collaborating with local community organizations that are currently doing significant work with social determinants of mental health such as the Economic Justice Accelerator, violence prevention groups, juvenile crisis prevention, and many more.
- Providing space for individual community members to speak their minds and to be heard to deepen understanding of varied and unique experiences, particularly in the context of where one lives, that can directly speak to disparities and the complexity of issues that need to be addressed to improve access to high-quality, affordable mental health care in the region. Innovative solutions may be found through the power of collective genius.
- Convening representatives from many of the groups or systems noted above, acknowledging everyone has a role to play and developing ways to leverage strengths and assets to promote effective change.

We ask you to consider the landscape of mental health ten years from now if these calls to actions were addressed, if collaboration and innovation build off one another, if the community feels seen, heard and engaged? What would be different in St. Louis? What would have changed? What hopes would you have seen realized? There are ways we can build new models of addressing the mental healthcare crisis in St. Louis. We look forward to all of us together being a part of positive change.

CHIRON
Community Giving Foundation

CONTACT US

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