community health needs assessment (CHNA)

2021 REPORT

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1. Acknowledgements

This Regional Community Health Needs Assessment (Regional CHNA) process and report would not be possible without a collaborative approach from a variety of stakeholders across the community. Specifically, this collaboration was built on the Mobilizing Action through Planning and Partnerships (MAPP) Circle of Involvement Framework, including the Core Circle (The Health Collaborative, Greater Dayton Area Hospital Association (GDAHA), and consulting organizations) and the Circle of Engagement (our Advisory Committee).

The Core Circle met regularly, hosted, and facilitated meetings, were responsible for deliverables, and managed day-to-day operations of the project. The Circle of Engagement (Advisory Committee) kept the Core Circle accountable, provided expertise on each step of the Regional CHNA including quantitative instrument development, qualitative questions, data collection efforts, reviewing results and report drafts, finalizing the Regional CHNA report, and committing to implementation efforts for their organization to address top needs.

ADVISORY COMMITTEE			
Denisha Porter	**All In Cincinnati**	Allison Luntz	**Mercy Health/Bon Secours**
Kiana Trabue	**bi3**	Gina Hemenway	**Mercy Health**
Lauren Brinkman	**Cincinnati Children's**	Carolyn Young	**Mercy Health Springfield**
Monica Mitchell	**Cincinnati Children's**	Geralyn Litzinger	**Margaret Mary Health**
Jeanne Bowman	**Champaign Health District**	Barbara Marsh	**Montgomery/Dayton County Public Health**
Maryse Amin	**Cincinnati HD**	Dawn Ebron	**Montgomery/Dayton County Public Health**
Susan Tilgner	**Cincinnati HD**	Brian Williamson	**Norwood Health Department**
Anna Jean Sauter	**Clark County Combined Health District**	Sarah Moore	**Norwood Health Department**
Emma Smales	**Clark County Combined Health District/Public Health Dayton Montgomery County**	Roopsi Narayan	**Premier Health**
Dani Isaacsohn	**CoHear**	Erik Balster	**Southwest Association of Ohio Health Commissioners (AOHC)/Preble County Public Health**
Jamahal Boyd	**Crossroads Center**	Ashley Clos	**The Christ Hospital**
Lisa Henderson	**Greater Dayton Area Hospital Association (GDAHA)**	Jessica Coyle	**The Christ Hospital**
Becca Stowe	**Hamilton County Public Health**	Shelley Spencer	**The Christ Hospital**
Greg Kesterman	**Hamilton County Public Health**	Frank Nation	**TriHealth**
Sarah Mills	**HealthCare Access Now (HCAN)**	Susan Murray	**TriHealth**

ADVISORY COMMITTEE			
Jolene Joseph	**Healthcare Connection**	Regan Johnson	**University of Cincinnati**
Colleen Desmond	**Interact for Health**	Dan Maxwell	**UC Health**
Kelly Adcock	**Interact for Health**	Lindsey Cencula	**UC Health**
Jonathan Duffy	**Kettering Health Network**	Laura Nabors	**University of Cincinnati**
Molly Hallock	**Kettering Health Network**	Gabe Jones	**West Central Association of Ohio Health Commissioners (AOHC)/Champaign County Public Health**
Jayda Carlton	**Mercy Health/Bon Secours**	Bruce Jeffery	**YMCA Cradle to Career**

CORE CIRCLE			
Lisa Henderson	**GDAHA**	Sheri Chaney Jones	**Measurement Resources Company**
Erik Balster	**Preble County Public Health**	Eliza Gardiner	**Measurement Resources Company**
Lauren Bartoszek	**The Health Collaborative**	Alyssa Petty	**Measurement Resources Company**
Ericson Imarenezor	**The Health Collaborative**	Harley Vossler	**Measurement Resources Company**
Elizabeth Pafford	**Measurement Resources Company**	Calista Smith	**Scale Strategic Solutions**

Additionally, the three circles in this framework were critical to success, breadth, and diversity of data collection. Our Circle of Engagement participants were instrumental in survey distribution and focus group recruitment through their Circle(s) of Champions, within counties and cities, hospital networks and community-based organizations.

Also, the Circle of Information and Awareness provided high-level review and oversight of the work on behalf of their organizations. This was represented by leadership of organizations participating in our Circle of Engagement.

Finally, the Circle of Possibility represents all the community organizations and community members who can and should be included in actionable strategies for implementation of the Community Health Improvement Plan.

2. Introduction

We envision a region where everyone has the opportunity to be healthy. To achieve this vision, our region is working on eliminating health disparities by embracing community voice, investing in trusted partnerships, and implementing evidence-based strategies and best practices to achieve equitable health outcomes for all.

To move this vision forward with data-driven action, The Health Collaborative (THC), in partnership with the Greater Dayton Area Hospital Association (GDAHA), facilitated the 2021 Regional Community Health Needs Assessment (CHNA). This Regional CHNA includes 36 hospitals, 22 health departments, across 26 counties in southwest Ohio and the Greater Dayton Area, southeast Indiana, and northern Kentucky.

Data collection, analysis, and synthesis was conducted by Measurement Resources Company (MRC) and subcontractor Scale Strategic Solutions. A comprehensive, inclusive, and balanced mixed-method approach, and best practices in community engagement, were used in data collection to ensure a representative sample of community members, specifically the voices of marginalized populations and the inclusion of providers across health and social services sectors.

In this Regional CHNA, health encompasses physical, mental, and social conditions. Health care is inclusive of hospitals and emergency rooms, primary care, behavioral health, specialty care (i.e., vision, dental, chiropractic, etc.) and social services that support health or link community members to health care.

The Regional CHNA was guided by the Advisory Committee. A total of 42 individuals are part of the advisory committee representing hospitals, health departments, and community partners in southwest Ohio and the Greater Dayton Area, southeast Indiana, and northern Kentucky. The advisory committee met monthly with THC, GDAHA, MRC and Scale Strategic Solutions to oversee the work and keep THC accountable to the inclusive process.

The success of the Regional CHNA is a result of the collaboration from THC, local community champions, and strategic partners throughout the region to help with community engagement and data collection efforts.

THC will use the Regional CHNA to inform how they direct energy and resources to equitably meet the healthcare needs of the community. The results will encourage innovative healthcare delivery models designed to unite region-wide efforts in providing high-quality care, increasing access to care, and achieving improved health outcomes for all.

Alignment to the State Health Improvement Plan of Ohio

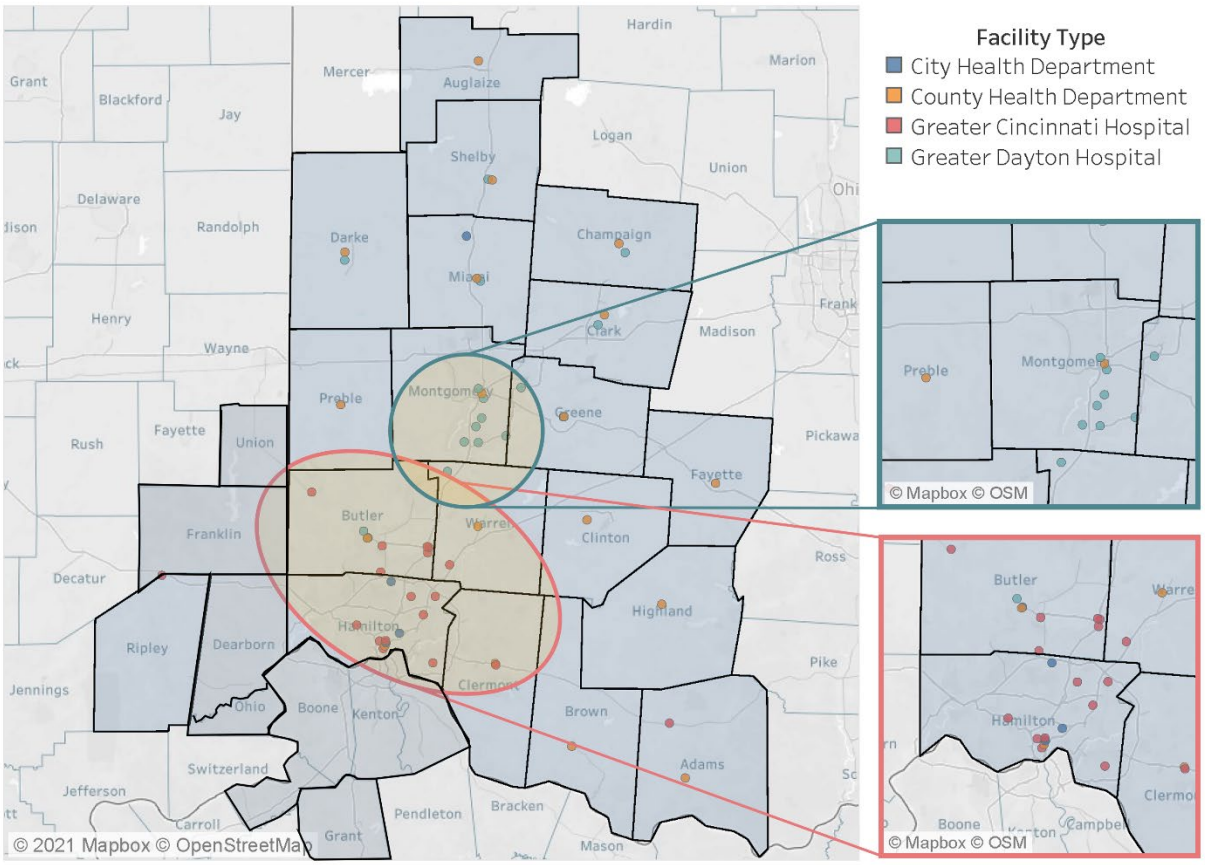
This Regional CHNA includes a comprehensive data-driven approach to define the current state of health and health equity with the goal of informing a collective, prioritize an actionable agenda for improving health outcomes across the region over the next three years. Like the Statewide Health Improvement Plan (SHIP) for Ohio, this Regional CHNA explores the priority factors that influence health including perceptions of healthcare quality and access, health behaviors and community conditions (i.e., social determinants of health). Guided by the SHIP, the Regional CHNA focuses on the priority health outcomes related to chronic disease, mental health and addiction, and maternal and infant health. The recommendations put forth in this Needs Assessment support the priorities of the SHIP and provide a framework for working collaboratively in addressing disparities and barriers to a healthier community.

The Regional CHNA Geographic Region

GDAHA
GREATER DAYTON AREA HOSPITAL ASSOCIATION
The Link to Quality Care

THE HEALTH COLLABORATIVE

Greater Cincinnati & Greater Dayton CHNA Partners



2021 CHNA Geographic Area and Participating Organizations

HOSPITALS/HEALTH SYSTEMS

Bon Secours Mercy Health
- **Bon Secours Mercy Health Anderson Hospital**
- **Bon Secours Mercy Health Clermont Hospital**
- **Bon Secours Mercy Health Fairfield Hospital**
- **Bon Secours Mercy Health Jewish Hospital**
- **Bon Secours Mercy Health West Hospital**

Cincinnati Children's Hospital
- **Cincinnati Children's Burnet Campus**
- **Cincinnati Children's Liberty Campus**
- **Cincinnati Children's College Hill Campus**

The C&F Lindner Center of HOPE

The Christ Hospital, Mt. Auburn

TriHealth
- **TriHealth Good Samaritan Hospital**
- **TriHealth Good Samaritan Evendale Hospital**
- **TriHealth Bethesda North Hospital**
- **TriHealth Bethesda Butler Hospital**
- **TriHealth McCullough Hyde Memorial Hospital**

UC Health
- **UC Health University of Cincinnati Medical Center**
- **UC Health West Chester Hospital**
- **UC Health Drake Center for Post-Acute Care**

Greater Dayton Area Hospital Association (GDAHA):

Kettering
- Kettering Medical Center
- Sycamore Medical Center
- Kettering Behavioral Medical Center
- Grandview Medical Center
- Southview Medical Center
- Soin Medical Center
- Greene Memorial Hospital
- Fort Hamilton Hospital
- Troy Hospital

Premier

- Miami Valley Hospital
- Atrium Medical Center
- Upper Valley Medical Center
- Miami Valley Hospital South
- Miami Valley Hospital North

Wilson Memorial Health
Wayne Healthcare
Mercy Health Springfield Regional Medical Center
Mercy Health Urbana Hospital

Adams County Regional Medical Center
Margaret Mary Health

LOCAL HEALTH DEPARTMENTS

City: Cincinnati, Hamilton (City), Norwood, Piqua, Springdale
County: Adams, Auglaize, Brown, Butler, Champaign, Clark, Clermont, Clinton, Darke, Fayette, Greene, Hamilton, Highland, Miami, Montgomery, Preble, Shelby, Warren

COUNTIES

Indiana: Franklin, Dearborn, Ohio, Ripley, Union
Kentucky: Campbell, Boone, Grant, Kenton
Ohio: Adams, Auglaize, Brown, Butler, Champaign, Clark, Clermont, Clinton, Darke, Greene, Hamilton, Highland, Miami, Montgomery, Preble, Shelby, Warren

Notes/Limitations:

- *4 Kentucky counties are managed by 1 NKY Health Department and did not officially participate. These counties are however in the services areas of participating hospitals (Christ, CCHMC) and therefore are included in the county number.*
- *5 Indiana counties do have their own health department/county but did not officially participate. They are included in multiple hospital service areas (GDAHA, MMH, CCHMC) and therefore were included in the county number.*
- *5 additional city health departments were engaged, all located within participating counties in Ohio*

3. An Inclusive Approach

The Regional CHNA methodology and results were generated through an inclusive, comprehensive, and balanced data collection strategy for answering the research questions.

Comprehensive Data Collection

The needs assessment utilized a mixed-method approach to data collection including secondary quantitative data and primary quantitative (Regional CHNA community and provider surveys) and qualitative (focus groups and interviews) data.

Secondary data collection, beginning in January of 2021, sought to understand the greatest health conditions of the region, including prevalence and impact on community members. These results informed the creation of survey items that were organized around a set of co-created research questions.

Each data collection strategy adhered to a recruitment plan to ensure a representative sample of community members, voices of marginalized populations, and providers across the health and social services sectors were captured. All results are summarized for the region which includes the Cincinnati Metropolitan Statistical Area (MSA),[1] Dayton-Kettering MSA (to include Clark County which is not part of the Dayton MSA but is similar in that it borders the Dayton MSA and is not a rural county),[2] and other rural counties in the geographic service area that are predominately rural and not included in other MSAs.[3]

Overall, the scope of data collection was robust and informed the results of this Regional CHNA. This includes:

8,321 community surveys available in five languages. Within this sample, representation was seen across 26 counties, males, females, ages 18-65+, Black/African American, Multiracial, Asian, American Indian, Alaskan Native, White, and Hispanic/Latino populations.

859 provider surveys inclusive of behavioral health, education, emergency medical services, faith-based organizations, federally qualified health centers, justice/corrections, medical care (adult, geriatric, pediatric) oral health, organizations addressing health related social needs and social determinants of health, pharmaceutical, and public health departments.

- Providers also represented administration, direct patient care, academic, support staff, and supervisors/management.
- Providers reported serving a variety of populations including children/youth, people with disabilities, ethnic minorities, people experiencing homelessness, people in the justice system, veterans, young adults, low-income populations, and LGBTQ+ populations.

[1] Includes the following counties: Grant, Butler, Clermont, Hamilton, Warren, Dearborn, Kenton, Boone, Campbell, Brown, Ohio, Union, and Franklin.
[2] Includes the following counties: Clark, Montgomery, Miami, and Greene.
[3] Includes the following counties: Clinton, Highland, Adams, Preble, Shelby, Darke, Auglaize, and Champaign.

51 focus groups with 234 people were held, representing all three MSAs. Specifically, recruitment for these focus groups were based on advisory committee identification of populations who are traditionally underrepresented, marginalized, or experience greatest health disparities.

- Populations represented in these focus groups include adult men, those experiencing foster care or foster parenting, youth and adults with disabilities, ethnic, cultural and language minorities, first and second-generation immigrants, people experiencing homelessness, those involved in the justice system, low-income families and individuals, parents, veterans, older adults, community members with lived experience of mental health and/or addiction, and first responders.

38 stakeholder interviews were held across health and social service providers, specifically with the following being represented: mental health and substance use disorder (SUD), public health, hospital systems, Federally Qualified Health Centers (FQHCs), transportation, housing, food access, healthcare access and policy, school-based health and children's health care, maternal and infant care, LGBTQ+ health care, pharmacy access, and healthcare workforce development.

Appendix A contains a detailed description of each data collection strategy including the sampling or recruitment strategy, and analysis.

Data collection was also comprehensive in that community members, social service providers and healthcare professionals were not only asked "what could be better," but also "what is working." As a result, this Regional CHNA includes a collection of assets and recommended policy and practice initiatives identified by the community that directly tie to system barriers. The symbol (to the left) can be found throughout this report. This symbol identifies a policy or practice that addresses the health need discussed in that section, corresponding to a more detailed description of the recommendation in Appendix D.

Co-Created Research Questions

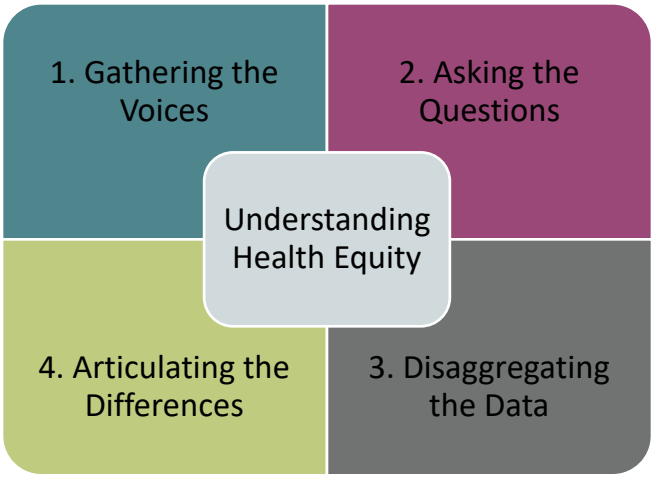
To create the guiding research questions, the advisory committee participated in a group process, facilitated by MRC, to identify the emerging curiosities related to community health. The exercise focused on moving beyond what is known through secondary data and asking questions that can lead to action. The following five research questions were co-created by the advisory committee.

1. How do the greatest health needs differ across communities and community members?
2. What SDOH drive these greatest health needs among different communities and community members?
3. What are the systemic barriers of these greatest health needs among different communities and community members?
4. What are the structural barriers providers face in meeting the needs of the community?
5. What specific action steps can be taken by various partners to address the root causes and achieve more equitable health outcomes?
    a. What community-based expertise should be leveraged?
    b. What best practices are being implemented?

To answer these research questions, a framework was developed for centering equity and a comprehensive understanding of the drivers of health conditions. From this framework, MRC and the Advisory Committee co-created a mixed-method data collection strategy including targeted recruitment.

Equity-Centered Framework

Health equity means everyone has a fair and just opportunity to be as healthy as possible.[i] To achieve an understanding of health equity, each data collection strategy included mechanisms to:



1. **Hear the voices of community members** and be intentional about engaging community members who are historically underrepresented in community data.

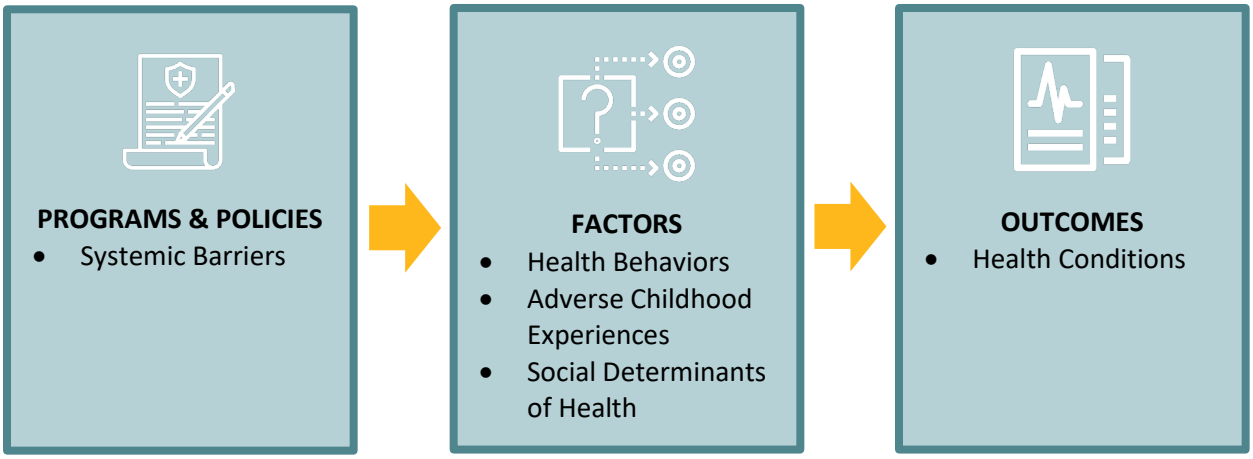
2. **Ask questions** about health experiences, outcomes, barriers, and solutions.

3. **Disaggregate the data** by region, age, race, and gender and other characteristics with sufficient sample sizes.

4. Using the data to clearly **identify the unique experiences** of community members.

Comprehensive Drivers of Health Outcomes

The following framework helps us understand the drivers of health outcomes and provides the basis for organizing the health needs assessment. In summary, community members experience health conditions because of the risk and protective factors that are present in their life. Those factors are driven by the programs and policies that govern society.



Programs and Policies

Systemic Barriers

Finally, the governing policies rooted in structural bias perpetuate health disparity and unhealthy behaviors (i.e., not seeking services, self-medicating, etc.). In this Needs Assessment, systemic barriers were assessed from the gender and race lens, perceptions related to stigma, and barriers specific to health care (i.e., workforce shortage, cost reimbursement, etc.).

Factors

Health Behaviors

Health behaviors are actions of community members that impact health. Health behaviors can improve health or put health at risk. Behaviors include diet and nutrition, exercise, sleep, substance use, etc. In this Needs Assessment, the literature around each of the health behaviors are explored to determine their impact on health outcomes and disparities in health conditions.

Adverse Childhood Experiences Framework

Adverse childhood experiences (ACEs) are also a significant risk factor that can lead to poor health, chronic disease and early death. ACEs are traumatic events experienced as a child including abuse, neglect, violence, incarceration of relatives, parental divorce, etc. Exposure to trauma from an early age can disrupt the development of a young person's brain, ultimately leading to higher rates of chronic risk behavior, disease, mental illness, and early death if appropriate interventions and protective factors are not present. As a child's ACEs increase, so does their likelihood of chronic disease and early death.[ii] Secondary data and literature were used to inform the discussion of ACEs and ACEs-related disparities.

Social Determinants of Health Framework

Social Determinants of Health (SDOH) are the structural and social conditions in the environment that affect a wide range of health, functioning, and quality-of-life outcomes and risks.[iii] The Healthy People 2030 SDOH[iv] framework provided guidance for this Regional CHNA in identifying the community conditions that impact the health of community members. These community conditions include (not in rank order):

- Economic stability
- Neighborhood and built environment
- Education access and quality
- Social and community context
- Healthcare access and quality

SDOH are explored in all data collection strategies to understand their relationship to the region's greatest health needs and disparities in health conditions.

Outcomes

Health Conditions

The health conditions of our communities are driven by factors within and outside an individual's control. A study from the University of Wisconsin Population Health Institute showed that about 80% of people's health is the result of physical, environmental and behavioral factors.[v] In this Regional CHNA, health factors were explored to understand what impacts the most prevalent health conditions in the region.

4. Summary Of Regional CHNA Results

To summarize the results of the Regional CHNA, the lists below highlight main takeaways to consider in the prioritization process.

Most Prevalent Health Conditions (Ranked)	Health Condition Most Untreated (Ranked)	Health Conditions Most Impacted By SDOH
1. Cardiovascular Conditions (Hypertension) 2. Mental Health (Depression and Anxiety) 3. Arthritis 4. Lung/Respiratory Health 5. Dental 6. Maternal health concerns 7. Prevention- related health needs	1. Vision 2. Dental 3. Allergy 4. Mental Health (Depression and Anxiety) 5. Arthritis 6. Cardiovascular Conditions (Hypertension) 7. Maternal health concerns	• Cardiovascular Conditions (Hypertension) • Mental Health (Depression and Anxiety) • Vision • Lung/Respiratory Health • Diabetes

SDOH Factors Impacting Health in the Region

- Economic stability (Stable housing, food security, paying bills)
- Neighborhood and Built Environment (Access to reasonable transportation, parks/outdoor activities, stable phone, and internet)
- Education Access and Quality (Perception of quality of schools and childcare that are available)
- Social and Community Connectedness (Having someone to talk to and feeling connected to the community)
- Healthcare Access and Quality (Perception of quality of health care available, cultural relevancy of health care, ease of finding desired health care, ease of navigating healthcare costs)

Structural Barriers in the Region's Healthcare System

- Competition across healthcare organizations/systems
- Workloads and caseloads are high
- Lack of effective clinical-community linkages
- Language barriers and cultural differences
- High cost of services
- Limited workforce
- Inflexible and restricted funding structures and/or investment in community
- Lack of culturally relevant communication strategies and services across providers
- Limited implementation of DEI practices within organizations
- Community member distrust in the healthcare ecosystem (providers, insurers, pharmacies, etc.)
- Limited implementation of best practices of trauma-informed care

Systemic Barriers

- Structural racism
- High-Cost healthcare system
- Structural divide between healthcare system, holistic wellness providers, and social service providers

Prioritized Health Needs

- Increase access to services in order to improve equitable outcomes for the region's top health needs: **behavioral health, cardiovascular disease, dental, and vision.**
- Address access to and use of resources for **food security and housing** with a focus on the development and strengthening of partnerships between providers and community-based organizations.
- Strengthen **workforce pipeline and diversity**, including cultural competence, within the healthcare ecosystem.

Regional CHNA Results

5. Most Prevalent Health Conditions in the Region

Greatest health needs across the region were identified utilizing multiple data sources, including self-report Regional CHNA community survey results (see Figure 1), hospitals' utilization data (see Appendix A for details), and county-level Center for Disease Control (CDC) leading cause of death data. In review of these varying data sources, the most **prevalent health conditions** across the region include:

1. **Cardiovascular-related conditions (i.e., high blood pressure and/or high cholesterol)**

As shown in Figure 1, approximately three in ten residents from the Regional CHNA community survey report needing treatment for high blood pressure and/or high cholesterol. As cardiovascular-related conditions, including high blood pressure/high cholesterol are the leading health needs among residents and are major risk factors for heart disease,[4] it is of no surprise that Diseases of the Heart, particularly Major Cardiovascular Disease, was the leading cause of death in 2019, with an average age-adjusted rate of 251 per 100,000 individuals.[5] Nationally, heart disease is the leading cause of death.[vi] Further, among emergency room and inpatient hospital visits in the region from January 2019 through June 2020, seven percent (or 72,889) of the visits were due to primary diagnoses of the circulatory system (after removing visits due to symptoms, signs, and abnormal clinical and laboratory findings).

2. **Mental health-related conditions (i.e., depression and anxiety disorders)**

Across the region, approximately two in ten residents from the Regional CHNA community survey report needing treatment to support their mental health (i.e., depression, anxiety, etc.; Figure 1). This is consistent with national rates.[vii] Further, among emergency room and inpatient hospital visits in the region from January 2019 through June 2020, three percent (or 22,112) of the visits were due to primary diagnoses of mood/affective and anxiety/stress-related disorders (after removing visits due to symptoms, signs, and abnormal clinical and laboratory findings).

3. **Arthritis or osteoporosis**

Across the region, approximately one in ten residents from the Regional CHNA community survey report needing treatment for arthritis or osteoporosis (Figure 1). This is slightly lower than national trends with an estimated two in ten U.S. residents having been diagnosed with arthritis.[viii] Further, among emergency room and inpatient hospital visits in the region from January 2019 through June 2020, one percent (or 10,498) of the visits were due to primary

[4] https://www.cdc.gov/heartdisease/risk_factors.htm

[5] Age-adjusted rates were obtained from CDC Wonder, Underlying Cause of Death (https://wonder.cdc.gov/wonder/help/DataExport.html#Excel) and averaged across all counties within the region (with exception of Ohio and Union Counties due to limited data), ranging from 189.8 in Ripley County to 325.4 in Adams County.

diagnoses of osteoarthritis and osteoporosis (after removing visits due to symptoms, signs, and abnormal clinical and laboratory findings).

4. **Lung/respiratory-related conditions, including asthma** 

Across the region, approximately one in ten residents from the Regional CHNA community survey report they needed treatment for lung health conditions (including asthma, COPD, emphysema, chronic bronchitis) and, similarly, for COVID-19 (Figure 1). This is higher than national trends. Across the U.S., approximately 8% of adults have asthma and 4.6% have chronic obstructive pulmonary disease (COPD). In terms of the Regional CHNA community survey, need for treatment prevalence for lung-related conditions ranked fifth in terms of the conditions surveyed, however, hospital data reveals that it is among the leading reasons (among the priority health conditions) why people visit the ER or are hospitalized as inpatient. From January 2019 through June 2020, 11 percent (or 111,301) of the visits were due to primary diagnoses of diseases of the respiratory system[6] (after removing visits due to symptoms, signs, and abnormal clinical and laboratory findings).

5. **Oral/Dental disease** 

Across all communities, there is a need for access to dental services. Because dental services are not under the system's 'healthcare' umbrella, dental care often requires supplemental insurance. In focus groups, dental services were identified as a need across many community members.

6. **Maternal health complications** 

Maternal health complications were a priority health area for women. Across the region, less than one in ten residents reported they needed treatment for maternal health complications (a lower rate relative to other conditions is to be expected given this can only apply to pregnant women; Figure 1). Further, among emergency room and inpatient hospital visits in the region from January 2019 through June 2020, three percent (or 30,363) of the visits were due to primary diagnoses of pregnancy, childbirth, and the and certain conditions originating in the perinatal period.

7. **Prevention services** 

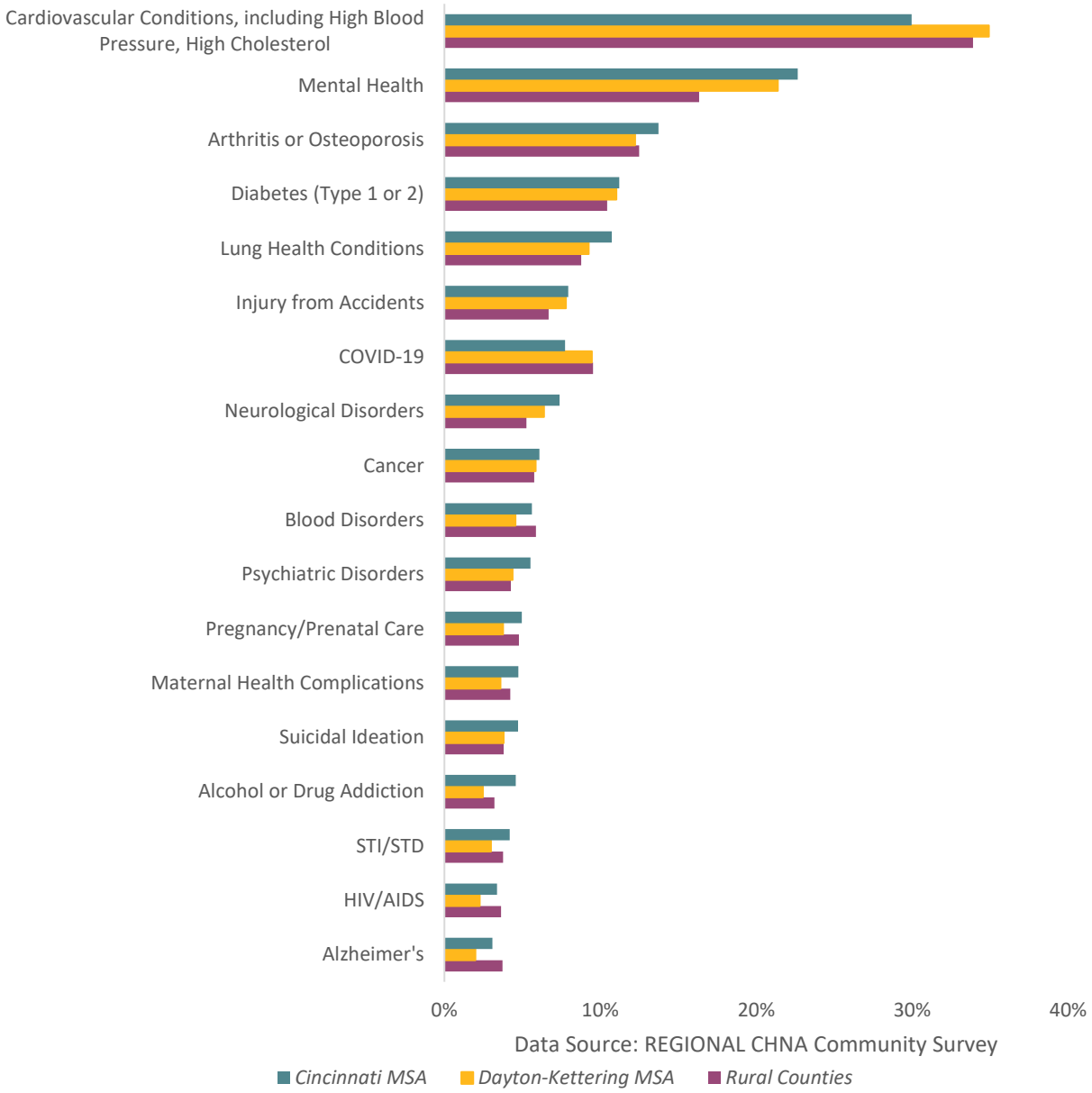
While community members reported needing treatment for the above specific conditions, when asked in focus groups and interviews, community members and providers alike identified the need for prevention services in the region. Prevention services are needed across the life span, with community members highlighting the need for more mental health and addiction prevention programs for youth, adults, and older adults (e.g., mindfulness); preventative reproductive health care for youth and adults; nutritional education; programs that promote social connectivity; and programs that promote exercise and coping with stress.

[6] Based on ICD10 codes provided in the hospital data, we were unable to determine if this accounts for COVID-19.

Additional health conditions were assessed in this Regional CHNA based on interests and priorities of local health improvement plans across all three states. All conditions are summarized in Figures 1 and 2 as well as in Tables 1 and 2. However, only the most prevalent are discussed and further analyzed in this Regional CHNA.

Figure 1. Overall Need for Treatment for Health Conditions

% of individuals who self-reported needing treatment for this condition in the past year



Greatest Unmet Needs

In the Regional CHNA community survey, community members were asked to identify their unmet health needs, i.e., the health conditions for which they needed health care but did not receive care/treatment in the past year (Figure 2). To investigate health needs further, community members were also asked what *other* conditions they had and needed treatment for but did not get treatment in the past year. These *other* conditions were not identified in the original list of health conditions but were included in the survey based on the understanding that these conditions were also prevalent in the community. Together, there are seven leading unmet healthcare needs reported in the Regional CHNA community survey by community members throughout the region. Systemic barriers driving these unmet needs are further discussed in the following sections of this report.

1. **Vision Concerns** 

   When asked what other health conditions (i.e., other than the priority health conditions shown in Table 1) community members needed treatment for but did not get, the most common condition was vision concerns, with approximately two in ten community members indicating this (Table 1).

2. **Oral/Dental disease** 

   Similar to unmet vision needs, community members are presented with barriers that lead to unmet dental needs. Approximately two in ten community members reported needing treatment for dental concerns but not receiving it within the past year (Table 1).

3. **Allergies** 

   Unmet health needs for allergies are also fairly prevalent throughout the region with approximately two in ten residents reporting needing but not receiving care for this health condition (Table 1).

4. **Mental health-related conditions (i.e., depression and anxiety disorders)** 

   Among the priority health conditions surveyed, mental health treatment was the leading unmet need across the region. Specifically, among residents who reported needing treatment for mental health, nearly one in three indicated that they did not receive it (Figure 2).

5. **Arthritis or osteoporosis** 

   Among the priority health conditions surveyed, treatment for arthritis or osteoporosis was the second highest unmet need across the region. Specifically, among residents who reported needing treatment for arthritis or osteoporosis (Figure 2), one in three or more (in Cincinnati MSA and rural counties) indicated that they did not receive it (Figure 2).

6. **Cardiovascular-related conditions (i.e., high blood pressure and/or high cholesterol)**

Not only are high blood pressure/high cholesterol the leading health needs in the region, but these conditions are also a leading unmet health need among the priority health conditions surveyed. Specifically, among residents who reported needing treatment for high blood pressure/high cholesterol, approximately one in ten did not receive it (Figure 2).

7. **Maternal health complications**

Maternal health is a priority for the region. Among pregnant women who need/needed treatment for maternal health complications, more than half report an unmet need in the Regional CHNA community survey results. Further, across Dayton and Cincinnati MSAs in 2019, approximately six percent of pregnant women received late (care started in the third trimester) or no prenatal care during their pregnancy.[7]

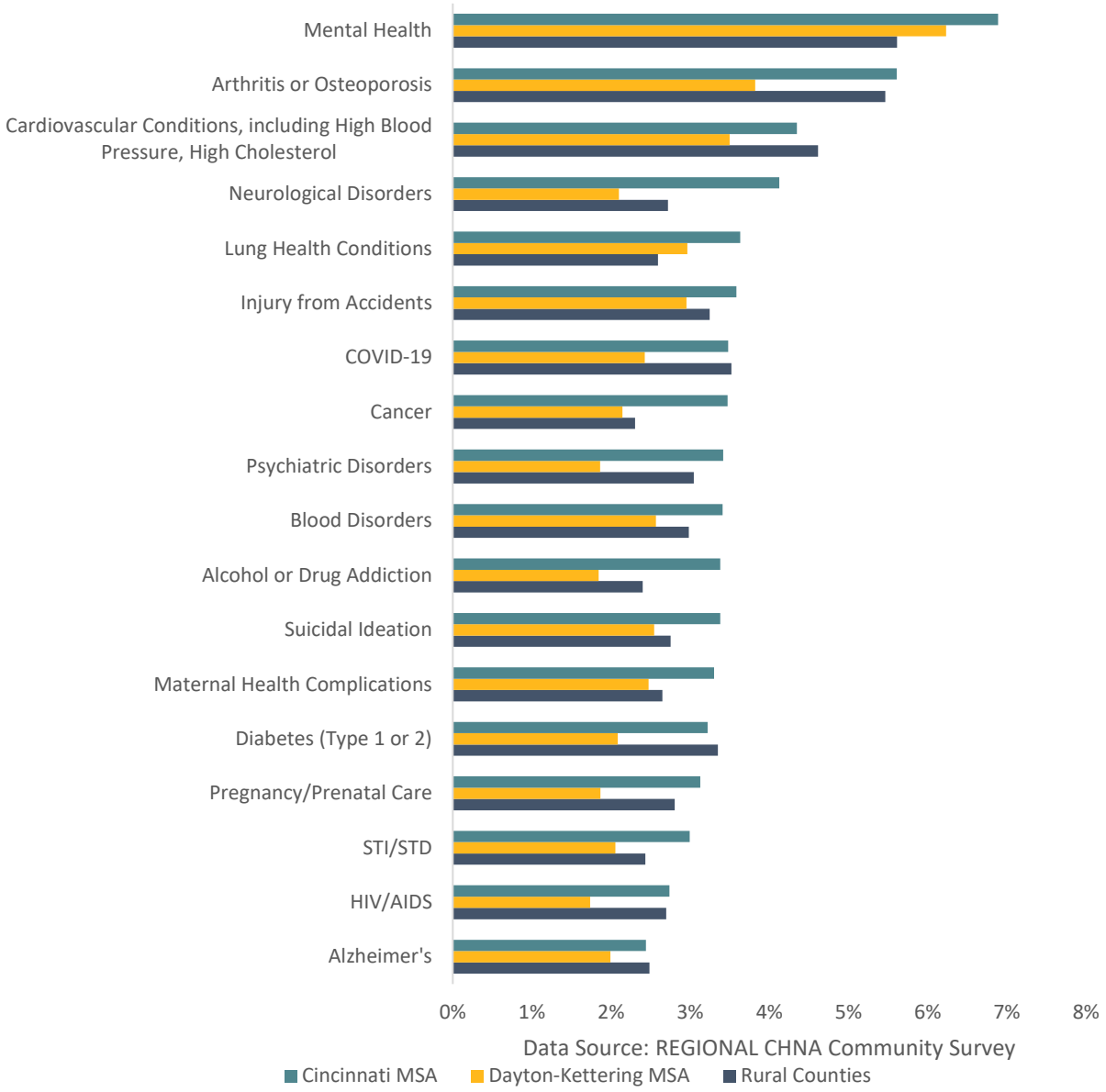
Table 1. Percent of individuals with other unmet health needs.
*What **other** health conditions did you have and need treatment for but did not get in the past 12 months?*

Other Health Condition	Cincinnati MSA (n = 4,415)	Dayton-Kettering MSA (n = 2,543)	Rural Counties (n = 1,363)
Vision concerns	23%	22%	23%
Dental concerns	20%	17%	17%
Allergies	20%	16%	15%
Migraines	9%	7%	8%
Autoimmune disease	6%	5%	5%
Men's reproductive health concerns (not cancer)	2%	3%	2%
Women's reproductive health concerns (not cancer)	3%	4%	3%
Another	3%	2%	3%
Data Source: Regional CHNA community survey			

[7] https://wonder.cdc.gov/wonder/help/DataExport.html#Excel; estimates are limited to counties with sufficient data needed for CDC to calculate reliable estimates. These counties include: Boone, Kenton, Butler, Clermont, Hamilton, Warren, Clark, Greene, Miami, and Montgomery.

Figure 2. Unmet Need for Health Conditions

% of individuals who self-reported needing treatment for this condition but did not receive it in the past year



When asked in focus groups what healthcare services they need most in their communities, community members across the region said, “dental, mental health, and prevention.”

Underserved Populations

There is a myriad of factors that can explain why individuals have unmet health needs (defined as needing treatment for a condition and not receiving it), ranging from individual factors (e.g., choosing not to seek out health care due to the assumption symptoms will improve on their own), family/personal responsibilities (e.g., prioritizing caregiving responsibilities over one's own health needs), and system-level factors (e.g., lack of availability or accessibility to care). Regardless of the reason why individuals have unmet needs, understanding for whom unmet health needs are most prevalent are critical to inform targeted interventions and/or outreach efforts to ensure residents throughout the region understand when, where, and how to get treatment. The following lists for whom unmet needs are most common and the following sections will provide greater context behind the reasons why treatment is not sought.

- **Males.** Among the greatest unmet needs across the regions, males, relative to females, are significantly more likely to have unmet health needs for vision concerns (1.2 times as likely),[8] dental concerns (1.3 times as likely),[9] and mental health (2.2 times as likely).[10]
- **Black, Multiracial, Asian, and American Indian/Alaskan Native.** Among the greatest unmet needs across the regions, Black/African American individuals, relative to White individuals, are significantly more likely to have unmet health needs for dental (1.3 times as likely)[11] and allergy-related concerns (1.6 times as likely),[12] as well as mental health (1.6 times as likely).[13] Multiracial individuals were also significantly more likely to have unmet dental needs (1.5 times as likely) relative to White individuals.[14] Finally, individuals identifying as Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or another race (that is not Black, White or multiracial) relative to those identifying as White, are significantly more likely to have unmet mental health (1.8 times as likely)[15] and allergy needs (1.7 times as likely).[16]
- **Younger Individuals.** Among the greatest unmet health needs throughout the region, younger individuals[17] are significantly more likely to experience unmet needs among nearly all the

[8] The odds of having an unmet vision need for males is 1.2 times as large as it is for females ($b = .15$, $p < .05$).
[9] The odds of having an unmet dental need for males is 1.3 times as large as it is for females ($b = .24$, $p < .05$).
[10] The odds of having an unmet mental health need for males is 2.2 times as large as it is for females ($b = .80$, $p < .05$).
[11] The odds of having an unmet dental need for Black/African American individuals is 1.3 times as large as it is for White individuals ($b = .29$, $p < .05$)
[12] The odds of having an unmet allergy need for Black/African American individuals is 1.6 times as large as it is for White individuals ($b = .45$, $p < .001$)
[13] Greater unmet mental health needs for Black/African American individuals mainly derived from qualitative data collection. The logistic regression results were not statistically significant at $p < .05$, though the effect size, odds ratio, for having an unmet mental health need was rather sizeable for Black individuals relative to White individuals (odds were 1.6 times as large; $b = .47$, $p = .059$).
[14] The odds of having an unmet dental need for Multiracial individuals is 1.5 times as large as it is for White individuals ($b = .43$, $p < .05$)
[15] The odds of having an unmet mental health need for individuals identifying as Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander, or identified as another race that is not Black, White or multiracial is 1.8 times as large as it is for White individuals ($b = .57$, $p < .05$)
[16] The odds of having an unmet allergy need for individuals identifying as Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander, or identified as another race that is not Black, White or multiracial is 1.7 times as large as it is for White individuals ($b = .51$, $p < .001$)
[17] Age is treated as a continuous variable and thus differences in unmet need based on age is interpreted as each additional year younger.

conditions, including dental,[18] allergy,[19] mental health,[20] arthritis/osteoporosis,[21] and cardiovascular-related conditions.[22] Thus, though younger individuals are less likely to need treatment for these conditions, when they do need treatment, they are also less likely to get it. (See footnotes for effect sizes.)

- **LGBTQ+ Individuals.** The exposure to chronic and pervasive stress, in line with the minority stress model,[ix] creates results in health disparities among LGBTQ+ individuals when compared to heterosexual, cisgender individuals (Caceres 2020).[x] The health disparity among LGBTQ+ individuals has primarily been studied in relationship to cardiovascular disease and mental health, with research concluding that rates of occurrence are higher in both cases (Gonzales 2017; Merschel 2020).[xi] Certain health conditions are found to be more prevalent among LGBTQ+ adults including high blood pressure and obesity.[xii] Because LGBTQ+ individuals report high levels of discrimination when accessing health care (between 50-70% depending on sexual orientation and gender identity), they are more apt to "delay primary or preventative care" and display mistrust in health care.[xiii]
- **Maternal Age Women.** Unmet needs for maternal age women highlight racial and ethnic discrepancies in health care. In Dayton and Cincinnati MSAs, individuals who are Hispanic as well as individuals who are Black have lower rates of receiving prenatal care during the first trimester, with first trimester prenatal care rates up to 19% lower for these individuals relative to other populations in these regions.[23] Overall, rates of pre-pregnancy obesity, as well as chronic illness during pregnancy including diabetes and hypertension, have all increased by an average of two percent (Cradle Cincinnati 2020). Other conditions such as drug exposure, postpartum depression, unintentional pregnancies, and those with an underweight pre-pregnancy body mass index have all decreased in recent years (Cradle Cincinnati 2020).
- **Veterans and Active Military.** Active military, relative to non-active military, are significantly more likely to have unmet mental health (2.5 times as likely),[24] arthritis/osteoporosis (2.8 times as likely),[25] and cardiovascular-related needs (2.7 times as likely).[26] Further, veterans, relative to non-veterans, are significantly more likely to have unmet mental health needs (2.3 times as likely).[27]

[18] For each additional year increase in age, the odds of having an unmet dental need are .7% less (b = -.007, p < .05). Thus, the odds of having an unmet need for an individual aged 55 are .7% less relative to an individual aged 54; the odds of having an unmet need for an individual aged 55 are 6.4% less than an individual aged 45.
[19] For each additional year increase in age, the odds of having an unmet allergy need are 1.6% less (b = -.02, p < .001).
[20] For each additional year increase in age, the odds of having an unmet mental health need are 3.0% less (b = -.03, p < .001).
[21] For each additional year increase in age, the odds of having an unmet arthritis/osteoporosis need are 4.5% less (b = -.05, p < .001).
[22] For each additional year increase in age, the odds of having an unmet cardiovascular need are 7.4% less (b = -.08, p < .001).
[23] https://wonder.cdc.gov/wonder/help/DataExport.html#Excel; estimates are limited to counties with sufficient data needed for CDC to calculate reliable estimates. These counties include: Boone, Kenton, Butler, Clermont, Hamilton, Warren, Clark, Greene, Miami, and Montgomery.
[24] The odds of having an unmet mental health need for active military is 2.5 times as large as it is for non-active military (b = .90, p < .01)
[25] The odds of having an unmet arthritis/osteoporosis need for active military is 2.8 times as large as it is for non-active military (b = 1.01, p < .05)
[26] The odds of having an unmet cardiovascular need for active military is 2.7 times as large as it is for non-active military (b = .98, p < .01)
[27] The odds of having an unmet mental health need for veterans is 2.3 times as large as it is for non-veterans (b = .82, p < .001)

- **Individuals with Disabilities.** Individuals with disabilities, relative to those without disabilities, are significantly more likely to have unmet vision (1.7 times as likely),[28] dental (1.7 times as likely),[29] and allergy needs (1.4 times as likely).[30]
- **Caregivers of Individuals with Disabilities.** Individuals caring for others with a disability are significantly more likely to have unmet needs for nearly all of the greatest unmet needs in the region (except cardiovascular-related), including mental health (1.5 times as likely),[31] dental (1.7 times as likely),[32] vision (1.5 times as likely),[33] allergy (1.2 times as likely),[34] and arthritis/osteoporosis (2.1 times as likely).[35]
- **Individuals without Private Insurance.** Individuals without private insurance (those not insured and those publicly insured) are significantly more likely to have unmet mental health (.6 times as likely),[36] dental (.7 times as likely),[37] and cardiovascular-related needs (.6 times as likely),[38] relative to privately insured individuals.
- **Individuals with Lower Educational Attainment.** Individuals with lower educational attainment are significantly more likely to have unmet vision,[39] dental,[40] and cardiovascular needs.[41]
- **Women with past traumas** of physical abuse and/or sex trafficking identified a need for chiropractic care but the cost can be too high, the care is not often covered by insurance, and/or the service is not accessible from shelters or group homes.

[28] The odds of having an unmet vision need for individuals with disabilities is 1.7 times as large as it is for those without disabilities (b = .52, p < .001)

[29] The odds of having an unmet dental need for individuals with disabilities is 1.7 times as large as it is for those without disabilities (b = .53, p < .001)

[30] The odds of having an unmet allergy need for individuals with disabilities is 1.4 times as large as it is for those without disabilities (b = .30, p < .001)

[31] The odds of having an unmet mental health need for caregivers of individuals with disabilities is 1.5 times as large as it is for those who are not caregivers (b = .40, p < .01)

[32] The odds of having an unmet dental need for caregivers of individuals with disabilities is 1.7 times as large as it is for those who are not caregivers (b = .53, p < .001)

[33] The odds of having an unmet vision need for caregivers of individuals with disabilities is 1.5 times as large as it is for those who are not caregivers (b = .44, p < .001)

[34] The odds of having an unmet allergy need for caregivers of individuals with disabilities is 1.2 times as large as it is for those who are not caregivers (b = .18, p < .05)

[35] The odds of having an unmet arthritis/osteoporosis need for caregivers of individuals with disabilities is 2.1 times as large as it is for those who are not caregivers (b = .74, p < .001)

[36] The odds of having an unmet mental health need for privately insured is .6 times as large (i.e., less likely) as it is for those who are not privately insured (b = -.51, p < .001)

[37] The odds of having an unmet dental need for privately insured is .7 times as large (i.e., less likely) as it is for those who are not privately insured (b = -.34, p < .001)

[38] The odds of having an unmet cardiovascular need for privately insured is .6 times as large (i.e., less likely) as it is for those who are not privately insured (b = -.51, p < .01)

[39] The odds of having an unmet vision need for those with a college degree and those with a graduate degree are .81, and .76 times as large (i.e., less likely), respectively, as it is for those with only a high school degree (b = -.22, p < .05; b = -.28, p < .05, respectively).

[40] The odds of having an unmet dental need for those with a college degree and those with a graduate degree are .71, and .59 times as large (i.e., less likely), respectively, as it is for those with only a high school degree (b = -.33, p < .05; b = -.53, p < .05, respectively).

[41] The odds of having an unmet cardiovascular need for those with a graduate degree are .46 times as large (i.e., less likely) as it is for those with only a high school degree (b = -.77, p < .05).

- **Incarcerated community members and community members transitioning** back into the community identified a need for greater access to longer term mental health services, particularly coordination of services.
- **Community members in addiction recovery** reported needing dental repair and/or dentures.
- **Older adults and youth** need prevention services in both mental health and addiction.

Themes from qualitative, secondary, and survey data highlight specific populations within the region most likely to have unmet needs. All differences reported below (except for qualitative data summaries) are after accounting for all other demographic variables listed in Table 2.

Disparity	Vision	Dental	Allergy-Related	Mental Health	Arthritis/ Osteoporosis	Cardio-vascular	Maternal Complications
Table 2. Populations most likely to have unmet needs among the largest unmet health conditions in the regions.							
Males	X	X		X			
Younger individuals		X	X	X	X	X	
Older individuals	X						
Black individuals		X	X	*			*
Multiracial individuals		X					
Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or another race that is not White or Black or Multiracial			X	X			
Active military				X	X	X	
Military veterans				X			
Individuals without private insurance		X		X		X	
Individuals with disabilities	X	X	X				
Individuals with lower education	X	X				X	

Disparity	Table 2. Populations most likely to have unmet needs among the largest unmet health conditions in the regions.						
	Vision	Dental	Allergy-Related	Mental Health	Arthritis/ Osteoporosis	Cardio-vascular	Maternal Complications
Individuals caring for a disabled individual	X	X	X	X	X		
LGBTQ+ individuals				*		*	
Cincinnati MSA			X				
Dayton MSA						X	

Data source: Regional CHNA community survey

Note. "X" indicates significant, negative effects (i.e., greater likelihood of having an unmet need relative to the reference, such as males compared to females or Black/African American compared to White) from logistic regression analyses. Each unmet health condition was a separate analysis with the same predictors across all models: gender, age, race, ethnicity, education, military/veteran status, disability status, private insurance, sexual orientation, and caregiver of an individual with a disability. Thus, all negative effects are after controlling for all other variables in the model. "*" indicates an additional theme gathered from interviews/focus groups or secondary data, not effects from regression analyses.

Places With Unmet Needs

Differences between subregions were not very common with respect to unmet health needs (i.e., after accounting for individual demographic differences, there were often not meaningful differences by subregion). However, two themes emerged.

- Relative to Dayton MSA, individuals in Cincinnati MSA are significantly more likely to have unmet allergy needs.[42]
- Relative to individuals living in Cincinnati MSA, individuals living in Dayton MSA are significantly more likely to have unmet cardiovascular-related needs.[43]

[42] The odds of having an unmet allergy need for individuals living in Cincinnati MSA are 1.7 times as large as it is for those living in Dayton MSA, adjusting for age, sex, race, ethnicity, education level, military status, disability status, and caring for a disabled person. ($b = .29$, $p < .001$).

[43] The odds of having an unmet cardiovascular need for individuals living in Cincinnati MSA are .66 times as large (i.e., less likely) as it is for those living in Dayton MSA, adjusting for age, sex, race, ethnicity, education level, military status, private insurance or lack thereof, caring for a disabled person, and sexual orientation. ($b = -.42$, $p < .05$).

6. SDOH Driving Health in the Region

Only a part of an individual's health status depends on their genetics and behaviors. Social Determinants of Health (SDOH) are the structural and social conditions that affect a wide range of health, functioning, and quality-of-life outcomes and risks.[xiv] In line with Healthy People 2030 SDOH framework, five categories of Social Determinants of Health were identified as key drivers of health in this Region (not in a rank order):

- Economic stability
- Neighborhood and built environment
- Education access and quality
- Social and community connectiveness
- Healthcare access and quality

As a driving factor of health, **strategies to improve health at the community level will need to address all SDOH.**

Different SDOH impact different health conditions (Table 3a) and SDOH are experienced differently depending on specific people groups (Table 3b) and places (Table 3c) as identified through the community survey ("X") and the Healthy People 2030 Framework ("+").

Methods utilized to assess these themes are further explained in the respective SDOH sections below. It should be noted that the lack of statistical significance in survey analysis does not mean there is not a need for a particular population group; rather such a need was not detected after accounting for all other demographic variables in the models in the context of the survey sample.

Key Takeaways:

- Healthcare access and quality as a SDOH is associated with the largest number of health conditions, using national Healthy People 2030 data. Using Regional CHNA community survey data, economic stability factors are associated with the largest number of health conditions, (Table 3a).
- Regional CHNA community survey data shows that Black community members in the region are significantly more impacted (negatively) in every SDOH when compared to White community members, followed by community members who identify as Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander, or identified as another race and community members with lower levels of education, (Table 3b).
- Regional CHNA community survey data shows that community members in rural counties reported significantly lower perceptions of their neighborhood and built environment. (Table 3c).

Table 3a. Health Conditions Associated with SDOH					
	Economic Stability	Neighborhood and Built Environment	Education Access and Quality	Social and Community Connectedness	Healthcare Access and Quality
Allergy					X
Arthritis					X
Asthma		+			
Dental					X
Depression			+		
Diabetes	+		+		
Disability	+				
Heart Disease	+/X		+		X
Lung Conditions	X				X
Maternal Complications	X				
Mental Health			X	X	X
Obesity	+				
Physical Safety		+			
Vision			X	X	X
+ Data Source: Healthy People 2030 X Data Source: Regional CHNA Community Survey					

Table 3b. People Impacted Most by SDOH Disparity	Economic Stability	Neighborhood and Built Environment	Education Access and Quality	Social and Community Connectedness	Healthcare Access and Quality
Sex					
Males	X			X	X
Females			X		
Age					
Younger Individuals	X				X
Older Adults	X	X			
Race and Ethnicity					
Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or another race that is not White or Black or Multiracial	X	X	X		X
Black Individuals	X	X	X	X	X
Multiracial Individuals	X			X	
White					
Hispanic					
Not Hispanic		X		X	

Table 3b. People Impacted Most by SDOH Disparity	Economic Stability	Neighborhood and Built Environment	Education Access and Quality	Social and Community Connectedness	Healthcare Access and Quality
Military Status					
Active Military	X	X		X	
Military Veterans	X	X		X	
Not in Military			X		
Employment Status					
Unemployed and Not Looking for Work	X				
Disabled and Not Able to Work	X				
Working Part Time			X		
Working Full Time	X				
Specific Populations					
Individuals without children in home			X		
LGBTQ+ individuals				X	
Individuals with disabilities	X		X	X	X
Individuals with lower education	X	X	X		X
Individuals without private insurance	X			X	X
Individuals not fluent in English	X				
X Data Source: Regional CHNA Community Survey					

Table 3c. Places Impacted Most by SDOH	Economic Stability	Neighborhood and Built Environment	Education Access and Quality	Social and Community Connectedness	Healthcare Access and Quality
Cincinnati MSA	X	X		X	
Dayton MSA					
Rural Counties		X			
X Data Source: Regional CHNA Community Survey					

To provide data-driven guidance on prioritizing populations and interventions to improve health in the region, primary and secondary data from this Regional CHNA identifies:

1. the health conditions most associated with each SDOH,
2. the people most negatively impacted by each SDOH,
3. and the places in which each SDOH factors are more prevalent.

6.1 Economic Stability

According to the research conducted for The Healthy People 2030 framework, economic stability lowers health risks and can be a protective factor that lowers the impact of other social determinants of health that one might experience. Poverty, on the other hand, is linked to harsh conditions that puts health at significant risk. In this report, economic stability is measured by a scale score of how frequently (on a scale of 1 to 5, 1 being "never" and 5 being "always or almost always") individuals have had enough food, enough money to pay bills, and safe housing in the past year utilizing Regional CHNA community survey data. Additional survey and secondary data are also used to provide additional context.

Health Conditions Impacted by Low Economic Stability

Nationally, individuals living in poverty are at greater risk of chronic disease and early death. Specifically, studies show that individuals with the lowest income and education levels are at greater risk of **heart disease, diabetes, and obesity**. **Disability** is higher among poor older adults. To assess the impact of economic stability on health in the region, community members were asked the extent to which they agreed that they have:

1. Enough money to pay bills
2. Enough food to eat
3. Safe and stable housing

These three variables were turned into a scale score.[44] A higher scale score reflects greater economic stability; a lower scale score reflects lower economic stability.

Data from the Regional CHNA community survey revealed that people in the region with lower economic stability are more likely to need treatment for **heart conditions**,[45] which is consistent with the literature. Additionally, people in the region with lower economic stability are more likely to report needing treatment for **lung conditions,** (i.e., Asthma, Chronic Obstructive Pulmonary Disease [COPD], Emphysema, Chronic Bronchitis, or other similar conditions).[46] This may be somewhat explained by the COVID-19 pandemic and the higher health risk people with low economic stability face with COVID-19[xv] and lung conditions in general.[xvi] Additionally, individuals with lower economic stability were more likely to need treatment for **maternal complications** than community members with higher economic stability.

[44] Scale internal consistency (Cronbach's Alpha = .95)

[45] As economic mean scale score increases by one point, the odds of needing treatment for a heart condition decrease by 5%, adjusting for sex, age, race, ethnicity, frequency of preventive care, healthcare quality scale score, and MSA. ($b = -0.05$, $p < 0.05$)

[46] As economic mean scale score increases by one point, the odds of needing treatment for a lung condition decrease by 6%, adjusting for sex, age, race, ethnicity, MSA, frequency of preventive care, healthcare quality scale score, and education mean scale score. ($b = -0.06$, $p < 0.05$)

People Impacted by Low Economic Stability in the Region

To achieve health equity, the region needs to consider the communities and populations within those communities who are most disadvantaged and design strategies to eliminate that disparity. In doing so, the entire community can attain the highest level of health for all people.

To assess for differences in perceptions of economic stability using a demographic lens, multiple linear regression analyses were used to determine which members of the community were reporting significantly lower perceptions of economic stability compared to other community members[47] (see list below).

Disparity

Populations Reporting Significantly Lower Economic Stability than their Counterparts

- Active-duty military and Veterans relative to non-military people
- Black relative to White individuals
- Cincinnati MSA relative to Dayton MSA community members
- Disabled and not able to work, and those not employed and also not looking for work relative to full-time employment
- Individuals without private insurance relative to those with it
- Individuals who do not speak English relative to those who are fluent in it
- Individuals with a disability relative to those without a disability
- Males relative to Females
- Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or identified as another race relative to White individuals

Develop strategies to eliminate disparities so that the entire community can attain the highest level of health for all people.

[47] On average, males have an expected economic stability SDOH mean scale score 0.11 less than females, adjusting for all other predictors. (b = -0.11, p < 0.05); On average, Black individuals have an expected economic stability SDOH mean scale score 0.30 lower than White individuals, adjusting for all other predictors. (b = -0.30, p < 0.05); On average, individuals who identify as Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or another race that is not Black, White or multiracial) have an expected economic stability SDOH mean scale score 0.23 points lower than White individuals, adjusting for all other predictors. (b = -0.23, p < 0.05); On average, those living in Cincinnati MSA have expected economic stability SDOH mean scale scores 0.12 lower than those in Dayton MSA, adjusting for all other predictors. (b = -0.12, p < 0.05); On average, active military and veterans have expected economic stability SDOH mean scale scores 0.68 and 0.35 points lower than those not in the military, respectively, adjusting for all other predictors. (b = -0.68, p < 0.05), Military veteran (b = -0.35, p < 0.05); On average, those without private insurance have expected economic stability SDOH mean scale scores 0.20 points lower than those with private insurance, adjusting for all other predictors. (b = -0.20, p < 0.05); On average, those who speak no English have expected economic stability SDOH mean scale scores 0.54 points lower than those who speak English fluently, adjusting for all other predictors. (b = -.54, p < 0.05); On average, those who are disabled have expected economic stability mean scale scores 0.14 lower than those who are not disabled, adjusting for all other predictors. (b = -.14, p < 0.05).

From this list of population groups reporting lower economic stability, the community can begin prioritizing strategies that will disrupt or overcome the disparities these community members face. In doing so, collective efforts will have the biggest impact on overall economic stability and improved health.

Food Security with Specific Community Members

As stated above, food security is part of the economic stability equation. In the primary analysis for this Regional CHNA, food security was specifically defined as having enough money to buy food and data were collected from the Regional CHNA community survey. A more complete definition of food security is having access to enough nutritionally adequate food for an active, healthy life for all household members. Adequate nutrition is not only needed to be healthy, but it is also critical to the success of treatment plans. In focus groups and interviews, community members spoke about food in several different ways. When asked what it means to be healthy, **young adults**, **older adults, parents** and **Black and Hispanic** youth were the community members that most often identified having enough healthy food as a key part of being healthy. **Youth and young adults** in particular spoke to the challenges of overcoming habits of eating junk food or meals of lower nutritional quality they learned throughout childhood. According to community members, primary barriers to overcoming unhealthy eating habits include perceptions that unhealthy foods/foods with less nutritional value are commonly the most affordable to buy, available to find, and convenient to prepare; challenges associated with overcoming taste preferences of high fat/high sugar foods formed as a child/adolescent; and community members' limited cooking skills and knowledge.

"For some people [poor nutrition and health] is a choice and for others it's barriers. In some communities there are food deserts or people who can't take a long lunch to walk or know that they even should. You have to think how you are delivering information on healthy eating and living because people won't hear it the same way. My friend group is super healthy and we influence each other." - Black Young Adult

Parents in focus groups are concerned that **students** are not eating healthy food even in school, sometimes due to access to healthy foods and sometimes due to students' taste preferences. Teachers and school-based healthcare providers also spoke about children being the most impacted by food insecurity and to the challenges their schools can have getting food to children in need due to stigma of receiving food assistance: "We try to provide meals over the weekends and food is sent home in a big brown bag but the kids would rather not be labeled and go hungry than walk home with a bag. We started taking food to the houses so the kids would get the food they need." Another school-based provider explained, "We started a food pantry at our school and we delivered groceries to 80 different families. When we stopped delivering and told them they could come to the school to pick up the food we only had two families show up to pick up food; the others didn't want to come."

Community members identified a need for improving the quality of food provided in hospitals. In particular, opportunities were identified to improve hospital meals for **diabetic patients, children, older adults, and new mothers**. Asian and African community members recommend looking at postnatal food traditions of their cultures for ideas of how new mothers can be better supported with nutrition as they wait to return home from the hospital.

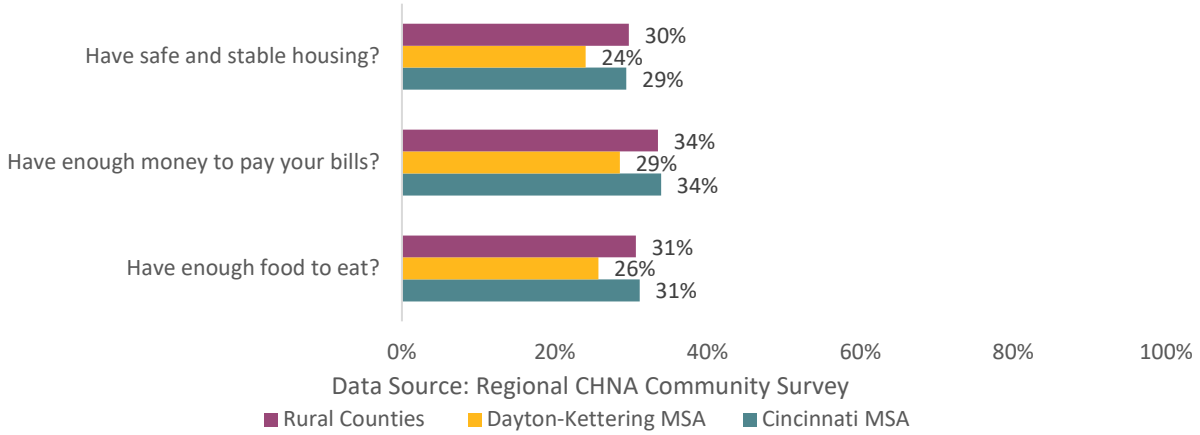
Healthy eating habits are an important element of food security. Community members expressed a sentiment that while they know making nutritional/diet changes require self-discipline of their own, they also identified a need for providers to provide more strategies or supports for community members to be successful with making diet changes. Community members identified a desire to make diet changes before turning to medications, when possible, but that they needed help to break negative eating habits.

Places with Low Economic Stability in the Region

Economic instability is present in communities across the region. Approximately 3 out of 10 community members in the Regional CHNA community survey self-reported having low economic stability. From the Regional CHNA community survey, low economic stability is most prevalent in Rural Counties and the Cincinnati MSA (Figure 3).[48] However, Montgomery County in the Dayton MSA was among the top three counties in the region for food insecurity in 2018 data from Feeding America. Within each region, there may be trends in economic stability factors that can help tailor strategies in specific parts of the region.

Figure 3. Economic Stability

How often do you experience these factors?
% Never or Almost Never to Sometimes



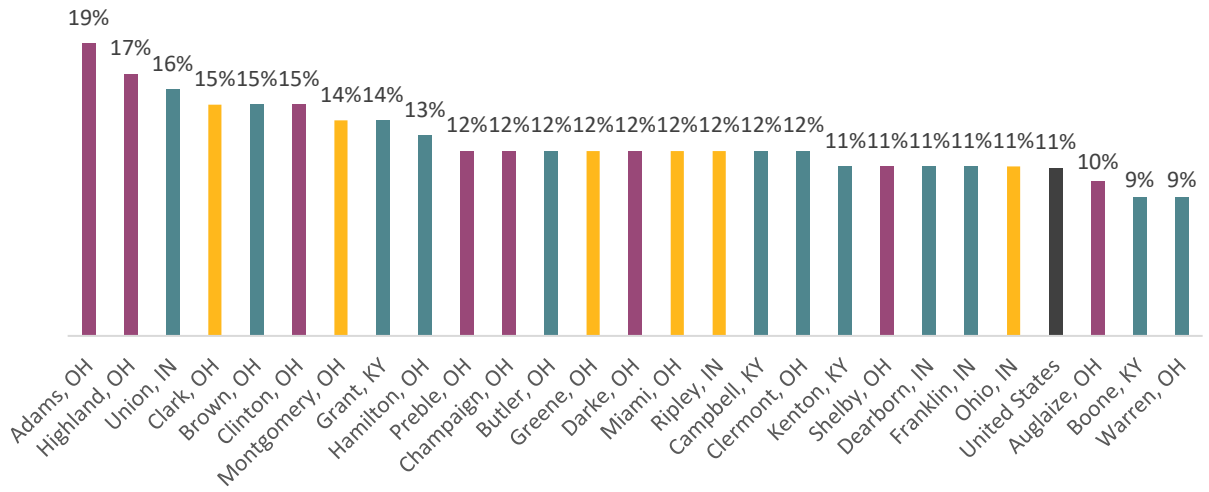
Places with High Rates of Food Insecurity

Secondary data was used to identify specific counties that may benefit from prioritized intervention. Figure 4 shows food insecurity by the percent of the population that lacked access to enough food or had limited or uncertain availability of nutritionally adequate foods for all household members in 2018-2019. The data show that Adams and Highland counties in Ohio have the largest percentage of the population who are food insecure, both of which are rural counties. Boone County, KY and Warren County, OH have the lowest percentage of food insecure households which are both in

[48] Figure 3 uses weighted survey data to best estimate what the results would look like at a population level in each of the three areas of interest.

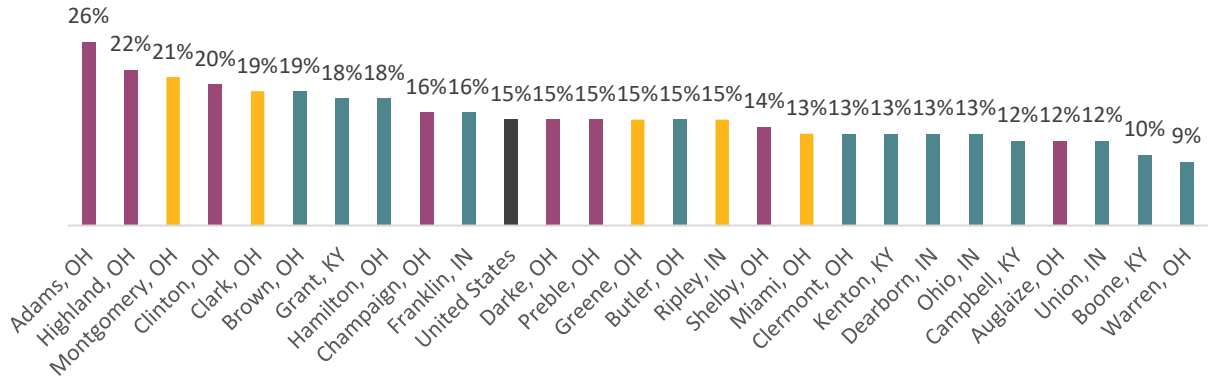
the Cincinnati MSA. Child food insecurity is particularly high in Adams County, OH with more than 1 in 4 children living in households that experienced food insecurity (Figure 5).[49] In the United States, an estimated 10.5% of households were food insecure in 2019 which is a decrease from 2018 when an estimated 11.1% of households were food insecure.[xvii]

Figure 4. Percent of County Population That is Food Insecure



Data Source: Feeding America's Map the Meal Gap 2021 (County Data Table 2019)
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

Figure 5. Percent of Child Population in the County That is Food Insecure

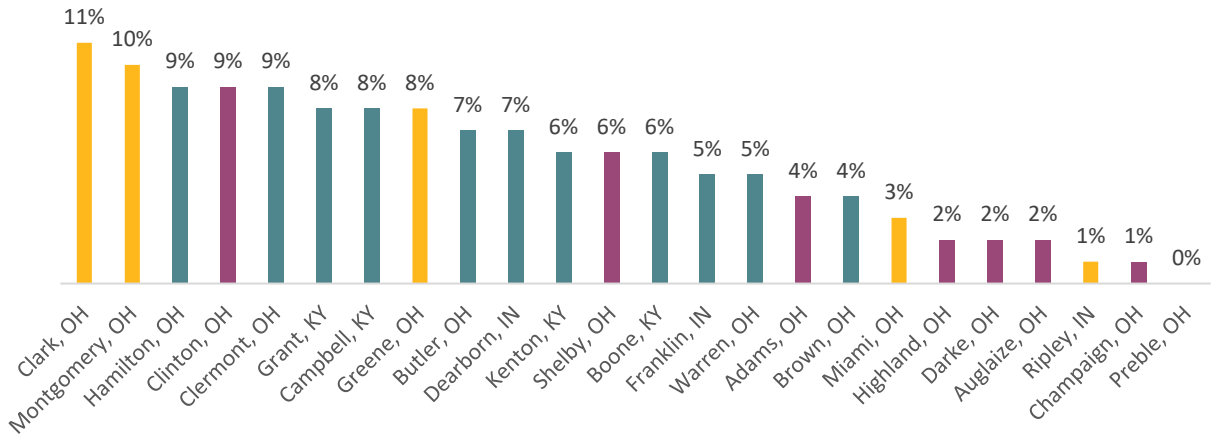


Data Source: Feeding America's Map the Meal Gap 2021 (County Data Table 2019)
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

[49] Gundersen, C., Strayer, M., Dewey, A., Hake, M., & Engelhard, E. (2021). Map the Meal Gap 2021: An Analysis of County and Congressional District Food Insecurity and County Food Cost in the United States in 2019. Feeding America.

County Health Rankings and Roadmaps also provides county-level data on the percent of the population that has limited access to healthy foods by estimating the percentage of the population that is low income and does not live close to a grocery store.[50] Figure 6 shows the region's access to healthy food, with Clark, OH and Montgomery, OH having 11% and 10%, respectively, of their population experiencing limited access to healthy food.

Figure 6. Percent of County Population That Have Limited Access to Healthy Foods

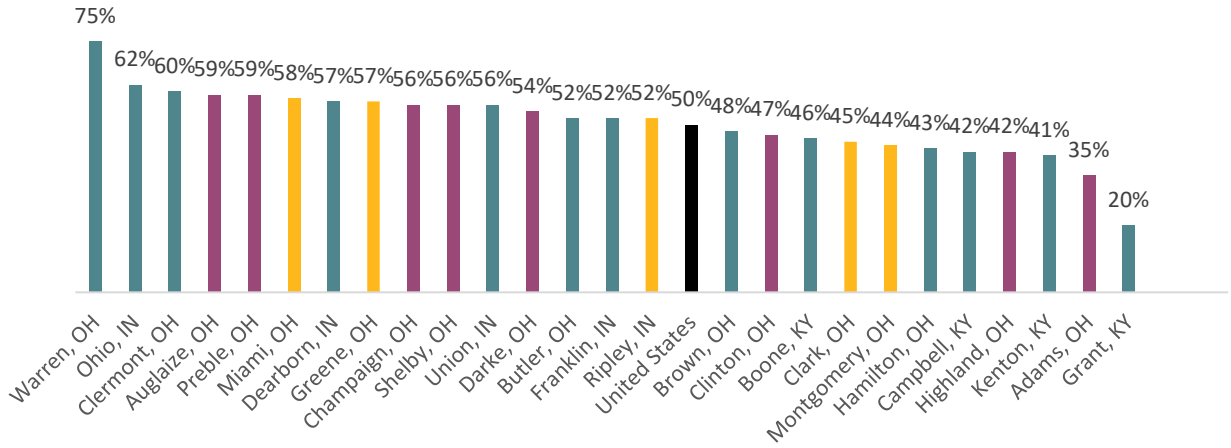


Data Source: County Health Rankings Food Environment Index, 2015
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

When it comes to food security, the Supplemental Nutrition Assistance Program (SNAP), provides some relief for many families. However, according to Feeding America's "Map the Meal Gap," in each county of the region there are significant percentages of the population who are food insecure but do not qualify for SNAP. Warren County has the highest percentage of the population that is food insecure, but not eligible for SNAP at 75%, compared to Grant County, the lowest percentage in the region, at 20% (Figure 7). It is important to note that SNAP gross income eligibility threshold in Ohio and Indiana is 130% of the poverty line and is 200% in Kentucky.[51]

[50] As a factor of the Food Environment Index (https://www.countyhealthrankings.org/app/ohio/2019/measure/factors/133/data) Low Income is defined as having an annual family income of less than or equal to 200% of the federal poverty threshold for the family size. Living close to a grocery store is defined differently in rural and nonrural areas; in rural areas, it means living less than 10 miles from a grocery store whereas in nonrural areas, it means less than 1 mile.
[51] Ohio and Indiana offer some nutrition programs for persons earning between 130% and 185% of the poverty line, such as reduced-price National School Lunch Program and/or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

Figure 7. Percent of County Population That is Food Insecure But Not Eligible for SNAP



Data Source: Map the Meal Gap, 2019

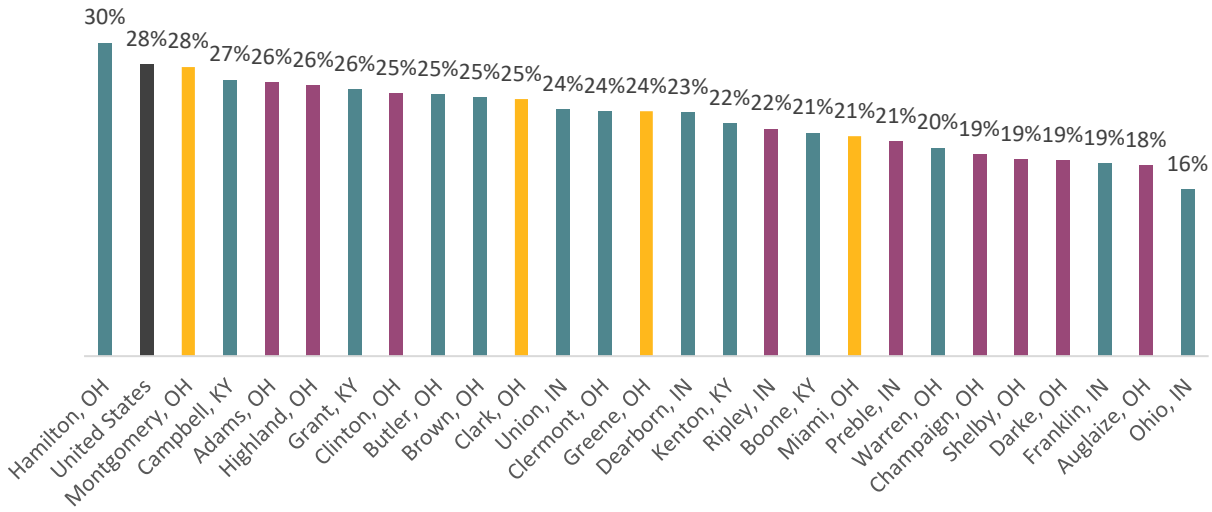
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

In comparing counties in Figures 4, 5, 6, and 7, each MSA in the region has counties that show high and low food security across measures. This highlights an opportunity for a regional approach to addressing food insecurity. However, Adams OH, Highland OH, Brown OH, and Clinton OH all rank above the average (see Table C1 in Appendix C) in the food security figures. This may suggest a unique opportunity in these counties for economic stability interventions to improve health outcomes. Further, counties in Cincinnati MSA fall on both the high and low ends of economic stability suggesting a wider economic gap and a need to target interventions based on micro conditions.

Places with High Rates of Housing Instability

Being housing cost burdened is paying more than 30% of income on housing costs. In Census data, economic instability, as defined by the percent of total households who are housing cost burdened, is most prevalent in Hamilton, Campbell, Grant, and Butler Counties in Cincinnati MSA and least prevalent in Ohio County, IN (also within Cincinnati MSA) and Auglaize County, OH which is a rural county (Figure 8).

Figure 8. Percent of Households that are Housing Cost Burdened



Data Source: American Community Survey, 5-Year Estimates, 2019.
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

6.2 Neighborhood and Built Environment

Health Conditions Impacted by Low Perceptions of the Neighborhood and Built Environment

Environmental conditions include unclean water and healthy air, exposure to toxins including lead and secondhand smoke; safety including neighborhood violence; unsafe roadways, limited access to spacing for physical activity, and limited access to broadband or transportation. These conditions are shown to impact health and safety including **asthma, and physical safety** (The Healthy People 2030 Framework).

To assess the impact of the neighborhood and built environment on health in the region, community members were asked the extent to which they agreed that they have:

- Stable internet
- Stable phone
- Clean water
- Clean air
- Access to parks
- Reliable transportation

These six variables were turned into a scale score (while violence in the neighborhood is part of this SDOH the item was not included in the scale because it did not reflect internal consistency with other items).[52] A higher scale score reflects higher perceptions of the neighborhood and built environment; a lower scale score reflects lower perceptions of the neighborhood and built environment.

People with Low Neighborhood and Built Environment Stability

To understand which communities are most disadvantaged in the area of neighborhood and built environment stability, regression analyses, as described in the Economic Stability section above, were conducted. The Regional CHNA data show that the following individuals are significantly more likely to report low neighborhood and built environment stability.[53] Strategies designed to eliminate the disparity for these groups will be more effective at improving health equity.

[52] Scale internal consistency (Cronbach's Alpha = .93)

[53] On average, Black individuals have an environment SDOH mean scale score 0.30 points lower than White individuals. (b = -0.30, p < 0.001); On average, Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander, or identified as another race that is not Black, White or multiracial individuals have an environment SDOH mean scale score 0.17 points lower than White individuals. (b = -0.17, p < 0.05); On average, those who are not Hispanic have an environment SDOH mean scale score 0.19 lower than those who are Hispanic. (b = -0.19, p < 0.05); On average, those with higher education have higher expected environment SDOH mean scale scores than high school graduates. Some college (b = 0.13, p < 0.001), Bachelor's degree (b = 0.41, p < 0.001), Graduate degree or higher (b = 0.64, p < 0.001); On average, active military and veterans have environment SDOH mean scale scores 0.49 (active) and 0.20 (veteran) points lower than those not involved in the military. (b = -0.49, p < 0.001), (b = -0.20, p < 0.05).

Disparity

Populations Reporting Significantly Lower Neighborhood and Built Environment Stability than their Counterparts

- Black relative to White individuals
- Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or identified as another race relative to White individuals
- Those who are not Hispanic relative to Hispanic individuals
- Older individuals relative to younger individuals
- Individuals with a high school degree relative to those with more than a high school degree
- Individuals living in Cincinnati MSA relative to Dayton MSA
- Individuals living in Rural counties relative to Cincinnati MSA
- Active military and veterans relative to those with no military involvement

The importance of phone and internet access was brought to the forefront of daily life during the COVID-19 pandemic. Not only was internet access important for education and employment, but also for telehealth. Access to technology is so important that legislation has been passed in the digital infrastructure bill to expand access and availability. According to recent Pew Research Center, even though more people at lower income levels have adopted technology into their daily lives, the disparity in digital access persists among **low-income households**.[xviii]

Transportation was also identified as a significant barrier in focus groups and interviews. Transportation is a long-standing barrier. Based on qualitative data, it is specifically a barrier for **older adults**, **families with children, people with disabilities** and anyone needing to access care from multiple locations. The transportation barrier causes people to be late or miss appointments. In interviews, it was identified that many clinics have policies related to missed appointments to offset costs to the provider. However, the unintended effect is that families "bounce" between providers, thus undermining any opportunity for consistent care. Without consistent medical care, issues go undetected and opportunities to address them are missed. The burden to identify concerns falls to other professionals like teachers and daycare professionals. However, when these individuals report issues, it can frighten parents and push them further away. Transportation barriers can also limit people's ability to get affordable medications or to see the provider of their choice. A provider of choice or a pharmacy with the most affordable medication may be outside of a community member's ability to travel.

Places with Low Perceptions of their Neighborhood and Built Environment

The quality of neighborhoods is a product of structural racism and impacts individuals' health and access to health care. From the Regional CHNA community survey, low perceptions of the neighborhood and built environment is most prevalent **in Rural Counties and the Cincinnati MSA** (Figure 9) where about 5 or 6 in 10 community members have low perceptions. About 3 in 10 community members report never to almost never or sometimes having reliable transportation (Figure 10). Counties within each region have their own trends, highlighting the need to tailor regional strategies.

Figure 9. Neighborhood and Built Environment

To what extent do you experience the following in your household or community?
% Very little to Some

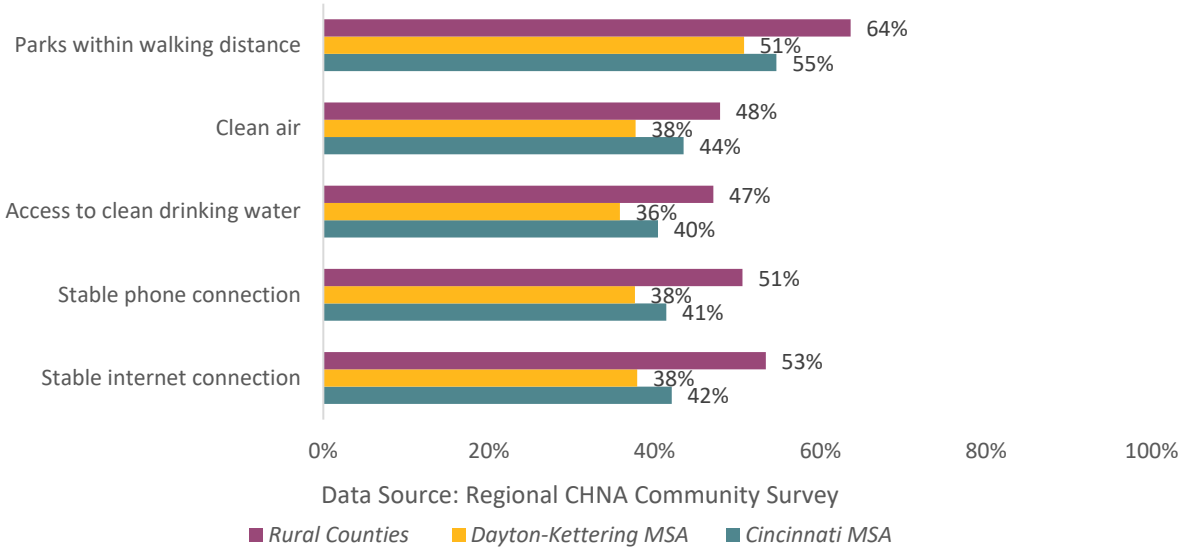
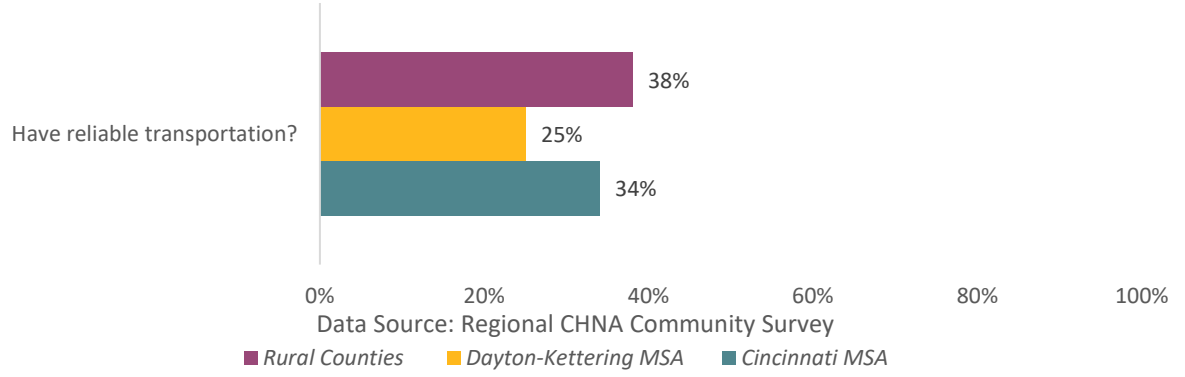


Figure 10. Neighborhood and Built Environment

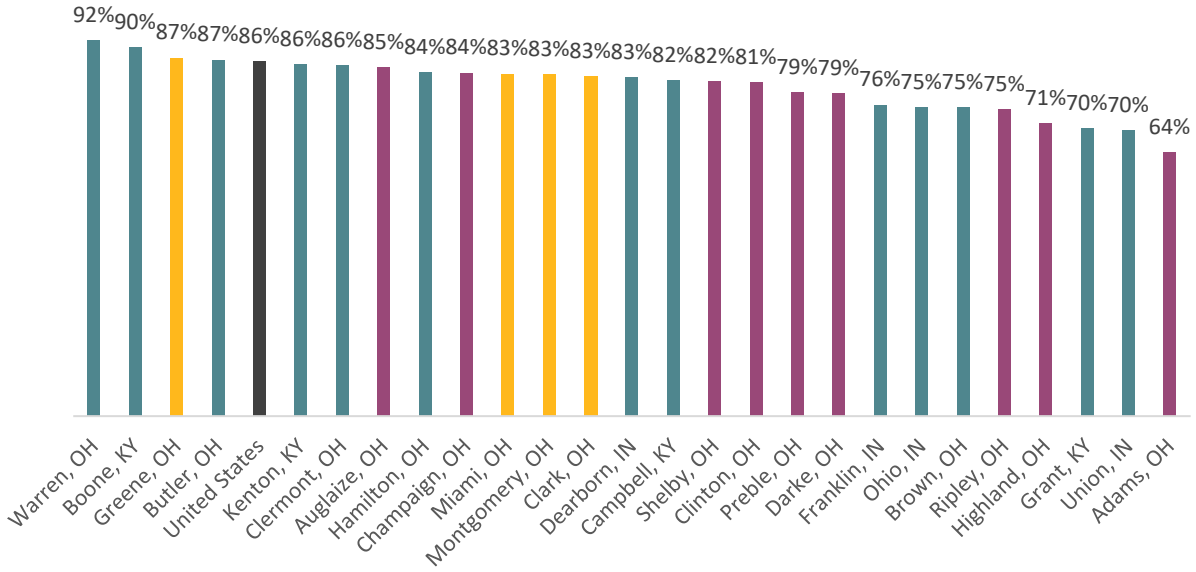
How often do you experience these factors?
% Never or Almost Never to Sometimes



Places with Low Internet Connection

Using data from the American Community Survey 5-Year Estimates for 2015-2019, data shows the percentage of households with broadband internet connection. As shown in Figure 11, the range of internet access is from 92% of households in Warren, OH to 64% of households in Adams, OH. On the low end of the spectrum, we see a quarter or more of the community members living in Ohio, Brown, Ripley, Highland, and Grant, Union and Adams counties do not have access to the internet.

Figure 11. Percent of Households with Broadband Access

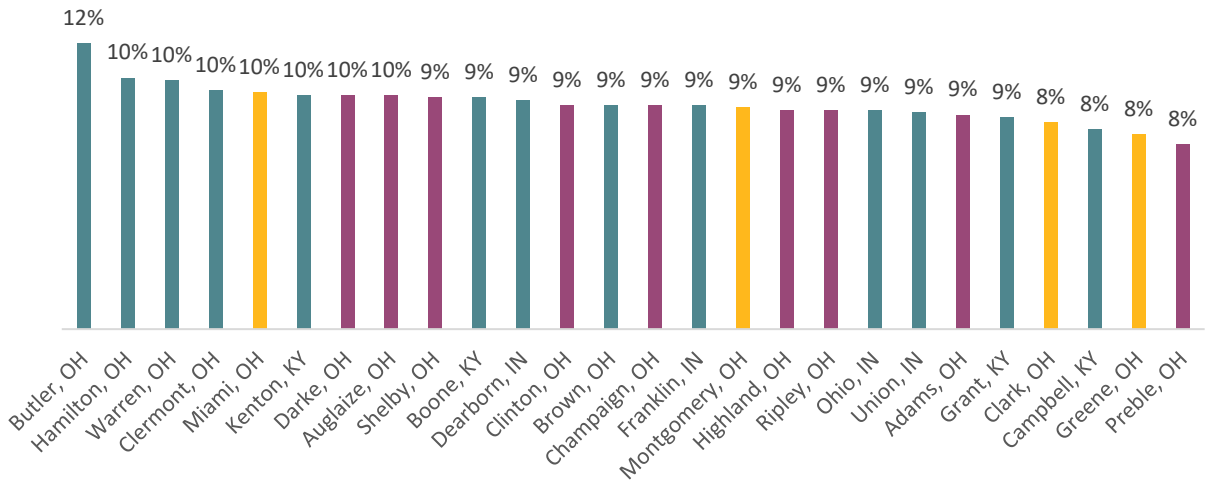


Data Source: American Community Survey, 5-Year Estimates 2015-2019
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

Places with Daily Exposure to Particulate Matter (Unhealthy Air Quality)

In regard to clean air, the Community Health Rankings also shows average daily density of fine particulate matter in micrograms per cubic meter (PM2.5) published by the Environmental Public Health Tracking Network. PM2.5 refers to tiny particles in the air that contribute to haziness. Because they are so small, they can bypass protective factors in your skin and face and lodge deep in the respiratory tract. Daily exposure to PM2.5 particles is associated with poor lung function (asthma, bronchitis, cancer), heart disease, and allergy-like irritation to the eyes, nose, throat, etc. This is particularly problematic for those with pre-existing conditions and vulnerable populations like children and older adults. As shown in Figure 12, 11.6% of community members are exposed daily to unhealthy air in Butler County. This supports the trend that air quality tends to be better in rural areas and worse in population dense areas such as Butler County and Hamilton County and communities with a larger presence of manufacturing.

Figure 12. Average Daily Exposure to Harmful Particulate Matter (PM2.5)



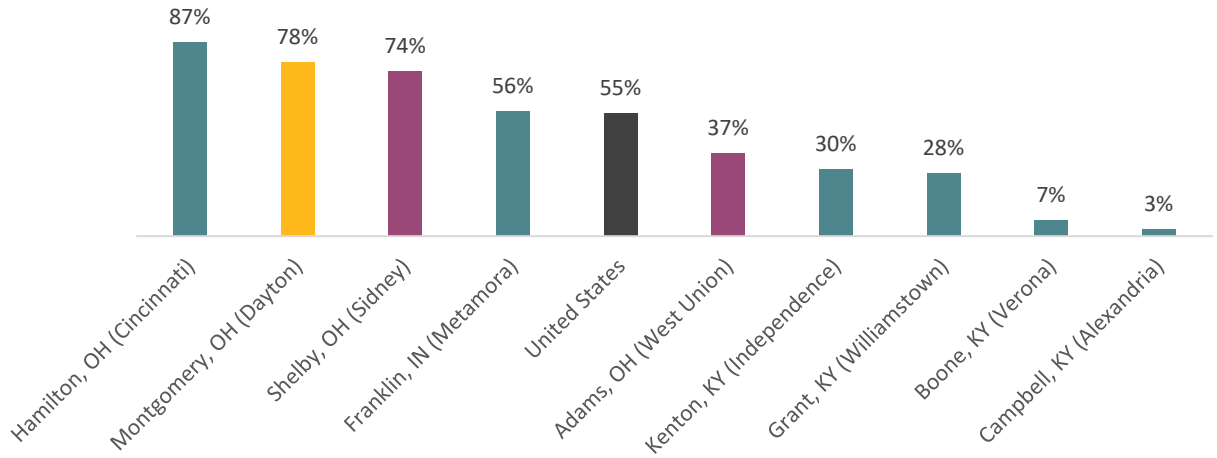
Data Source: Environmental Public Health Tracking Network 2016
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

Places with Low Access to Parks

Access to parks within walking distance is a challenge in many communities. As shown in Figure 13, in the region's most populous cities, about 8 in 10 households live within a 10-minute walk to a park based on 2020 data. At the other end of the spectrum, not even 1 in 10 households live within a 10-minute walk to a park (in Boone and Campbell KY). This measure does not factor in perspectives of safety and quality of the park.

"In China and for older people, if you walk every night after dinner you will live to be 99. With the urban lifestyle in USA and modern technology we have excessive nutrition. We need to exercise more, be more socially active, and more relationally connected after dinner. But, if there are not many walkways or older adults don't feel safe walking in their neighborhood, then that's a problem." - Chinese-American Community Member

Figure 13. Percent of Households Within 10-Minute Walk to Park by County and Largest City



Data Source: The Trust for Public Land (2020)

Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

Places with Higher Rates of Violence

Community violence is an important part of the discussion when talking about the impact of the neighborhood and built environment on health. Cincinnati and Dayton MSAs have violent crime rates of 312.3 and 282.1 respectively, much higher than that of rural counties at 88.1 (per 100,000; Figure C1 in Appendix C). In addition to these trends, counties with higher populations, such as Montgomery County and Hamilton County, often have more segregation (Figure C2 in Appendix C) and higher rates of violent crime. Hamilton County had a violent crime rate of 468.5, much higher than the state average of 292.6. On the other hand, counties with smaller populations such as Ripley County and Franklin County, IN have very low violent crime rates of 29.8 and 36.3, respectively. Nationally, the total violent crime rate is 366.7.

6.3 Education Access and Quality

Health Conditions Impacted by Low Education Access and Quality

Getting a good education is crucial for gaining employment and a decent paying job. Education also significantly predicts one's ability to earn a wage that is above poverty levels. Children from under-performing schools and those who are bullied or experiencing other social difficulties are more likely to struggle in school and less likely to go to college. The risk for **depression, heart disease, and diabetes** is higher among individuals without safe, high paying jobs (The Healthy People 2030 Framework).

To assess the impact of education access and quality on health in the region, community members were asked the extent to which they:

1. Had access to quality childcare
2. Were in close distance to quality schools

These two variables were turned into a scale score.[54] A higher scale score reflects greater education access and quality; a lower scale score reflects lower education access and quality.

Data from the Regional CHNA community survey showed that people in the region with lower education access and quality are more likely to need treatment for **mental health**,[55] which is consistent with the literature. Additionally, people in the region with lower education access and quality are more likely to report needing treatment for **vision**.[56] This is also consistent with other literature in that vision care may not be prioritized due to barriers such as cost, trust, accessibility, and poor patient-provider relationship. All of these barriers are barriers to health care in general.[xix]

People with Low Education Access and Quality

As discussed in the SDOH section above, the Regional CHNA community survey provides data to understand who is most negatively impacted by education access and quality in the region. To use a demographic lens for differences in perceptions of education access and quality, regression analyses as describe in the Economic Stability section above, were conducted. The box below shows the populations who reported significantly lower education access and quality when compared to other community members.[57] Note that these effects are significant after adjusting for all other significant predictors in

[54] Scale internal consistency (Cronbach's Alpha = .88)

[55] As education mean scale score increases by one point, the odds of needing treatment for a mental health need decreases by 5%, adjusting for sex, age, race, ethnicity, healthcare quality scale score, MSA, environment mean scale score, economic mean scale score, and social connectivity mean scale score. ($b = -0.05$, $p < 0.05$)

[56] As education mean scale score increases by one point, the odds of needing treatment for a vision need decreases by 5%, adjusting for sex, age, race, ethnicity, MSA, frequency of preventive care, healthcare quality scale score, environment mean scale score, and social connectivity mean scale score. ($b = -0.05$, $p < 0.05$)

[57] On average, females have an expected education SDOH mean scale score 0.12 points lower than males ($b = -0.12$, $p < 0.05$); On average, as age increases by one year, the expected education SDOH mean scale score decreases by 0.02 ($b = -0.02$, $p < 0.001$); On average, those not involved in the military have an expected education SDOH mean scale score 0.32 points lower than military veterans ($b = -0.32$, $p < 0.001$); On average, those with children in the household have an expected education SDOH mean scale score 1.02 points higher than those with no children ($b = 1.02$, $p < 0.001$); On average, those with a graduate degree or higher are expected to have an education SDOH mean scale score 0.29 points higher than those with a high school education ($b = 0.29$, $p < 0.001$); On average, those with a disability are expected to have an education SDOH mean scale score 0.19 points lower than those who are not disabled ($b = -0.19$, $p < 0.001$).

the model, as well as age, race, ethnicity, sex, and MSA. Strategies designed to eliminate the education access and quality disparity for these groups will be more effective at improving health equity.

Disparity

Populations Reporting Significantly Lower Education Access and Quality than their Counterparts

- Females relative to males
- Individuals with lower education relative to those with higher education
- Those not working full time relative to those working full time
- Individuals not in the military relative to veterans
- Families without children in the home relative to families with children in the home
- Individuals with disabilities relative to those without disabilities

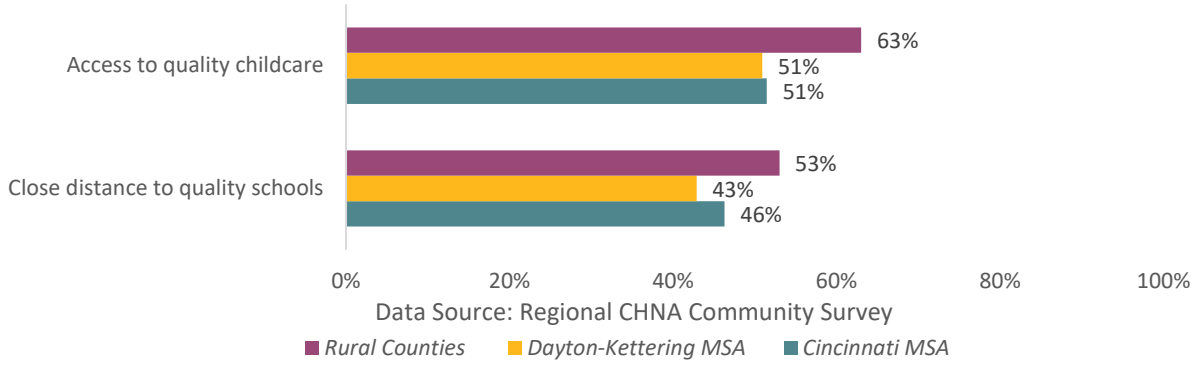
From this list of population groups reporting lower education access and quality, the community can prioritize strategies that address the disparities these community members face. In doing so, collective efforts will have the biggest impact on overall education access and quality and improved health for all.

Places with Low Education Access and Quality

As shown in Figure 14, over half of the region's community members who completed the survey reported low access to quality childcare and about half reported low access to quality schools. Without access to quality childcare, families not only struggle with maintaining employment and assuring child safety, they may also struggle to prioritize health care. Nationally, 51% of Americans live in neighborhoods classified as childcare deserts (more than 3:1 children under age 5 provider ratio).[xx] Additionally, families who are not close to quality schools are at greater risk of long-term economic instability which perpetuates health disparity. In addition, schools and daycares are natural places for children and families to receive health education, prevention, and intervention. Without access to daycares and schools, the community lacks opportunities to reach children.

Figure 14. Education Access and Quality

To what extent do you experience the following in your household or community?
% Very little to Some



6.4 Social and Community Connectiveness

Health Conditions Impacted by Low Social and Community Connectiveness

According to Healthy People 2030 research, there is a need to help people get the support they need to improve overall health and well-being. This support comes through relationships and having people who can be depended on to help and to listen. Though the research does not link this SDOH to any specific condition, it is understood that helpful relationships can reduce the negative impacts of factors that are outside of a community member's control, (i.e., discrimination, bullying, having parents who are in jail, etc.)

To assess the impact of social and community connectiveness on health in the region, community members were asked in the survey how often they:

1. Have family or friends to talk to about health concerns
2. Have someone to talk to about other serious problems
3. Feel connected to their community

These three variables were turned into a scale score.[58] A higher scale score reflects greater social and community connectiveness; a lower scale score reflects lower social and community connectiveness.

In the Regional CHNA community survey data, regression analyses showed that individuals who had greater social and community connectiveness were less likely to report needing treatment for **mental health**[59] and **vision concerns.**[60] These results are consistent with other literature demonstrating that relationships are an important factor of mental health and finding solutions for a range of health concerns, including vision.

People with Low Social and Community Connectiveness

The Healthy People 2030 Framework suggests **children whose parents are in jail** and **students who are bullied** do not get the support that they need. Similarly, people who are **caretakers** of a disabled or chronically ill family member also do not get the support they need. **Individuals with disabilities** and **LGBTQ+ community members** face heightened risk of being bullied and not have many people in their life that they can depend on for comfort and support.

Across all focus groups and interviews, community members spoke to the loss of social connectiveness due to the COVID-19 pandemic. In particular, **youth and older adults** spoke to the negative impact social distancing and fear of the pandemic has had on their overall well-being. **Black** community members,

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[58] Scale internal consistency (Cronbach's Alpha = .86)

[59] A one-unit improvement in mean social connectivity scale score is associated with a 14% decrease in the odds of needing treatment for mental health, adjusting for sex, age, race, ethnicity, MSA, social built environment mean scale score, education mean scale score, economic mean scale score, and healthcare quality scale score. ($b = -0.15$, $p < 0.05$)

[60] A one-unit improvement in social connectivity mean scale score is associated with a 9% decrease in the odds of having unmet vision treatment needs, adjusting for sex, age, race, ethnicity, MSA, social built environment mean scale score, education mean scale score, frequency of preventive care, and healthcare quality scale score. ($b = -0.09$, $p < 0.05$)

both youth and adults, expressed a need for building stronger community connectiveness in order to protect against the additional stresses of racism, social justice media coverages and campaigns, and the social impacts of COVID-19. Additionally, **Asian** community members spoke to the challenges of being geographically dispersed throughout the region, making it difficult to build cultural community connectiveness, especially for older adults in the community.

Again, regression analyses show differences in community members' perceptions of social and community connectiveness. The box below shows the populations who report significantly lower social and community connectiveness when compared to other community members.[61] Note that these significant effects are after adjusting for all other significant predictors in the model, as well as age, race, ethnicity, and MSA.

Disparity

Populations Reporting Significantly Lower Social and Community Connectiveness than their Counterparts

- Non-Hispanic individuals relative to Hispanic individuals
- Males relative to Females
- Black or Multiracial individuals relative to White individuals
- Individuals in active duty or veterans relative to those who are not engaged in the armed forces
- Individuals without private insurance relative to those with private insurance
- Individuals with disabilities relative to those without disabilities
- Individuals other than heterosexual relative to those who are heterosexual
- Individuals living in Cincinnati MSA relative to those in Dayton MSA

Strategies that include addressing SDOH to improve the health of the community should prioritize populations shown to be experiencing the greatest disadvantage. This analysis identifies community

[61] Hispanic individuals have an expected social connectivity mean scale score 0.32 higher than those who are not Hispanic ($b = -0.32$, $p < 0.001$); Males have an expected social connectivity mean scale score 0.08 lower than females. ($b = -0.08$, $p < 0.05$); Those who have a bachelor's degree have an expected social connectivity mean scale score 0.25 points higher than high school graduates. ($b = 0.25$, $p < 0.001$); Those who have a graduate degree or higher have an expected social connectivity mean scale score 0.47 points higher than high school graduates. ($b = 0.47$, $p < 0.001$); Black individuals have an expected social connectivity mean scale score 0.26 points lower than White individuals. ($b = -0.26$, $p < 0.001$); Multiracial individuals have an expected social connectivity mean scale score 0.19 points lower than White individuals. ($b = -0.19$, $p < 0.05$); Individuals living in Dayton MSA have an expected social connectivity mean scale score 0.09 points higher than those in Cincinnati MSA. ($b = 0.09$, $p < 0.05$); Active military members have an expected social connectivity mean scale score 0.39 points lower than those not involved in military. ($b = -0.39$, $p < 0.001$); Military veterans have an expected social connectivity mean scale score 0.15 points lower than those not involved in military. ($b = -0.15$, $p < 0.05$); Those with a disability have expected social connectivity mean scale scores 0.09 points lower than those without a disability. ($b = -0.09$, $p < 0.03$); Those without private insurance have an expected social connectivity mean scale score 0.16 points lower than those with private insurance. ($b = -0.19$, $p < 0.001$); Those who are not heterosexual have an expected social connectivity mean scale score 0.13 points lower than those who are heterosexual. ($b = -0.13$, $p < 0.05$).

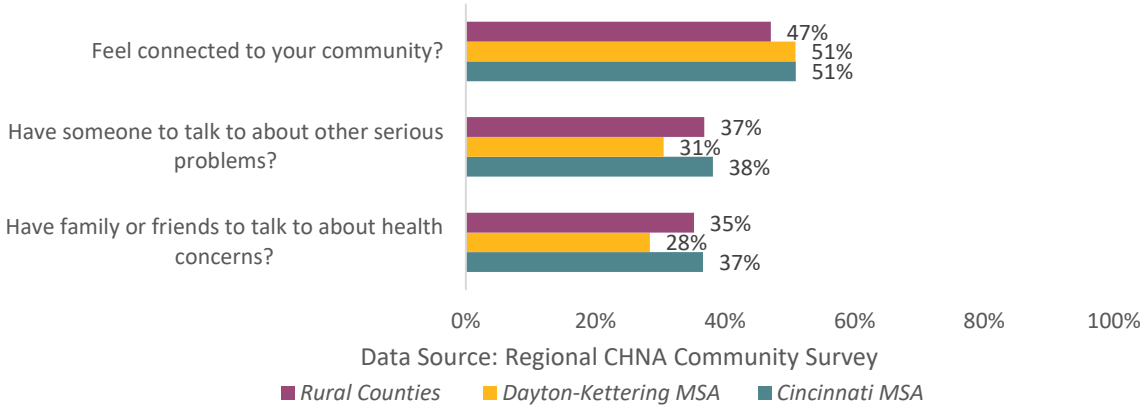
groups who are at a greater social and community connectiveness disadvantage when it comes to health outcomes.

Places with Low Social and Community Connectiveness

From Regional CHNA community survey data, we see that about half of the community members living in the region "never or almost never" or "sometimes" feel connected to their community. About 3 in 10 community members report "never or almost never" or "sometimes" having someone to talk to about problems or health concerns (Figure 15). Social connectivity seems to be an opportunity across the region with the largest proportions feeling never or almost never connected to their community. This is also the case nationally. In national studies, about 4 in 10 U.S. community members reported feelings of isolation and lack of meaningful connectedness to their community.[xxi]

Figure 15. Social and Community Connectiveness

How often do you experience these factors?
% Never or Almost Never to Sometimes



Additional Social Factors

Adverse Childhood Experiences

Additionally, adverse childhood experiences (ACEs) are also a determinant of health. Exposure to trauma from an early age disrupts the development of a young person's brain, ultimately leading to higher rates of **chronic disease, mental illness and early death** if appropriate interventions and protective factors are not present. Preventing ACEs is a health strategy to improve health outcomes[xxii] but requires collective impact strategies with other systems of health and human services within communities.

Looking at state-level data from 2018-2019, Ohio, Kentucky, and Indiana all fall under the nationwide estimated percentage of children with zero ACEs (CAHMI 2019). Kentucky is furthest from the nationwide average of 60.2%, with an estimated 54% of children having experienced zero ACEs. There are clear disparities when breaking down these numbers by race in each state. Generally, White (non-Hispanic) children experience the fewest ACEs in each state, compared to those who are Black (non-Hispanic), Hispanic, and other (non-Hispanic)**.** The proportion of Black and Hispanic children experiencing two or more ACEs is considerably higher in Ohio compared to Indiana and Kentucky, with 35.0% of Black children in Ohio experiencing two or more ACEs and 33.5% of Hispanic children experiencing two or more ACEs. Kentucky has a noticeably higher proportion of children identifying as

another race, other than White, Hispanic, or Black, experiencing two or more ACEs with 41.8%. Rates of exposure to ACEs also differ based on income, disability, and other demographic factors; for example, in a 2020 study of LGTBQ+ individuals, 43% reported four or more ACEs and patterns of ACEs were higher in nine of ten categories when compared to national samples.[xxiii] The top three ACEs reported from state Behavioral Risk Factor Surveillance System data are indicated below (Table 4); these indicators are, in each state, elements to note in addressing poor health outcomes related to ACEs.

Table 4. Top Three Reported ACEs Among Adults, by State

	Ohio[xxiv]	**Indiana**[xxv]	**Kentucky**[xxvi]
First	Emotional Abuse (57%)	Divorce or Separation of Parents (32%)	Divorce or Separation of Parents (32%)
Second	Household Substance Abuse (41%)	Emotional Abuse (30%)	Household Alcohol Abuse (27%)
Third	Divorce or Separation of Parents (36%)	Household Substance Abuse (28%)	Verbal Abuse (26%)

Without addressing SDOH, community members will continue to experience healthcare access and quality barriers, perpetuating disparity in health outcomes.

6.5 Access to Quality Health Care

Health Conditions Impacted by Low Health Care Access and Quality

Getting timely, high-quality healthcare services is key to improving the health of our communities but not everyone has this kind of access. Not having insurance, a primary care physician, reliable/good communication with healthcare providers or living too far away from a healthcare center can lead to lack of preventive care and greater risk of **chronic disease**.

To determine if access to quality health care was driving any specific health conditions in the region, health quality was assessed based on the response to the question, *Overall, how would you describe the quality of health care you typically receive?* Community members rated the quality of health care as poor, fair, good, very good, or excellent.

In several different logistic regression analyses looking at treatment need for disease, an increase (improvement) in quality of health care was associated with a decrease in odds of needing treatment for **mental health,**[62] **heart conditions,**[63] **arthritis,**[64] **and lung disease.**[65] Analysis also showed that for an increase of one unit in perception of quality health care, the odds of having unmet needs related to **vision,**[66] **dental,**[67] **and allergy**[68] concerns also decreased.

[62] A one-unit improvement in quality of health care scale score is associated with a 9% decrease in the odds of needing treatment for mental health, adjusting for sex, age, race, ethnicity, MSA, social built environment mean scale score, education mean scale score, economic mean scale score, and social connectivity scale score. ($b = -0.09$, $p < 0.05$)

[63] A one-unit improvement in quality of health care scale score is associated with a 15% decrease in the odds of needing treatment for heart conditions, adjusting for sex, age, race, ethnicity, MSA, economic mean scale score, and frequency of preventive care. ($b = -0.15$, $p < 0.05$)

[64] A one-unit improvement in quality of health care scale score is associated with a 29% decrease in the odds of needing treatment for arthritis, adjusting for sex, age, race, ethnicity, MSA, economic mean scale score, and frequency of preventive care. ($b = -0.35$, $p < 0.001$)

[65] A one-unit improvement in quality of health care scale score is associated with a 19% decrease in the odds of needing treatment for lung disease, adjusting for sex, age, race, ethnicity, MSA, education mean scale score, economic mean scale score, and frequency of preventive care. ($b = -0.21$, $p < 0.05$)

[66] A one-unit improvement in quality of health care scale score is associated with a 14% decrease in the odds of having unmet vision treatment needs, adjusting for sex, age, race, ethnicity, MSA, social built environment mean scale score, education mean scale score, social connectivity scale score, and preventive care frequency. ($b = -0.16$, $p < 0.001$)

[67] A one-unit improvement in quality of health care scale score is associated with a 24% decrease in the odds of having unmet dental treatment needs, adjusting for sex, age, race, ethnicity, MSA, social connectivity scale score, and preventive care frequency. ($b = -0.28$, $p < 0.001$)

[68] A one-unit improvement in quality of health care scale score is associated with a 16% decrease in the odds of having unmet allergy treatment needs, adjusting for sex, age, race, ethnicity, MSA, and social connectivity scale score. ($b = -0.18$, $p < 0.001$)

People with Low Healthcare Access and Quality

To determine who is impacted by low healthcare access and quality, the Regional CHNA looked at the differences in quality perceptions based on demographic characteristics using a logistic regression. The box below shows the populations who are significantly more likely to report lower health care access and quality compared to other community members.[69] Significant predictors seen below are adjusting for all other significant predictors as well as age, sex, ethnicity, race, and MSA. This analysis identified the specific populations within the community that are experiencing greater disadvantages in the area of healthcare access and quality.

Disparity

Populations Reporting Significantly Lower Quality Health Care Experiences than their Counterparts

- Black or Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or identified as another race individuals relative to White individuals
- Individuals with disabilities relative to those without disabilities
- Individuals with lower education relative to those with higher education
- Individuals who are younger relative to those who are older
- Individuals without private insurance relative to those with private insurance
- Individuals who care for a disabled individual relative to those who do not

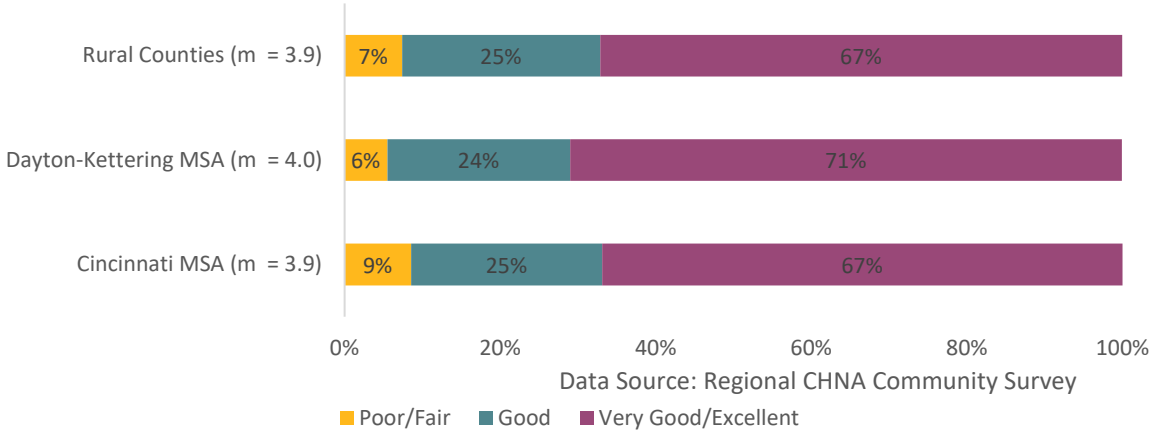
[69] As age increases by one year, the odds of rating one's healthcare experience as good to excellent increases by 4%. ($b = -0.04$, $p < 0.05$); The odds of rating one's healthcare experience as fair or poor for those with less than a high school education and those with some high school education are 2.15 (no high school) and 1.58 (some high school) times that of high school graduates. ($b = 0.77$, $p < 0.05$), ($b = 0.46$, $p < 0.05$); Black individuals have 61% higher odds of rating their healthcare experience fair/poor relative to White individuals. ($b = 0.48$, $p < 0.05$); Individuals who identify as Asian, American Indian/Alaskan Native, Native Hawaiian or Pacific Islander or another race that is not Black, White or multiracial have 62% higher odds of rating their healthcare quality fair/poor than White people. ($b = 0.48$, $p < 0.05$); Individuals with a disability have 51% higher odds of rating their healthcare fair/poor than those without a disability. ($b = 0.42$, $p < 0.001$); Those with private insurance have 28% lower odds of rating their healthcare fair/poor compared to those without private insurance. ($b = -0.32$, $p < 0.05$); Those caring for a disabled person have 81% higher odds of rating their healthcare quality as fair/poor compared to those not caring for a disabled person. ($b = 0.59$, $p < 0.001$).

Places with Low Access to Quality Health Care

The majority of community members in the rural counties and MSAs perceive the quality of health care to be “very good” or “excellent,” (Figure 16).

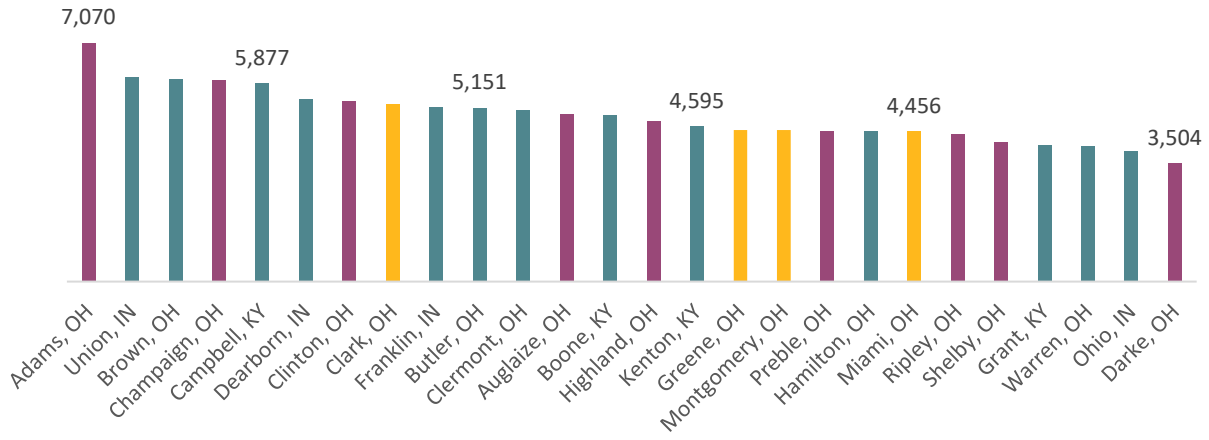
Figure 16. Quality of Health Care

How would you describe the quality of health care you typically receive?



Having access to quality health care is a protective factor for preventing or minimizing chronic and life-threatening conditions and preventing hospitalizations. When quality health care is readily available, community members can get the help they need before the health concern becomes an acute problem. The County Health Rankings published the preventable hospital stays data using the Mapping Medicare Disparities Tool for 2018. Preventable hospitalization are admissions for acute or worsening conditions that could be managed successfully in an outpatient setting. As shown in Figure 17, Adams County, OH has the highest rate of preventable hospitalizations and Darke County, OH has the lowest. Additionally, in interviews, it was noted that geographic location and availability of services from healthcare systems is highly influential to preventable hospitalizations. However, despite the density of health care in the region, community members are still going to the hospital for reasons that are preventable. This lends itself to the need for prevention services outside of the hospital.

Figure 17. Preventable Hospitalizations
(per 100,000 Medicare Enrollees, 2018)



Data Source: Medicare Disparities Tool: Rate of Hospital Stays for Ambulatory-Care Sensitive Conditions per 100,000 Medicare Enrollees, 2018
Blue = Cincinnati MSA, Yellow = Dayton MSA, Gray = Rural Counties

Barriers to Accessing Quality Health Care According to Region's Community Members

Many barriers to a healthy life and to health care that were identified by community members (outlined below) align with SDOH-related barriers discussed above. While the following barriers to health care are widely known by providers throughout this region, the list of barriers below were identified by community members who participated in this Regional CHNA. Significantly, community members identified SDOH-related barriers without being prompted to discuss SDOH.

Community members identified experiences related to **information accessibility and service availability; affordability and health insurance; and feeling unsafe and having negative past experiences** as barriers to accessing quality health care when they need it. Exemplary quotes and survey results from community members are shared below to provide insights into experiences related to each barrier. For a more detailed discussion of each barrier, please see Appendix C.

According to community members, to have **accessible** health care **is to have confidence that, when needed, community members will know what services are available, where to find them, will not have cause to fear seeking them, and will not suffer social stigmatization or economic debt for using them**. To have accessible health care is to be able to receive physical, mental, and spiritual support in order to live a holistically healthy life.

Information Accessibility and Service Availability

- **A Lack of Centralized, Up-to-Date Information on Healthcare Services and Providers.** Community members reported that the lack of a centralized resource for healthcare service information also means there is a lack of a centralized resource for local public health information that is trusted.

"People don't know what is available, what their options are. I don't know how to find a good family doctor that will listen. I don't know where I need to go or where I need to point myself." - Adult Community Member, Social Service Provider

"We have a list of providers who are supposed to help us, but when we call it's a different story- especially dental. Either they don't give services to us anymore or they don't take my insurance anymore. The resources we get are not up-to-date." - Woman in Recovery Housing

- **A Limited or Lack of Access to Culturally and/or LGBTQ+ Competent Healthcare Professionals.** Black community members in focus groups expressed feelings that "my doctor doesn't listen to me." Asian and Hispanic community members expressed feelings of not being understood in regard to culture and language. Community members across all focus groups expressed a feeling that healthcare professionals do not know about or understand the impact of community members' past experiences or traumas. In focus groups, Black and Muslim adults expressed a feeling of disempowerment at hospitals during delivery of their baby, feeling little power to advocate for their needs [for a female doctor to deliver the baby] or fearing a backlash when they do advocate for themselves or a loved one. Misgendering and obtaining gender-affirming prescriptions and treatments are priority issues for health care among the LGBTQ+ community. When community members do not feel heard they reported being more hesitant to trust a diagnosis, to follow treatment plans, and/or to attend future healthcare appointments, according to focus groups. This also extends to a lack of mental health care providers that share lived experiences with community members, like first responders, veterans, military family members, survivors of human trafficking, etc.

"Another thing I've noticed is many providers simply look at the skill sets of the interpreter… It's very important to have interpretation that does not just interpret the language but who also has the ability to understand the cultural context of the patient." - Asian Community Member, Medical Physician

"There needs to be more women counselors. I've been waiting… Most civilians don't have a clue what it's like to be in the military. I would choose a female non-veteran over a male veteran psychologist, though." - Woman Veteran Community Member

- **A Limited Number of Service Appointments and Appointment Times.** About 1 in 3 Regional CHNA community survey respondents across the region report having to wait a long time in a waiting or exam room and/or not being able to make an appointment for health care because appointments were not available after work hours or during weekends (Figure C3). The limited open appointments is even greater for transgender specialists, LGBTQ+ specialists, and minority providers in general.

"When a person needs mental [healthcare] they don't need help 9 to 5. Crises happen at night a lot. So, like when you go to the ER and are having a heart problem, they give you help right there. We need the same thing with mental health. Treatment is needed right now. [Healthcare professionals] also need to meet people where they are at, not requiring them to get to an office. I had to send someone to Columbus [from Dayton] so they could get services right away. We didn't have anything in our community that could help them right away." - Peer Supporter

"I used Google and found a dentist who took my insurance, [but] it was scheduling months in advance." - Woman Community Member Experiencing Homelessness

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Affordability and Health Insurance

- **Limited or Lack of Financial Resources to Pay for Healthcare Service.** Upwards of one in five Regional CHNA community survey respondents across the region reported not being able to afford their medications and/or to afford to go to the doctor (Figure C7). In focus groups, community members reported the unknown cost of a healthcare service (e.g., a "surprise medical bill") made them avoid seeking health care even when they knew they needed care.

"The healthcare worker said she made a few dollars too much to qualify for the poverty discount but she didn't make enough money to pay for the surgery out of pocket. She has the same problem for paying for prescriptions…" - Hispanic Community Member speaking about experiences of women in her community

"There are places where they will get your teeth pulled but you can't find anyone anywhere to help pay for dentures." - Community Member in Addiction Recovery

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- **Limited or Lack of Transportation.** This also includes commutes being too long (in distance, in time, or both), even when individuals have access to a personal vehicle or public transportation.

"I am legally blind. Having access to providers and even going to the store requires access to home aides who can provide transportation. Even being able to use a telephone is hard… A month ago, I saw a specialist and I was disappointed because it was rushed. I didn't get what I needed and now I'll need to go back." - Community Member with a Disability

"I don't like to drive to where my family doctor is... If you use the county transit, they will only take you in the county, and then when you're done with your appointment, you have to sit there and wait on their discretion to come back and get you." - Older Adult Community Member

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- **Limited Experience Navigating Healthcare and Insurance Systems.** Community members in focus groups explained they only learned how to navigate the healthcare system only after negative and/or expensive experiences. Healthcare and insurance systems need to provide more accessible information and tools for community members (young adults to older adults) to find health care they need and to make the costs of health care transparent. There is a need for healthcare systems to empower community members with the tools and skills to be informed of what insurance plans cover, how to anticipate costs, what Medicare options exist for those who do not qualify for Medicaid, and what financial assistance is available directly through the provider.

"I would like to have a little more education about how the health system works here. I thought I was a healthy young person and didn't think I needed a doctor then I got shingles and had to go to the ER doctor..." - Asian Community Member

"What can be done to help get health care to the community? Hire a liaison that the community trusts. Help them navigate insurance." - Male Community Member

"If there was a guide – as a starting point – you need to ask your doctor about this and this. Most people don't know what they don't know…" - Caretaker for Veteran

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Feeling Unsafe and Having Negative Past Experiences

- **Perceptions that Healthcare Providers Care More About Money.** Community members in each region of this Regional CHNA perceive that the healthcare system does not have the best interest of community members in mind (Figure C8). Across focus groups, community members spoke about healthcare providers, hospitals, clinics, pharmacies, insurance companies, health departments, etc. as a single system that generally favors profit over what is best for patients.

> *"[Healthcare professionals] can't treat it as just a job. They need to treat people as people. This is not just a job... Some operate like "I need a check" vs. "I want to help you."- Male Community Member*

- **Feeling Unsafe in Receiving Care.** In Regional CHNA community survey data, 7%-15% of respondents across the region reported feeling unsafe in the location of a healthcare facility (Figure C9). Community members have also avoided health care due to fear of contracting COVID-19; 18%-32% of survey respondents felt unsafe receiving health care due to COVID-19 (Figure C9).

> *"Volumes remain high in emergency departments. Not due to COVID patients, but its fallout of not managing health over the past year…. We need more effort to tell the public that it is safe to seek health care in the ER." - Emergency Room Physician.*

- **Experiences of Discrimination when Receiving Care.** In Regional CHNA community survey data, 7%-14% of respondents across the region reported experiences of discrimination in health care due to their race, culture, gender, and/or sexual orientation (Figure C11). As community members generally perceive all healthcare institutions as a single system, a single experience of discrimination or personal experience of someone they know, perpetuates a negative perception of all healthcare institutions and healthcare professionals.

> *"Recently I took my son to get a checkup and the doctor was kind of rushing. I don't know if he was just busy or was uncomfortable with people who don't look like him. I was concerned about the result- he said my son was okay and we went home and my son continued to have a hard time so we went back and another person who took time with us saw that my son had an ear infection… you can't help but feel like the doctor rushed out because of how we looked." - Muslim Community Member*

- **Fear of Judgement** In general, when community members spoke about feeling judged, it went hand in hand with healthcare professionals "talking down" to community members. In Regional CHNA community survey data, 11%-16% of respondents across the region reported avoiding health care for fear that the healthcare professional will judge them (Figure C8). In focus groups, community members in recovery, homeless community members, and incarcerated/justice-involved community members specifically reported feeling judged by mental healthcare providers. Community members who are caretakers of family members also describe experiences of being undermined by physicians, with caretakers' intimate knowledge of their family members' symptoms being dismissed by treatment teams of healthcare professionals.

"When [people of color] go to the hospital and see the wall portraits of White, older men [former hospital presidents/CEOs] it sends the message that 'this place is not for me'." - Community Health Advocate

7. Societal Systemic Barriers to Improving Overall Health of Community Members

Without interventions, community members experiencing health-related risk factors like economic instability, social isolation, low healthcare access, and/or ACEs (e.g., SDOH-related risk factors) are at greater risk of poor health and limited to no access to the quality of health care they need. SDOH-related risk factors discussed in Section 4 of this report are rooted in various social, political, and economic structures. Analyzing survey, interview, and focus group data, three such structures stand out as key barriers to addressing the region's health disparities and overall health outcomes according to the region's stakeholders.

These structures include systemic racism; profit-driven design of America's healthcare system; and the structural division of medical care, healthcare providers who share patient's/client's cultural background or gender, and social services that work to mitigate the negative impact of SDOH-related risk factors. These structural barriers are driving disparity in access to health care, quality of health care, health-related behaviors (such as not seeking care) and disparities in health conditions (see above sections) and SDOH.

The following sections summarize these three structural barriers to improve health and quality health care in the region. In turn, these sections highlight structural barriers that require change in order to promote sustainable improvements to the health disparities of the region, to the overall health of community members, and to the quality of health care in the region.

Structural Racism

Based on the thematic analysis of focus group, interview, and survey data, it could be determined that structural racism drives barriers related to lack of culturally relevant health care, diversity in the workforce, and a divided healthcare system.

Community members and providers identified a **lack of culturally relevant health care and a lack of diversity in the workforce** among healthcare professionals. These shortages are rooted in structural racism that drives K-12 education disparities in Black and Hispanic communities, lowering the number of minorities prepared to pursue higher level healthcare professions. In turn, there is a shortage of healthcare professionals who themselves are Black and/or Hispanic and/or female. The lack of diversity going into healthcare professions further perpetuates a medical/clinical education curriculum that lack an equity lens and insufficient training in culturally relevant health care and cultural sensitivity. Even more, leadership in healthcare institutions in the region are lacking in the implementation of Diversity, Equity and Inclusion (DEI) best practices.

Structural racism is also a cause for **distrust in the healthcare system** among Black community members. Lived experiences of racism can also influence a community member's perception of the health care they receive. For example, the data shows that the "15-minute appointment" medical professionals' schedule drives perceptions of low healthcare quality across community groups. However, for Black community members with lived experiences of racism, these short appointments can be internalized as a disregard for their health and leading to demotivation to continue to seek health care. A community member explained, "My wife and I are Black. We are Muslim. When she was

pregnant we went to the doctor. He spent maybe 15 minutes with us. I don't know if he was uncomfortable with us being Muslim or my wife's headscarf, or what. But he rushed in and out of our appointment."

> *"Health systems don't make disaggregated data public and there is no public facing dashboard showing data of quality when it comes to care for diverse and marginalized populations.* ***NOT moving towards a system that is more transparent is a barrier.****" - Hospital Administration Expert*

America's High-Cost Healthcare System

America has the highest cost of healthcare per capita among developed countries.[xxvii] Community members in focus groups agree that the high cost, in particular the **unknown cost**, of health care is a major reason why they do not seek health care even if they think they need it. The fear of "surprise" medical bills and medical debt is not unfounded, with an average of 19% of community members in the region reporting medical debt in collections in 2020. Of total medical debts in collections in Hamilton County, 25% is in communities of color, compared to 14% in majority White communities of the county. Similar trends are also measured in Montgomery County, where 30% of medical debt collections is in communities of color, compared to 18% in majority White communities.[70]

The cost of health care not only limits access to health care, but it also drives what treatment or health care is provided. Many community members in focus groups agree that healthcare professionals are more likely to prescribe a treatment plan that is most **profitable over** a treatment plan that is most **beneficial** to the health of the patient. On the other hand, healthcare professionals feel limited too, at times feeling the **treatment plan is restricted** by what a patient can afford, rather than research-based best practices. Health professionals are forced to ask what is the best action for care within the range of affordability? At the same time, community members must ask what financial crisis will going to a doctor to check on a symptom spark?

The Structural Divide of Holistic Health Care

Overall, community members need physicians, clinicians, hospitals, etc. to be in better coordination with holistic wellness programs and social services. Social services and culturally based holistic wellness programs can help community members overcome barriers to accessing quality health care and decrease risk factors. Few healthcare professionals reported having caseworkers on-site to directly connect patients to social services. Social workers are increasingly being made available in emergency departments and some emergency response units. However, social workers are not in healthcare offices and clinics.

[70] https://apps.urban.org/features/debt-interactive-map/?type=overall&variable=pct_w_medical_debt_in_collections

The barrier providers face is the historical division between the healthcare system, holistic wellness providers, and social service providers. Between social, holistic, and healthcare systems, providers do not know what services are provided, the benefits of those services, or how to advise community members to access services outside their own system. Furthermore, healthcare providers are reporting limited coordination with social service agencies, as well as limited screening of patients for needed social services. Overall, public transportation and social service providers identified the opportunity for healthcare providers/professionals to be a better partner in the coordination of care by initiating contact with community-based and social service organizations that address barriers to healthcare access.

Demographics and Geographic Areas Uniquely Impacted by Structural Barriers

Though structural barriers permeate every community, the needs assessment results show that specific communities are more likely to agree that structural barriers are impacting their healthcare access and quality. Table 5 below summarizes specific focus group populations who discussed being negatively impacted by these structural barriers.

Table 5. Demographic Groups and Subregions Negatively Impacted by Structural Barriers

	Distrust	High Cost (including service, treatment, transportation)	Lack of Diversity in workforce	Lack of Culturally Relevant Health Care	Lack of Coordination of Health and Social Services
Low income	*	*			*
Older Adults		*			*
Community members with a disability					*
Incarcerated or transitioning back into community	*	*	*	*	*
Black community members	*	*	*	*	
Immigrant community members		*	*	*	
Across community groups		*	*		
Cincinnati MSA		*		*	*
Dayton MSA		*		*	*

Table 5. Demographic Groups and Subregions Negatively Impacted by Structural Barriers					
	Distrust	High Cost (including service, treatment, transportation)	Lack of Diversity in workforce	Lack of Culturally Relevant Health Care	Lack of Coordination of Health and Social Services
Rural Counties		*		*	*
Data Source: Focus Groups The absence of an * does not mean that the community does not face the specific barrier. The absence of an * means the barrier was not specifically discussed by that population in focus groups.					

8. Healthcare System's Structural Barriers to Improving Quality of Health Care

Some governing policies within the region's healthcare system diminish community members' access to needed services and decrease the quality of care provided. According to qualitative data, when a community member perceives a healthcare encounter/service to be of high quality, they are:

- More likely to trust the opinion of the healthcare professional and follow through on treatment plans
- Less likely to put off seeking health care in the future
- More likely to recommend healthcare services to family/friends.

In focus groups and interviews, community members were asked to describe a quality healthcare experience they have had and to describe what could have made a poor health care more effective, relevant and of higher quality. From their responses, seven types of community needs emerged that range from a need for more time with healthcare professionals to a need for greater transparency of the cost of care (see Table 6 below).

Additionally, healthcare professionals were interviewed and surveyed in order to assess the barriers providers face in meeting community needs and in improving the quality of care. Table 6 links community needs to the barriers most commonly identified by healthcare professionals. Furthermore, Appendix D provides a summary of policies and practices recommended by social service providers and healthcare professionals in order to overcome the identified barriers.

Community Perspective on Opportunities to Improve Quality of Health Care

According to community members, a quality healthcare encounter ensures that a patient/community member:

- **Is provided enough time (30+ minutes) to speak with their physician/clinician.** "My doctors are always rushed. It's only 15 minutes to get to know me. They don't know my life," explains a community member. Repeatedly, when asked to describe a quality experience with a healthcare professional, community members were brought to tears as they described the amount of time a physician spent with them talking about a diagnosis, a treatment plan relevant to their every-day circumstances, or just getting to know them better. *Increasing time talking about diagnoses with community members was also associated with lowering individuals' fears about returning for follow-up care, even if community members know there might be a health condition identified*.

- **Feels "heard" by their physician/clinician**. Community members feel heard by their healthcare professionals when *health care is culturally relevant and is trauma informed*.

- **Is provided the range of treatment options by their physician/clinician, including both medical and non-medical options and the pros/cons of options in terms of overall health.** *Community members want to trust their healthcare provider is presenting all the options, even if some*

options require the patient to go to a different provider or service, such as yoga, mindfulness classes, etc. Across focus groups, community members identified a need for more information on how the healthcare system works in order to be able to advocate for themselves, particularly among low-income community members and individuals new to having health insurance.

- **Is not sent a "surprise" medical bill.** Community members were satisfied with healthcare services when they knew the cost upfront, even when it was a more expensive service. Community members are more satisfied when financial assistance policies are also provided upfront. *When these policies are not made known to community members, their trust in the healthcare system declines and the perception that healthcare professionals are more concerned about making money than patient health increases*.

- **Is immediately connected to a follow-up service before leaving the site of service**. This includes coordination of prescribed medical services and social services needed to improve access to health care. Community members in focus groups who had met with social workers at the doctor's office/hospital, or a healthcare staff member that helped to arrange transportation, were most satisfied with their healthcare service overall. *In general, when social services to overcome access barriers to health care are coordinated in/through physician offices/hospitals, community members perceived those healthcare professionals as ones who care about putting the health of patients before profit.* Overall, community members need physicians, clinicians, hospitals, etc. to be in better coordination with social services and community-based providers of holistic health programming (i.e., yoga studios, outdoor recreation, community connectedness activities, cultural events).

- **Is informed of prescription medication options** (i.e., pros, cons, and side effects) at the time of a healthcare service, not at the pharmacy. Community members want to trust that healthcare professionals are offering non-medicated options before going to medication. *Community members find health care to be of higher quality when they are able to consider other aspects of their lives when determining what medication might be the best option for them.*

- **Has the ability to make an informed choice on who their healthcare professional is**, including having access to gender-, race-, and skill level- specific physicians/clinicians. When community members feel as if they cannot relate to their healthcare provider, and vice versa, they have a poor healthcare experience that impacts how community members perceive other healthcare professionals. *Being able to relate to a healthcare professional's gender, race or lived experience was also identified as key to community members' sense of feeling safe*.

Region's Systemic Barriers Faced by Healthcare Professionals to Improving Quality Care

While the region's healthcare professionals may not have singular power to change structural barriers, there are governing policies within the region's healthcare system that hinder healthcare professionals' capacity to meet the needs of their communities. Through interviews, focus groups and surveys, healthcare professionals were asked to identify the policy and other barriers they face to meeting

community needs and to improving the quality of care. Theming for barriers rooted in the region's healthcare system (e.g., barriers that result from policies or circumstances in which the region's healthcare stakeholders control or have influence over), as opposed to structural barriers (see Section 8), healthcare professionals identified four types of barriers to improving quality of health care to meet community needs.

- **High caseloads and the increasing number of administrative tasks** required of healthcare providers are producing knowledge gaps in medical best practices, cultural needs of patients, and lack of time to practice continuous learning. Rural healthcare providers face limited access to specialists and "beds" in emergency departments and some hospitals. Workloads are limiting time spent with patients, decreasing the capacity to provide care coordination or screening of other environmental conditions, basic needs, or social needs that promote positive health outcomes**.** Workloads are limiting time for continuous education and the implementation of best practices. They are also increasing stress among providers and decreasing providers' job satisfaction.

- **The region's healthcare institutions are competitors from a business perspective. Competition is also driven by competitive grant structures.** Each organization has its own **funding structures and service priorities** that cause competition, not collaboration, with other providers. Healthcare-providing organizations are **competing for a relatively small pool of skilled employees**, struggling to fill staff vacancies at all levels and to diversify professional staff. This is rooted in a lack of pipeline infrastructure to expose community members to the variety of healthcare career tracks and the delay in availability of training programs (staffing/specialty needs not known before they are needed, takes time to develop certification curriculum and standards). Providers in Dayton are more likely than providers in other regions to report a shortage of nurses as a barrier (69% relative to 56% in Cincinnati and 57% in rural counties) and having limited time to visit/follow-up with patients due to heavy caseloads (65% relative to 56% in Cincinnati and 53% in rural counties). According to healthcare professionals, competition for attracting community members and new staff stymie the capacity for organizations to implement emerging best practices.

- **Healthcare providers' lack of knowledge of, and investment in coordinated efforts with, SDOH-related social services.** Successes in coordinating care are the result of "star" staff going above and beyond, or have high inter-agency social networks, not the result of the system itself. Healthcare organizations do not share data, which ultimately harms community members as there are not coordinated efforts to address SDOH or outcomes of services provided for continuous improvement purposes. **There is a lack of effective linkages between health care, mental health care and community-based service providers that lead to poor health outcomes even when health care is accessed.** An overall lack of coordinated regional approaches to health care is rooted in competition for funds or organizational-specific policies. Healthcare professionals identified a lack of knowledge of what social services exist and even a limited understanding of the role different healthcare institutions play in the community (e.g., what is the role of a health department).

"We never know the longevity of [hospitals' or health departments'] commitments… We see them make investments in a specific community project or grants or participate in certain meetings. But, that participation is limited to a short-term project…. Hospitals would be better partners if [community-based organizations] could rely on more long-term commitments."

- Community Expert in Food Security

- **Language barriers and cultural differences** are barriers to effectively communicating with patients. Even when translating services are available, interpretive services require technological knowledge, as well as cultural knowledge to be effective (not just language skills). Language barriers are also a challenge for providers in that it is difficult to also be confident that treatment or medication plans will be followed correctly and safely. Even when providers and community members share a language, healthcare professionals reported that cultural differences (e.g., differences in attitudes towards health care, political ideologies, belief systems, or lived experiences) make it difficult to effectively communicate and to build trusting provider-patient relationships.

Increasing the Quality of Healthcare Encounters Can Help Meet Community Needs

Community members also identified a need for quality healthcare encounters. However, there are barriers within the healthcare system that negatively impact the quality of the interaction. The table below outlines the needs identified by community members and the region's healthcare system barriers that providers report (either in qualitative [Q] or survey [S] data) in meeting community needs related to quality healthcare delivery.

Table 6. Linking Community Member Need for Quality Health Care to Barriers Providers Face

What community members need when it comes to *receiving health care*? According to community members, a quality healthcare service means a patient…	**Barriers providers face to meeting this need**
1. … is provided enough time (30+ minutes) to speak with their physician/clinician.	• High caseloads and the increasing number of administrative tasks required of healthcare providers. (Q/S) • Reimbursement structures and hospital/provider productivity policies. (Q/S) • Shortage of staff/applicant pool. (Q/S) • Providers also indicate that they perceive a lack of time to visit or follow up with patients as a major barrier driven by heavy caseloads. (S)

Table 6. Linking Community Member Need for Quality Health Care to Barriers Providers Face	
What community members need when it comes to *receiving health care*? According to community members, a quality healthcare service means a patient…	**Barriers providers face to meeting this need**
2. … "feels heard" by their physician/clinician.	• Not paid for "soft skills"; Increasing stress among healthcare professionals due to caseloads and decreasing job satisfaction makes it difficult to be constantly empathetic. (Q) • Increasingly less or no time for continuous education on cultural relevancy. (Q) • Some best practices simply require more time with patient. (Q) • Providers report limited implementation of best practices surrounding cultural competency and trauma-informed care. (S)
3. … is provided the range of treatment options by their physician/clinician, including both medical and non-medical options and the pros/cons of options in terms of overall health.	• Medical services are siloed from other services, including non-medical services that ultimately increase health and well-being (even the success of a medical treatment). (Q) • Language barriers and cultural differences make it difficult to have confidence that patient/physician are communicating effectively. (Q) • Providers report limited implementation of best practices surrounding integration of cultural preferences for disease management. (S)
4. … is verbally informed upfront by the physician/clinician of the cost of care and of financial assistance policies.	• Informing on cost (and cost upfront) is historically outside the role of physician/clinician. (Q)
5. … is immediately connected to a follow-up service before leaving the site of service. This includes coordination of prescribed medical services and social services needed to improve access to health care.	• Healthcare providers work within their own network, can isolate from specialists or other providers. (Q) • Profit-driven healthcare models drive competition. (Q) • Overall shortage of specialty service providers. (Q/S) • Healthcare professionals generally lack knowledge of types of available social services, the organizations offering services, and eligibilities. (Q) • Healthcare and social services are provided in separate, sometimes distant, spaces. (Q) • Interpretations of HIPAA/institutional competition prevent important data sharing that could inform the better coordination of health care and social services. (Q) • Insurance policy can limit service options. (Q/S) • Medical providers reporting limited implementation of screening for social service needs and coordination/collaboration with social service providers. (S)

Table 6. Linking Community Member Need for Quality Health Care to Barriers Providers Face	
What community members need when it comes to *receiving health care*? According to community members, a quality healthcare service means a patient…	**Barriers providers face to meeting this need**
6. … is informed of prescription medication options (i.e., pros, cons, and side effects), potential that medication may change based on supply/generic/etc., and costs by physician/clinician.	• Providers perceive patient barriers to access medications as a barrier for them in providing quality care. (S) • Supply driven by insurance policies and prescription medication corporations. (Q) • Informing on cost is historically outside the role of physician. (Q)
7. … has ability to make an informed choice on who their provider is.	• Competitive health institutions do not lend to a central resource where all providers in area are presented as an option. (Q) • Changing staff and insurance networks. (Q)
(Q) Qualitative data from focus groups or interviews (S) Survey data	

9. Community Assets and Considerations for Addressing Prioritized Needs

Regional Assets and Concrete Opportunities to Address Prioritized Needs

The Regional CHNA provider survey, community focus groups, and interviews with system leaders highlighted existing assets (i.e., models and strategies) in the community and concrete strategies to address health and social service care delivery challenges identified in this Reginal CHNA. Assets included established agencies and organizations with expertise in a priority area to be engaged as a partners in addressing needs, and models or best practices that community members agree would address prioritized needs if implemented. The list is limited to the perceptions and ideas of those who were interviewed, engaged in a focus group, and/or completed the provider survey. While the list of specific organizations and initiatives throughout the region who are addressing these prioritized needs is vast, the goal of this CHNA was to **clearly identify the successful models and best practices that currently exist in the region, and through capacity building, can be applied as strategies to address the final prioritized needs.**

Below are the organizations, programs, and strategies identified as Regional assets (i.e., models and best practices) specific to the health needs identified throughout the report and link the CHNA to concrete action steps to address prioritized needs.

Prioritized Need

FOOD SECURITY*

Models and Best Practices to Inform Strategies:

- Good Food Purchasing Program
- Mobile Food and Basic Needs Truck model
- Greater Cincinnati Regional Food Policy Council, an initiative of Green Umbrella Regional Sustainability Alliance

*Housing security is also a prioritized health-related social need. However, the models and strategies discussed around housing security related more to successful models in accessing health care in communities who are housing insecure. Therefore, no housing security models were specifically identified by community stakeholders.

It should be noted that a collaborative effort of broad coalition stakeholders across Cincinnati and Hamilton County have developed a strategy guide – **Housing our Future – that focuses on the need to preserve and produce affordable housing, protect existing residents, and make system changes that increase access to home ownership, production of housing units, preservation of existing affordable housing, equitable zoning policies, and resources and financing to meet goals. Led by the **Local Initiatives Support Corporation (LISC) of Greater Cincinnati**, this report leveraged comprehensive data collection and local expertise to show the full scope of housing needs within Greater Cincinnati.

Prioritized Need

ACCESS TO CARE

Models and Best Practices to Inform Strategies:

- City planning agencies to support bringing health centers to communities
- Public transportation agencies/transit authorities, both in urban and rural communities
- Health and Cultural Fairs
- School-based Healthcare Model
- LGBTQ+ affirming care practices based on Human Rights Campaign's Healthcare Equality Index
- Peer Supporter Model
- Charitable pharmacy model and effective communication strategies between healthcare providers and pharmacies
- Increasingly accessible technologies to leverage for a centralized resource for community members to find services, providers that meet needs/preferences, and healthcare cost transparency across the region
- Coordinated advocacy efforts
- Best practices (and failed practices to avoid) learned from regional collaboration during COVID-19 pandemic and in Opioid epidemic.
- Doula Model
- Community Health Worker Model and On-site Social Workers
- Models for a regional approach to screening for health and SDOH-related needs/supports
- Models for safety and prevention interventions across lifespan

Prioritized Need

WORKFORCE DIVERSITY/CULTURAL COMPETENCY

Models and Best Practices to Inform Strategies:

- Best practices in culturally competent design of healthcare spaces
- Investment in future healthcare workforce through partnering with schools and Career Stat Network Hospitals
- National Fund for Workforce Solutions

Appendix D contains more information about these community assets.

Gaps in Assets for Addressing Prioritized Needs

Though the region as a whole may be resource rich and have many different organizations and initiatives addressing the prioritized needs, the following list highlights gaps in assets for addressing prioritized needs in the region in the existing ecosystem of health and social services. Some of the gaps in assets listed below are also discussed in more detail throughout the Regional CHNA. When considering strategies to address the prioritized health needs, these gaps will need to be addressed or taken into consideration for the strategy to be successful.

Prioritized Need

FOOD SECURITY*

Gaps in Regional Assets:

- Food deserts in the region.
- Perceptions of food being served to patients in hospitals is unhealthy.
- There is a need for more long-term commitments to partnerships with food-security related community organizations to provide better strategies/tools for community members to be successful in developing healthier eating habits and to increase access to healthier foods that are culturally relevant. Partnerships between hospital or other health care system and a community-based organization, for example, have historically been based on a short-term initiative.

Prioritized Need

ACCESS TO CARE

Gaps in Regional Assets:

- Limited partnerships with transportation providers.
- Relative to Dayton MSA, individuals in Cincinnati MSA are significantly more likely to have unmet allergy needs.
- Relative to individuals living in Cincinnati MSA, individuals living in Dayton MSA are significantly more likely to have unmet cardiovascular-related needs.
- The region is missing a centralized information resource that can help community members find doctors to meet needs related to specialties, gender, or cultural preferences; estimate health care costs; and navigate insurance benefits, rights, and/or questions. Community members reported that the lack of a centralized resource for healthcare service information also means there is a lack of a centralized resource for local public health information that is trusted.
- Limited number of service appointments and appointment times (i.e. longer waits for an appointment, particularly new patients, and limited appointment times available outside regular work hours).
- Community members in each region of this Regional CHNA perceive that the healthcare system does not have the best interest of community members in mind.
- America's high-cost healthcare system.
- Limited time available for health care professionals to spend with each patient, including high caseloads and increasing administrative tasks.
- Community members need physicians, clinicians, hospitals, etc. to be in better coordination with social services and community-based providers of holistic health programming (i.e., yoga studios, outdoor recreation, community connectedness activities, cultural events).
- Lack of effective linkages between health care, mental health care, and community-based service providers. Healthcare professionals generally lack knowledge of types of available social services,

Prioritized Need

ACCESS TO CARE

Gaps in Regional Assets:

the organizations offering services, and eligibilities. Healthcare and social services are provided in separate, sometimes distant, spaces.

- Insurance policy can limit service options.
- Lack of regional approach for screening for SDOH and considering SDOH when developing care or treatment plans.
- Outdated technology and lack of shared interpretation of HIPPA policies that makes it challenging to have up-to-date data and to share data.
- Lack of regional protocol for how crisis, addiction, and mental health cases should be treated in emergency departments and among emergency services.

Prioritized Need

WORKFORCE DIVERSITY/CULTURAL COMPETENCY

Gaps in Regional Assets:

- Limited or lack of access to culturally and/or LGBTQ+ competent healthcare professionals
- Translating services are available, but interpretive services require technological knowledge, as well as cultural knowledge to be effective (not just language skills). Language barriers are also a challenge for providers in that it is difficult to also be confident that treatment or medication plans will be followed correctly and safely.
- Increasingly less or no time for health care professionals to pursue continuous education on cultural relevancy.
- Providers report limited implementation of best practices surrounding cultural competency and trauma-informed care.
- Regional staffing shortages from medical specialists to nurses to entry-level administrative and other support staff.

Organizations Identified by Peers as Implementing Best Practices to Address Barriers to Health Care

With a research-informed understanding of the barriers providers face in delivering health and social services, the Regional CHNA focused on identifying the best practices to overcome those barriers. The Regional CHNA provider survey asked health and social service providers about the implementation of best practices that address the barriers providers face in serving the health needs of the community. These best practices are categorized as:

- Workforce development in social services
- Ensuring cultural relevance of services
- Screening and care coordination
- Collaboration
- Data sharing
- Client-responsive services.

The main takeaway in the best practices analysis is that there is great opportunity to increase the implementation of best practices across the region. Appendix E summarizes the results of best practice implementation across the health and social service providers who completed the Regional CHNA provider survey.

The following lists highlight the organizations who were specifically named by one or more of their peers as successfully implementing best practices. Strategies to address barriers providers face in serving the health needs of the community could be informed by the successes of these listed organizations. These organizations are recorded in the Regional Assets data file and is managed by THC.

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN WORKFORCE DEVELOPMENT IN SOCIAL SERVICES	
Bon Secour Mercy Health	Greater Cincinnati Behavioral Health
Caracole, Inc.	Health Source of Ohio
Central Clinic Behavioral Health	Kettering Health
Cincinnati Children's Hospital	Kettering Health Dayton / Grandview Medical Center
Cincinnati Health Department	Kettering Health Franklin Emergency Department
Cincinnati Health Department – Dental	Kettering Health Piqua
Cincinnati Youth Collaborative	Lincoln Heights Health Center
Community Health Assistant	Lindner Center of Hope
CompuNet Clinical Laboratories	Margaret Mary Health Center
Crossroad Health Center	Maternal and Child Health Center
Cypress	Medical Aid Station
Dayton VA Medical Center	Medical Comprehensive Authority Hospital
Dental Success Today	Mental Health and Recovery Board of Clark, Champaign, and Madison Counties
Department of Family and Community Medicine	Mercy Health
Equitas Health	Mercy Health (Springfield and Urbana)

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN WORKFORCE DEVELOPMENT IN SOCIAL SERVICES	
Goodwill Easter Seals Miami Valley	Mt Lookout Dentistry
Greater Cincinnati Behavioral Health Services	Restoration Ranch of Ohio
Krause's Sofa Factory	Rocking Horse Community Health Center
Mercy Health	Samaritan Behavioral Health
Mercy Urbana SBU	Soin Medical Center
Miami Valley Hospital	Temple University
Premier Health	The Christ Hospital
Samaritan Behavioral Health	UC Health
Springfield Regional Medical Center	University of Cincinnati, Department of Family and Community Medicine
The Change Agency	University of Cincinnati, Department of Psychiatry
The Christ Hospital Mt. Auburn FMC	Vanguard Eldercare
TriHealth	Wright State Physicians OB/GYN
Five Rivers Health Center	

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN ENSURING CULTURAL RELEVANCE OF SERVICES	
Bon Secour Mercy Health	Margaret Mary Health Center
Brown and Gettings, DDS	Maternal and Child Health Center
Caracole, Inc.	Medical Aid Station
Central Clinical Behavioral Health	Medical Comprehensive Authority Hospital
Cincinnati Children's Hospital	Mental Health and Recovery Board of Clark, Champaign, and Madison Counties
Cincinnati Health Department	Mercy Health
Cincinnati Health Department – Dental	Mercy Health (Springfield and Urbana)
Cincinnati Health Network	Mercy Urbana SBU
Cincinnati Youth Collaborative	Miami Valley Hospital
Clean Slate Sober Living	Mt Lookout Dentistry
Community Health Assistant	Premier Health
CompuNet Clinical Laboratories	Premier Health – Miami Valley Hospital
Cradle Cincinnati	Premier Health – Upper Valley Medical Center
Crossroad Health Center	Purity Supreme
Cypress	Restoration Ranch of Ohio
Dayton VA Medical Center	Rocking Horse Community Health Center
Dental Success Today	Samaritan Behavioral Health
Department of Family and Community Medicine	Santa Maria Community Services
Dole Foods	Soin Family Medicine Residency
Equitas Health	Soin Medical Center

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN ENSURING CULTURAL RELEVANCE OF SERVICES

Five Rivers Health Center	South Community
Good Samaritan Free Clinic	Springfield Regional Medical Center
Goodwill Easter Seals	Temple University
Grandview Medical Center	The Change Agency
Greater Cincinnati Behavioral Health Services	The Christ Hospital
Health Source of Ohio	The Christ Hospital Mt. Auburn FMC
Kettering Health Dayton / Grandview Medical Center	The HealthCare Connection
Kettering Health Franklin Emergency Department	TriHealth
Kettering Health Main	UC Health
Kettering Health Piqua	UC Health – Primary Care Montgomery
Kettering Network Breast Evaluation Center	University of Cincinnati Medical Center
Lincoln Heights Health Center	University of Cincinnati Department of Psychiatry
Lindner Center of Hope	

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN SCREENING AND CARE COORDINATION

Bon Secour Mercy Health	Maternal and Child Health Center
Brown and Gettings, DDS	Mercy Health
Cincinnati Children's Hospital	Mercy Health (Springfield and Urbana)
Cincinnati Health Department	Mercy Urbana SBU
Cincinnati Health Network	Miami Valley Hospital
Crossroad Health Center	Premier Health
Department of Family and Community Medicine	Premier Health – Upper Valley Medical Center
Five Rivers Health Center	Samaritan Behavioral Health
Goodwill Easter Seals	South Community
Grandview Medical Center	The Change Agency
Greater Cincinnati Behavioral Health Services	The Christ Hospital Mt. Auburn FMC
Health Source of Ohio	The HealthCare Connection
Kettering Health	TriHealth
Kettering Health Dayton / Grandview Medical Center	University of Cincinnati, Department of Psychiatry
Kettering Network KBEC	University of Cincinnati/Cincinnati Children's Hospital

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN DATA-SHARING
Anaheim Medical
Andrews University
CareSource
Cincinnati Health Department
Cleveland Clinic
Country Club Markets
Education and Training Institution
Perfect Plastic Body
Rocking Horse Community Health Center

ORGANIZATIONS SUCCESSFULLY IMPLEMENTING BEST PRACTICES IN CLIENT-RESPONSIVE SERVICES
Anaheim Medical
CareSource
Cincinnati Health Department
Cleveland Clinic
Country Club Markets
Education and Training Institution
Kettering Health
Rocking Horse Community Health Center
United Senior Services

10. Conclusion

The region of providers desire to take a regional approach to ensuring everyone has the opportunity to be healthy. Most of these health conditions align to the priorities set in the Ohio, Indiana, and Kentucky Health Improvement Plans (HIPs) and conditions already prioritized in the community.

Community members have communicated a desire for a regional health system that is more supportive of prevention and wellness. **The research conducted in this Community Health Needs Assessment shows the interconnectedness of structural barriers (policies and programs that govern the community) and community factors (SDOH) that put community members at greater risk for health conditions.**

To advance health equity, the region should consider the communities who are most disadvantaged and design strategies to eliminate that disparity in healthcare access and outcomes. According to Regional CHNA community survey data, Non-White community members, individuals with lower levels of education, individuals with disabilities, those without health insurance, and veteran or active-duty community members experience significant disparity related to multiple SDOH. As a result, initiatives to advance health equity so that all community members have the opportunity to be healthy will require strategies that address these disparities.

Further, these health disparities are also driven by the structural barriers that govern health care; namely the profit-driven healthcare system and the structural division of the continuum of care. These systemic barriers can be addressed in a collective impact strategy that includes policy and practice change. Additionally, the barriers created uniquely by the healthcare system can also be addressed at the policy and practice levels. At the policy level, the region can align internal organizational policies and leverage collective lobbying and political will. At the practice level, providers from every sector can focus on improving the quality of interactions between providers and community members.

The region has come together around a common goal to use a regional approach to improving the health of the community. Data from this Regional CHNA clearly supports comprehensive strategies including addressing SDOH that are driving health needs, a health equity lens that considers how strategies will remove disparities, and mutually reinforcing action at the practice and policy levels.

11. Prioritization of Health Needs for Regional CHNA

The health needs of this region were identified (Table 7) through a series of robust quantitative and qualitative data collection methods across community members, healthcare and social service providers, subject matter experts in hospitals, health departments, community-based organizations, and through review of secondary data and an extensive literature review.

Table 7. Significant Health Needs for the Greater Cincinnati/Greater Dayton Regional CHNA

Most Prevalent Health Conditions (Ranked)	Health Condition Most Untreated (Ranked)	Health Conditions Most Impacted By SDOH
• **Cardiovascular Conditions (Hypertension)** • **Mental Health (Depression and Anxiety)** • Arthritis • Lung/Respiratory Health • **Dental** • Maternal health concerns • Prevention-related needs	• **Vision** • **Dental** • Allergy • **Mental Health (Depression and Anxiety)** • Arthritis • **Cardiovascular Conditions (Hypertension)** • Maternal health concerns	• **Cardiovascular Conditions (Hypertension)** • **Mental Health (Depression and Anxiety)** • **Vision** • Lung/Respiratory Health • Diabetes

SDOH Factors Impacting Health in the Region

- **Economic stability *(Stable housing, food security, paying bills)***
- **Neighborhood and Built Environment *(Access to reasonable transportation, parks/outdoor activities, stable phone, and internet)***
- Education Access and Quality *(Perception of quality of schools and childcare that are available)*
- Social and Community Connectedness *(Having someone to talk to and feeling connected to the community)*
- **Healthcare Access and Quality *(Perception of quality of health care available, cultural relevancy of health care, ease of finding desired health care, ease of navigating healthcare costs)***

Structural Barriers in the Region's Healthcare System

- Competition across healthcare organizations/systems
- Workloads and caseloads are high
- Lack of effective clinical-community linkages
- Language barriers and cultural differences
- High cost of services
- Limited workforce
- Inflexible and restricted funding structures and/or investment in community
- Lack of culturally relevant communication strategies and services across providers
- Limited implementation of DEI practices within organizations
- Community member distrust in the healthcare ecosystem (i.e., providers, insurers, pharmacies, etc.)
- Limited implementation of best practices of trauma-informed care

Systemic Barriers

- Structural racism, including workforce diversity and cultural competence of healthcare delivery
- High-Cost healthcare system
- Structural divide between healthcare system, holistic wellness providers, and social service providers

A total of 25 one-on-one stakeholder meetings were conducted from September 27, 2021 to October 31, 2021 by The Health Collaborative to review results of the robust data collection process, and prioritize the significant health needs using a list of data-driven, actionable recommended priorities. [71] Prioritization of these needs began with a list of recommended priorities that were data driven and action focused. Using a set of five criteria, the top priorities were finalized.

The criteria for prioritization included:

1. **Burden and Severity**: Are the health conditions the greatest burden for our region, across prevalence, those most often gone untreated, and those that were most impacted by social determinants of health? Would addressing this have an impact on the greatest number of community members?
2. **Equity**: Does the health condition/social determinants of health have extreme health disparities across prevalence and qualitative data for our community members? Would addressing this priority significantly address health disparities?
3. **Value to Stakeholders**: Is the health conditions, social determinants of health, and/or systemic root causes important to address across stakeholders? Would addressing this be a high priority for stakeholders/organizations for the community members they serve?
4. **Capacity and Feasibility**: Does our region have the ability to address the need, through partnerships, resources, community will, and funding opportunities?
5. **Alignment:** The level of alignment of the recommended priority. Does the priority align with:
    a. internal strategic plans at stakeholder organizations?
    b. the Ohio State Health Assessment (SHA) and Ohio State Health Improvement Plan (SHIP)?
    c. national goals through Healthy People 2030?

Each meeting was documented with qualitative data of comments, feedback, concerns, and ideas for prioritizing needs for the region. Additionally, quantitative data was collected on the recommended priorities list by asking each stakeholder to name their top three priorities using a series of strategic questions from the list below in Table 8.

Strategic Questions:

1. Based on your **subject matter expertise**, what should the top three priorities be for the region?
2. Based on your **expertise within your organization**, and **as a representative of your organization**, what should the top three priorities be for the region?
3. To **move the needle on advancing health and reducing health disparities** for our community, what should the top three priorities be for the region?

[71] THC and the CHNA Advisory Team reviewed the Regional CHNA Report and data-driven recommendations (Appendix F) drafted by MRC. From the report and data-driven recommendations, THC and the Advisory Committee completed the prioritization methodology outlined in the chapter.

The list of data-driven, actionable recommended priorities discussed at each stakeholder meeting includes:

Table 8: Recommended Priorities and Quantitative Data
Recommended Priority
Address access to and use of resources for the most critical health related social needs, particularly housing and food insecurity, through the development and strengthening of relationships between providers and community-based organizations.
Increase access to services for the region's greatest unmet needs, including dental, vision health, and mental health services.
Strengthen access to and the quality of health care for the region's top health conditions, specifically mental health, and cardiovascular disease, particularly among populations of highest need.
Increase diversity in workforce across all levels, entry to executive (including trauma-informed care practices and cultural competence).
Invest in upstream approaches for identified health equity zones (place-based, community-led collaboratives, in specific geographic areas of highest need – those with the lowest lifespan or other agreed upon metrics).
Increase training and availability of community health workers in clinical delivery sites and community-based organizations.
Increase access to and use of telehealth services, particularly for addressing mental health needs.
Develop data-sharing processes for increasing access to clinical data for local health departments and community-based organizations.

As a result of the stakeholder meetings, Table 9 lists the three regional priorities with supporting data summary:

Table 9. Prioritized Health Needs for the Greater Cincinnati/Greater Dayton Regional CHNA

- Increase access to services in order to improve equitable outcomes for the region's top health needs: behavioral health, cardiovascular disease, dental, and vision.
    - Across the region, cardiovascular conditions and mental health have the highest prevalence and among the highest rate of unmet needs as compared to the other priority conditions. Among other health conditions, dental and vision concerns have the highest rate of unmet needs and that rate is more than double the rate of unmet needs for other conditions. (Figures 1 and 2 and Tables 1 and 2 in the beginning of the report).

- Address access to and use of resources for food security and housing with a focus on the development and strengthening of partnerships between providers and community-based organizations.
    - In regression analysis, economic stability was the SDOH most commonly associated with prevalence of health conditions and rates of unmet health needs. Though average economic stability indicators were relatively more positive compared to other factors in the survey data, the disparity in economic stability is driving the significant results. It is generally understood that food and housing are largely outside of the healthcare system. However, they are a key driver of health. In interviews and focus groups, the community identified many ways for health systems to partner with community providers in delivering collaborative interventions.

- Strengthen workforce pipeline and diversity, including cultural competence, within the healthcare ecosystem.
    - Survey data from health and social service providers as well as qualitative data from interviews and focus groups highlight a lack of diversity in the healthcare provider and management workforce. According to the community, lack of workforce diversity negatively impacts the cultural relevancy of health care and health care accessibility. Additionally, healthcare system experts and community members attribute the lack of diversity among healthcare professionals to be an outcome of structural racism, unwelcoming workplace cultures, and disparity in pursuing healthcare careers across community groups.

12. Endnotes

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