Cleveland Clinic Children's
Hospital for Rehabilitation

Community Health Needs Assessment

2016



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EXECUTIVE SUMMARY

Introduction

This Community Health Needs Assessment (CHNA) was conducted by Cleveland Clinic Children's Hospital for Rehabilitation ("CCCHR" or "the hospital") to identify significant community health needs, to inform development of an Implementation Strategy to address current needs and to evaluate the impact of ongoing efforts to address previously identified community needs.

Cleveland Clinic Children's Hospital for Rehabilitation is a 25-bed pediatric rehabilitation hospital located on the Shaker Heights, Ohio campus. Cleveland Clinic Children's Hospital for Rehabilitation is accredited by the Commission on Accreditation of Rehabilitation Facilities and is the only CARF-accredited, freestanding pediatric rehabilitation hospital in Ohio.

Cleveland Clinic Children's Hospital for Rehabilitation offers both inpatient and "Day Hospital" services for children recovering from trauma, surgery, or a complex, acute hospital stay. Through our inpatient program, outpatient rehabilitation, and a range of therapy services, infants through children age 18 receive the right treatment mix to overcome chronic medical challenges.

Cleveland Clinic Children's Hospital for Rehabilitation provides the following services:

- Aquatic Therapy Program
- Community Programs
- Day Hospital: Regular, intensive therapy without requiring overnight hospitalization
- Dialysis Unit (Judith M. Powers): treatment for young patients with chronic renal disease. Also serves as a training center for parents whose children are on peritoneal dialysis.
- Feeding Disorders Program
- Motor Control Program: specially constructed computer protocols and devices designed to help speed motor learning
- NICU Follow-Up Clinic: Neonatologists, developmental pediatricians and nurse practitioners evaluate and support the developmental needs of premature infants or medically complex babies.
- Outpatient Therapy Services
- Pediatric Pain Rehabilitation Program: The first and only pediatric specialty pain rehabilitation program in the world to be accredited by CARF. Staffed by an interdisciplinary team of experts in behavioral health, medical sciences and rehabilitation. The CCCHR Pediatric Pain Rehabilitation Program is specifically designed for children and teens whose chronic pain interferes with their normal activities.
- Seating & Wheelchair Clinic
- Spasticity Program
- Technology Resource Center: Customized alternative/augmentative communication systems for children and adults who have never spoken or who have lost their ability to speak due to accidents, injuries or other medical conditions.

- The Cleveland Clinic Children's Hospital Center for Autism: The only center in Ohio offering diagnostic services and treatment based on applied behavioral analysis in an educational setting. The state-of-the-art facility is dedicated to treatment, education, and research for children, adolescents, young adults and families dealing with autism spectrum disorders. The Center for Autism leads an outreach program that provides in-home behavioral programming, consultation and training.

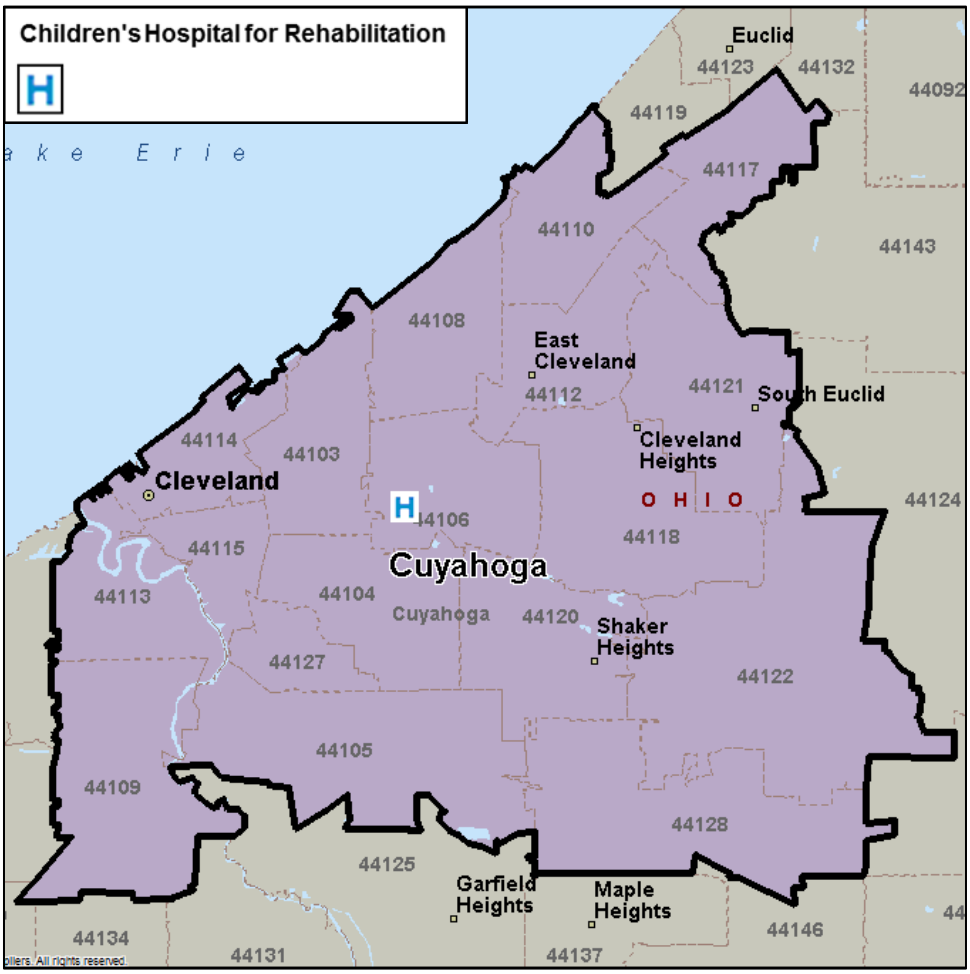
Community Definition

Cleveland Clinic and CCCHR provide a wide range of services from traditional, primary care to highly specialized care to patients in their local communities, across the nation, and around the world. Cleveland Clinic provides complex specialty care to patients residing in a geographic area encompassing one quarter of the State of Ohio and to patients transferred from nearly every state and twenty countries. The broad geographic area that comprises CCCHR's service area is reflected in the fact that 86% of all inpatients in 2014 visited from a 21-county area in Northeast Ohio.

The communities Cleveland Clinic and CCCHR serve are: (1) Local[1] neighborhoods; (2) the 7-County Region; (3) the 21-County Region; (4) the state and (5) nation.

[1] The local neighborhoods community is comprised of 18 ZIP codes surrounding CCCHR.

The following map portrays the Local neighborhoods community. See pp 12-13 for the 7-County and 21-County community maps.



Significant Community Health Needs

Six significant community health needs were identified through this assessment:

1. Access to Affordable Healthcare
2. Chronic Diseases and Other Health Conditions
3. Economic Development and Community Conditions
4. Health Professions Education and Research
5. Specialty Care: Autism Spectrum Disorder
6. Wellness and Prevention

Based on an assessment of secondary data (a broad range of health status and access to care indicators) and of primary data (received through key stakeholder interviews), the following were identified as significant health needs in the communities served by CCCHR. The needs are presented below in alphabetical order, along with certain highlights regarding why each issue was identified as "significant."

Access to Affordable Health Care

- Access to basic health care is challenging for some children and families in CCCHR communities who are unaware of how to access and use available services and who experience other access barriers including cost and inadequate transportation. The CCCHR Local neighborhoods community has comparatively unfavorable socioeconomic indicators. The recent election of the new president raises questions regarding whether access improvements associated with the Affordable Care Act will be sustained.

Chronic Diseases and Other Health Conditions

- Chronic diseases and other health conditions including, in alphabetical order: adolescent chemical dependency, autism, childhood obesity, diabetes, heart disease, poor birth outcomes, poor mental health status, and respiratory diseases were identified as prevalent in CCCHR communities.

Economic Development and Community Conditions

- Several areas within CCCHR communities lack adequate social services and experience high rates of poverty, unemployment, and crime.

Health Professions Education and Research

- There is a need for more trained pediatricians, dentists, and other health professionals in CCCHR communities. Research conducted by Cleveland Clinic, in collaboration with Children's Hospital and CCCHR, has improved health for children with autism, heart disease, concussions, cancer, and other diseases and health conditions. There is a need for more research to address these and other child and adolescent community health needs.

Specialty Care: Autism Spectrum Disorder

- The prevalence of Autism Spectrum Disorder (ASD) is increasing in CCCHR communities. Children with ASD frequently suffer from other developmental, psychiatric, neurological, chromosomal, and genetic disorders and have higher annual medical costs than children without ASD.

Wellness and Prevention

- Programs and activities that target behavior change and prevention were identified as needed in the CCCHR communities. Education and opportunities for residents regarding exercise, nutrition, risk behaviors, and injury prevention specifically were noted.

OBJECTIVES AND METHODOLOGY

Regulatory Requirements

Federal law requires that tax-exempt hospital facilities conduct a CHNA every three years and adopt an Implementation Strategy that addresses significant community health needs.[2] Each tax-exempt hospital facility must conduct a CHNA that identifies the most significant health needs in the hospital's community.

The regulations require that each hospital:

- Take into account input from persons representing the broad interests of the community, including those knowledgeable about public health issues, and
- Make the CHNA widely available to the public.

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

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

Tax-exempt hospital organizations also are required to report information about the CHNA process and about community benefits they provide on IRS Form 990, Schedule H. As described in the instructions to Schedule H, community benefits are programs or activities that provide treatment and/or promote health and healing as a response to identified community needs. Community benefit activities and programs also seek to achieve objectives, including:

- improving access to health services,
- enhancing public health,
- advancing increased general knowledge, and
- relief of a government burden to improve health.[3]

To be reported, community need for the activity or program must be established. Need can be established by conducting a Community Health Needs Assessment.

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

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

[2] Internal Revenue Code, Section 501(r).
[3] Instructions for IRS form 990 Schedule H, 2015.

- ***Why*** are these problems present?

The question of ***how*** each hospital can address significant community health needs is the subject of the separate Implementation Strategy.

Methodology

Federal regulations that govern the CHNA process allow hospital facilities to define the community they serve based on "all of the relevant facts and circumstances," including the "geographic location" served by the hospital facility, "target populations served" (e.g., children, women, or the aged), and/or the hospital facility's principal functions (e.g., focus on a particular specialty area or targeted disease)."[4] The Local neighborhoods community defined by CCCHR accounts for nearly 15 percent of the hospital's 2014 inpatient discharges. The 7-County community accounts for approximately 68 percent of the hospital's inpatient discharges and the 21-County community accounts for approximately 81 percent of inpatient discharges.

This assessment was conducted by Verité Healthcare Consulting, LLC. *See* Appendix A.

Secondary data from multiple sources were gathered and assessed. *See* Appendices B (Local Community), C (7-County), D (21-County), E (Ohio), and F (National). Considering a wide array of information is important when assessing community health needs to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively.

Input from the community was received through key informant interviews. *See* Appendix G. These informants represented the broad interests of the community and included individuals with special knowledge of or expertise in public health.

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

In addition, data was gathered to evaluate the impact of various services and programs identified in the previous CHNA process. *See* Appendix H.

Collaborating Organizations

For this assessment, CCCHR collaborated with the following Cleveland Clinic hospitals: Main Campus, Akron General, Euclid, Fairview, Hillcrest, Lodi, Lutheran, Marymount, Medina, South Pointe, Edwin Shaw Rehabilitation, and Cleveland Clinic Florida. CCCHR also collaborated with Ashtabula County Medical Center and Glenbeigh.

[4] 501(r) Final Rule, 2014.

Data Sources

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

Input from 19 persons representing the interests of children, and a total of 116 persons representing the broad interests of the CCCHR community was taken into account through key informant interviews. Interviewees included: individuals with special knowledge of or expertise in public health; local public health departments; agencies with current data or information about the health and social needs of the community; representatives of social service organizations; and leaders, representatives, and members of medically underserved, low-income, and minority populations.

Information Gaps

This CHNA relies on multiple data sources and community input gathered between January 2016 and July 2016. A number of data limitations should be recognized when interpreting results. For example, some data (e.g., County Health Rankings, Community Health Status Indicators, Youth Behavioral Risk Factors Surveillance System, and others) exist only at a county-wide level of detail. Those data sources do not allow assessing health needs at a more granular level of detail, such as by ZIP code or census tract.

Secondary data upon which this assessment relies measure community health in prior years. For example, the most recently available mortality data published by the Ohio Department of Health are from 2012. Others sources incorporate data from 2010. The impacts of recent public policy developments, changes in the economy, and other community developments are not yet reflected in those data sets.

The findings of this CHNA may differ from those of others. Differences in data sources, communities assessed (e.g., hospital service areas versus counties or cities), and prioritization processes can contribute to differences in findings.

DATA AND ANALYSIS SUMMARY

Definition of Community Assessed

This section identifies the community that was assessed by CCCHR. The community was defined by considering the geographic origins of the hospital's 2014 inpatient discharges, its mission, and principal functions. Thus, the community CCCHR serves are: (1) Local neighborhoods; (2) the 7-County Region; (3) the 21-County Region; (4) the state and (5) nation.

CCCHR's Local neighborhood community is comprised of 18 ZIP codes in Cuyahoga County (**Exhibit 1**) which in 2014 accounted for approximately 26 percent of its inpatient discharges. CCCHR's 7-County community accounts for approximately 70 percent of its inpatient discharges and is comprised of the seven counties surrounding the hospital.[5] CCCHR's 21-County community accounts for over 86 percent of inpatient discharges and is comprised of 21 counties in Northeast Ohio.

Exhibit 1: CCCHR Inpatient Discharges, 2014

Community	Percent of Inpatient Discharges (2014)
Local (18 ZIP Codes)	25.6%
7-County	69.9%
21-County	86.4%
Other Areas	13.6%
Total Discharges	**100.0%**

Source: Analysis of OHA Discharge Data, 2014.

The total population of the Local neighborhoods community in 2015 was approximately 427,000 persons, including approximately 99,000 children (**Exhibit 2**).

[5] The 7-County community consists of Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit counties.

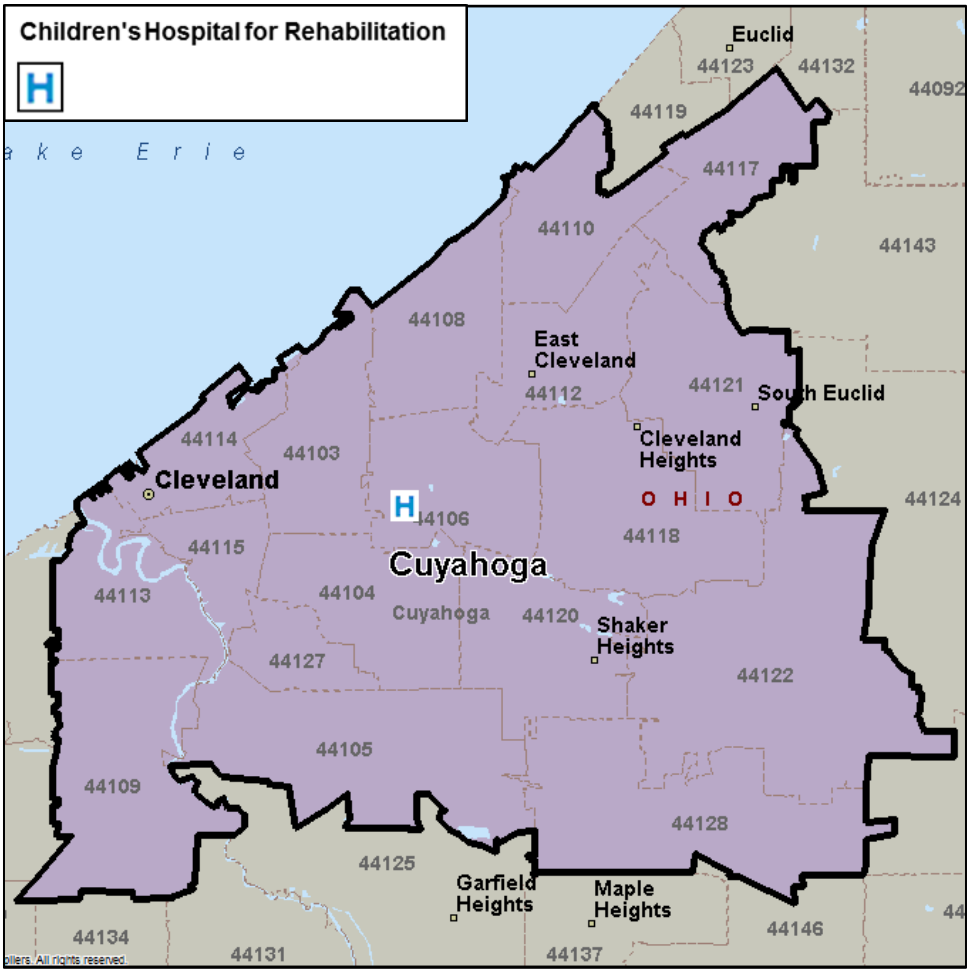
Exhibit 2: Community Population, 2015

City	ZIP Code	Total Population 2015	Percent of Total Population 2015	Population 17 and Younger 2015	Percent of Total ZIP Code Population
Beachwood	44122	33,661	7.9%	6,825	20.3%
Bratenahl	44108	23,919	5.6%	5,941	24.8%
Buckeye-Woodland Hills	44104	22,327	5.2%	7,026	31.5%
Cleveland	44105	37,633	8.8%	9,747	25.9%
Cleveland	44109	39,023	9.1%	9,771	25.0%
Cleveland	44110	18,719	4.4%	4,589	24.5%
Cleveland	44113	19,659	4.6%	3,332	16.9%
Cleveland	44121	32,122	7.5%	7,193	22.4%
Cleveland	44128	28,303	6.6%	6,262	22.1%
Cleveland Heights	44118	39,612	9.3%	9,385	23.7%
Downtown Cleveland	44114	6,256	1.5%	749	12.0%
Downtown Cleveland	44115	8,962	2.1%	2,763	30.8%
East Cleveland	44112	22,151	5.2%	4,885	22.1%
Euclid	44117	10,075	2.4%	1,735	17.2%
Hough-Fairfax	44103	16,978	4.0%	3,809	22.4%
Shaker Heights	44120	35,932	8.4%	8,424	23.4%
Slavic Village	44127	5,215	1.2%	1,463	28.1%
University Circle	44106	26,278	6.2%	4,260	16.2%
Local Community Total		**426,825**	**100.0%**	**98,159**	**23.0%**

Source: Truven Market Expert, 2015.

The hospital is located in Cleveland, Ohio (ZIP code 44195). The maps in **Exhibit 3** portray the ZIP codes that comprise the CCCHR communities.

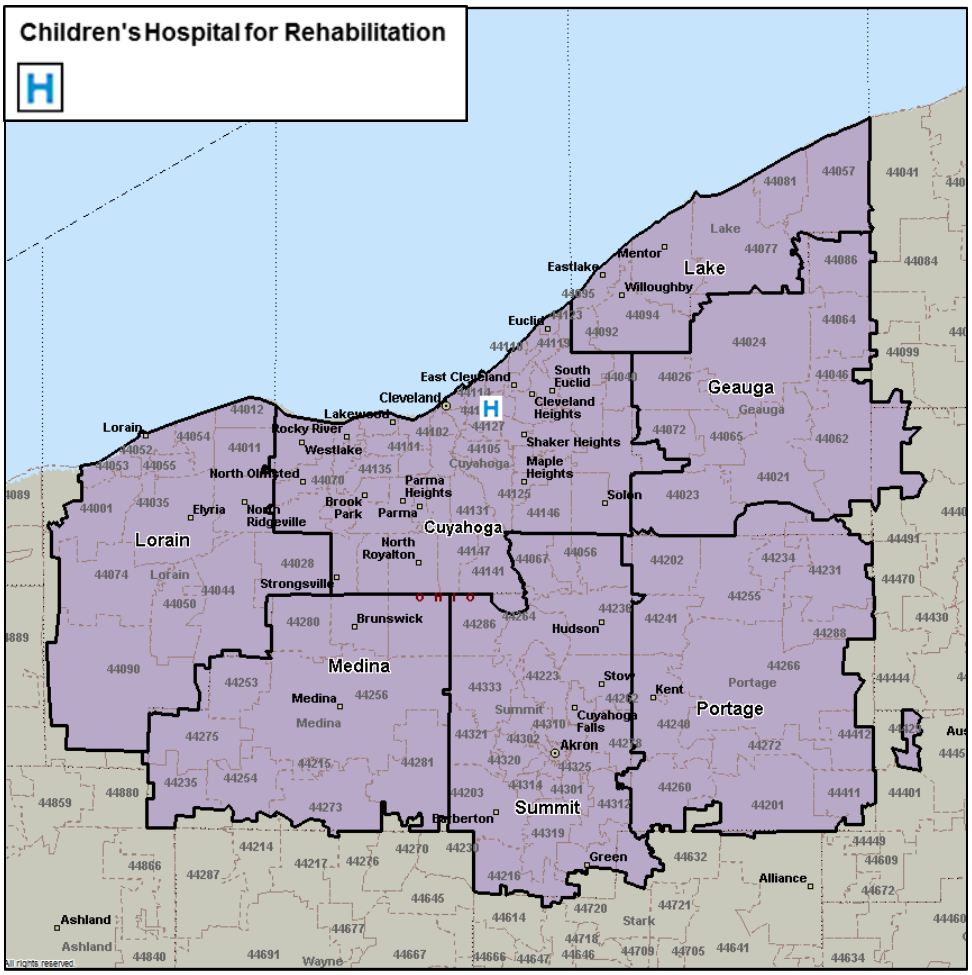
Exhibit 3A: CCCHR Local Neighborhoods Community



Source: Microsoft MapPoint and Cleveland Clinic, 2015.

In 2015, approximately 427,000 persons lived in the Local neighborhoods community, including approximately 99,000 children.

Exhibit 3B: CCCHR 7-County Community

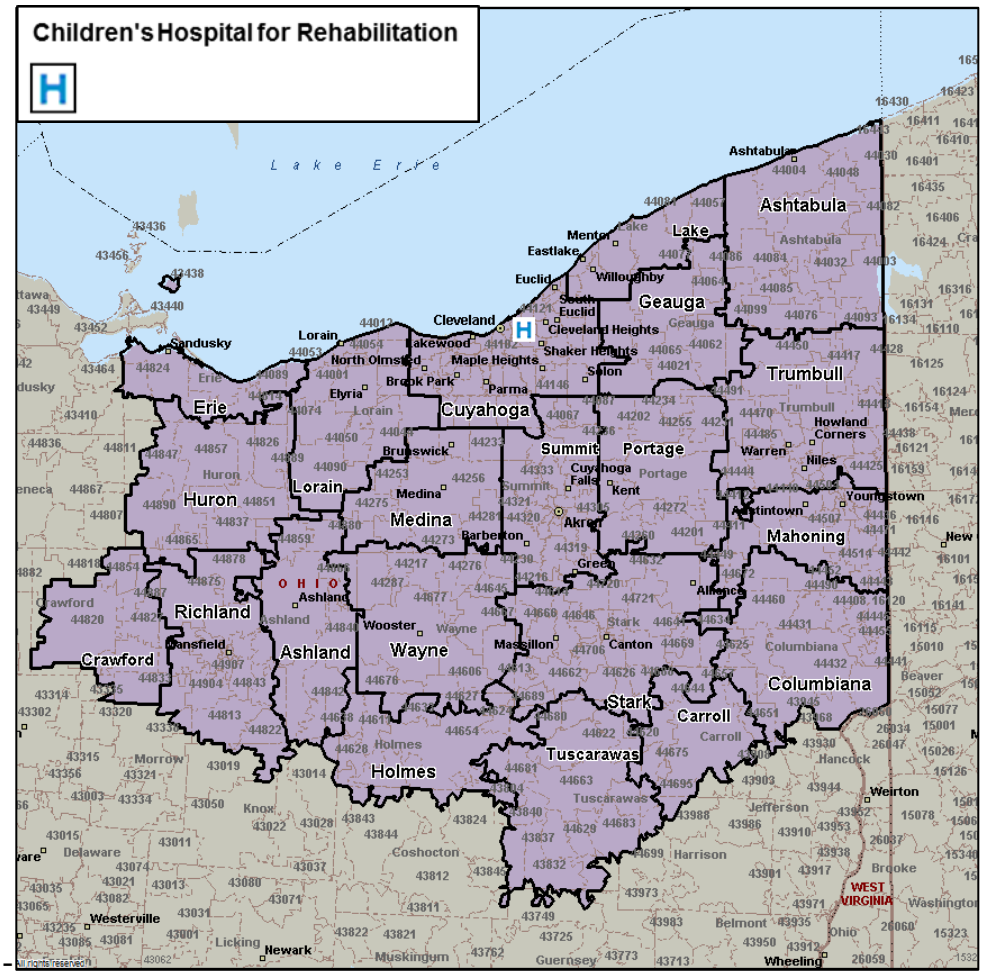


Source: Microsoft MapPoint and Cleveland Clinic, 2015.

In 2015, approximately 2,771,000 persons lived in the 7-County community, including approximately 600,000 children.

County	Estimated Population 17 and Younger 2015
Cuyahoga County	272,274
Geauga County	20,900
Lake County	47,576
Lorain County	66,802
Medina County	40,434
Portage County	32,816
Summit County	118,730

Exhibit 3B: CCCHR 21-County Community



Source: Microsoft MapPoint and Cleveland Clinic, 2015.

In 2015, approximately 4.4 million persons lived in the 21-County community, including approximately 961,000 children.[6]

County	Estimated Population 17 and Younger 2015	County	Estimated Population 17 and Younger 2015	County	Estimated Population 17 and Younger 2015
Ashland County	11,844	Geauga County	20,900	Portage County	32,816
Ashtabula County	22,022	Holmes County	14,256	Richland County	26,248
Carroll County	5,942	Huron County	14,324	Stark County	81,596
Columbiana County	21,697	Lake County	47,576	Summit County	118,730
Crawford County	9,249	Lorain County	66,802	Trumbull County	42,537
Cuyahoga County	272,274	Mahoning County	47,024	Tuscarawas County	20,959
Erie County	15,658	Medina County	40,434	Wayne County	28,055

[6] The 21–County community consists of Ashland, Ashtabula, Carroll, Columbiana, Crawford, Cuyahoga, Erie, Geauga, Holmes, Huron, Lake, Lorain, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

Secondary Data Summary

The following section summarizes principal findings from the secondary data analysis. Appendices B-F provide more detailed information.

Demographics

Local Neighborhoods

Population characteristics and changes directly influence community health needs. The total population in the CCCHR Local neighborhoods community is expected to decrease 2.3 percent from 2015 to 2020. Between 2015 and 2020, 15 of the 18 ZIP codes in the Local neighborhoods community are projected to lose population. The populations in two Cleveland ZIP codes (44105 and 44110) are expected to decrease by approximately five percent.

In 2015, approximately 98,000, or 23 percent of the population in the Local neighborhoods community was aged 17 and younger. This population is projected to decrease by 4.5 percent between 2015 and 2020. 17 of the 18 ZIP codes in the Local neighborhoods community are projected to decrease in population size.

In 2015, over 90 percent of the population in four ZIP codes on the eastern side of the Local neighborhoods community (44104, 44108, 44112, and 44128) was Black. Fewer than fifteen percent of residents were Black in ZIP code 44109.

7-County Community

The total population in the 7-County community is projected to remain virtually unchanged between 2015 and 2020, however the population in Cuyahoga County is projected to decrease by 1.1 percent. During this time period, the population aged 17 and younger in the 7-County community is projected to decrease by 4.7 percent, from 599,532 to 571,294. The population aged 17 and younger in Geauga County is projected to decrease by over nine percent.

In 2015, approximately 17.7 percent of the population in the 7-County community was Black. Cuyahoga County had the highest proportion of Black residents at 29.3 percent and Medina County had the lowest proportion at 1.4 percent.

21-County Community

In 2015, the total population in the 21-County community was approximately 4,417,000 persons. Between 2015 and 2020, the total population in the 21-County community is projected to decrease by 0.4 percent. Within this region, the population in eleven counties is expected to decrease in size.

The population aged 17 and younger in the 21-County community is projected to decrease by a greater degree than the total population. Between 2015 and 2020, the population aged 17 and younger is projected to decrease by 4.8 percent, from 960,943 to 915,034 persons. In 2015, Cuyahoga and Summit counties had the greatest proportion of Black residents.

Economic Indicators

Local Neighborhoods

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. At 31.1 percent, the average poverty rate in the Local neighborhoods community was significantly higher than the state average. Poverty rates among the population aged 17 and younger were substantially higher than overall poverty rates. Within the Local neighborhoods community, approximately 45.6 percent of the population aged 17 and younger is living in poverty. Low income census tracts are prevalent throughout the Local neighborhoods community.

The percentage of people uninsured has declined in recent years, due to two primary factors. First, between 2010 and 2015, unemployment rates at the county, state, and national level decreased significantly. Many receive health insurance coverage through their (or a family member's) employer. Second, in 2010 the Patient Protection and Affordable Care Act (ACA, 2010) was enacted, and Ohio was among the states that expanded Medicaid eligibility. In 2015, 4 out of the 18 ZIP codes in the CCCHR Local neighborhoods community had uninsured rates below ten percent. By 2020, it is projected that this will increase to 16 of the 18 ZIP codes in the Local neighborhoods community. U.S. Census data also indicate that the average uninsured rate among the population 17 and younger in the Local neighborhoods community was 4.1 percent, which was lower than both the Ohio and national averages for this population.

7-County Community

In 2014, approximately 18.5 percent of the total population and 27.9 percent of the population aged 17 and younger in Cuyahoga County were living in poverty; higher percentages than the Ohio averages. Poverty rates in the 7-County community and Ohio have been comparatively high for Black and Hispanic (or Latino) residents. The poverty rate for Hispanic (or Latino) residents of Cuyahoga County has exceeded the Ohio average as has the poverty rate for Asian residents of Lorain, Medina, Portage, and Summit counties.

2014 overall crime rates in Cuyahoga and Summit counties were well above Ohio averages. Across Ohio, approximately 8.8 violent crimes per 100,000 population were committed by juveniles in 2013. Juvenile property crime and drug crime rates were approximately 38.5 and 16.5 per 100,000 population, respectively.[7]

Between 2010 and 2015, unemployment rates have decreased in each county in the 7-County community. Uninsured rates are also projected to decrease. In 2015, approximately 6.1 percent of residents in the 7-County community were uninsured. By 2020, it is projected that this percentage will decrease to 4.1 percent. U.S. census data indicate that in 2014, the uninsured rates for the total population; 11.4 percent, and the population aged 17 and younger; 14.4 percent, in Geauga County were higher than the Ohio averages.

21-County Community

Poverty rates have been comparatively high across the 21-County community. Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Portage, Stark, and Trumbull counties also had

[7] Ohio Office of Criminal Justice Services, *Juvenile Arrests in Ohio by Crime Type*, 2013.

higher poverty rates than Ohio in 2014. The poverty rate for the population 17 and younger has been problematic in the community as well. The poverty rate for individuals aged 17 and younger was higher than the overall poverty rate in every county in Northeast Ohio. The youth poverty rates in Ashland, Ashtabula, Carroll, Columbiana, Crawford, Cuyahoga, Mahoning, Richland, and Trumbull counties were all higher than the Ohio youth poverty rate. Across the 21-County community, poverty rates have been comparatively high for Black and Hispanic (or Latino) residents. Low income census tracts are also prevalent throughout this region.

Unemployment rates have been improving in the 21-County community, however in 2015, fourteen of the 21 counties in this region had higher unemployment rates than the state average. Between 2015 and 2020, it is projected than uninsured rates will drop by approximately 1.9 percent, from 6.0 to 4.1 percent. In 2014, U.S. Census data indicated that 5.1 percent of the population aged 17 and younger in Ohio was uninsured. Within the 21-County community, Ashland, Ashtabula, Carroll, Columbiana, Geauga, Holmes, Huron, Richland, Trumbull, Tuscarawas, and Wayne counties had a higher percent of persons aged 17 and younger who lacked health insurance.

Health Status and Access Indicators

Local Neighborhoods

In the 2016 *County Health Rankings*, Cuyahoga County ranked in the bottom one-half of Ohio counties for 15 of the 21 indicators assessed. For five issue areas, the county ranked in the bottom quartile including: Quality of Life, Sexually Transmitted Infections, Social and Economic Factors, Inadequate Social Support, and Severe Housing Problems. The county's ranking fell between 2013 and 2016, particularly for various social and economic factors, social determinants of health, Excessive Drinking, and Teen Births. The following indicators underlying the rankings are comparatively unfavorable:

- Chlamydia rate
- Income inequality rate
- Percent of children in poverty
- Percent of children living in a household headed by a single parent
- Percent of driving deaths with alcohol involvement
- Percent of households with severe housing problems
- Percent of live births with low birth weight
- Percent of the population unemployed
- Social associations rate
- Violent crime rate

In the 2015 *Community Health Status Indicators*, which compares community health indicators for each county with those for peers across the United States, the following indicators appear to be most significant in Cuyahoga County:

- Annual average particulate matter concentration
- Morbidity associated with preterm births
- Mortality rates for cancer

- The number of children living in single-parent households

According to the Ohio Department of Health, virtually all maternal and child health indicators (infant mortality rates, low birth weights, preterm births, and teen pregnancies) are comparatively problematic in Cuyahoga County.

Data from the Centers for Disease Control's Youth Risk Behavior Surveillance System (YRBSS) indicate comparatively high rates alcohol use, attempted suicide, behaviors that contribute to unintentional injuries, cigar use, illegal and prescription drug use, and violence among Cuyahoga County high school students.

7-County Community

In the 2016 *County Health Rankings*, rankings for Sexually Transmitted Infections, Social & Economic Factors, Inadequate Social Support, Physical Environment, Air Pollution, and Severe Housing Problems were comparatively low in the 7-County community. Compared to Ohio averages, the following indicators were unfavorable in three or more of the counties in the 7-County community:

- Air pollution
- Percent of households with severe housing problems
- Percent of the population unemployed
- Ratio of primary care physicians, dentists, and mental health providers
- Social associations rate

Community Health Status Indicators data indicate that morbidity associated with preterm births was comparatively high in the 7-County community in 2015. The indicators for poverty and air quality also benchmark unfavorably.

Data from the Ohio Department of Health also indicate that maternal and child health indicators in Cuyahoga and Summit counties were also particularly problematic.

21-County Community

In the 2016 *County Health Rankings*, more than half of the counties in the 21-County community ranked in the bottom quartile of Ohio counties for Physical Environment and more than one third of counties in the 21-County community also ranked unfavorably for Social & Economic Factors, Clinical Care, Quality of Life, Length of Life, Health Factors, and Health Outcomes.

Community Health Status Indicators data indicate that at least one third of the counties in the 21-County community compared unfavorably to peer counties for primary care provider access and air pollution. Five of the counties in the 21-County community also compared unfavorably to peer counties for preterm births inadequate social support, and children in single-parent households.

Ohio Department of Health data indicate that more than half of the counties in the 21-County community had unfavorable rates of infant, neonatal, and/or post-neonatal mortality.

Ohio

America's Health Rankings is an annual report produced by the United Health Foundation, which assesses the health status of each state based on 62 indicators. In 2015, Ohio ranked in the bottom quartile of states for 21 of the 62 health indicators including:

- Air pollution
- Children in poverty
- Immunizations
- Infant mortality
- Insufficient sleep
- Obesity
- Preterm births
- Teen births

Data from the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance System (YRBSS) indicate that children in Ohio have high rates of health-risk behaviors that contribute to the leading causes of death and disability among youth, including:

- Bullying
- Carrying a weapon on school property
- Failure to get sufficient sleep
- Failure to use a safety belt
- No wellness checkup in past 12 months
- Proportion of adolescents who experience a major depressive episode
- Tobacco use
- Viewing television or playing video games more than two hours per day

The Ohio Department of Health identified the following child health areas as priority issues in 2013:

- Adolescent pregnancy and teen birth rates
- Behavioral health
- Child health disparities:
    - African American: homicide mortality, teen birth rate, overall mortality
    - Hispanic: behavioral health problems including depression, overweight/obesity
    - Disabled: suicide attempts, bullying, substance abuse, forced sexual activity
- Infant mortality
- Oral health
- Overweight and obesity rates; poor nutrition, physical inactivity
- Tobacco use and second-hand tobacco exposure
- Unintentional injury and mortality

The Ohio Department of Health also published the *Ohio Child Fatality Review Fifteenth Annual Report* in 2015.

The 2015 report reviewed 7,671 deaths for 2009-2013

- 33 percent were Black children (versus 17 percent in population)
- 72 percent were due to medical causes; 23 percent to "external causes" (including asphyxia)

The leading medical causes of death were: prematurity (44 percent), congenital anomalies (17 percent), cardiovascular conditions (7 percent), SIDS (2 percent). The leading external causes of death were: asphyxia (32 percent), vehicular injuries (23 percent), and weapons (18 percent).

The 2015 Child Fatality Review Annual Report identified a number of prevention initiatives across Ohio:

- Child abuse and neglect
- General health and safety
- Infant deaths
- SIDS and sleep-related deaths
- Substance abuse
- Suicide
- Systems improvements (e.g., consortia formation)
- Vehicular injuries

National

The Healthy People 2020 *Leading Health Indicators (LHIs)* are a select subset of 26 Healthy People 2020 objectives chosen to communicate high-priority health issues in the United States. Based off of the most recently available data, 15 of the 19 health indicators related to child health are not meeting their HP 2020 targets. Topics with particularly unfavorable rates include:

- Access to health services
- Clinical preventive services
- Maternal, infant, and child health
- Mental health
- Nutrition, physical activity, and obesity
- Oral health
- Social determinants
- Substance abuse
- Tobacco use

Health, United States is published annually by the Centers for Disease Control. It indicates that the leading causes of death in the United States are: heart disease, cancer, chronic lower respiratory diseases, unintentional injuries, stroke, Alzheimer's disease, diabetes,

influenza/pneumonia, nephritis, and suicide. Chronic disease rates have increased since 2000, particularly rates of obesity, heart disease, diabetes, and cancer.

Reviewing national health statistics, the Centers for Disease Control and Prevention has identified the following as the nation's Child Public Health Priorities:

- Tobacco use
- Nutrition, physical activity, and obesity,
- Motor vehicle injuries
- Teen pregnancy

The Centers for Disease Control and Prevention also record national statistics on Autism Spectrum Disorder (ASD) and unintentional injuries. Recent findings related to ASD indicate:

- The prevalence of ASD has been increasing
    - In 2000, approximately 1 in 150 children were diagnosed with ASD
    - In 2012, approximately 1 in 68 children were diagnosed with ASD
- ASD is a nondiscriminatory illness, occurring in all racial, ethnic and socioeconomic groups
- ASD is more common among males than females
    - Approximately 1 in 42 males are diagnosed with ASD
    - Approximately 1 in 189 females are diagnosed with ASD
- Developmental, psychiatric, neurological, chromosomal, and genetic disorders commonly co-occur with ASD
    - Approximately 10 percent of children with ASD also have Down syndrome, fragile X syndrome, tuberous sclerosis, or another other disorders
- Diagnosis of ASD can be made reliably at age 2; however, most children are not diagnosed with ASD until after the age of 4
- Annual medical expenditures for children with ASD exceed expenditures for children without ASD by $4,110 to $6,200
- Adolescents with ASD are approximately twice as likely to be obese as adolescents without developmental disabilities

Recent findings related to unintentional injuries indicate:

- In 2013, injury deaths related to motor vehicle accidents were the leading cause of death for children aged 5-19 and the second leading cause of death for children aged 0-4
- In 2013, falls or being struck by or against something were the leading causes of unintentional nonfatal injuries for all age groups

In 2016, the American Psychological Association published *mental health treatment for people with autism spectrum disorder (ASD).* The publication indicates:

- Emotional and behavioral problems are major issues for people with ASD, occurring more frequently than in peers
- 59 percent of 5 year olds with ASD have difficulty with hyperactivity, 46 percent with conduct, and 38 percent with emotions
- 70 percent of youth with ASD (between 5 and 17 years of age) have emotional problems and 65 percent have conduct issues
- Additionally, 70 percent of youth with ASD meet criteria for at least one psychiatric disorder and 40 percent for two disorders or more
- People with ASD often struggle to access appropriate care as a result of systemic barriers and a lack of capacity

Ambulatory Care Sensitive Conditions

Ambulatory Care Sensitive Conditions (ACSCs) include fourteen health conditions we analyzed "for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[8] Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, low birth weight congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

Local Neighborhoods

The average ACSC rate for low birth weight in the CCCHR Local neighborhoods community was 92.1 per 100,000 population, which is nearly 50 percent higher than the Ohio average of 61.4 per 100,000 population. Within the CCCHR Local neighborhoods community, ZIP code 44115 had the highest rate at 186.7 per 100,000 population and only ZIP code 44122 had a lower rate than the Ohio average.

7-County Community

The average ACSC rate for low birth weight in the 7-County community was 67.1 per 100,000 population. Within the 7-County community, Cuyahoga County's low birth weight rate of 78.2 was higher than the Ohio average of 61.5 per 100,000 population.

21-County Community

The average ACSC rate for low birth weight in the 21-County community was 66.2 per 100,000 population Within this region, Cuyahoga, Erie, Huron, Lorain, Mahoning, Richland, Stark, and Trumbull counties had higher low birth weight rates than the Ohio average of 61.5 per 100,000 population.

Ohio

The average ACSC rate for low birth weight in Ohio was 61.5 per 100,000 population.

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

Community Need Index

Dignity Health, a California-based hospital system, developed and has made widely available for public use a *Community Need Index*™ (CNI) that measures barriers to health care access by county/city and ZIP code. The index is based on five social and economic indicators:

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

The CNI calculates a score for each ZIP code based on these indicators. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0).

Local Neighborhoods

The CNI indicates that 15 of the 18 ZIP codes in the Local neighborhoods community scored in the "highest need category." Seven Cleveland ZIP codes (44103, 44104, 44108, 44115, 44127, 44105, and 44110) each received a score of 5.0 – the highest score possible.

7-County Community

The average CNI score in the 7-County community was 3.0. Cuyahoga County had the highest average CNI score in the community; 3.4.

21-County Community

The average CNI score in the 21-County community was 3.0. Ashtabula and Cuyahoga counties had the highest average CNI scores in the community; 3.4.

Food Deserts

The U.S. Department of Agriculture's Economic Research Service estimates the number of people in each census tract that live in a "food desert," defined as low-income areas more than one mile from a supermarket or large grocery store in urban areas and more than 10 miles from a supermarket or large grocery store in rural areas.

Local Neighborhoods

Food deserts have been designated in seven of the eighteen ZIP codes that comprise the Local neighborhoods community.

7-County Community

Within the 7-County community, food deserts are located in Cuyahoga, Lake, Lorain, Portage, and Summit counties.

21-County Community

Food deserts are located in seventeen of the twenty one counties in the community including: Ashland, Ashtabula, Columbiana, Crawford, Cuyahoga, Erie, Huron, Lake, Lorain, Mahoning, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

Medically Underserved Areas and Populations

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

Local Neighborhoods

There are approximately 98 census tracts in the hospital's Local neighborhoods community that have been designated as medically underserved.

7-County Community

Medically Underserved Areas are present in Cuyahoga, Lorain, and Summit counties and Medically Underserved Populations are present in Lake, Medina, and Portage counties.

21-County Community

In the 21-County community, Medically Underserved Areas are present in Cuyahoga, Lorain, Mahoning, Stark, Summit, and Trumbull counties. Medically Underserved Populations are present in Ashtabula, Lake, Medina, and Portage counties.

Health Professional Shortage Areas

A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present.

Local Neighborhoods

Primary care and Dental care HPSA designated census tracts are located throughout the Local neighborhoods community.

7-County Community

Primary care HPSAs are present in Cuyahoga, Lake, and Summit, counties and Dental care HPSA designated census tracts are located in Cuyahoga, Lorain, and Summit counties.

21-County Community

Primary care HPSAs are present in Cuyahoga, Lake, Mahoning, Stark, Summit, and Trumbull counties and Dental care HPSA designated census tracts are located in Cuyahoga, Erie, Lorain, Mahoning, and Summit counties.

Relevant Findings of Other CHNAs

The following community health needs were most frequently found to be significant in other, recently conducted community health needs assessments conducted by CCCHRs.

- Asthma/childhood asthma
- Mental/Behavioral health
- Obesity
- Infant mortality (disparities)
- Access to basic/primary health care
- Access to dental care
- Child safety and injuries
- Child vaccination/infectious disease management
- Diabetes
- Nutrition/ access to healthy food
- Alcohol abuse and excessive drinking
- Cost of care
- Drug/ substance abuse
- Early childhood development/literacy
- Violence (youth)

Primary Data Summary

The following community health issues were identified by interviewees as significant. The issues are presented based on the frequency with which they were mentioned.

Access Issues. Interviewees cited the inaccessibility of certain pediatric healthcare services as a significant need in the community served by CCCHR. Lack of knowledge of available services, certain insurance gaps, transportation, and providers not accepting Medicaid are some of the main barriers to access. Many indicated that social determinants of health also present access barriers and disproportionately affect low-income families and children, immigrant populations, those with language barriers, and minorities.

The most frequently mentioned services for children and adolescents associated with access challenges include:

- **Access to Dental Care.** A majority of interviewees indicated that access to dental care services for children is problematic, particularly for those without dental insurance benefits. They emphasized that poor oral health can lead to other health problems.

- **Access to Pediatric Care.** Interviewees indicated that access to pediatric primary care is challenging for some segments of the population – particularly low-income children and families. As a result, many children and adolescents receive primary care in hospital emergency rooms. Several interviewees expressed the goal that all children find a

consistent medical home for primary care and prevention. Clinics that serve lower-income children report challenges in recruiting and retaining health professionals.

- **Access to Specialty Care.** Many interviewees reported problematic access to certain types of pediatric specialty care in the communities served by CCCHR. As described below, this includes access to behavioral health services. Access to autism services reportedly is complicated by low compensation rates and high turnover rates for autism and disability aides.

Infant Mortality and Preterm Births. Interviewees were well aware that the infant mortality rate for low-income Black women in Cleveland is among the highest in the nation. Rates of preterm births for minority populations also were mentioned as problematic. Interviewees mentioned the following as contributing factors to these health disparities: poverty, poor housing options, smoking rates, opioid use, lack of time between pregnancies, weight management issues, and a lack of access to and awareness of prenatal care services. Community collaboration and assuring that interventions are evidenced-based were mentioned as important.

Obesity and Diabetes. Interviewees expressed concerns about the growing number of obese and diabetic children in the community. They attributed high obesity rates primarily to two factors: physical inactivity and poor nutrition. Many expressed frustration regarding a declining emphasis on physical activity in schools and reduced availability of other recreational activities in communities. Some suggested that growing pressures on children to perform well academically are contributing to sedentary lifestyles. Other causal factors include unhealthy eating habits, the comparatively high cost of healthy foods, and a lack of school-based health education courses.

Housing and Other Community Problems. Many interviewees stated that substandard housing in the community has had a negative impact on child health. Lead poisoning, caused by the exposure to lead-based paint, frequently was mentioned as contributing to developmental impairments in children. Public funding for lead removal reportedly has declined significantly. Elevated gang activity and violence also were identified as negatively affecting children and adolescents.

Mental and Behavioral Health. Interviewees indicated that managing the mental and behavioral health needs of the community's youth was a significant health concern. Problem areas mentioned include:

- **Access to Psychiatric Care.** There are severe shortages of pediatric psychiatrists and psychiatric beds in the community. These providers have long waiting lists.

- **Alcohol and Substance Abuse.** Interviewees also expressed concern about a growing number of adolescents who report consuming alcohol before the age of twenty-one. The affordability and accessibility of heroin and prescription opioids in the community has resulted in unacceptably high overdose death rates among adolescents. A lack of detox and rehabilitation treatment centers was said to exacerbate these problems.

- **Severe Problem Behavior.** Interviewees also indicated identified the need to manage better students with severe problem behaviors. These students disrupt classrooms and require resources that provide individualized attention. Problem behaviors were attributed to broken family structures and to children being exposed to family traumas.

Autism and Developmental Disabilities. Several interviewees identified increasing rates of autism and developmental disabilities as a significant health concern. These were described as widespread problems, with few resources available to treat them. Of the development disabilities discussed, cerebral palsy, spina bifida, muscular dystrophy, and seizures were specifically mentioned.

Asthma. Interviewees stated that many children in the community served by CCCHR suffered from asthma. Children living in low-income areas were cited as being particularly susceptible to developing asthma given the increased exposure to air pollution and tobacco smoke.

SIGNIFICANT COMMUNITY HEALTH NEEDS

Prioritization Process

The following section highlights why certain community health needs were determined to be "significant." Needs were determined to be significant if they were identified as problematic by at least two of the following three data sources: (1) the most recently available secondary data regarding the community's health, (2) recent assessments developed by other organizations (e.g., local Health Departments), and (3) the key informants who participated in the interview process.

Access to Affordable Health Care

Access to basic health care is challenging for some segments of the CCCHR community who are unaware of how to access and use available services and who experience other access barriers including cost and inadequate transportation. The CCCHR community has comparatively unfavorable socioeconomic indicators, particularly in medically underserved areas. The recent election of the new president raises questions regarding whether access improvements associated with the Affordable Care Act will be sustained.

- Federally-designated Medically Underserved Areas (MUAs) and Primary Care Health Professional Shortage Areas (HPSAs) are present in the communities served by CCCHR **(Exhibits 31, 32, 55, 56, 77, and 78)**.
- ACSC rates for low birth weight within the CCCHR communities were significantly higher than the Ohio averages **(Exhibits 27, 51, and 74)**. Disproportionately high rates indicate potential problems with the availability or accessibility of ambulatory care and preventive services and can suggest areas for improvement in the health care system and ways to improve outcomes.
- County Health Rankings data indicate that the ratios of population to primary care physicians, dentists, and mental health providers in counties across the community were higher than the Ohio averages **(Exhibit 47)**.
- Interviewees cited the inaccessibility of certain pediatric healthcare services as a significant need in the community served by CCCHR. Lack of knowledge of available services, certain insurance gaps, transportation, and providers not accepting Medicaid are some of the main barriers to access. The most frequently mentioned services for children and adolescents were dental care, pediatric care, and specialty care.

Chronic Diseases and Other Health Conditions

Chronic diseases and other health conditions including, in alphabetical order: adolescent chemical dependency, autism, childhood obesity and diabetes, heart disease, poor birth outcomes, poor mental health status, and respiratory diseases were identified as prevalent in CCCHR communities.

- **Adolescent Chemical Dependency**
  - In County Health Rankings, Cuyahoga County ranked 52nd out of 88 Ohio counties for Drug Overdose Deaths and 64th for Excessive Drinking **(Exhibit 20)**. In the 7-County community, Lake and Lorain counties also ranked in the bottom half of Ohio counties for Drug Overdose Deaths **(Exhibit 47)**.
  - YRBSS data indicate that there are high rates of illicit and prescription drug use among middle school and high school students within the community served by CCCHR **(Exhibits 24 and 26)**.
  - According to the 2014 Ohio Department of Health Drug Overdose Report, fentanyl drug seizures in the United States increased by 300 percent between 2013 and 2014. In 2014, fentanyl-related overdoses accounted for 19.9 percent of accidental overdoses, a significant rise from 4.0 percent in 2013. Additionally, the rate of heroin poisoning in Cuyahoga County was significant higher than the Ohio average.
- **Autism**
  - Data from the Centers for Disease Control and Prevention indicate that ASD prevalence has increased from 1 in 150 children to 1 in 68 children between 2000 and 2012. Children with ASD experience higher rates of co-morbid conditions than children without developmental disabilities.
  - Interviewees identified increasing rates of autism and developmental disabilities as a significant health concern. These were described as widespread problems, with few resources available to treat them.
- **Childhood Obesity and Diabetes**
  - Federally-designated Food Deserts are present in the communities served by CCCHR **(Exhibits 30, 54, and 76)**. Lack of access to affordable healthy food options and high concentrations of fast food restaurants, may lead individuals (particularly those in lower socio-economic classes) to consume calorie dense, nutrient poor foods that lead to obesity. Chronic conditions such as diabetes are much more prevalent among individuals who are obese.
  - Data from the Youth Risk Behavior Surveillance System (YRBSS) indicate that a high percentage of middle school students in the community are either overweight or obese. Rates of physical inactivity were also low **(Exhibit 24)**.
  - Interviewees expressed concerns about the growing number of obese and diabetic children in the community. High obesity rates were primarily attributed to physical inactivity and poor nutrition.
- **Heart Diseases**
  - According to the Ohio Child Fatality Review Fifteenth Annual Report, cardiovascular conditions were the third leading medical cause of death among children in Ohio.
  - YRBSS data indicate that children in Cuyahoga County report high rates of risk behaviors that lead to heart disease, including alcohol and tobacco use, physical inactivity, and excessive use of technology**(Exhibit 26)**.
- **Poor Birth Outcomes**
  - In County Health Rankings, Cuyahoga County ranked 51st out of the 88 counties in Ohio for teen births **(Exhibit 20)**, and had a significantly higher percentage of

low birth weight births compared to both the Ohio and national averages **(Exhibit 21)**.
    - Data from the Ohio Department of Health indicate that rates of infant mortality, low birth weights, and preterm births in Cuyahoga County have been significantly higher than the Ohio averages **(Exhibit 23)**. Indicators of maternal and infant health have been unfavorable throughout the 7-County and 21-County communities; more than half of the counties in the 21-County community had unfavorable rates of infant, neonatal, and/or post-neonatal mortality **(Exhibits 50 and 73)**.
    - ACSC rates for Low Birth Weight were significantly higher than the Ohio average in the CCCHR Local neighborhoods community **(Exhibit 27)**. ACSC rates for Low Birth Weight in eight of the 21 counties in Northeast Ohio and in the 21-County community overall were higher than the Ohio average **(Exhibit 74)**.
    - In America's Health Rankings, Ohio ranked 44th out of the 50 states for infant mortality **(Exhibit 79)**.
- **Poor Mental Health Status**
    - YRBSS data show that the percent of middle school and high school students who have considered and/or attempted suicide is high within the community **(Exhibit 24 and 26)**.
    - Managing the mental and behavioral health needs of the community's youth was a significant health concern. Frequently noted problem areas included lack of access to psychiatric care, alcohol and substance abuse, and severe problem behavior.
    - The 2012 Medina County Community Health Needs Assessment indicates that 17 percent of Medina County youth had seriously considered attempting suicide in the past year. Childhood depression was also identified as a serious issue in Medina County; approximately 25 percent of youth reported feeling sad or hopeless almost every day for 2 or more weeks in a row.[9]
- **Respiratory Diseases**
    - Interviewees stated that many children living in the community suffered from asthma and children living in low-income areas were cited as being particularly susceptible to developing asthma given the increased exposure to air pollution and tobacco smoke.
    - Data from County Health Rankings and Community Health Status Indicators show that air pollution is a serious problem throughout the community **(Exhibits 47 and 70)**.
    - Childhood asthma was the most frequently identified health concern in other recent pediatric health assessments.

Economic Development and Community Conditions

Several areas within the CCCHR communities lack adequate social services and experience high rates of poverty, unemployment, crime, and adverse environmental conditions.

[9] Living Well Medina County, *Medina County Community Needs Assessment*, 2012.

- Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Portage, Stark, and Trumbull counties have higher poverty rates than both the Ohio and national averages and youth poverty rates are higher than the overall poverty rates in every county in Northeast Ohio **(Exhibit 63).**
    - Poverty rates among Black and Hispanic (or Latino) populations in Cuyahoga County are more than twice as high as the poverty rate of White residents **(Exhibit 12)**.
    - Federally-designated Low Income Areas are present in the communities served by CCCHR **(Exhibits 14, 42, and 65)**.
    - In County Health Rankings, Cuyahoga County ranked 79th out of the 88 counties in Ohio for Social and Economic Factors, 59th for Unemployment, and 78th for Inadequate Social Support **(Exhibit 20)**. Ten other counties in the 21-County community also ranked in the bottom half of Ohio counties for Social and Economic Factors **(Exhibit 70)**.
    - County Health Rankings data show that the percent of children living in single parent households or children living in poverty in Cuyahoga County are higher than the Ohio averages **(Exhibit 21)**.
    - According to the Community Need Index, 15 out of the 18 ZIP codes in CCCHR's Local neighborhoods community scored in the "highest need category" **(Exhibit 28)**.
    - A majority of interviewees identified economic and healthcare disparities among minority residents as significant community health issues.
- Crime rates in Cuyahoga County have been well above Ohio averages **(Exhibit 19)**. Murder rates have been problematic in Columbiana, Cuyahoga, Geauga, Mahoning, and Summit counties **(Exhibit 69)**.
- In County Health Rankings, Cuyahoga County ranked 61st out of 88 counties, in Physical Environment, 63rd in Air Pollution, and 87th in Severe Housing Problems **(Exhibit 20)**. Seventeen additional counties in the 21-County community also ranked in the bottom half of Ohio counties for Physical Environment **(Exhibit 70)**.
- Substandard housing has had a negative impact on child health in the community. Many interviewees stated that lead poisoning contributes to developmental impairments in children. It was also mentioned that public health funding for lead removal has declined significantly in recent years.

Health Professions Education and Research

There is a need for more trained pediatricians, dentists, and other health professionals in the community. Research conducted by Cleveland Clinic, in collaboration with Children's Hospital and CCCHR, has improved health for children with autism, concussions, heart disease, cancer and other diseases and health conditions. There is a need for more research to address these and other community health needs.

- Federally-designated Medically Underserved Areas (MUAs) and Primary Care Health Professional Shortage Areas (HPSAs) are present in the communities served by CCCHR **(Exhibits 31, 32, 55, 56, 77, and 78)**.

- A report conducted by the Robert Graham Center indicates that Ohio will need an additional 681 primary care physicians by 2030 (an eight percent increase) to maintain current levels of primary care access. Physicians nearing retirement age and increases in demand associated with increases in insurance coverage are expected to exacerbate this need.[10]
- Through research, Cleveland Clinic has advanced knowledge and improved community health. For example in 2015, CCCHR was involved in research on plant based diets for pediatric cardiovascular patients, the effectiveness of targeted radiation therapy for pediatric cancer patients, and treatment trials for autism patients with PTEN mutations. In addition, CCCHR has adopted the use of a new technology, frequency-specific microcurrent (FSM) therapy, for children with nerve and muscle pain, acute injury, and arthritis that research has shown to reduce inflammation and enhance healing.

Specialty Care: Autism Spectrum Disorder

The prevalence of Autism Spectrum Disorder (ASD) is increasing in CCCHR communities. Children with ASD frequently suffer from other developmental, psychiatric, neurological, chromosomal, and genetic disorders and have higher annual medical costs than children without ASD.

- Data from the Centers for Disease Control and Prevention indicate that ASD prevalence has increased from 1 in 150 children to 1 in 68 children between 2000 and 2012. Children with ASD experience higher rates of co-morbid conditions than children without developmental disabilities.
    - Approximately 10 percent of children with ASD also have Down syndrome, fragile X syndrome, tuberous sclerosis, or another other disorders.
    - Adolescents with ASD are approximately twice as likely to be obese as adolescents without developmental disabilities.
- Interviewees identified increasing rates of autism and developmental disabilities as a significant health concern. These were described as widespread problems, with few resources available to treat them.

Wellness and Prevention

Programs and activities that target behavior change and prevention were identified as needed in the CCCHR community. Education and opportunities for residents regarding exercise, nutrition, risk behaviors, and unintentional injuries specifically were noted.

- YRBSS data indicate that many high school students in Cuyahoga County and Ohio engaged in alcohol and tobacco use as well as behaviors that contribute to unintentional injuries. Data also show that rates of physical rates of inactivity and extensive use of technology are also high **(Exhibit 26)**.

[10] Petterson, Stephen M; Cai, Angela; Moore, Miranda; Bazemore, Andrew. State-level projections of primary care workforce, 2010-2030. September 2013, Robert Graham Center, Washington, D.C.

- In America's Health Rankings, Ohio ranked 36th out of the 50 states for childhood immunizations **(Exhibit 79)**. Low immunization rates were also identified as a significant health concern in other recent health assessments.
- Federally-designated Food Deserts are present in the communities served by CCCHR **(Exhibit 30, 54, and 76)**. Lack of access to affordable healthy food options and high concentrations of fast food restaurants, may lead individuals (particularly those in lower socio-economic classes) to consume nutrient poor foods.
- Data from the Centers for Disease Control and Prevention indicate that unintentional injuries are the leading cause of death among children in the United States.

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

This section identifies other facilities and resources available in the community served by CCCHR that are available to address community health needs.

Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs) are established to promote access to ambulatory care in areas designated as "medically underserved." These clinics provide primary care, mental health, and dental services for lower-income members of the community. Most provide pediatrics services. FQHCs receive enhanced reimbursement for Medicaid and Medicare services and most also receive federal grant funds under Section 330 of the Public Health Service Act. There currently are 17 FQHC sites operating in the CCCHR Local neighborhoods community (**Exhibit 4**).

Exhibit 4: Federally Qualified Health Centers

Health Center	County	ZIP Code
Asian Services in Action- International Community Heal	Cuyahoga	44114
Carl B. Stokes Social Services mall	Cuyahoga	44104
Central Neighborhood Clinic	Cuyahoga	44115
Clinic at Riverview Towers	Cuyahoga	44113
Collinwood Health Center	Cuyahoga	44110
East Cleveland Health Center	Cuyahoga	44112
Hough Health Center	Cuyahoga	44103
Miles Broadway Health Center	Cuyahoga	44105
Neighborhood Family Practice at Tremont	Cuyahoga	44113
Norwood Health Center	Cuyahoga	44103
Shaw Wellness Center	Cuyahoga	44112
SouthEast Health Center	Cuyahoga	44105
St. Clair Clinic	Cuyahoga	44114
Superior Health Cneter	Cuyahoga	44106
The Cleveland Job Corps Center (PT)	Cuyahoga	44106
The Free Medical Clinic of Greater Cleveland	Cuyahoga	44106

Source: Health Resources and Services Administration, 2016.

There are a total of 63 FQHC sites operating in the CCCHR 21-County community.

Hospitals

Exhibit 5 presents information on hospital facilities that operate in the community.

Exhibit 5: Hospitals

Hospital Name	Type	Beds	ZIP Code	County
Cleveland Clinic Children's Hospital for Rehabilitation	Children's Rehabilitation	52	44104	Cuyahoga
Highland Springs Hospital	Psychiatric	72	44122	Cuyahoga
Kindred Hospital- Cleveland	Long-Term Acute Care	68	44120	Cuyahoga
Kindred Hospital- Cleveland- Gateway	Long-Term Acute Care	75	44115	Cuyahoga
Louis Stokes Cleveland VA Medical Center- Wade Parks	Veteran's Hospital	660	44106	Cuyahoga
Lutheran Hospital	General Hospital	203	44113	Cuyahoga
MetroHealth Medical Center- Main Campus	General Hospital	731	44109	Cuyahoga
Regency North Central Ohio- Cleveland East	Long-Term Acute Care	44	44128	Cuyahoga
South Pointe Hospital	General Hospital	173	44122	Cuyahoga
St. Vincent Charity Medical Center	General Hospital	438	44115	Cuyahoga
University Hospitals Ahuja Medical Center	General Hospital	144	44122	Cuyahoga
University Hospitals Case Medical Center	General Hospital	1032	44106	Cuyahoga
University Hospitals MacDonald Women's Hospital	Women's Hospital	93	44106	Cuyahoga
University Hospitals Rainbow Babies & Children's Hospital	Children's Hospital	244	44106	Cuyahoga
University Hospitals Rehabilitation Hospital	Rehabilitation	50	44122	Cuyahoga
University Hospitals Seidman Cancer Center	Cancer Center	120	44106	Cuyahoga

Source: Ohio Hospital Association, 2016.

A total of 99 hospitals operate in Northeast Ohio, including 16 in the CCCHR Local neighborhoods community.

Other Community Resources

A wide range of agencies, coalitions, and organizations that provide health and social services is available in the region served by CCCHR. United Way 2-1-1 Ohio maintains a large, online database to help refer individuals in need to health and human services in Ohio. This is a service of the Ohio Department of Social Services and is provided in partnership with the Council of Community Services, The Planning Council, and United Way chapters in Cleveland. United Way 2-1-1 Ohio contains information on organizations and resources in the following categories:

- Donations and Volunteering
- Education, Recreation, and the Arts
- Employment and Income Support
- Family Support and Parenting
- Food, Clothing, and Household Items
- Health Care
- Housing and Utilities
- Legal Services and Financial Management
- Mental Health and Counseling
- Municipal and Community Services
- Substance Abuse and Other Addictions

Additional information about these resources is available at: http://www.211oh.org/.

APPENDIX A – CONSULTANT QUALIFICATIONS

Verité Healthcare Consulting, LLC (Verité) was founded in May 2006 and is located in Alexandria, Virginia. The firm serves clients throughout the United States as a resource that helps health care providers conduct Community Health Needs Assessments and develop Implementation Strategies to address significant health needs. Verité has conducted more than 50 needs assessments for hospitals, health systems, and community partnerships nationally since 2010.

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the CCCHR Local neighborhoods community.

Community Assessed

As mentioned previously and shown in **Exhibit 1**, CCCHR's Local neighborhoods community is comprised of 18 ZIP codes, all of which are located in Cuyahoga County, Ohio.

Demographics

Population characteristics and changes directly influence community health needs. The total population in the CCCHR Local neighborhoods community is expected to decrease 2.3 percent from 2015 to 2020 (**Exhibit 6**).

Exhibit 6: Percent Change in Community Population by ZIP Code

City	ZIP Code	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
Beachwood	44122	33,661	33,514	-0.4%
Bratenahl	44108	23,919	22,783	-4.7%
Buckeye-Woodland Hills	44104	22,327	22,180	-0.7%
Cleveland	44105	37,633	35,694	-5.2%
Cleveland	44109	39,023	38,011	-2.6%
Cleveland	44110	18,719	17,730	-5.3%
Cleveland	44113	19,659	20,035	1.9%
Cleveland	44121	32,122	31,551	-1.8%
Cleveland	44128	28,303	27,539	-2.7%
Cleveland Heights	44118	39,612	38,891	-1.8%
Downtown Cleveland	44114	6,256	6,547	4.7%
Downtown Cleveland	44115	8,962	9,251	3.2%
East Cleveland	44112	22,151	21,627	-2.4%
Euclid	44117	10,075	9,905	-1.7%
Hough-Fairfax	44103	16,978	16,437	-3.2%
Shaker Heights	44120	35,932	34,539	-3.9%
Slavic Village	44127	5,215	4,957	-4.9%
University Circle	44106	26,278	25,721	-2.1%
Community Total		**426,825**	**416,912**	**-2.3%**

Source: Truven Market Expert, 2015.

Between 2015 and 2020, 15 of the 18 ZIP codes in the Local neighborhoods community are projected to decrease in population size. The populations in Cleveland ZIP codes 44105 and 44110 are expected to decrease by approximately five percent.

Exhibit 7: Percent Change in Population Aged 17 and Younger by ZIP Code

City	ZIP Code	Population 17 and Younger 2015	Projected Population 17 and Younger 2020	Percent Change 2015-2020
Beachwood	44122	6,825	6,350	-7.0%
Bratenahl	44108	5,941	5,505	-7.3%
Buckeye-Woodland Hills	44104	7,026	6,794	-3.3%
Cleveland	44105	9,747	9,038	-7.3%
Cleveland	44109	9,771	9,402	-3.8%
Cleveland	44110	4,589	4,272	-6.9%
Cleveland	44113	3,332	3,477	4.4%
Cleveland	44121	7,193	6,777	-5.8%
Cleveland	44128	6,262	5,951	-5.0%
Cleveland Heights	44118	9,385	9,132	-2.7%
Downtown Cleveland	44114	749	873	16.6%
Downtown Cleveland	44115	2,763	2,689	-2.7%
East Cleveland	44112	4,885	4,810	-1.5%
Euclid	44117	1,735	1,648	-5.0%
Hough-Fairfax	44103	3,809	3,572	-6.2%
Shaker Heights	44120	8,424	7,930	-5.9%
Slavic Village	44127	1,463	1,343	-8.2%
University Circle	44106	4,260	4,203	-1.3%
Community Total		**98,159**	**93,766**	**-4.5%**

Source: Truven Market Expert, 2015.

Between 2015 and 2020, the population aged 17 and younger in 17 of the 18 ZIP codes in the Local neighborhoods community is projected to decrease in population size.

Exhibit 8 shows the Local neighborhoods community's population for certain age and sex cohorts in 2015, with projections to 2020.

Exhibit 8: Percent Change in Population by Age/Sex Cohort, 2015-2020

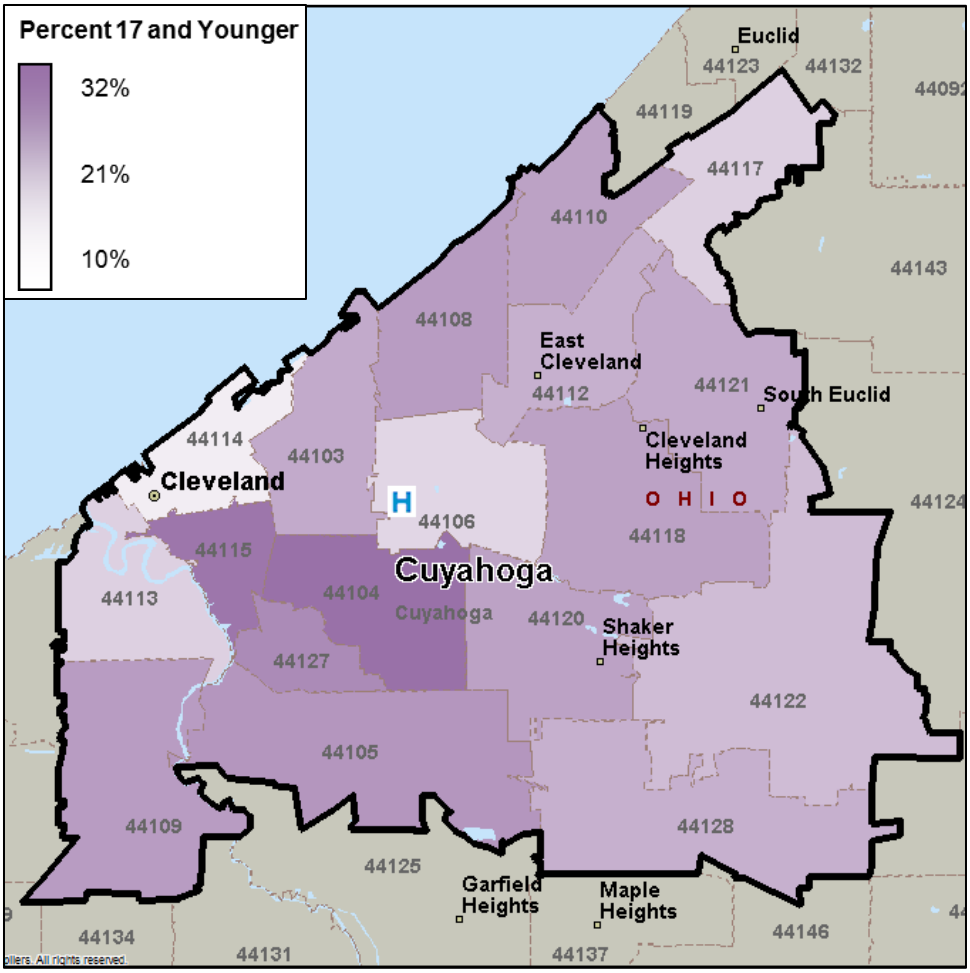
Age/Sex Cohort	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
0-17	98,159	93,766	-4.5%
Female 18-44	79,061	76,558	-3.2%
Male 18-44	73,386	72,840	-0.7%
45-64	110,323	100,898	-8.5%
65+	65,896	72,850	10.6%
Community Total	**426,825**	**416,912**	**-2.3%**

Source: Truven Market Expert, 2015.

While the total population in the CCCHR Local neighborhoods community is projected to decrease by 2.3 percent, the number of persons aged 17 years and younger is projected to decrease by 4.5 percent between 2015 and 2020.

Exhibit 9 illustrates the percent of the population 17 years of age and younger in the Local neighborhoods community by ZIP code.

Exhibit 9: Percent of Population Aged 17 and Younger by ZIP Code, 2015

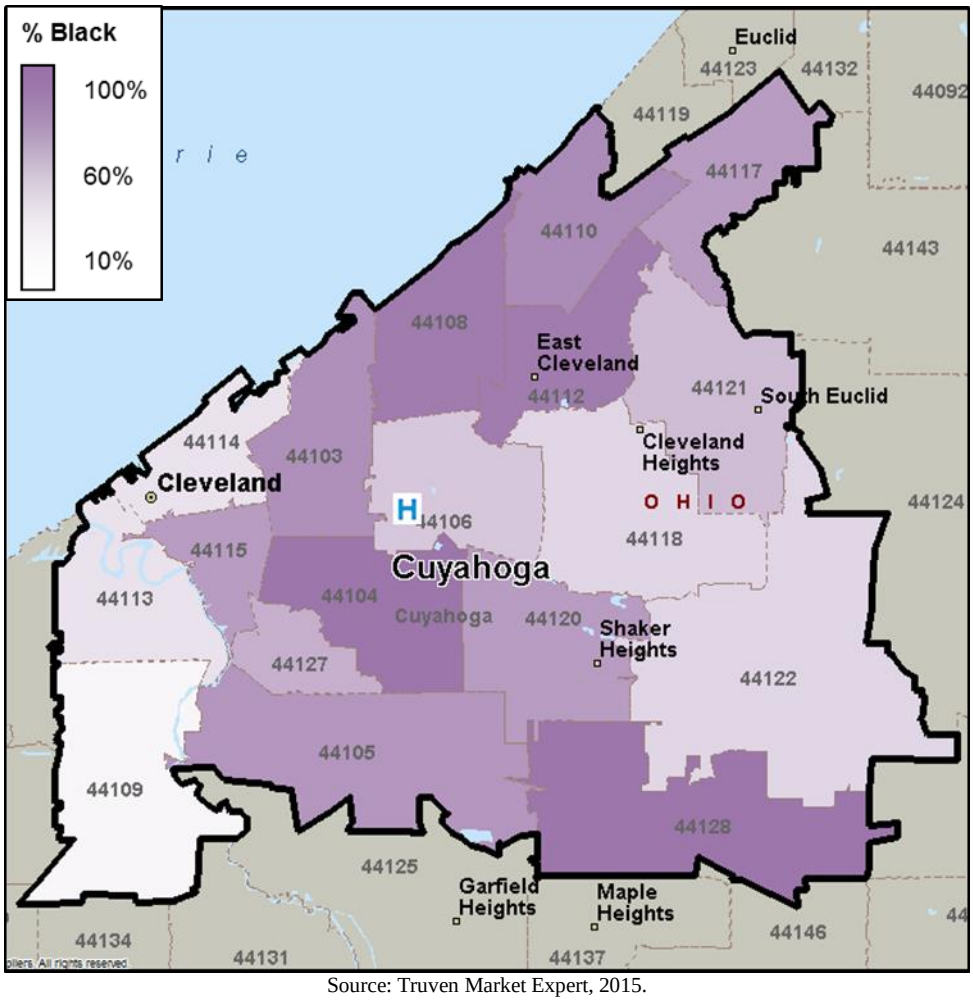


Source: Truven Market Expert, 2015.

In the Local neighborhoods community, ZIP codes 44115, and 44104 had the highest proportions of residents 17 years of age and younger. ZIP code 44114 had the lowest.

Exhibits 10 and 11 show locations in the Local neighborhoods community where the percentages of the population that are Black and Hispanic (or Latino) were highest in 2015.

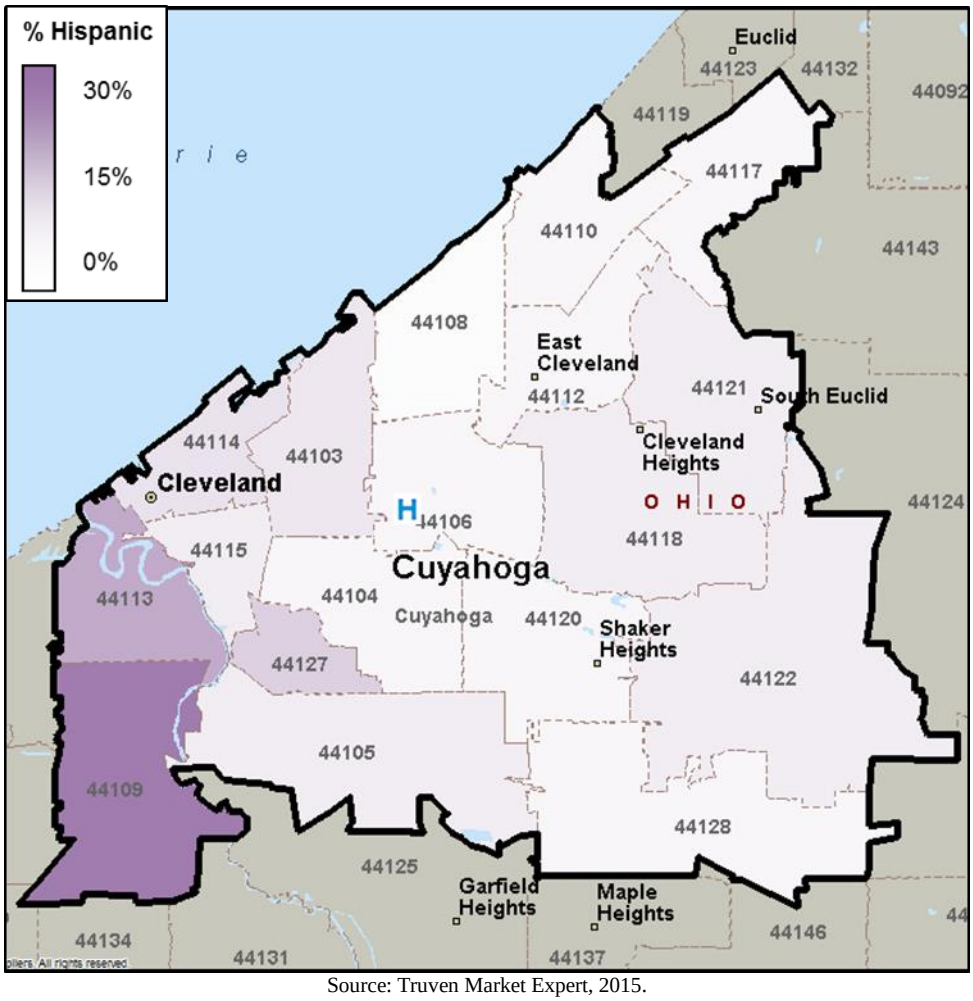
Exhibit 10: Percent of Population - Black, 2015



Source: Truven Market Expert, 2015.

In 2015, over ninety percent of residents of ZIP codes 44104, 44108, 44112, and 44128 were Black. Fewer than fifteen percent of residents in ZIP code 44109 were Black.

Exhibit 11: Percent of Population – Hispanic (or Latino), (2015)



Source: Truven Market Expert, 2015.

The percentage of residents that are Hispanic (or Latino) was highest in ZIP codes 44109 and 44113.

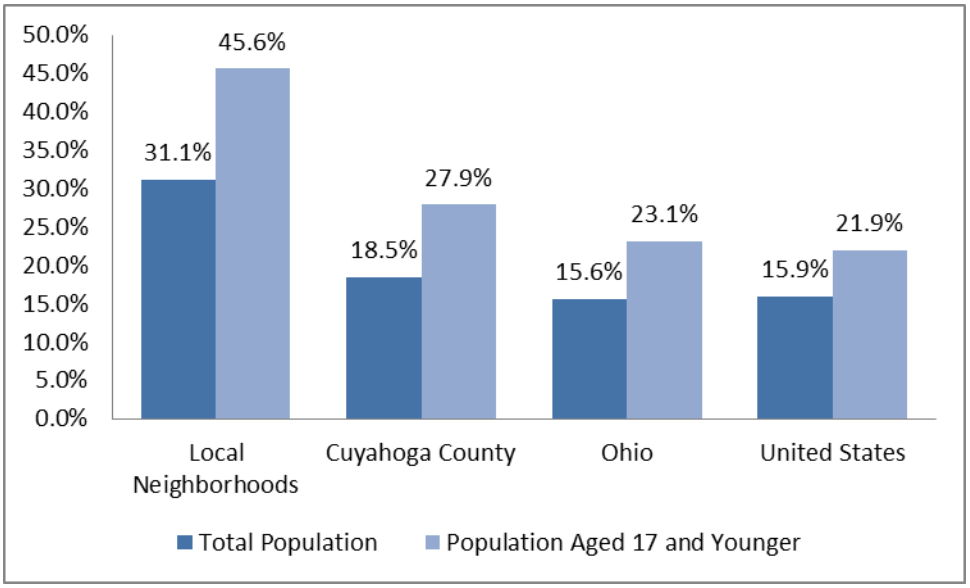
Economic indicators

The following categories of economic indicators with implications for health were assessed: (1) people in poverty; (2) unemployment rate; (3) insurance status; and (4) crime.

People in Poverty

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. The poverty rate in the Local neighborhoods community was nearly twice as high as the Ohio rate (**Exhibit 12**).

Exhibit 12: Percent of People in Poverty, 2014

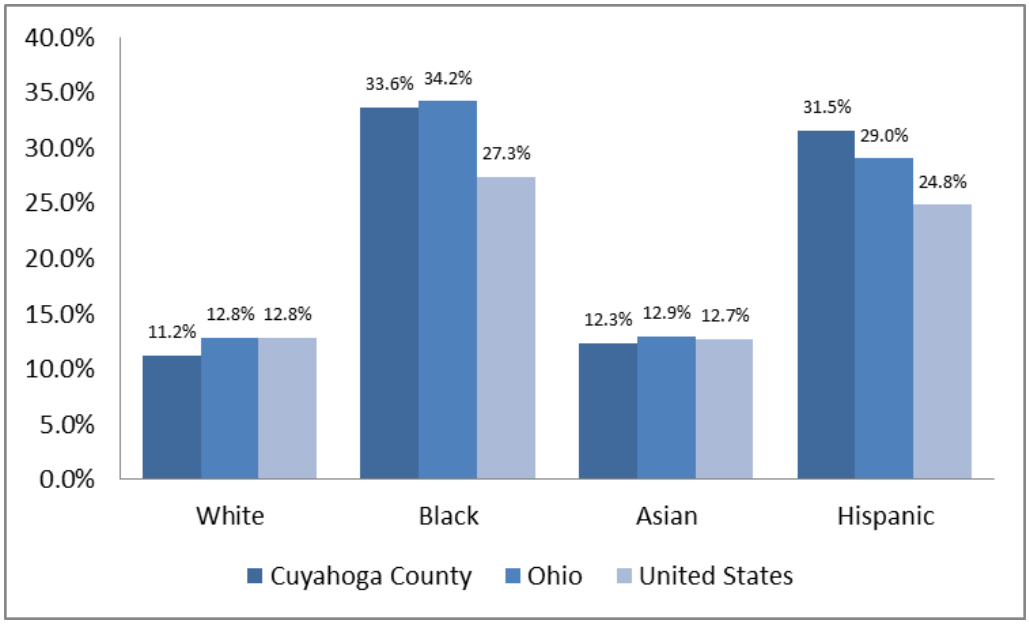


Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Rates of poverty among children in the community were significantly higher than overall poverty rates. In 2014, approximately 45.6 percent of the population aged 17 and younger in the Local neighborhoods community was living in poverty compared to 23.1 percent in Ohio and 21.9 percent nationally.

Considerable variation in poverty rates is present across racial and ethnic categories, in Cuyahoga County and Ohio (**Exhibit 13**).

Exhibit 13: Poverty Rates by Race and Ethnicity, 2014



Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Poverty rates in Cuyahoga County and Ohio have been comparatively high for Black and Hispanic (or Latino) residents. The poverty rate for Hispanic (or Latino) residents of Cuyahoga County has exceeded the Ohio average.

Exhibit 14 portrays (in green shading) the locations of low income census tracts in the community. The U.S. Department of Agriculture defines "low income census tracts" as areas where poverty rates are 20 percent or higher or where median family incomes are 80 percent or lower than within the metropolitan area.

Exhibit 14: Low Income Census Tracts



Source: US Department of Agriculture Economic Research Service, ESRI, 2015.

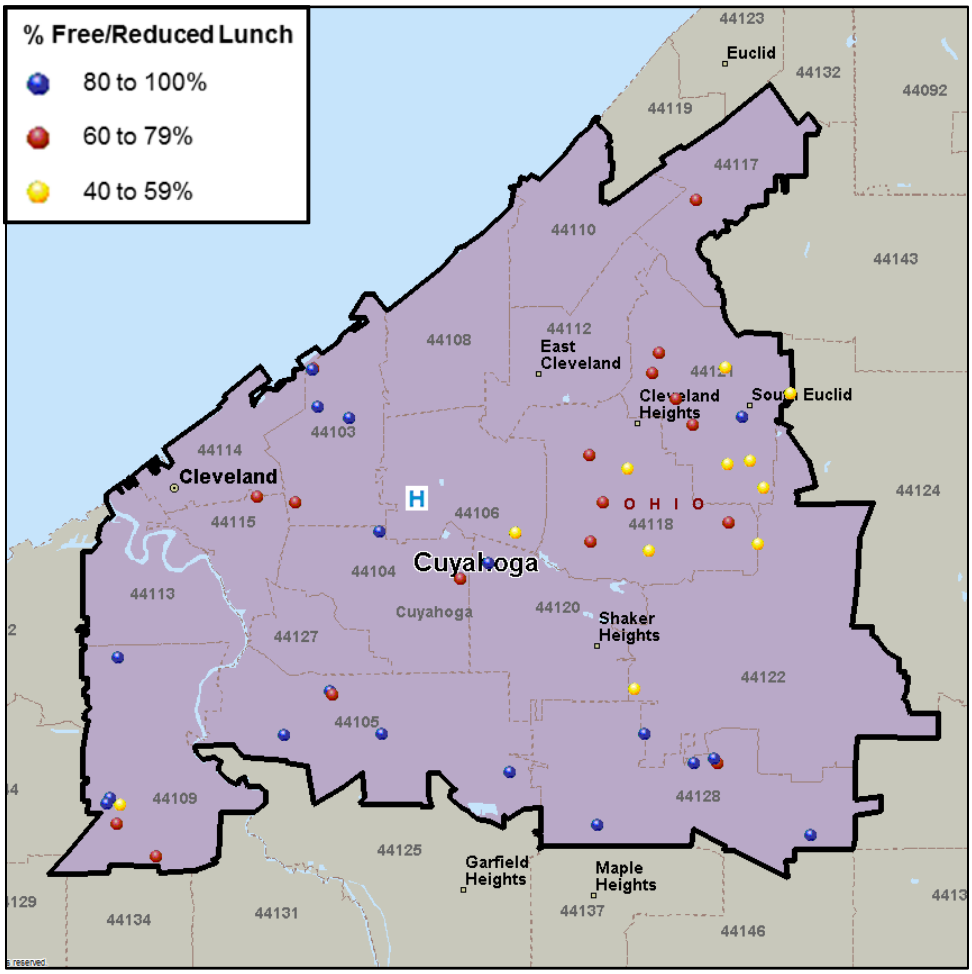
Low income census tracts have been prevalent throughout CCCHR's Local neighborhoods community.

Eligibility for the National School Lunch Program

Schools participating in the National School Lunch Program are eligible to receive financial assistance from the United States Department of Agriculture (USDA) to provide free or reduced-price meals to low-income students. Schools with 40 percent or more of their student body receiving this assistance are eligible for school-wide Title I funding, designed to ensure that students meet grade-level proficiency standards.

Exhibit 15 illustrates the locations of the schools with at least 40 percent of the students eligible for free or reduced price lunch.

Exhibit 15: Public Schools with over 40 Percent of Students Eligible for Free or Reduced-Price Lunches, School Year 2014-2015



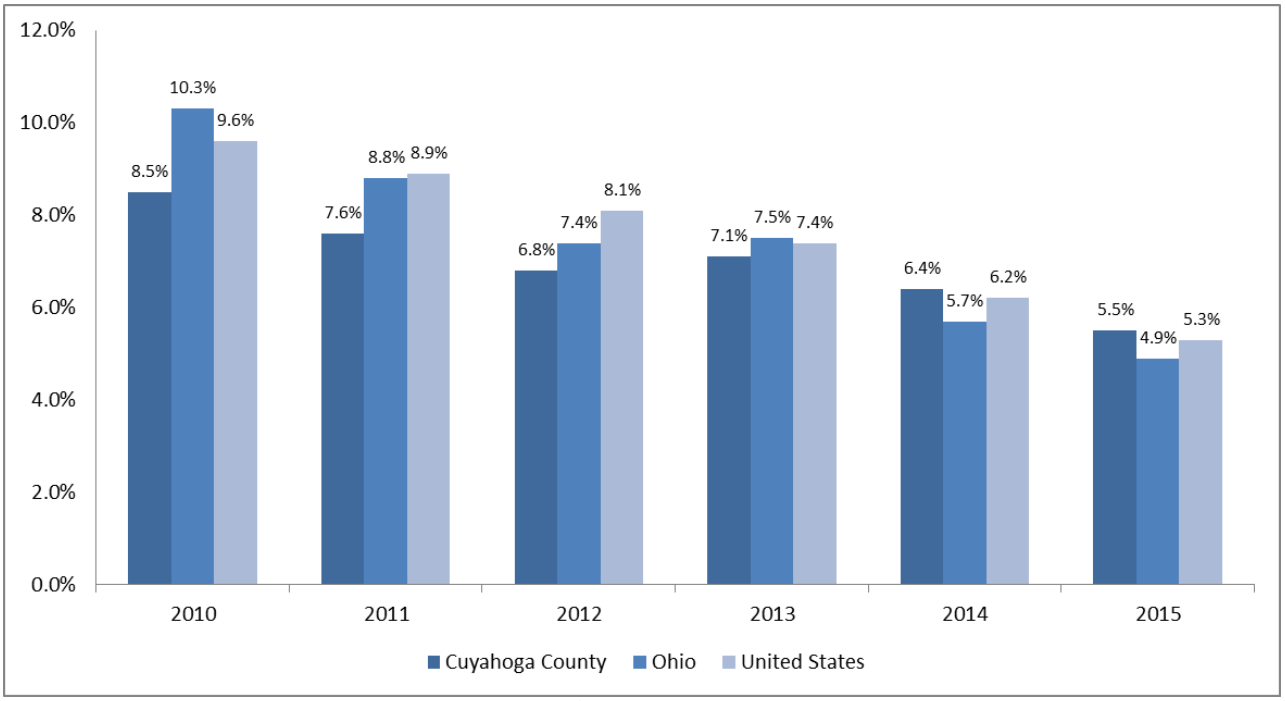
Source: Ohio Department of Education, 2014.

There are 46 schools within the CCCHR Local neighborhoods community where at least 40 percent of students are eligible for free or reduced price lunches.

Unemployment

Unemployment is problematic because many residents receive health insurance coverage through their (or a family member's) employer. If unemployment rises, access to employer based health insurance can decrease. **Exhibit 16** shows unemployment rates for 2010 through 2015 for Cuyahoga County, with Ohio and national rates for comparison.

Exhibit 16: Unemployment Rates, 2010-2015



Source: Bureau of Labor Statistics, 2010-2014.

Between 2010 and 2015, unemployment rates at the local (Cuyahoga County), state, and national level decreased significantly. In 2015, the unemployment rate in Cuyahoga County was higher than both the state and national rates.

Insurance Status

Exhibit 17 presents the estimated percent of populations in the CCCHR Local neighborhoods community without health insurance (uninsured), by ZIP code.

Exhibit 17: Percent of the Population without Health Insurance, 2015-2020

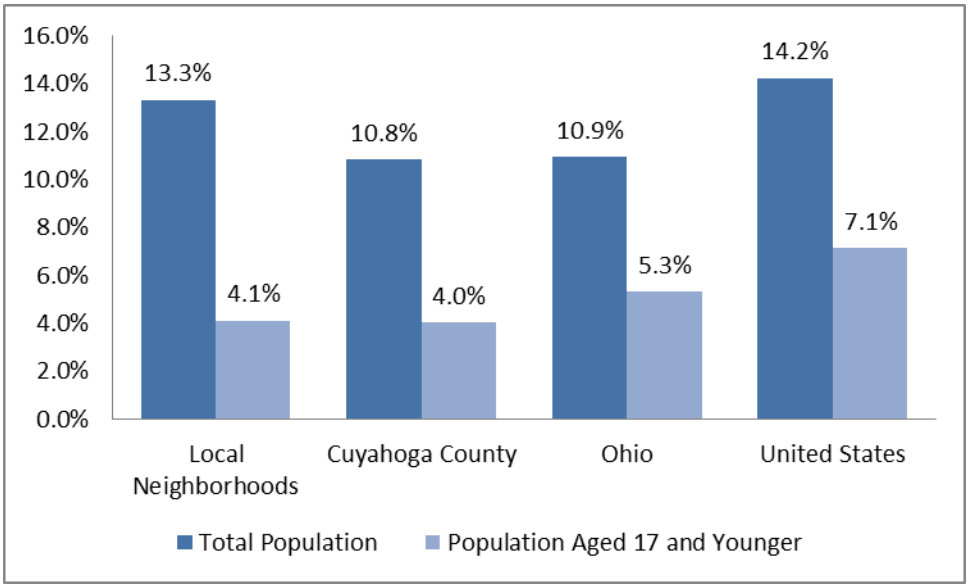
City	ZIP Code	Total Population 2015	% Uninsured 2015	Total Population 2020	% Uninsured 2020
Beachwood	44122	33,661	5.0%	33,514	3.5%
Bratenahl	44108	23,919	11.5%	22,783	7.9%
Buckeye-Woodland Hills	44104	22,327	14.6%	22,180	10.1%
Cleveland	44105	37,633	10.9%	35,694	7.4%
Cleveland	44109	39,023	10.0%	38,011	6.5%
Cleveland	44110	18,719	12.5%	17,730	8.4%
Cleveland	44113	19,659	11.1%	20,035	7.1%
Cleveland	44121	32,122	6.4%	31,551	4.3%
Cleveland	44128	28,303	8.3%	27,539	5.7%
Cleveland Heights	44118	39,612	6.6%	38,891	4.5%
Downtown Cleveland	44114	6,256	12.2%	6,547	7.8%
Downtown Cleveland	44115	8,962	15.2%	9,251	10.9%
East Cleveland	44112	22,151	11.8%	21,627	8.0%
Euclid	44117	10,075	11.9%	9,905	8.1%
Hough-Fairfax	44103	16,978	13.0%	16,437	8.7%
Shaker Heights	44120	35,932	10.3%	34,539	7.0%
Slavic Village	44127	5,215	13.1%	4,957	8.6%
University Circle	44106	26,278	12.1%	25,721	8.2%

Source: Truven Market Expert, 2015.

In 2015, 14 out of the 18 ZIP codes in the CCCHR Local neighborhoods community had uninsured rates above ten percent. By 2020, it is projected that only two of the 18 ZIP codes in the Local neighborhoods community will have uninsured rates above ten percent; ZIP codes 44104 and 44115.

Exhibit 18 displays the percent of children in Local neighborhoods community without health insurance, with Cuyahoga County, Ohio and United States averages for comparison.

Exhibit 18: Percent of the Population without Health Insurance, 2014



Source: US Census ACS 5-Year Estimates, 2010-2014.

In 2014, the CCCHR Local neighborhoods community had higher uninsured rates for the total population and population aged 17 and younger compared to the Cuyahoga County averages.

Ohio Medicaid Expansion

Subsequent to the ACA's passage, a June 2012 Supreme Court ruling provided states with discretion regarding whether or not to expand Medicaid eligibility. Ohio was one of the states that expanded Medicaid. Medicaid expansion accounted for over 76 percent of Ohio's ACA enrollment and plans purchased through the federal healthcare.gov exchange accounted for about 24 percent.[11]

In Ohio, Medicaid primarily is available for low-income individuals, pregnant women, children, low-income elderly persons, and individuals with disabilities.[12] With a network of more than 83,000 providers, the Ohio Department of Medicaid covers over 2.9 million Ohio residents. Across the United States, uninsured rates have fallen most in states that decided to expand Medicaid.[13]

The recent election of the new president raises questions regarding whether access improvements associated with the Affordable Care Act will be sustained.

Crime

Exhibit 19 provides certain crime statistics for Cuyahoga County and Ohio.

[11] http://watchdog.org/237980/75percent-ohio-obamacare/
[12] http://medicaid.ohio.gov/FOROHIOANS/WhoQualifies.aspx
[13] See: http://hrms.urban.org/briefs/Increase-in-Medicaid-under-the-ACA-reduces-uninsurance.html

Exhibit 19: Crime Rates by Type, Per 100,000, 2014
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Crime	Cuyahoga County	Ohio
Violent Crime	613.3	**278.4**
Property Crime	3,141.8	**2,880.8**
Murder	6.4	**4.4**
Rape	48.8	**36.2**
Robbery	362.1	**129.2**
Aggravated Assault	196.1	**126.1**
Burglary	966.2	**786.5**
Larceny	1,720.5	**1,921.8**
Motor Vehicle Theft	455.1	**172.5**
Arson	32.5	**21.1**

Source: FBI, 2014.

2014 overall crime rates in Cuyahoga County were well above the Ohio average for all crimes except larceny.

Local Health Status and Access Indicators

This section assesses health status and access indicators for the CCCHR community. Data sources include: (1) County Health Rankings, (2) the Centers for Disease Control's (CDC) Community Health Status Indicators, (3) the Ohio Department of Health, and (4) the CDC's Behavioral Risk Factor Surveillance System.

Throughout this section, data and cells are highlighted if indicators are unfavorable – because they exceed benchmarks (typically, Ohio averages). Where confidence interval data are available, cells are highlighted only if variances are unfavorable and statistically significant.

County Health Rankings

County Health Rankings, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[14] social and

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

economic factors, and physical environment.[15] *County Health Rankings* is updated annually. *County Health Rankings 2016* relies on data from 2006 to 2015, with most data from 2010 to 2013.

Exhibit 20 presents 2013 and 2016 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in the Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. The table also indicates if rankings fell between 2013 and 2016.

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

Exhibit 20: County Health Rankings, 2013 and 2016
(Light grey shading indicates indicator in bottom half of Ohio counties; Dark grey shading indicates in bottom quartile of Ohio counties)

	Cuyahoga County		
	2013	2016	Rank Change
Health Outcomes	**67**	**64**	
Health Factors	**45**	**53**	↓
Length of Life	**58**	**54**	
Quality of Life	**76**	**73**	
Frequent Physical Distress	N/A	63	
Frequent Mental Distress	N/A	54	
Drug Overdose Deaths	N/A	52	
Health Behaviors	**15**	**39**	↓
Sexually Transmitted Infections	55	87	↓
Teen Births	3	51	↓
Clinical Care	**7**	**5**	
Primary Care Physicians	1	2	↓
Dentists	56	1	
Mental Health Providers	3	1	
Social & Economic Factors	**76**	**79**	↓
Unemployment	15	59	↓
Inadequate Social Support	39	78	↓
Injury Deaths	1	30	↓
Physical Environment	**36**	**61**	↓
Air Pollution	66	63	
Severe Housing Problems	N/A	87	

Source: County Health Rankings, 2016.

In 2016, Cuyahoga County ranked in the bottom 50th percentile among Ohio counties for 15 of the 21 indicators assessed. Of those 13 indicators ranking in the bottom 50th percentile, five of them ranked in the bottom quartile, including Quality of Life, Sexually Transmitted Infections, Social and Economic Factors, Inadequate Social Support, and Severe Housing Problems. Between 2013 and 2016, rankings for 10 indictors fell in Cuyahoga County.

Exhibit 21 provides data for each underlying indicator of the composite categories in the County Health Rankings.[16] The exhibit also includes national averages.

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

Exhibit 21: County Health Rankings Data Compared to Ohio and U.S. Averages, 2016

(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Indicator Category	Data	Cuyahoga County	Ohio	U.S.
Health Outcomes				
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,907.7	**7,533.6**	7,700.0
Quality of Life	Average number of physically unhealthy days reported in past 30 days	3.9	**3.8**	3.7
	Average number of mentally unhealthy days reported in past 30 days	4.0	**4.0**	3.7
	Percent of live births with low birthweight (<2500 grams)	10.5	**8.6**	8.0
Health Factors				
Health Behaviors				
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	6.6	**6.9**	7.2
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	95.6	**83.2**	62.0
STDs	Chlamydia rate per 100,000 population	792.4	**460.2**	287.7
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	37.7	**34.4**	40.0
Clinical Care				
Uninsured	Percent of population under age 65 without health insurance	13.3	**13.0**	17.0
Primary Care Physicians	Ratio of population to primary care physicians	879:1	**1296:1**	1990:1
Dentists	Ratio of population to dentists	1028:1	**1713:1**	2590:1
Mental Health Providers	Ratio of population to mental health providers	402:1	**642:1**	1060:1
Social & Economic Factors				
High School Graduation	Percent of ninth-grade cohort that graduates in four years	75.8	**82.7**	86.0
Unemployment	Percent of population age 16+ unemployed but seeking work	6.4	**5.7**	6.0
Children in poverty	Percent of children under age 18 in poverty	30.0	**22.7**	23.0
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	5.6	**4.8**	4.4
Children in single-parent households	Percent of children that live in a household headed by single parent	44.9	**35.4**	32.0
Social Associations	Number of associations per 10,000 population	9.2	**11.4**	13.0
Violent Crime	Number of reported violent crime offenses per 100,000 population	559.8	**307.2**	199.0
Injury Deaths	Injury mortality per 100,000	59.1	**62.7**	74.0
Physical Environment				
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	13.6	**13.5**	11.9
Severe Housing Problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	18.9	**15.2**	14.0

Source: County Health Rankings, 2016.

Exhibit 21 highlights the following comparatively unfavorable indicators:

- Years of potential life lost
- Average number of physically unhealthy days
- Percent of live births with low birth weight
- Chlamydia rate
- Teen birth rate
- Percent of the population without health insurance
- Percent of the population unemployed
- Percent of children in poverty
- Income inequality rate
- Percent of children living in a household headed by a single parent
- Social associations rate
- Violent crime rate
- Air pollution
- Percent of households with severe housing problems

Community Health Status Indicators

The Centers for Disease Control and Prevention's *Community Health Status Indicators* provide health profiles for all 3,143 counties in the United States. Counties are assessed using 44 metrics associated with health outcomes including health care access and quality, health behaviors, social factors, and the physical environment.

The *Community Health Status Indicators* allow for a comparison of a given county to other "peer counties." Peer counties are assigned based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly, and poverty rates.

Exhibit 22 compares Cuyahoga County to its respective peer counties and cities and highlights community health issues found to rank in the bottom quartile of the counties included in the analysis.

Exhibit 22: Community Health Status Indicators, 2015
(Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Cuyahoga County
Mortality	Cancer Deaths	
	Female Life Expectancy	
	Male Life Expectancy	
	Motor Vehicle Deaths	
	Unintentional Injury (including motor vehicle)	
Morbidity	Cancer	
	HIV	
	Preterm Births	
	Syphilis	
Health Care Access and Quality	Cost Barrier to Care	
	Primary Care Provider Access	
	Uninsured	
Health Behaviors	Teen Births	
Social Factors	Children in Single-Parent Households	
	High Housing Costs	
	Inadequate Social Support	
	On Time High School Graduation	
	Poverty	
	Unemployment	
	Violent Crime	
Physical Environment	Access to Parks	
	Annual Average PM2.5 Concentration	
	Drinking Water Violations	
	Housing Stress	
	Limited Access to Healthy Food	
	Living Near Highways	

Source: Community Health Status Indicators, 2015.

The CHSI data indicate that cancer mortality and morbidity rates associated with preterm births are comparatively high. Indicators for children in single-parent households and air quality also benchmark unfavorably.

Ohio Department of Health

The Ohio Department of Health maintains a data warehouse that includes county-level indicators regarding maternal and child health (**Exhibit 23**).

Exhibit 23: Maternal and Child Health Indicators, 2012
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Measure	Cuyahoga County	Ohio	Healthy People 2020
Mortality Rate per 1,000 Live Births			
Infant	9.4	**7.7**	N/A
Neonatal	6.5	**5.2**	N/A
Post-Neonatal	2.9	**2.5**	N/A
% Deliveries			
Low Birth Weight	10.5	**8.6**	7.8
Very Low Birth Weight	2.3	**1.6**	1.4
% Preterm Births			
< 32 weeks of gestation	3.1	**2.3**	1.8
32-33 weeks of gestation	2.0	**1.6**	1.4
34-36 weeks of gestation	9.3	**8.6**	8.1
< 37 weeks of gestation	14.4	**12.6**	11.4
% Births to			
Unmarried Women 18-54 Years Old	49.1	**41.3**	N/A
Women 40-54 Years Old	2.7	**2.1**	N/A
Women <18 Years Old	3.7	**3.0**	N/A
Teenage Pregnancies per 1,000 Births			
Births to Females 15-19 Years Old	39.3	**36.0**	N/A

Source: Ohio Department of Health, 2012.

Exhibit 23 indicates that infant mortality rates, low birth weights, and preterm births are comparatively problematic in Cuyahoga County.

Youth Risk Behavior Surveillance System

The Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Surveillance System (YRBSS) monitors six types of health-risk behaviors that contribute to the leading causes of death and disability among youth and adults, including—

- Alcohol and other drug use
- Behaviors that contribute to unintentional injuries and violence
- Inadequate physical activity
- Sexual behaviors related to unintended pregnancy and sexually transmitted diseases, including HIV infection
- Tobacco use
- Unhealthy dietary behaviors

YRBSS also measures the prevalence of obesity and asthma and other priority health-related behaviors plus sexual identity and sex of sexual contacts.

YRBSS includes a national school-based survey conducted by CDC and state, territorial, tribal, and local surveys conducted by state, territorial, and local education and health agencies and tribal governments.

Exhibit 24 displays YRBSS data for Cuyahoga County.

Exhibit 24: Youth Risk Behavior Survey, Middle School Students, 2014

(Light grey shading indicates indicator worse than the Cuyahoga County average; Dark grey shading indicates more than 50 percent worse than the Cuyahoga County average)

Category	Risk Behavior	Male	Female	White	Black	Hispanic	Cuyahoga County
Alcohol Use	Lifetime alcohol use	26.3%	26.9%	21.3%	34.3%	35.4%	**26.7%**
	Drank alcohol before age 11 years	9.4%	7.1%	6.1%	11.0%	13.3%	**8.3%**
	Current alcohol use	8.3%	9.8%	8.5%	9.5%	13.2%	**9.1%**
Behaviors that Contribute to Unintentional Injuries	Rarely or never wore a seatbelt	11.5%	9.1%	5.5%	17.0%	14.8%	**10.4%**
	Rarely or never wore a bicycle helmet	77.8%	76.9%	65.9%	93.9%	89.9%	**77.5%**
	Suffered sever blow to head	16.0%	14.3%	15.8%	14.2%	15.5%	**15.2%**
Depression and Suicide	Intentional self-harm	8.1%	22.9%	15.4%	13.7%	23.7%	**15.2%**
	Depressive sadness	12.5%	30.7%	19.6%	22.4%	31.1%	**21.3%**
	Seriously considered attempting suicide	8.5%	19.7%	13.2%	14.2%	19.4%	**13.9%**
	Attempted suicide	7.0%	12.6%	8.0%	11.3%	18.2%	**9.8%**
Illegal and Presciption Drug Use	Ever used marijuana	11.1%	9.3%	6.6%	15.4%	16.1%	**10.3%**
	Tried marijuana before age 11 years	3.0%	1.3%	1.1%	3.4%	6.3%	**2.3%**
	Current marijuana use	6.1%	5.1%	3.8%	8.0%	10.7%	**5.8%**
	Current unauthorized prescription drug use	6.1%	9.7%	6.1%	9.8%	12.9%	**7.9%**
	Offered, sold, or given drugs on school property	9.5%	6.5%	6.9%	9.4%	12.4%	**8.1%**
	Ever used inhalants	6.2%	7.9%	4.7%	9.8%	12.5%	**7.1%**
Nutrition	Ate fruits and vegetables five or more times per day	24.7%	25.6%	30.2%	17.7%	17.6%	**25.1%**
	Ate fast food one or more times (past 7 days)	71.2%	70.3%	66.7%	76.3%	78.3%	**70.7%**
	Did not eat breakfast every day (past 7 days)	54.0%	65.6%	52.2%	69.5%	63.7%	**59.5%**
	Drank soda or pop at least once previous day	55.0%	47.6%	44.0%	61.1%	67.7%	**51.6%**
	Drank beverages high in caffeine one or more times previous day	12.8%	9.6%	7.9%	14.8%	21.8%	**11.4%**
	Took a multivitamin every day (past 7 days)	9.6%	11.1%	12.8%	6.6%	9.0%	**10.3%**

Source: Centers for Disease Control and Prevention, 2014.

Exhibit 24: Youth Risk Behavior Survey, Middle School Students, 2014 (*continued*)
(Light grey shading indicates indicator worse than the Cuyahoga County average; Dark grey shading indicates more than 50 percent worse than the Cuyahoga County average)

Category	Risk Behavior	Male	Female	White	Black	Hispanic	Cuyahoga County
Obesity and Weight Control	Obese	13.7%	9.6%	8.5%	16.7%	16.7%	**11.8%**
	Overweight	17.3%	17.3%	14.5%	21.6%	20.3%	**17.3%**
	Describes self as slightly or very overweight	22.1%	30.8%	27.1%	24.5%	27.5%	**26.2%**
	Trying to lose weight	31.6%	50.8%	39.2%	42.1%	45.9%	**42.6%**
Physical Activity	Participated in 60 or more minutes of physical actibity on 5 or more days (previous 7 days)	57.9%	43.9%	59.9%	41.1%	31.8%	**51.2%**
	Did not participate in 60 or more minutes of physical activity on any day (previous 7 days)	8.2%	10.9%	5.7%	13.7%	18.8%	**9.6%**
	Watched television 3 or more hours per day	32.1%	31.8%	18.7%	50.9%	39.8%	**32.0%**
	Used computers 3 or more hours per day	45.7%	47.9%	40.2%	55.5%	56.2%	**46.6%**
	Played on one or more sports teams (past year)	72.5%	67.6%	74.1%	66.0%	55.5%	**70.1%**
	Walked or rode bike to school every day	20.9%	17.1%	13.6%	27.1%	23.1%	**19.1%**
	Walked or rode bike home from school every day	25.3%	22.2%	18.9%	31.0%	26.6%	**23.8%**
Positive Youth Development	Spent at least 1 hour in clubs or organizations outside of school (past 7 days)	49.3%	57.0%	56.3%	49.0%	46.0%	**53.0%**
	Spent at least 1 hour community service (past 7 days)	42.6%	42.4%	44.8%	39.5%	39.7%	**42.6%**
	Parents talk with student about school almost every day	53.4%	55.7%	56.4%	52.5%	49.5%	**54.4%**
	Students help decide what goes on in school	44.5%	43.8%	47.4%	40.0%	37.3%	**44.1%**
	Students feel like they matter to people in their community	48.5%	39.9%	44.9%	43.7%	42.4%	**44.3%**
	Described their grades in school as A's and B's	64.0%	72.6%	79.7%	51.5%	60.3%	**67.9%**
	Supportive adult (other than adult) in life	80.4%	83.6%	82.3%	82.2%	77.7%	**82.0%**
	Trusted friend	85.4%	91.0%	91.0%	83.8%	83.3%	**88.0%**
	Ate at least one meal with family (past 7 days)	91.1%	89.8%	93.3%	86.4%	87.9%	**90.5%**

Source: Centers for Disease Control and Prevention, 2014.

Exhibit 24: Youth Risk Behavior Survey, Middle School Students, 2014 (*continued*)
(Light grey shading indicates indicator worse than the Cuyahoga County average; Dark grey shading indicates more than 50 percent worse than the Cuyahoga County average)

Category	Risk Behavior	Male	Female	White	Black	Hispanic	Cuyahoga County
Preventive Health Care	Fair or Poor Health	5.9%	10.0%	6.3%	9.8%	11.9%	**7.9%**
	Saw a doctor or nurse for check-up (past year)	66.6%	67.7%	73.6%	59.2%	53.0%	**67.0%**
	Saw a doctor, nurse, therapist, social worker, or counselor for a mental health issue (past year)	26.9%	32.8%	27.4%	33.0%	34.6%	**29.7%**
	Saw a dentist for routine check-up (past year)	72.3%	73.4%	82.5%	59.7%	57.9%	**72.7%**
	Brush teeth twice a day	59.8%	69.9%	65.0%	63.6%	68.7%	**64.6%**
	Had at least one toothache (past 30 days)	22.9%	31.0%	25.5%	28.8%	25.6%	**26.8%**
	Missed school due to a toothache (past year)	4.3%	4.9%	3.1%	6.8%	6.8%	**4.6%**
Reproductive Health	Ever had sexual intercourse	17.5%	5.8%	6.1%	21.3%	16.8%	**11.9%**
	Used a condom during last sexual intercourse	64.2%	56.1%	49.6%	69.4%	54.6%	**62.0%**
	Currently sexually active	11.1%	4.2%	4.2%	13.6%	10.8%	**7.9%**
	Ever taught in school about AIDS or HIV	69.2%	66.8%	65.2%	74.4%	58.9%	**68.0%**
Tobacco Use	Ever smoked cigarettes	11.5%	12.2%	9.7%	14.2%	18.2%	**11.9%**
	Smoked first tobacco product before age 11 years	5.4%	3.4%	2.8%	6.3%	8.7%	**4.6%**
	Current cigarette use	2.9%	3.4%	3.1%	3.1%	6.0%	**3.3%**
	Current hookah use	4.2%	4.2%	4.0%	3.6%	9.8%	**4.3%**
	Current cigar use	4.7%	4.7%	2.2%	8.0%	9.0%	**4.8%**
	Current e-cigarette use	5.9%	4.1%	4.7%	5.4%	7.3%	**5.1%**
Violence	Carried a weapon on school property (past 30 days)	3.9%	2.2%	1.8%	4.3%	8.1%	**3.2%**
	Did not go to school because of safety concerns (past 30 days)	5.6%	8.0%	5.5%	8.3%	11.2%	**6.9%**
	In a physical fight (past year)	39.9%	25.5%	25.5%	44.3%	38.1%	**33.2%**
	In a physical fight on school property (past year)	18.0%	10.9%	8.3%	23.8%	19.2%	**14.7%**
	Harassed or picked on at school	27.2%	33.7%	33.7%	25.0%	28.4%	**30.3%**
	Electronically bullied (past year)	15.0%	28.2%	22.5%	19.8%	22.0%	**21.3%**

Source: Centers for Disease Control and Prevention, 2014.

Exhibit 25 portrays the percent of risk behaviors with unfavorable rates compared to the Cuyahoga County averages. Cells are shaded light grey if more than 50 percent of risk behaviors were unfavorable. Cells are shaded dark grey if more than 75 percent of risk behaviors were unfavorable.

Exhibit 25: Youth Risk Behavior Survey, Middle School Students Summary, 2014

Category	Number of Risk Behavior	Percent of Risk Behaviors with Unfavorable Rates				
		Male	Female	White	Black	Hispanic
Alcohol Use	3 Risk Behaviors	33%	67%	0%	100%	100%
Behaviors that Contribute to Unintentional Injuries	3 Risk Behaviors	100%	0%	33%	67%	100%
Depression and Suicide	4 Risk Behaviors	0%	100%	25%	75%	100%
Illegal and Presciption Drug Use	6 Risk Behaviors	67%	33%	0%	100%	100%
Nutrition	6 Risk Behaviors	83%	17%	0%	100%	100%
Obesity and Weight Control	4 Risk Behaviors	50%	25%	50%	75%	75%
Physical Activity	7 Risk Behaviors	14%	86%	29%	71%	71%
Positive Youth Development	9 Risk Behaviors	56%	44%	0%	89%	100%
Preventive Health Care	7 Risk Behaviors	71%	29%	29%	71%	43%
Reproductive Health	4 Risk Behaviors	50%	50%	50%	50%	100%
Tobacco Use	6 Risk Behaviors	33%	33%	0%	67%	100%
Violence	6 Risk Behaviors	50%	50%	33%	67%	83%
Total	65 Risk Behaviors	51%	45%	18%	78%	88%

Source: Centers for Disease Control and Prevention, 2013.

Compared to the Cuyahoga County average, male middle school students reported more risk behaviors than females and Black and Hispanic students reported more risk behaviors than White students.

Exhibit 26 displays YRBSS data for High School students in Cuyahoga County, with Ohio and United States averages for comparison.

Exhibit 26: Youth Risk Behavior Survey, High School Students, 2013
(Light grey shading indicates indicator worse than the Ohio average; Dark grey shading indicates more than 50 percent worse than the Ohio average)

Category	Risk Behavior	Male	Female	White	Black	Hispanic	Low Family Affluence	Medium Family Affluence	High Family Affluence	Cuyahoga County	Ohio	United States
Alcohol Use	Drank alcohol before age 13 years	16.3%	13.9%	10.7%	21.0%	24.7%	21.9%	14.5%	11.8%	**15.2%**	12.7%	18.6%
	Current alcohol use	32.0%	34.9%	37.2%	28.6%	29.7%	31.1%	32.8%	35.4%	**33.4%**	29.5%	34.9%
	Had 5 or more drinks of alcohol in a row within a couple of hours	18.0%	15.9%	19.8%	12.8%	19.4%	16.7%	16.6%	17.6%	**17.0%**	16.1%	20.8%
Behaviors that Contribute to Unintentional Injuries	Rarely or never wore a seatbelt	14.4%	8.8%	6.3%	18.6%	21.6%	21.3%	11.3%	6.5%	**11.8%**	8.4%	7.6%
	Rode with a driver who had been drinking alcohol	21.0%	24.0%	19.8%	25.7%	27.4%	25.8%	21.8%	21.1%	**22.5%**	17.4%	21.9%
	Drove when drinking alcohol	9.2%	7.0%	8.4%	7.2%	14.2%	8.7%	7.6%	8.3%	**8.2%**	4.0%	10.0%
	Texted or e-mailed while driving	44.0%	42.8%	49.6%	33.3%	35.9%	33.3%	42.0%	48.6%	**43.5%**	45.6%	41.4%
Depression and Suicide	Felt sad or hopeless	18.2%	33.3%	23.1%	27.7%	38.1%	31.1%	26.6%	21.5%	**25.6%**	25.8%	29.9%
	Seriously considered attempting suicide	9.9%	17.8%	12.6%	14.5%	20.5%	17.0%	13.8%	11.8%	**13.8%**	14.3%	17.0%
	Attempted suicide	8.8%	11.5%	7.2%	13.5%	20.6%	13.5%	9.9%	8.4%	**10.2%**	6.2%	8.0%
Illegal and Presciption Drug Use	Lifetime marijuana use	42.0%	37.5%	34.5%	48.0%	41.2%	49.2%	40.7%	33.7%	**39.8%**	35.7%	40.7%
	Tried marijuana before age 13 years	8.5%	4.6%	3.4%	10.6%	14.3%	10.7%	6.3%	4.5%	**6.6%**	5.8%	8.6%
	Current marijuana use	25.1%	20.5%	19.4%	28.0%	23.6%	29.3%	22.2%	19.7%	**22.9%**	20.7%	23.4%
	Offered, sold, or given drugs on school property	20.1%	13.5%	13.8%	20.7%	23.9%	19.1%	15.6%	16.6%	**16.9%**	19.9%	-
Tobacco Use	Current cigarette use	12.0%	8.8%	13.2%	6.3%	13.7%	11.8%	11.5%	8.8%	**10.4%**	15.1%	15.7%
	Current cigar use	18.2%	11.8%	11.4%	20.7%	16.8%	21.5%	14.4%	12.1%	**15.1%**	11.5%	12.6%
Violence	Carried a weapon (past 30 days)	18.0%	5.3%	10.6%	12.9%	19.5%	14.0%	11.6%	10.9%	**11.9%**	14.2%	17.9%
	Did not go to school because of safety concerns	6.9%	8.0%	5.1%	9.7%	18.3%	10.4%	7.5%	5.6%	**7.4%**	5.1%	7.1%
	In a physical fight	32.3%	20.3%	18.7%	36.9%	34.9%	33.9%	25.6%	22.9%	**26.5%**	19.8%	24.7%
	In a physical fight on school property	13.7%	8.4%	5.7%	18.1%	20.6%	16.5%	10.6%	8.5%	**11.2%**	6.2%	8.1%
	Forced to have sexual intercourse	6.5%	9.3%	5.8%	10.3%	14.1%	10.5%	7.6%	6.7%	**7.9%**	7.5%	7.3%
	Forced to do sexual things by significant other	7.8%	12.8%	9.4%	10.3%	16.7%	11.9%	9.6%	9.8%	**10.3%**	9.7%	10.4%
	Bullied on school property	17.6%	21.3%	22.6%	14.4%	21.9%	18.0%	18.8%	20.6%	**19.4%**	20.8%	19.6%
	Electronically bullied	10.1%	19.1%	17.1%	10.4%	16.0%	12.6%	14.9%	15.2%	**14.5%**	15.1%	14.8%

Source: Centers for Disease Control and Prevention, 2013.

Compared to the Ohio averages, Cuyahoga County high school students reported higher rates of:

- Alcohol use
- Attempted suicide
- Behaviors that contribute to unintentional injuries
- Cigar use
- Illegal and prescription drug use
- Violence

Within Cuyahoga County, male high school students reported higher rates of risk behaviors than females and Black and Hispanic students reported higher rates of risk behaviors than White students. Rates of risk behaviors also appear to be inversely correlated with family affluence.

Ambulatory Care Sensitive Conditions

This section examines the frequency of discharges for Ambulatory Care Sensitive Conditions (ACSCs, frequently referred to as Prevention Quality Indicators or PQIs) throughout the community.

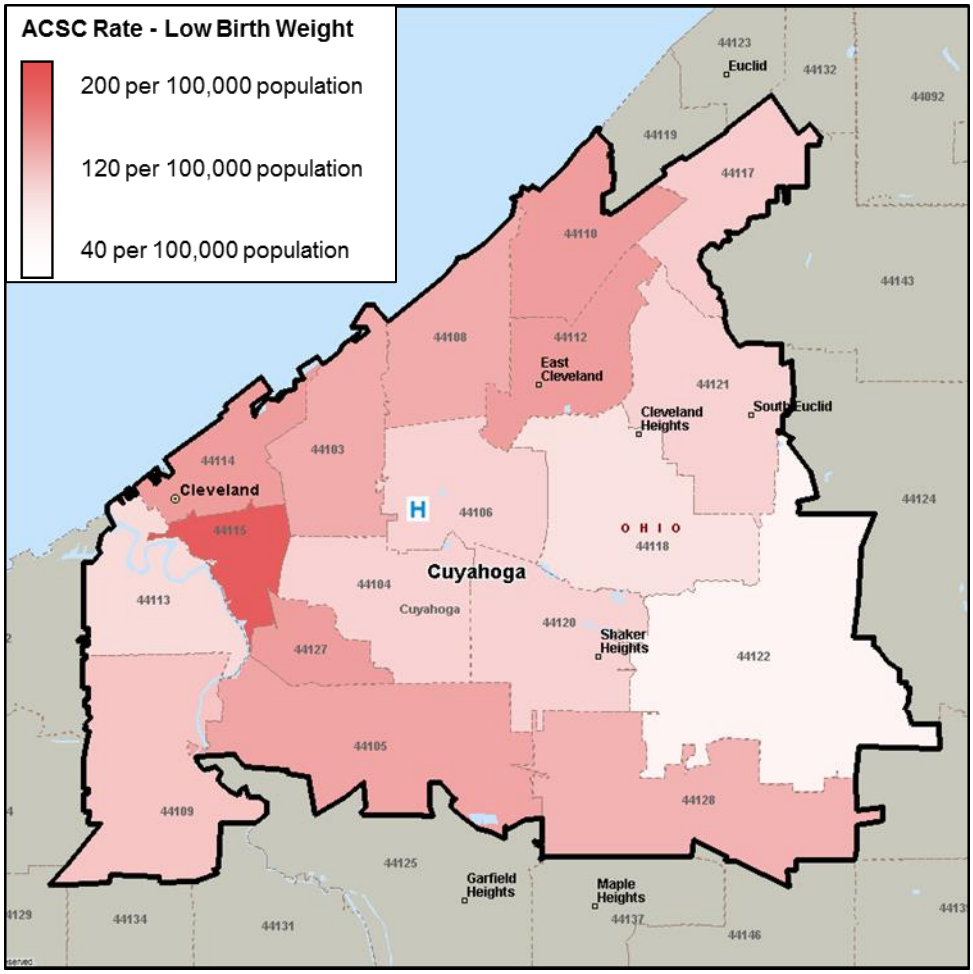
ACSCs are health "conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[17] As such, rates of hospitalization for these conditions can "provide insight into the quality of the health care system outside of the hospital," including the accessibility and utilization of primary care, preventive care and health education. Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, low birth weight, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

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

Exhibit 27 displays the 2014 PQI rate (per 100,000 persons) for low birth weight, by ZIP code.

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

Exhibit 27: ACSC Rate for Low Birth Weight, by ZIP Code, 2014



Source: Cleveland Clinic, 2014.
Note: Rates are not age-sex adjusted.

The average ACSC rate for low birth weight in the CCCHR Local neighborhoods community was 92.1 per 100,000 population, which is nearly 50 percent higher than the Ohio average of 61.4 per 100,000 population. Within the CCCHR Local neighborhoods community, ZIP code 44115 had the highest rate at 186.7 per 100,000 population and only ZIP code 44122 had a lower rate than the Ohio average.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

Dignity Health, a California-based hospital system, developed and has made widely available for public use a *Community Need Index*™ that measures barriers to health care access by county/city and ZIP code. The index is based on five social and economic indicators:

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

The *Community Need Index*™ calculates a score for each ZIP code based on these indicators. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0).

Exhibit 28 presents the *Community Need Index*™ (CNI) score of each ZIP code in the CCCHR Local neighborhoods community.

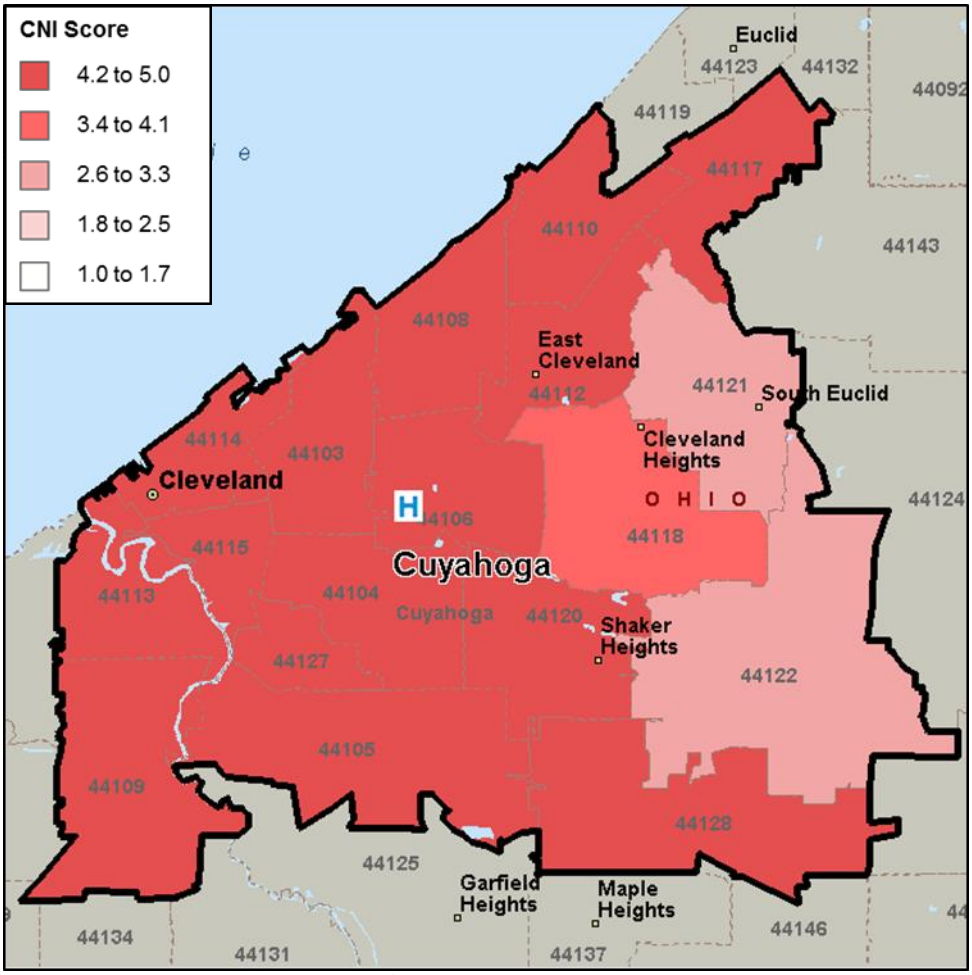
Exhibit 28: Community Need Index™ Score by ZIP Code, 2015

City	ZIP Code	CNI Score
Hough-Fairfax	44103	5.0
Buckeye-Woodland Hills	44104	5.0
Bratenahl	44108	5.0
Downtown Cleveland	44115	5.0
Slavic Village	44127	5.0
Cleveland	44105	5.0
Cleveland	44110	5.0
University Circle	44106	4.8
East Cleveland	44112	4.8
Downtown Cleveland	44114	4.8
Cleveland	44109	4.8
Cleveland	44113	4.8
Euclid	44117	4.6
Cleveland	44128	4.4
Shaker Heights	44120	4.2
Cleveland Heights	44118	3.4
Cleveland	44121	3.2
Beachwood	44122	3.2
Children's Hospital Community Average		**4.4**
Cuyahoga County Average		**3.4**

Source: Dignity Health, 2015.

Exhibit 29 presents these data in a community map format.

Exhibit 29: Community Need Index, 2015



Source: Microsoft MapPoint and Dignity Health, 2015.

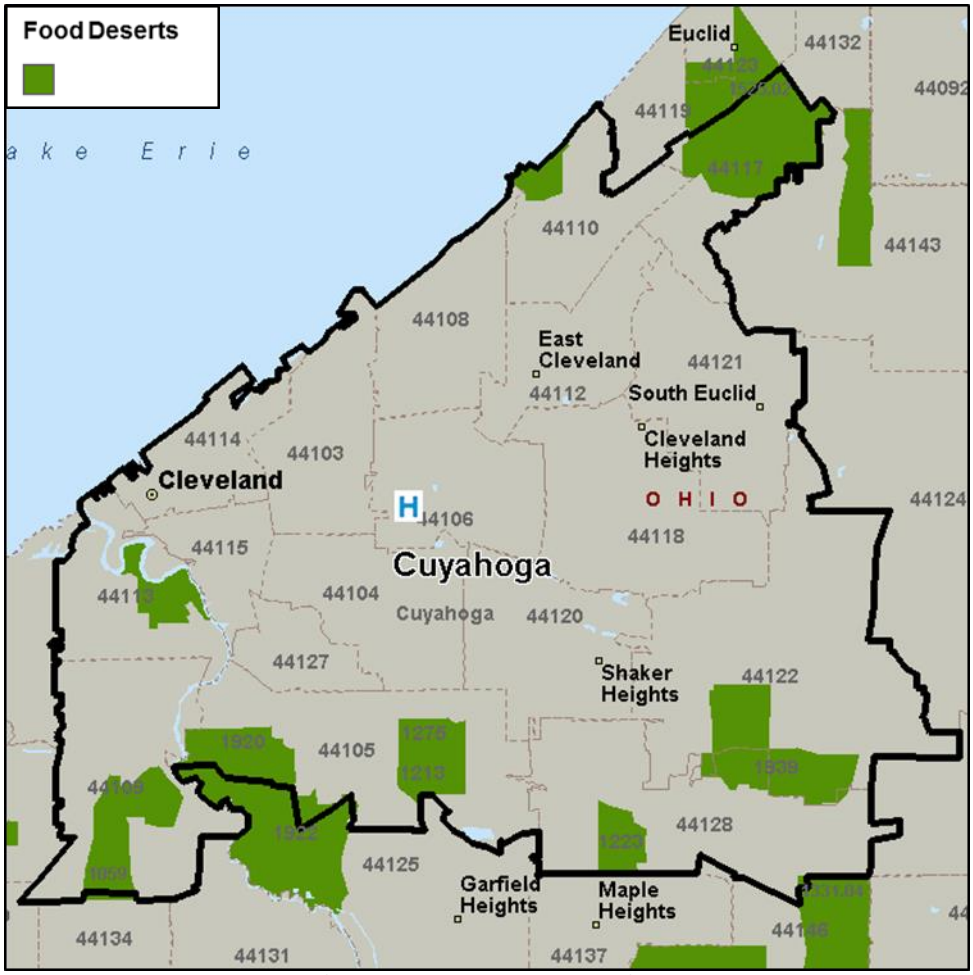
The CNI indicates that 15 of the 18 ZIP codes in the CCCHR Local neighborhoods community scored in the "highest need category." Cleveland ZIP codes 44103, 44104, 44108, 44115, 44127, 44105, and 44110 each received a score of 5.0 – the highest score possible.

Food Deserts

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

Exhibit 30 illustrates the location of food deserts in the Local neighborhoods community.

Exhibit 30: Food Deserts



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2015.

Several locations within the CCCHR Local neighborhoods community have been designated as food deserts.

Medically Underserved Areas and Populations

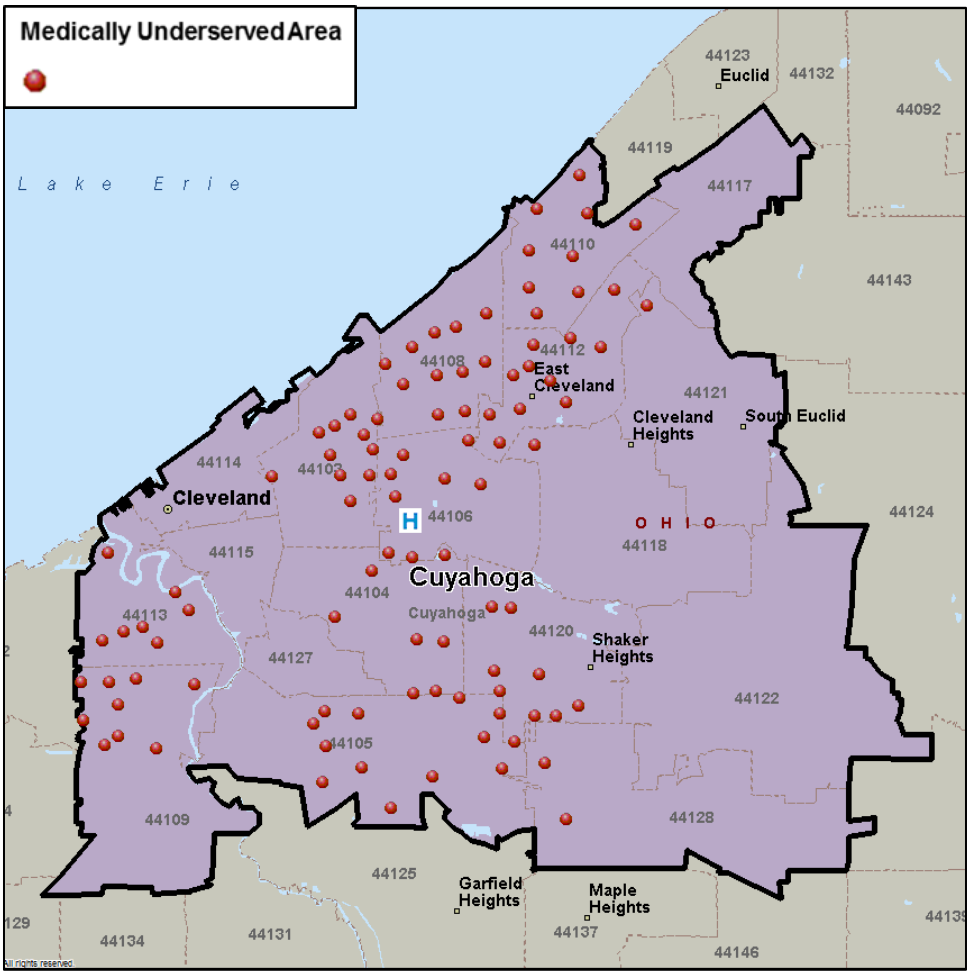
Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[18] Areas with a score of 62 or less are considered "medically underserved."

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if "unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides."[19]

There are approximately 98 census tracts within the hospital's Local neighborhoods community that have been designated as areas where Medically Underserved Areas are present (**Exhibit 31**).

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

Exhibit 31: Medically Underserved Areas



Source: Microsoft MapPoint and HRSA, 2015.

Health Professional Shortage Areas

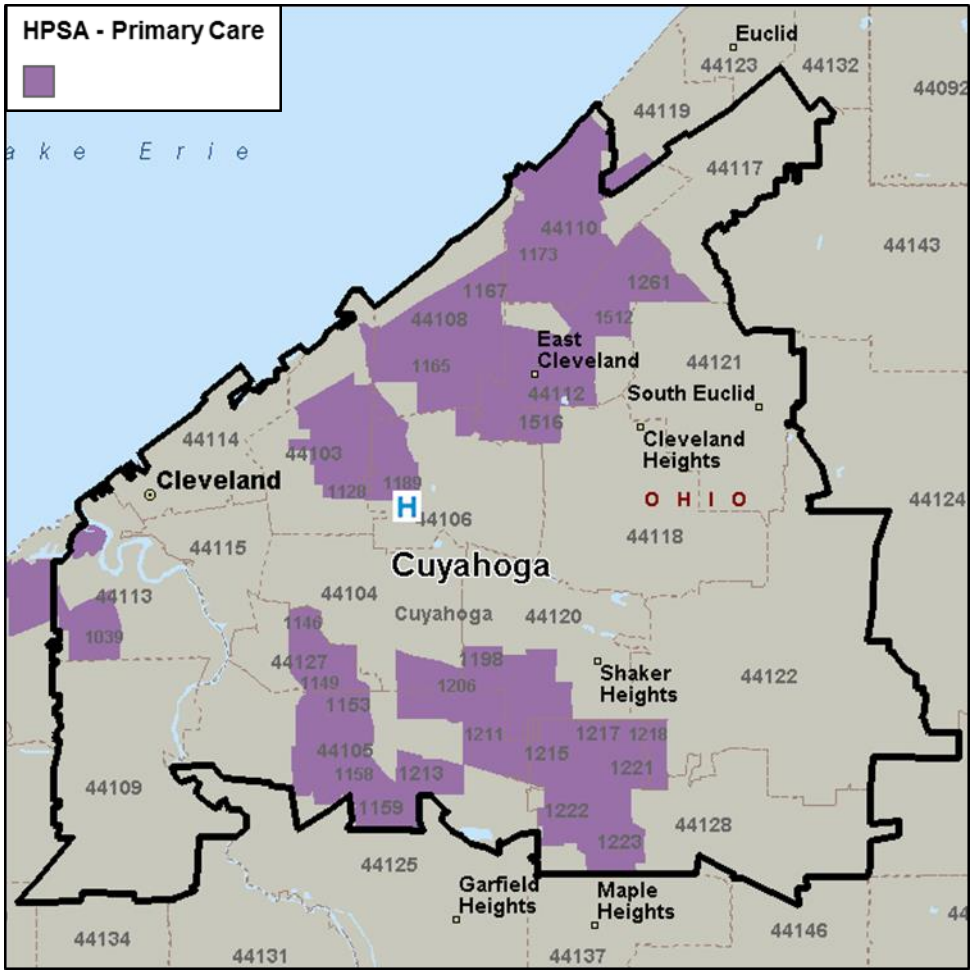
A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can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

HPSAs can be: "(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility."[20]

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

Exhibit 32 illustrates the locations of the federally-designated HPSAs.

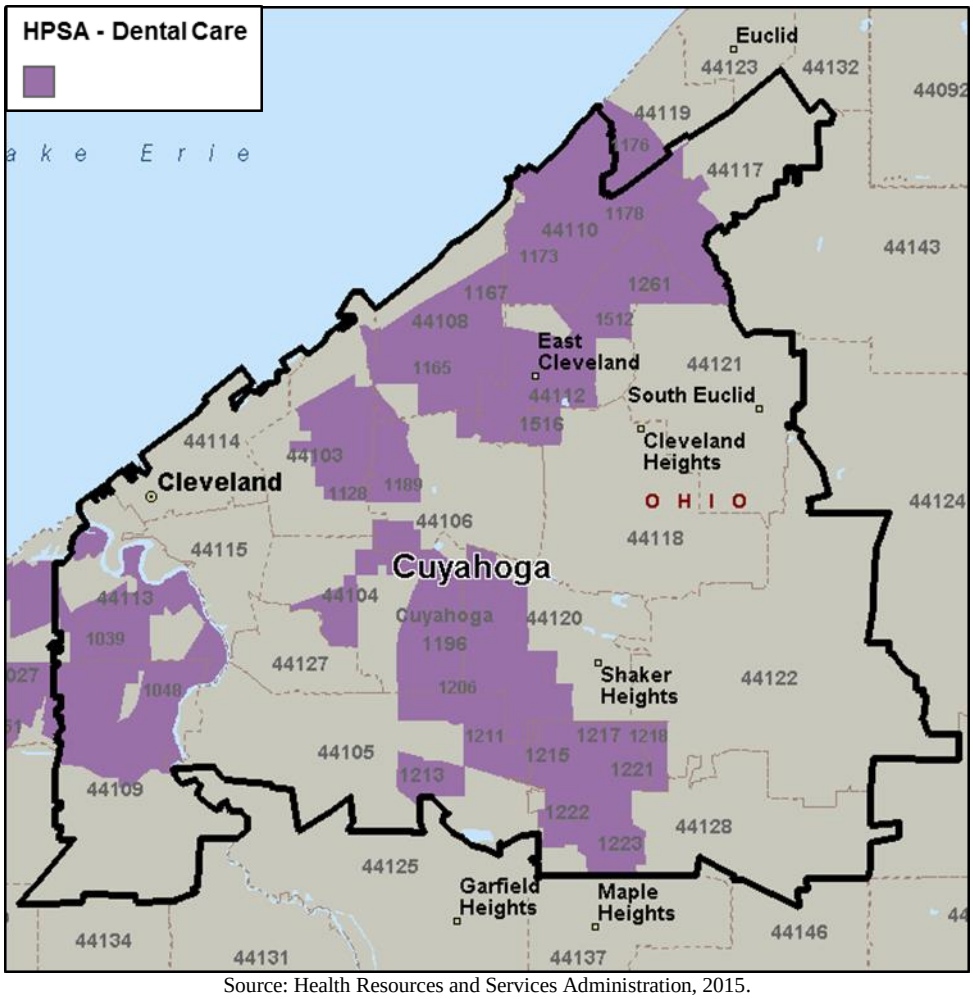
Exhibit 32A: Primary Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

Primary care HPSA designated census tracts are located throughout the Local neighborhoods community.

Exhibit 32B: Dental Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

Dental care HPSA designated census tracts also are located throughout the Local neighborhoods community.

APPENDIX C – 7-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the CCCHR 7-County community.

Community Assessed

As mentioned previously, the CCCHR 7-County community is comprised of Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit counties in Ohio.

Demographics

The total population in the 7-County community was approximately 2,771,000 persons, including almost 600,000 children. Nearly half of the population is located in Cuyahoga County **(Exhibit 33)**.

Exhibit 33: Community Population, 2015

County	Total Population 2015	Percent of Total Population 2015	Estimated Population 17 and Younger 2015	Percent of Population 17 and Younger 2015
Cuyahoga County	1,262,784	45.6%	272,274	21.6%
Geauga County	89,153	3.2%	20,900	23.4%
Lake County	229,715	8.3%	47,576	20.7%
Lorain County	295,253	10.7%	66,802	22.6%
Medina County	174,882	6.3%	40,434	23.1%
Portage County	171,141	6.2%	32,816	19.2%
Summit County	547,778	19.8%	118,730	21.7%
7-County Community Total	**2,770,706**	**100.0%**	**599,532**	**21.6%**

Source: Truven Market Expert, 2015.

Population characteristics and changes directly influence community health needs. The total population in the CCCHR 7-County community is expected to remain virtually unchanged from 2015 to 2020 (**Exhibit 34**).

Exhibit 34: Percent Change in Community Population by County

County	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
Cuyahoga County	1,262,784	1,249,392	-1.1%
Geauga County	89,153	90,062	1.0%
Lake County	229,715	230,305	0.3%
Lorain County	295,253	298,360	1.1%
Medina County	174,882	178,420	2.0%
Portage County	171,141	173,198	1.2%
Summit County	547,778	549,948	0.4%
7-County Community Total	**2,770,706**	**2,769,685**	**0.0%**

Source: Truven Market Expert, 2015.

Between 2015 and 2020, the population in Cuyahoga County is projected to decrease by 1.1 percent.

Exhibit 35: Percent Change in Population Aged 17 and Younger by County, 2015-2020

County	Estimated Population 17 and Younger 2015	Projected Population 17 and Younger 2020	Percent Change 2015-2020
Cuyahoga County	272,274	260,056	-4.5%
Geauga County	20,900	18,984	-9.2%
Lake County	47,576	45,029	-5.4%
Lorain County	66,802	64,258	-3.8%
Medina County	40,434	37,983	-6.1%
Portage County	32,816	30,815	-6.1%
Summit County	118,730	114,169	-3.8%
7-County Community Total	**599,532**	**571,294**	**-4.7%**

Source: Truven Market Expert, 2015.

Between 2015 and 2020, the population aged 17 and younger in each of the seven counties is projected to decrease. The population aged 17 and younger in Geauga County is projected to decrease by over nine percent.

Exhibit 36 shows the 7-County community's population for certain age and sex cohorts in 2015, with projections to 2020.

Exhibit 36: Percent Change in Population by Age/Sex Cohort, 2015-2020

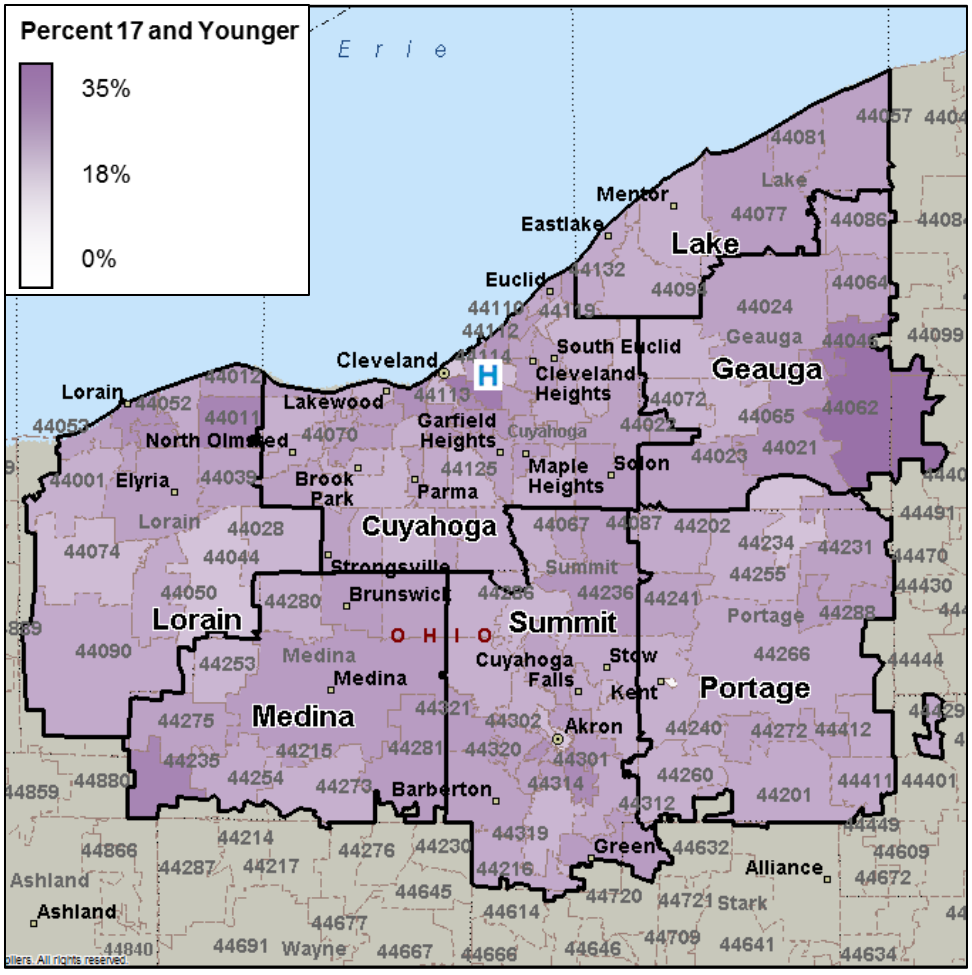
Age/Sex Cohort	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
0-17	599,532	571,294	-4.7%
Female 18-44	463,888	460,341	-0.8%
Male 18-44	455,003	458,468	0.8%
45-64	788,812	750,473	-4.9%
65+	463,471	529,109	14.2%
7-County Community Total	**2,770,706**	**2,769,685**	**0.0%**

Source: Truven Market Expert, 2015.

While the total population in the 7-County community is projected to remain unchanged, the number of persons aged 17 years and younger is projected to decrease by 4.7 percent between 2015 and 2020.

Exhibit 37 illustrates the percent of the population 17 years of age and younger in the community by ZIP code.

Exhibit 37: Percent of Population Aged 17 and Younger by ZIP Code, 2015

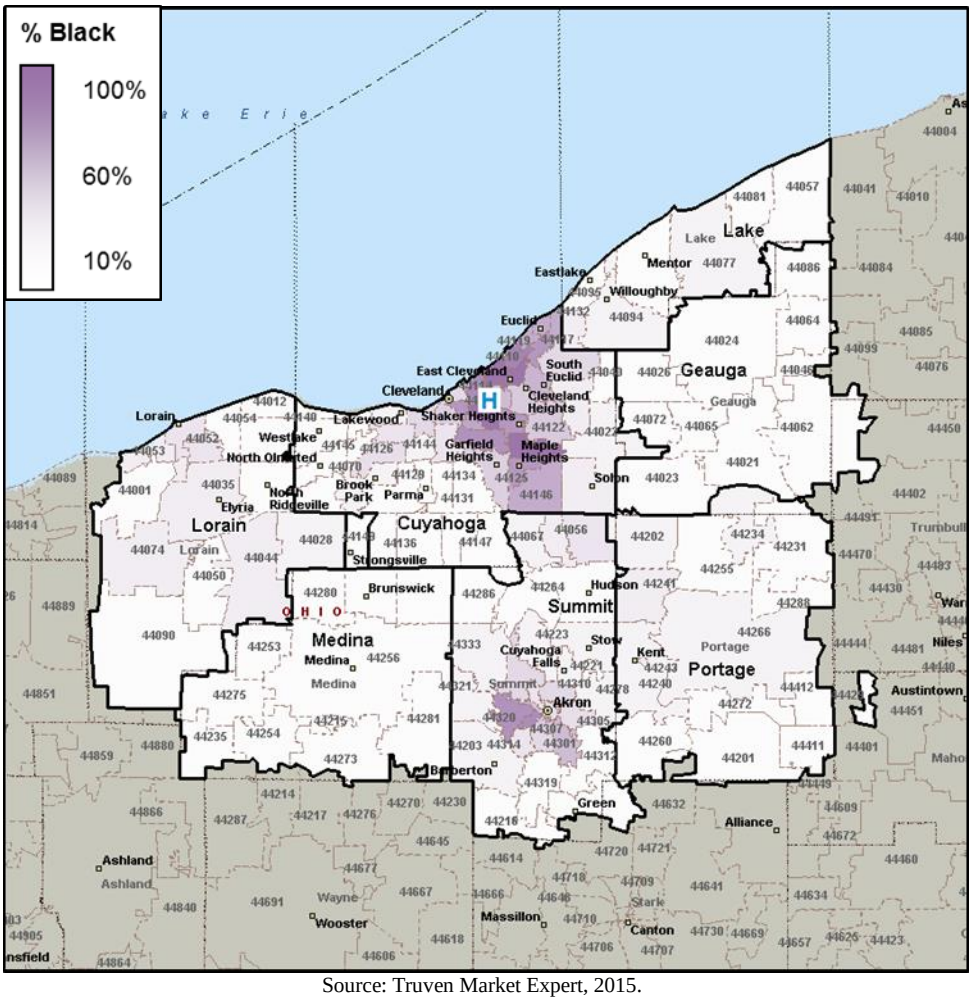


Source: Truven Market Expert, 2015.

In the 7-County community, 21.6 percent of the population was aged 17 and younger. Within the community, Geauga County had the highest proportion of residents 17 years of age and younger at 23.4 percent and Portage County had the lowest proportion at 19.2 percent.

Exhibits 38 and 39 show locations in the community where the percentages of the population that are Black and Hispanic (or Latino) were highest in 2015.

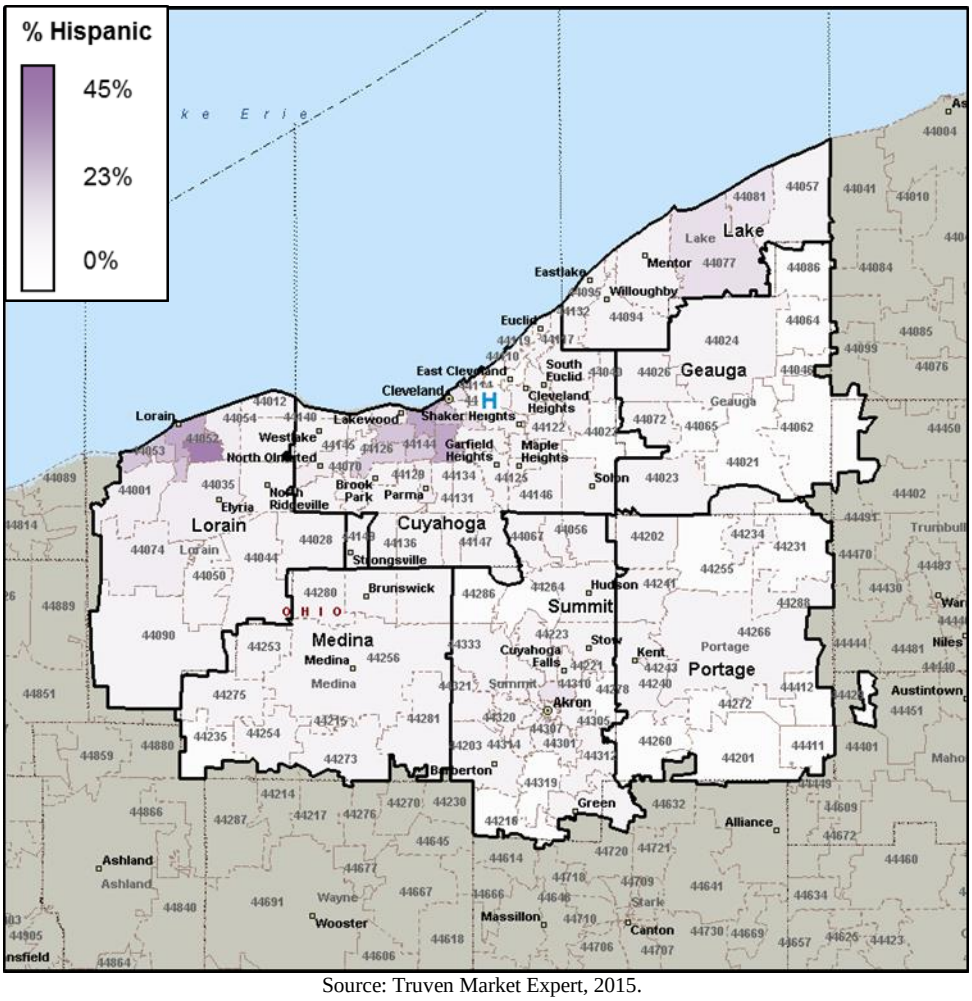
Exhibit 38: Percent of Population - Black, 2015



Source: Truven Market Expert, 2015.

In the 7-County community, 17.7 percent of the population was Black. Within the community, Cuyahoga County had the highest proportion of Black residents at 29.3 percent. Medina County had the lowest proportion of Black residents; 1.4 percent.

Exhibit 39: Percent of Population – Hispanic (or Latino), (2015)



Source: Truven Market Expert, 2015.

In the 7-County community, 4.5 percent of the population was Hispanic (or Latino). Within the community, Lorain County had the highest proportion of Hispanic (or Latino) residents at 9.3 percent. Geauga County had the lowest proportion of Hispanic (or Latino) residents; 1.4 percent.

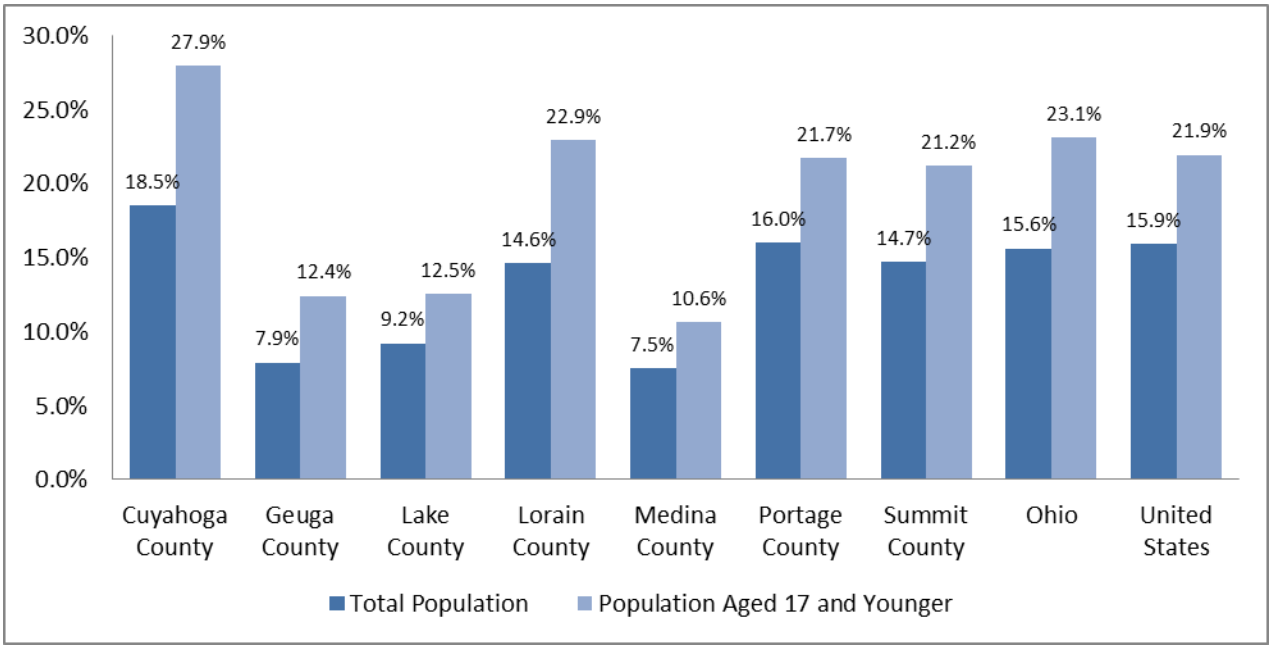
Economic indicators

The following categories of economic indicators with implications for health were assessed: (1) people in poverty; (2) unemployment rate; (3) insurance status; and (4) crime.

People in Poverty

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. Cuyahoga and Portage counties' poverty rates were higher than Ohio's poverty rate during that year. At the county, state, and national level, youth poverty rates have been higher than overall poverty rates. In 2014, the percent of youth living in poverty in Cuyahoga County was significantly higher than both the Ohio and national averages (**Exhibit 40**).

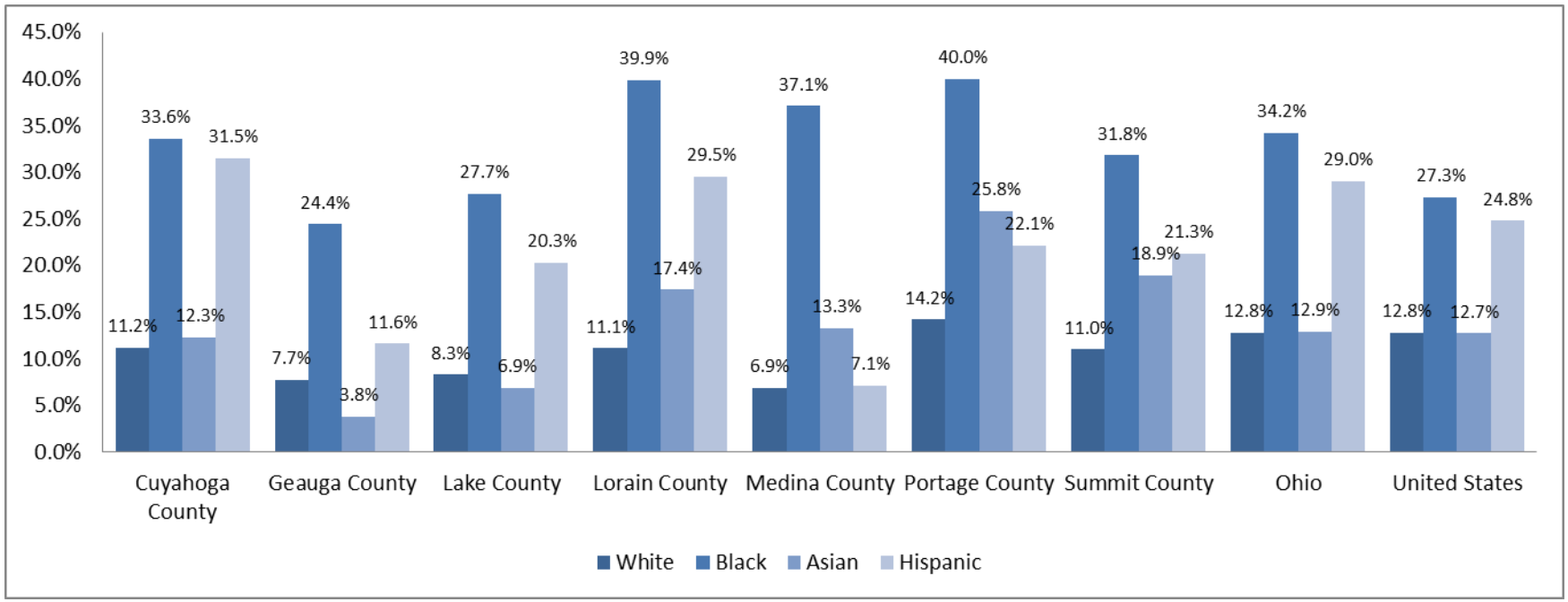
Exhibit 40: Percent of People in Poverty, 2014



Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Considerable variation in poverty rates is present across racial and ethnic categories, in the 7-County community and Ohio (**Exhibit 43**).

Exhibit 41: Poverty Rates by Race and Ethnicity, 2014



Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Poverty rates in the 7-County community and Ohio have been comparatively high for Black and Hispanic (or Latino) residents. The poverty rate for Hispanic (or Latino) residents of Cuyahoga County has exceeded the Ohio average as has the poverty rate for Asian residents of Lorain, Medina, Portage, and Summit counties.

Exhibit 42 portrays (in green shading) the locations of low income census tracts in the community. The U.S. Department of Agriculture defines "low income census tracts" as areas where poverty rates are 20 percent or higher or where median family incomes are 80 percent or lower than within the metropolitan area.

Exhibit 42: Low Income Census Tracts



Source: US Department of Agriculture Economic Research Service, ESRI, 2015.

Low income census tracts have been prevalent throughout CCCHR's 7-County community.

Unemployment

Unemployment is problematic because many residents receive health insurance coverage through their (or a family member's) employer. If unemployment rises, access to employer based health insurance can decrease. **Exhibit 43** shows unemployment rates for 2010 through 2015 for the 7-County community, with Ohio and national rates for comparison.

Exhibit 43: Unemployment Rates, 2010-2015

Region	2010	2011	2012	2013	2014	2015
Cuyahoga County	8.5%	7.6%	6.8%	7.1%	6.4%	5.5%
Geauga County	6.9%	6.1%	5.4%	5.8%	5.1%	4.0%
Lake County	7.9%	6.8%	6.0%	6.3%	5.6%	4.4%
Lorain County	9.1%	7.9%	7.1%	7.5%	6.6%	5.4%
Medina County	7.4%	6.4%	5.6%	5.9%	5.2%	4.0%
Portage County	10.3%	8.9%	7.3%	7.7%	5.8%	4.9%
Summit County	10.6%	9.1%	7.4%	7.6%	5.8%	4.9%
Ohio	**10.3%**	**8.8%**	**7.4%**	**7.5%**	**5.7%**	**4.9%**
United States	**9.6%**	**8.9%**	**8.1%**	**7.4%**	**6.2%**	**5.3%**

Source: Bureau of Labor Statistics, 2010-2014.

Between 2010 and 2015, unemployment rates at county, state, and national level decreased significantly. However in 2015, the unemployment rates in Cuyahoga and Lorain counties were higher than both the state and national rates.

Insurance Status

Exhibit 44 presents the estimated percent of population in the 7-County community without health insurance (uninsured).

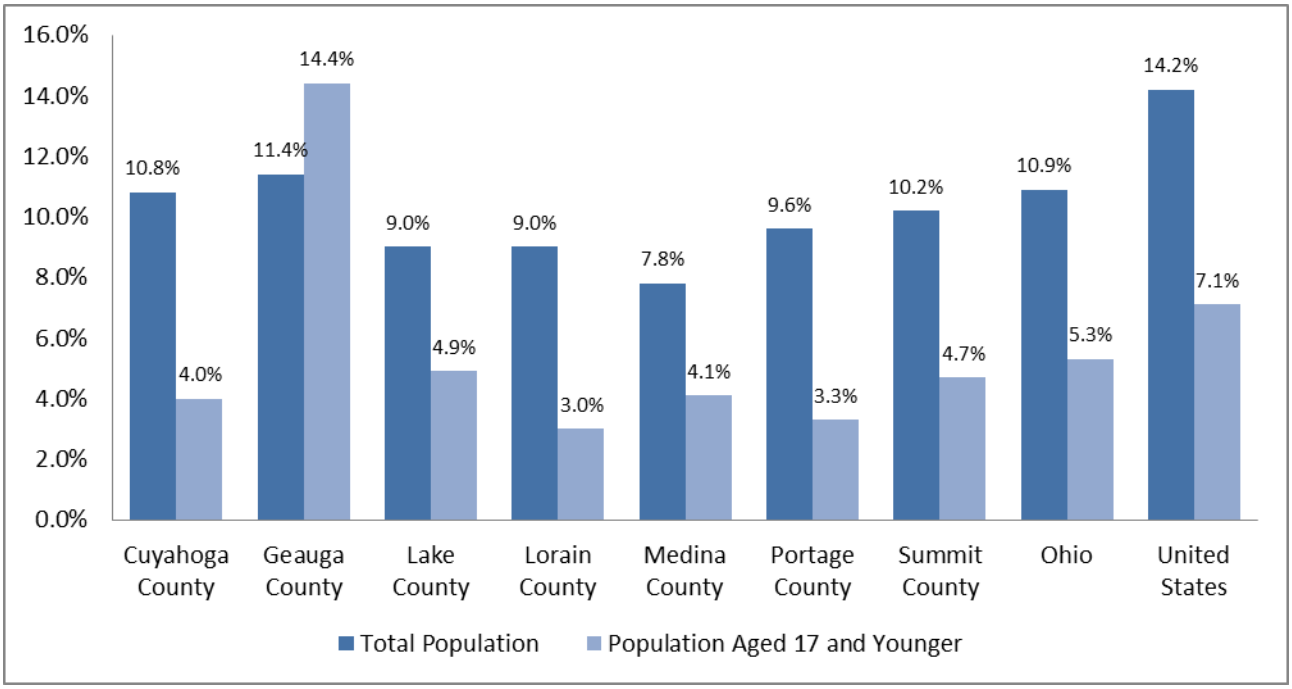
Exhibit 44: Percent of the Population without Health Insurance, 2015-2020

County	Total Population 2015	% Uninsured 2015	Total Population 2020	% Uninsured 2020
Cuyahoga County	1,262,784	7.0%	1,249,392	4.7%
Geauga County	89,153	3.0%	90,062	2.3%
Lake County	229,715	4.2%	230,305	2.9%
Lorain County	295,253	6.1%	298,360	4.2%
Medina County	174,882	3.1%	178,420	2.2%
Portage County	171,141	6.1%	173,198	4.2%
Summit County	547,778	6.0%	549,948	4.0%
7-County Community Total	**2,770,707**	**6.1%**	**2,769,685**	**4.1%**

Source: Truven Market Expert, 2015.

In 2015, approximately 6.1 percent of residents in the CCCHR 7-County community were uninsured. By 2020, it is projected that this percentage will decrease to 4.1 percent.

Exhibit 45: Percent of the Population without Health Insurance, 2014



Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

In Ohio, approximately 5.3 percent of the population aged 17 and younger was uninsured in 2014. Within the 7-County community, Geauga County had a significantly higher percent of the population aged 17 and younger who lacked health insurance; 14.4 percent.

Crime

Exhibit 46 provides certain crime statistics for Cuyahoga County and Ohio.

Exhibit 46: Crime Rates by Type and County, Per 100,000, 2014
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Crime	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Violent Crime	613.3	44.2	163.9	201.9	38.6	88.0	377.7	**278.4**
Property Crime	3,141.8	801.9	1,562.1	2,350.7	966.8	1,917.0	3,246.1	**2,880.8**
Murder	6.4	4.8	-	3.1	1.2	1.3	6.6	**4.4**
Rape	48.8	3.6	27.1	28.0	12.1	19.5	47.8	**36.2**
Robbery	362.1	7.2	29.5	99.4	10.4	28.2	124.0	**129.2**
Aggravated Assault	196.1	28.7	107.3	71.4	15.0	39.0	199.3	**126.1**
Burglary	966.2	88.4	272.2	830.5	134.2	412.6	845.2	**786.5**
Larceny	1,720.5	699.2	1,243.7	1,459.0	813.7	1,464.2	2,239.1	**1,921.8**
Motor Vehicle Theft	455.1	14.3	46.3	61.2	19.0	40.3	161.7	**172.5**
Arson	32.5	2.4	5.4	22.4	2.3	15.5	24.1	**21.1**

Source: FBI, 2014.

2014 overall crime rates in Cuyahoga and Summit counties were well above the Ohio averages. Rates of violent crime, robbery, aggravated assault, motor vehicle theft, and arson were particularly problematic in Cuyahoga County, as were murder and aggravated assault in Summit County.

Local Health Status and Access Indicators

This section assesses health status and access indicators for the CCCHR community. Data sources include: (1) County Health Rankings, (2) the Centers for Disease Control's (CDC) Community Health Status Indicators, (3) the Ohio Department of Health, and (4) the CDC's Behavioral Risk Factor Surveillance System.

Throughout this section, data and cells are highlighted if indicators are unfavorable – because they exceed benchmarks (typically, Ohio averages). Where confidence interval data are available, cells are highlighted only if variances are unfavorable and statistically significant.

County Health Rankings

County Health Rankings, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[21] social and

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

economic factors, and physical environment.[22] *County Health Rankings* is updated annually. *County Health Rankings 2016* relies on data from 2006 to 2015, with most data from 2010 to 2013.

Exhibit 47 presents 2013 and 2016 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in the Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. The table also indicates if rankings fell between 2013 and 2016.

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

Exhibit 47: County Health Rankings, 2016
(Light grey shading indicates indicator in bottom half of Ohio counties; Dark grey shading indicates in bottom quartile of Ohio counties)

	Cuyahoga County			Geauga County			Lake County			Lorain County			Medina County			Portage County			Summit County		
	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change
Health Outcomes	67	64		1	2		17	15		29	30	↓	4	5	↓	20	22	↓	41	52	↓
Health Factors	45	53	↓	3	6	↓	12	13	↓	42	41		4	5	↓	26	26		29	46	↓
Length of Life	58	54		1	3	↓	12	17	↓	24	30	↓	3	4	↓	18	21	↓	44	40	
Quality of Life	76	73		4	4		20	13		30	33	↓	6	5		27	32	↓	47	60	↓
Frequent Physical Distress	N/A	63		N/A	5		N/A	5		N/A	31		N/A	3		N/A	33		N/A	44	
Frequent Mental Distress	N/A	54		N/A	5		N/A	6		N/A	31		N/A	3		N/A	27		N/A	31	
Drug Overdose Deaths	N/A	52		N/A	13		N/A	54		N/A	63		N/A	9		N/A	29		N/A	44	
Health Behaviors	15	39	↓	2	2		18	6		38	20		3	5	↓	37	15		13	40	↓
Sexually Transmitted Infections	55	87	↓	1	2	↓	9	60	↓	31	71	↓	7	9	↓	6	33	↓	28	80	↓
Teen Births	3	51	↓	18	1		55	11		28	29	↓	26	7		66	4		22	24	↓
Clinical Care	7	5		8	12	↓	18	16		22	29	↓	5	6	↓	54	39		13	22	↓
Primary Care Physicians	1	2	↓	27	21		8	49	↓	24	26	↓	15	24	↓	52	58	↓	6	6	
Dentists	56	1		10	32	↓	18	9		9	28	↓	4	21	↓	34	37	↓	10	13	↓
Mental Health Providers	3	1		6	17	↓	26	24		25	36	↓	16	28	↓	11	19	↓	5	11	↓
Social & Economic Factors	76	79	↓	5	10	↓	10	22	↓	46	52	↓	3	7	↓	15	29	↓	47	48	↓
Unemployment	15	59	↓	4	19	↓	6	39	↓	15	65	↓	5	20	↓	19	45	↓	8	44	↓
Inadequate Social Support	39	78	↓	20	75	↓	18	80	↓	30	70	↓	18	76	↓	5	83	↓	52	60	↓
Injury Deaths	1	30	↓	11	13	↓	2	19	↓	6	15	↓	10	3		16	7		5	29	↓
Physical Environment	36	61	↓	17	59	↓	51	49		83	77		34	79	↓	70	73	↓	78	84	↓
Air Pollution	66	63		75	70		70	65		59	57		70	67		82	79		79	75	
Severe Housing Problems	N/A	87		N/A	62		N/A	41		N/A	74		N/A	24		N/A	80		N/A	71	

Source: County Health Rankings, 2016.

Throughout the 7-County community, rankings for Drug Overdose Deaths, Sexually Transmitted Infections, Social & Economic Factors, Inadequate Social Support, Physical Environment, Air Pollution, and Severe Housing Problems were comparatively low.

Exhibit 48 provides data for each underlying indicator of the composite categories in the County Health Rankings.[23] The exhibit also includes national averages.

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

Exhibit 48: County Health Rankings Data Compared to Ohio and U.S. Averages, 2016
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Indicator Category	Data	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	U.S.
Health Outcomes										
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,907.7	4,847.6	6,289.3	7,011.6	5,102.9	6,442.9	7,252.8	**7,533.6**	7,700.0
Quality of Life	Average number of physically unhealthy days reported in past 30 days	3.9	3.3	3.3	3.6	3.2	3.6	3.8	**3.8**	3.7
	Average number of mentally unhealthy days reported in past 30 days	4.0	3.7	3.7	3.9	3.6	3.9	4.0	**4.0**	3.7
	Percent of live births with low birthweight (<2500 grams)	10.5	5.9	7.6	7.6	6.9	7.5	9.0	**8.6**	8.0
Health Factors										
Health Behaviors										
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	6.6	8.3	7.5	7.2	8.1	7.2	6.6	**6.9**	7.2
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	95.6	90.0	89.4	88.7	94.3	78.0	95.7	**83.2**	62.0
STDs	Chlamydia rate per 100,000 population	792.4	121.7	292.3	346.0	157.2	221.1	441.2	**460.2**	287.7
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	37.7	9.2	21.0	32.9	15.6	14.7	31.3	**34.4**	40.0
Clinical Care										
Uninsured	Percent of population under age 65 without health insurance	13.3	13.4	11.5	12.2	9.9	12.0	12.6	**13.0**	17.0
Primary Care Physicians	Ratio of population to primary care physicians	879:1	1516:1	2148:1	1692:1	1576:1	2410:1	1002:1	**1296:1**	1990:1
Dentists	Ratio of population to dentists	1028:1	2300:1	1559:1	2173:1	2047:1	2490:1	1715:1	**1713:1**	2590:1
Mental Health Providers	Ratio of population to mental health providers	402:1	650:1	780:1	1004:1	894:1	710:1	529:1	**642:1**	1060:1

Source: County Health Rankings, 2016.

Exhibit 48: County Health Rankings Data Compared to Ohio and U.S. Averages, 2016 (*continued*)
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Indicator Category	Data	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	U.S.
Health Factors										
Social & Economic Factors										
High School Graduation	Percent of ninth-grade cohort that graduates in four years	75.8	92.9	90.0	85.8	95.1	92.4	83.9	**82.7**	86.0
Unemployment	Percent of population age 16+ unemployed but seeking work	6.4	5.1	5.6	6.6	5.2	5.8	5.8	**5.7**	6.0
Children in poverty	Percent of children under age 18 in poverty	30.0	11.5	13.4	21.7	9.6	18.2	20.3	**22.7**	23.0
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	5.6	4.1	4.0	4.4	3.7	4.4	4.8	**4.8**	4.4
Children in single-parent households	Percent of children that live in a household headed by single parent	44.9	16.7	28.5	37.2	22.0	31.0	36.2	**35.4**	32.0
Social Associations	Number of associations per 10,000 population	9.2	9.5	9.1	10.1	9.3	8.8	11.4	**11.4**	13.0
Violent Crime	Number of reported violent crime offenses per 100,000 population	559.8	38.4	203.0	225.6	95.1	84.5	405.5	**307.2**	199.0
Injury Deaths	Injury mortality per 100,000	59.1	53.9	56.4	55.2	42.2	45.9	58.5	**62.7**	74.0
Physical Environment										
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	13.6	13.7	13.6	13.6	13.7	13.9	13.8	**13.5**	11.9
Severe Housing Problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	18.9	14.6	13.0	15.6	11.6	16.6	15.5	**15.2**	14.0

Source: County Health Rankings, 2016

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Exhibit 48 highlights the following comparatively unfavorable indicators in which three or more of the counties in the 7-County community ranked worse than Ohio averages:

- Air pollution
- Percent of households with severe housing problems
- Percent of the population unemployed
- Ratio of primary care physicians, dentists, and mental health providers
- Social associations rate

Community Health Status Indicators

The Centers for Disease Control and Prevention's *Community Health Status Indicators* provide health profiles for all 3,143 counties in the United States. Counties are assessed using 44 metrics associated with health outcomes including health care access and quality, health behaviors, social factors, and the physical environment.

The *Community Health Status Indicators* allows for a comparison of a given county to other "peer counties." Peer counties are assigned based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly, and poverty rates.

Exhibit 49 compares each county in the 7-County community to its respective peer counties and cities and highlights community health issues found to rank in the bottom quartile of the counties included in the analysis.

Exhibit 49: Community Health Status Indicators, 2015
(Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County
Mortality	Cancer Deaths	■					■	
	Female Life Expectancy						■	
	Male Life Expectancy						■	
	Motor Vehicle Deaths							
	Unintentional Injury (including motor vehicle)							
Morbidity	Cancer							
	HIV				■			
	Preterm Births	■					■	■
	Syphilis							
Health Care Access and Quality	Cost Barrier to Care							
	Primary Care Provider Access						■	
	Uninsured		■					
Health Behaviors	Teen Births							
Social Factors	Children in Single-Parent Households	■			■			
	High Housing Costs				■			
	Inadequate Social Support		■					
	On Time High School Graduation							
	Poverty		■		■		■	
	Unemployment				■			
	Violent Crime							
Physical Environment	Access to Parks						■	
	Annual Average PM2.5 Concentration	■		■	■	■	■	■
	Drinking Water Violations							
	Housing Stress				■			
	Limited Access to Healthy Food			■				
	Living Near Highways				■			■

Source: Community Health Status Indicators, 2015.

The CHSI data indicate that preterm births, poverty, and air pollution are particularly problematic in the 7-County community.

Ohio Department of Health

The Ohio Department of Health maintains a data warehouse that includes county-level indicators regarding maternal and child health (**Exhibit 50**).

Exhibit 50: Maternal and Child Health Indicators, 2012
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Measure	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	Healthy People 2020
Mortality Rate per 1,000 Live Births									
Infant	9.4	4.1	4.2	6.8	3.3	6.7	7.7	**7.7**	N/A
Neonatal	6.5	2.6	3.2	4.4	2.2	4.2	5.4	**5.2**	N/A
Post-Neonatal	2.9	1.5	0.9	2.4	1.1	2.6	2.3	**2.5**	N/A
% Deliveries									
Low Birth Weight	10.5	6.0	7.6	7.7	6.8	7.5	9.0	**8.6**	7.8
Very Low Birth Weight	2.3	N/A	1.3	1.6	1.3	1.3	1.8	**1.6**	1.4
% Preterm Births									
< 32 weeks of gestation	3.1	1.4	1.6	2.3	1.8	2.0	2.4	**2.3**	1.8
32-33 weeks of gestation	2.0	1.9	1.3	1.6	1.4	1.5	1.9	**1.6**	1.4
34-36 weeks of gestation	9.3	7.4	8.3	7.9	7.9	8.3	9.3	**8.6**	8.1
< 37 weeks of gestation	14.4	9.7	11.2	11.7	11.2	11.8	13.6	**12.6**	11.4
% Births to									
Unmarried Women 18-54 Years Old	49.1	14.0	32.4	43.2	22.6	36.6	40.9	**41.3**	N/A
Women 40-54 Years Old	2.7	4.9	2.8	2.3	3.1	2.3	2.4	**2.1**	N/A
Women <18 Years Old	3.7	1.0	1.7	3.0	1.2	2.0	2.9	**3.0**	N/A
Teenage Pregnancies per 1,000 Births									
Births to Females 15-19 Years Old	39.3	9.9	21.3	33.8	16.2	15.9	32.9	**36.0**	N/A

Source: Ohio Department of Health, 2012.

Exhibit 50 indicates that infant mortality rates, low birth weights, and preterm births are comparatively problematic in Cuyahoga and Summit counties. The percent of births to older women was also problematic in each of the seven counties. The percent of births to older women in Geauga County was more than 50 percent higher than the Ohio average.

Ambulatory Care Sensitive Conditions

This section examines the frequency of discharges for Ambulatory Care Sensitive Conditions (ACSCs, frequently referred to as Prevention Quality Indicators or PQIs) throughout the community.

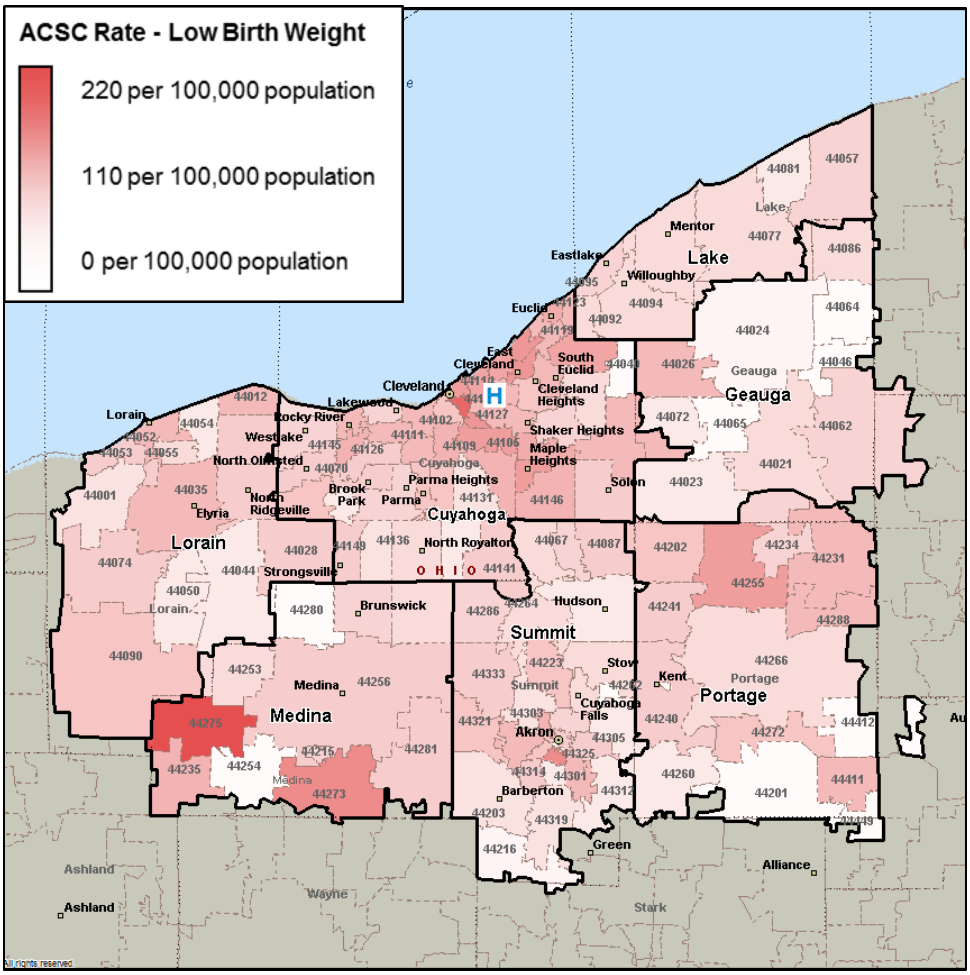
ACSCs are health "conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[24] As such, rates of hospitalization for these conditions can "provide insight into the quality of the health care system outside of the hospital," including the accessibility and utilization of primary care, preventive care and health education. Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, low birth weight, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

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

Exhibit 51 displays the 2014 PQI rate (per 100,000 persons) for low birth weight, by ZIP code, in the 7-County community.

Exhibit 51: ACSC Rate for Low Birth Weight, by ZIP Code, 2014

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



Source: Cleveland Clinic, 2014.
Note: Rates are not age-sex adjusted.

The average ACSC rate for low birth weight in the 7-County community was 67.1 per 100,000 population. Within the community, Cuyahoga County's low birth weight rate of 78.2 was higher than the Ohio average of 61.5 per 100,000 population.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

Dignity Health, a California-based hospital system, developed and has made widely available for public use a *Community Need Index*™ that measures barriers to health care access by county/city and ZIP code. The index is based on five social and economic indicators:

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

- The percentage of the population renting houses.

The *Community Need Index*™ calculates a score for each ZIP code based on these indicators. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0).

Exhibit 52 presents the *Community Need Index*™ (CNI) score of each county in the CCCHR 7-County community.

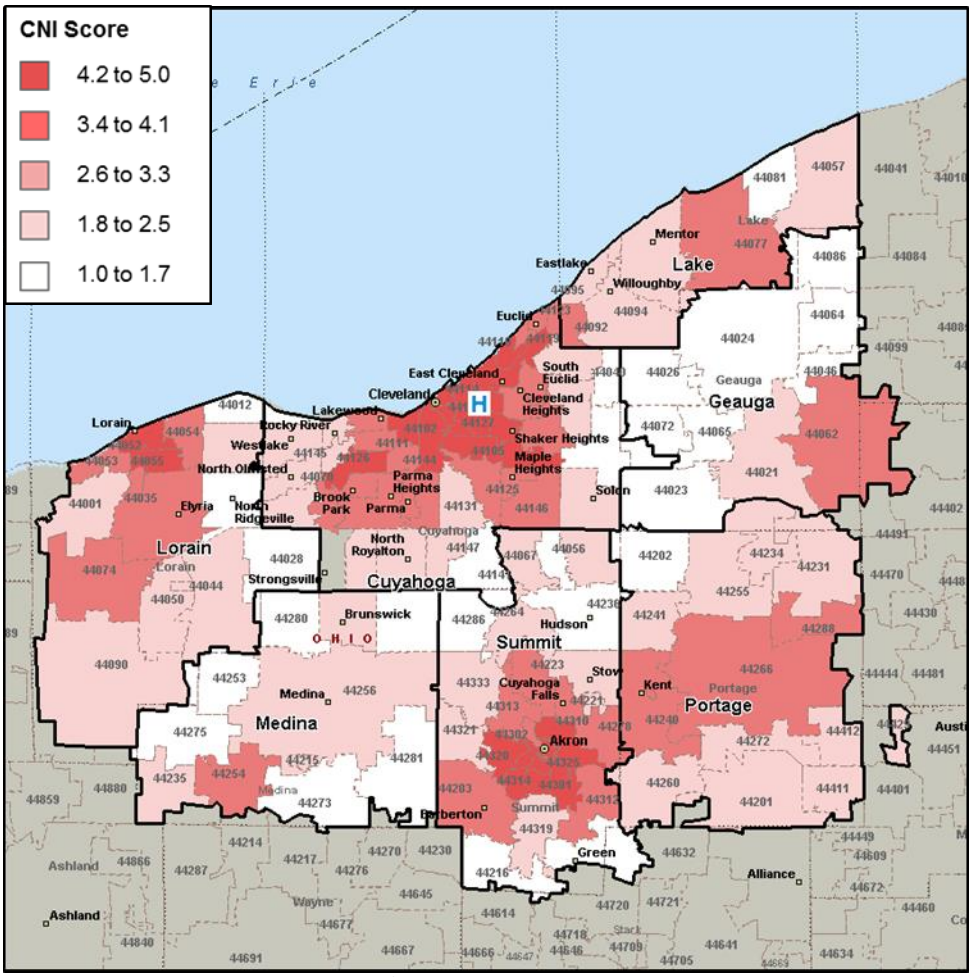
Exhibit 52: Community Need Index™ Score by County, 2015

County	CNI Score
Cuyahoga County Average	3.4
Geauga County Average	1.6
Lake County Average	2.4
Lorain County Average	3.0
Medina County Average	1.8
Portage County Average	2.8
Summit County Average	2.9
7-County Average	**3.0**

Source: Dignity Health, 2015.

Exhibit 53 presents these data in a community map format.

Exhibit 53: Community Need Index, 2015



Source: Microsoft MapPoint and Dignity Health, 2015.

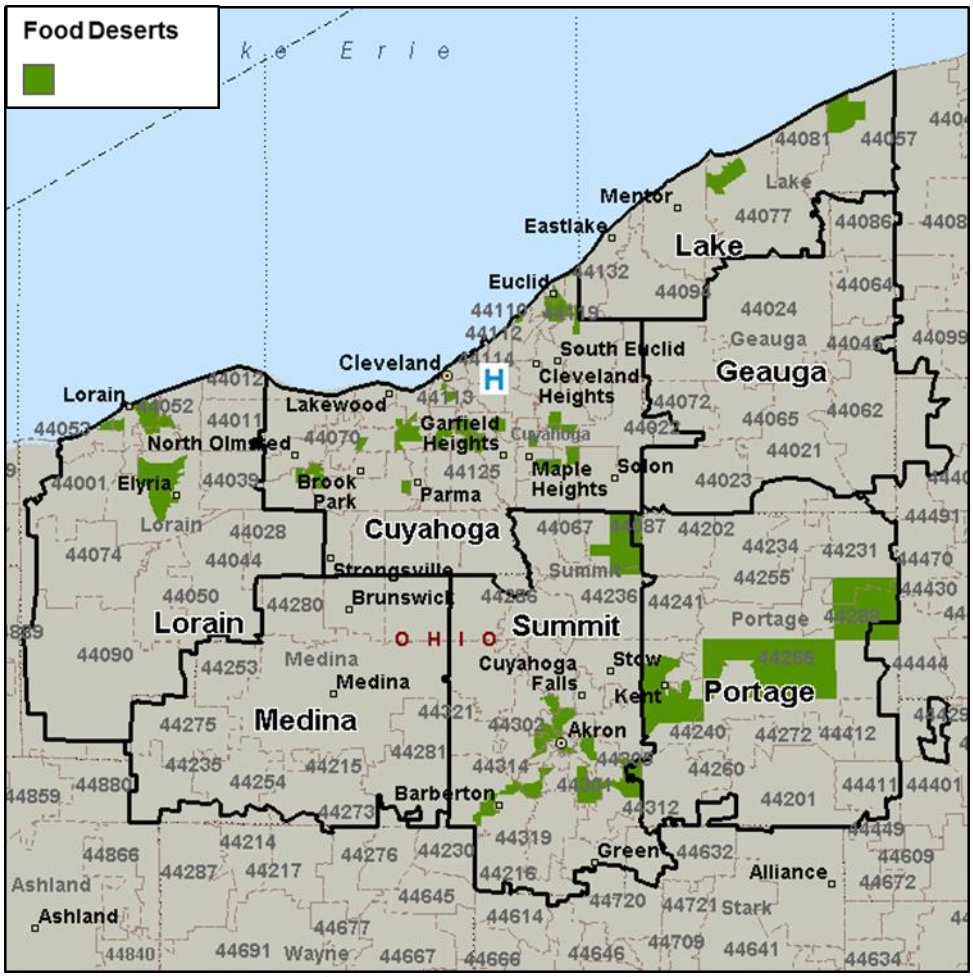
In the CCCHR 7-County community, the average CNI score was 3.0. The average CNI score in Cuyahoga County was 3.4, indicating that the county is a high need area.

Food Deserts

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

Exhibit 54 illustrates the location of food deserts in the 7-County community.

Exhibit 54: Food Deserts



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2015.

Food deserts are present throughout Cuyahoga, Lake, Lorain, Portage, and Summit counties.

Medically Underserved Areas and Populations

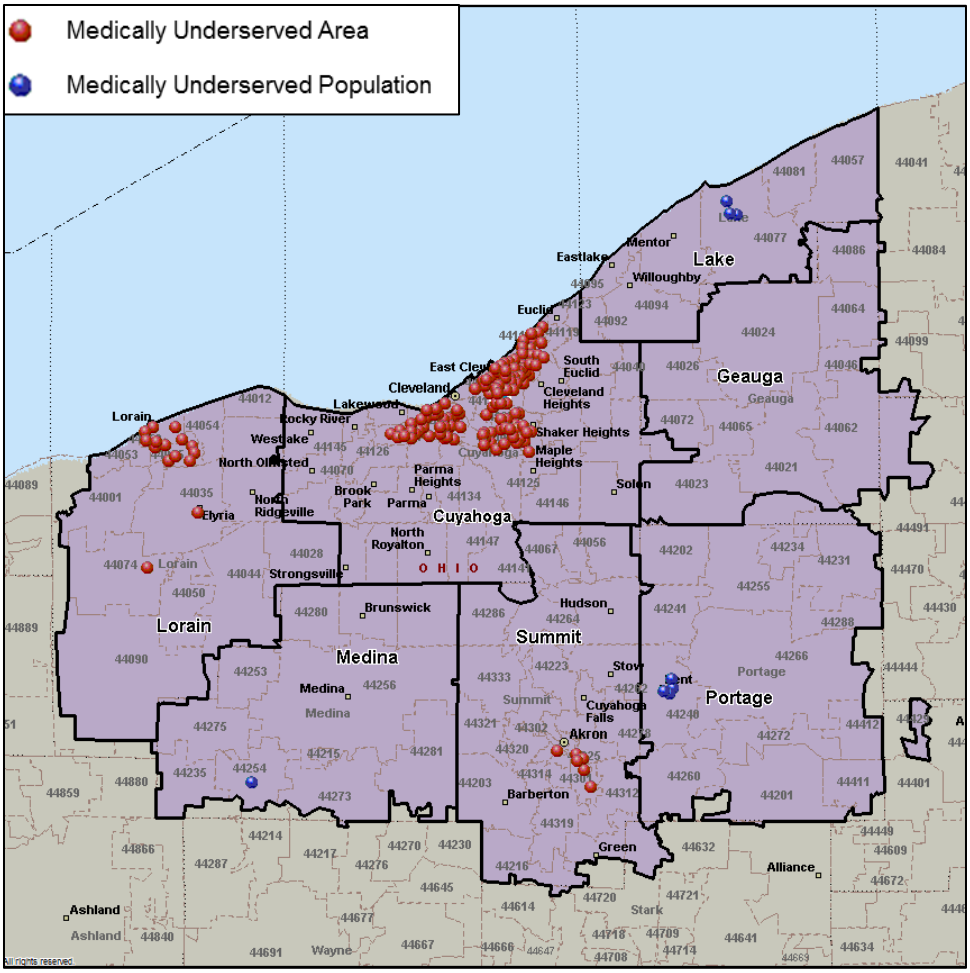
Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[25] Areas with a score of 62 or less are considered "medically underserved."

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if "unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides."[26]

Medically Underserved Areas are present in Cuyahoga, Lorain, and Summit counties. Medically Underserved populations are present in Lake, Medina, and Portage counties (**Exhibit 55**).

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

Exhibit 55: Medically Underserved Areas



Source: Microsoft MapPoint and HRSA, 2015.

Health Professional Shortage Areas

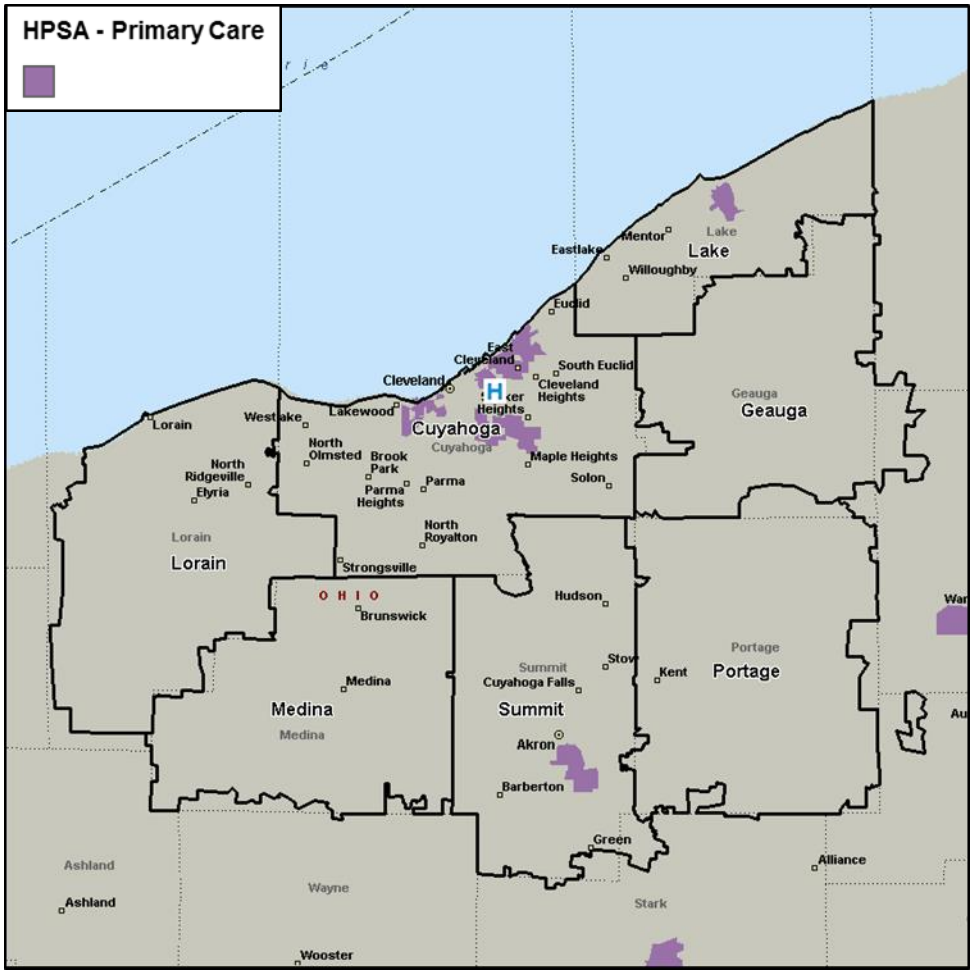
A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can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

HPSAs can be: "(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility."[27]

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

Exhibit 56 illustrates the locations of the federally-designated HPSAs.

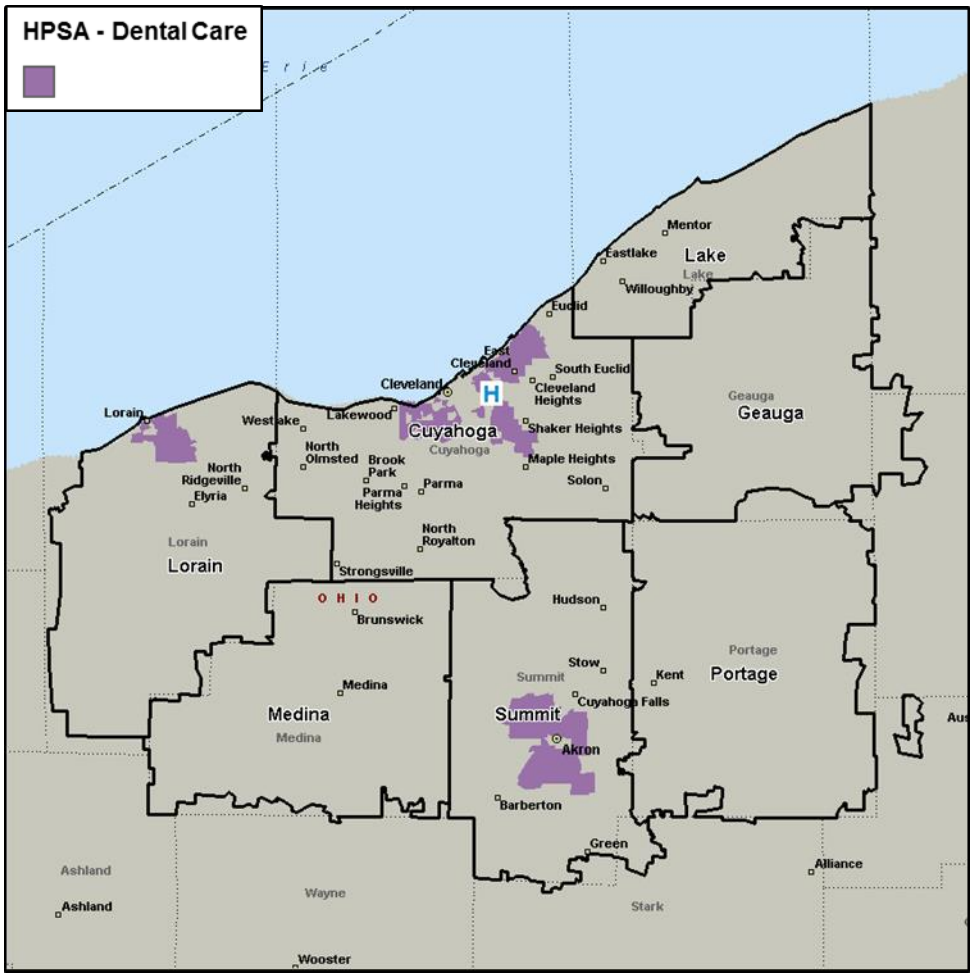
Exhibit 56A: Primary Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

Within the CCCHR 7-County community, Primary care HPSAs are located in Cuyahoga, Lake, and Summit counties.

Exhibit 56B: Dental Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

Dental care HPSA designated census tracts are located in Cuyahoga, Lorain, and Summit counties.

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the 21-County community.

Community Assessed

As mentioned previously, CCCHR's 21-County community is comprised of the twenty one counties in Northeast Ohio.

Demographics

The total population in the 21-County community was approximately 4,400,000 persons, including nearly 961,000 children. Over a quarter of the population is located in Cuyahoga County **(Exhibit 57)**.

Exhibit 57: Community Population, 2015

County	Total Population 2015	Percent of Total Population 2015	Estimated Population 17 and Younger 2015	Percent of Population 17 and Younger 2015
Ashland County	52,874	1.2%	11,844	1.2%
Ashtabula County	98,976	2.2%	22,022	2.3%
Carroll County	27,882	0.6%	5,942	0.6%
Columbiana County	104,953	2.4%	21,697	2.3%
Crawford County	42,480	1.0%	9,249	1.0%
Cuyahoga County	1,262,784	28.6%	272,274	28.3%
Erie County	75,553	1.7%	15,658	1.6%
Geauga County	89,153	2.0%	20,900	2.2%
Holmes County	44,226	1.0%	14,256	1.5%
Huron County	58,428	1.3%	14,324	1.5%
Lake County	229,715	5.2%	47,576	5.0%
Lorain County	295,253	6.7%	66,802	7.0%
Mahoning County	231,477	5.2%	47,024	4.9%
Medina County	174,882	4.0%	40,434	4.2%
Portage County	171,141	3.9%	32,816	3.4%
Richland County	120,595	2.7%	26,248	2.7%
Stark County	375,715	8.5%	81,596	8.5%
Summit County	547,778	12.4%	118,730	12.4%
Trumbull County	204,715	4.6%	42,537	4.4%
Tuscarawas County	92,859	2.1%	20,959	2.2%
Wayne County	115,307	2.6%	28,055	2.9%
21-County Total	**4,416,746**	**100.0%**	**960,943**	**100.0%**

Source: Truven Market Expert, 2015.

Population characteristics and changes directly influence community health needs. The total population in the CCCHR 21-County community is expected to decrease by approximately 0.4 percent from 2015 to 2020 (**Exhibit 58**).

Exhibit 58: Percent Change in Community Population by County, 2015-2020

County	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
Ashland County	52,874	52,698	-0.3%
Ashtabula County	98,976	97,230	-1.8%
Carroll County	27,882	27,110	-2.8%
Columbiana County	104,953	102,947	-1.9%
Crawford County	42,480	41,682	-1.9%
Cuyahoga County	1,262,784	1,249,392	-1.1%
Erie County	75,553	74,547	-1.3%
Geauga County	89,153	90,062	1.0%
Holmes County	44,226	45,800	3.6%
Huron County	58,428	57,536	-1.5%
Lake County	229,715	230,305	0.3%
Lorain County	295,253	298,360	1.1%
Mahoning County	231,477	226,324	-2.2%
Medina County	174,882	178,420	2.0%
Portage County	171,141	173,198	1.2%
Richland County	120,595	117,992	-2.2%
Stark County	375,715	377,062	0.4%
Summit County	547,778	549,948	0.4%
Trumbull County	204,715	200,932	-1.8%
Tuscarawas County	92,859	93,434	0.6%
Wayne County	115,307	116,211	0.8%
21-County Total	**4,416,746**	**4,401,190**	**-0.4%**

Source: Truven Market Expert, 2015.

Between 2015 and 2020, the population in eleven of the counties in the 21-County community is expected to decrease in size.

The population aged 17 and younger in the CCCHR 21-County community is expected to decrease by approximately 4.8 percent from 2015 to 2020 (**Exhibit 59**).

Exhibit 59: Percent Change in Population 17 and Younger by County, 2015-2020

County	Estimated Population 17 and Younger 2015	Projected Population 17 and Younger 2020	Percent Change 2015-2020
Ashland County	11,844	11,323	-4.4%
Ashtabula County	22,022	20,761	-5.7%
Carroll County	5,942	5,430	-8.6%
Columbiana County	21,697	20,429	-5.8%
Crawford County	9,249	8,669	-6.3%
Cuyahoga County	272,274	260,056	-4.5%
Erie County	15,658	14,668	-6.3%
Geauga County	20,900	18,984	-9.2%
Holmes County	14,256	14,034	-1.6%
Huron County	14,324	13,489	-5.8%
Lake County	47,576	45,029	-5.4%
Lorain County	66,802	64,258	-3.8%
Mahoning County	47,024	43,860	-6.7%
Medina County	40,434	37,983	-6.1%
Portage County	32,816	30,815	-6.1%
Richland County	26,248	25,133	-4.2%
Stark County	81,596	78,415	-3.9%
Summit County	118,730	114,169	-3.8%
Trumbull County	42,537	39,618	-6.9%
Tuscarawas County	20,959	20,415	-2.6%
Wayne County	28,055	27,496	-2.0%
21-County Total	**960,943**	**915,034**	**-4.8%**

Source: Truven Market Expert, 2015.

Between 2015 and 2020, the population aged 17 and younger is projected to decrease in every county in the 21-County community.

Exhibit 60 shows the 21-County community's population for certain age and sex cohorts in 2015, with projections to 2020.

Exhibit 60: Percent Change in Population by Age/Sex Cohort, 2015-2020

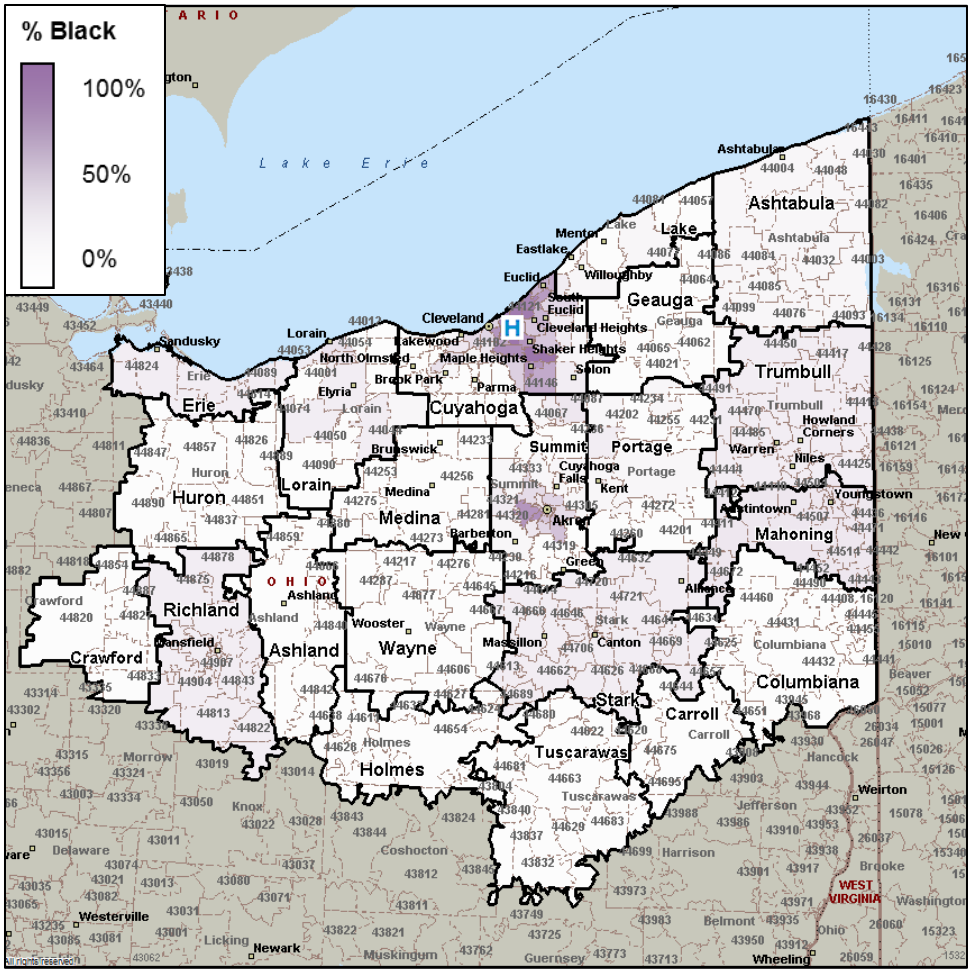
Age/Sex Cohort	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
0-17	960,943	915,034	-4.8%
Female 18-44	719,264	714,073	-0.7%
Male 18-44	719,790	724,131	0.6%
45-64	1,252,811	1,184,324	-5.5%
65+	763,938	863,628	13.0%
21-County Total	**4,416,746**	**4,401,190**	**-0.4%**

Source: Truven Market Expert, 2015.

The number of persons aged 17 years and younger is projected to decrease by 4.8 percent between 2015 and 2020.

Exhibits 61 and 62 show locations in the 21-County community where the percentages of the population that are Black and Hispanic (or Latino) were highest in 2015.

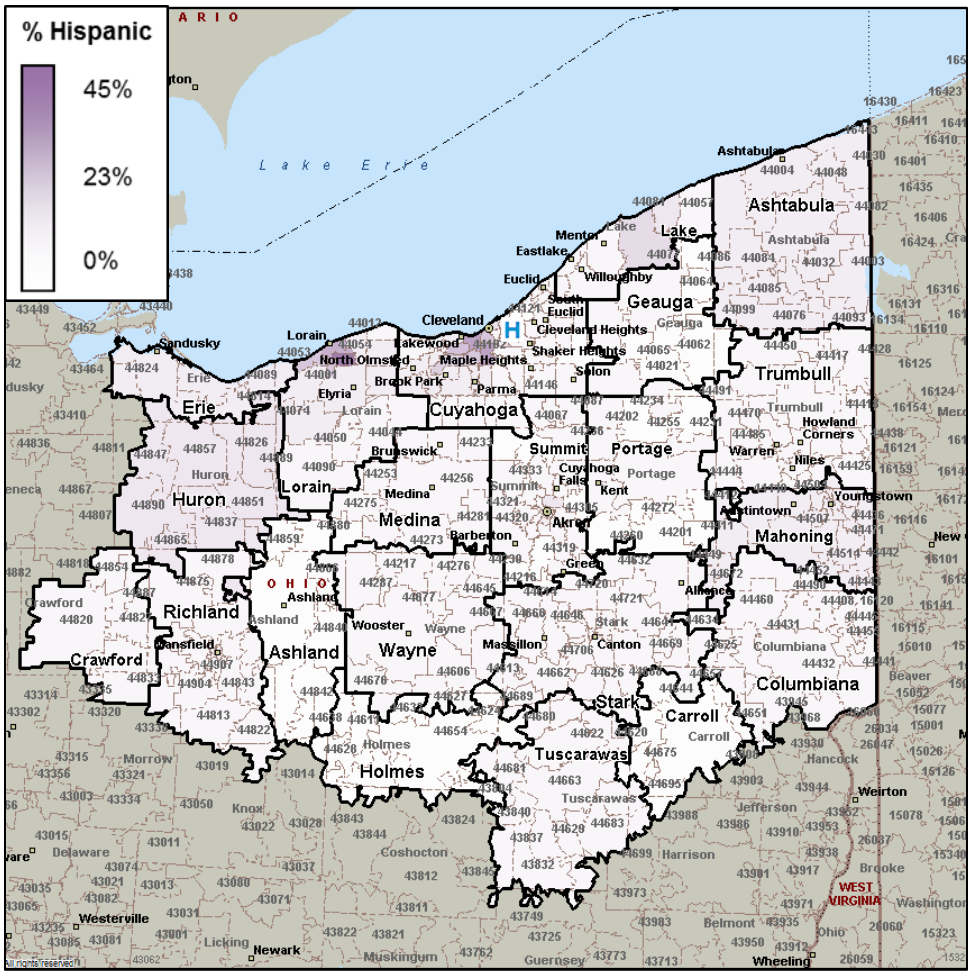
Exhibit 61: Percent of Population - Black, 2015



Source: Truven Market Expert, 2015.

In 2015, Cuyahoga and Summit counties had the greatest proportion of Black residents. In several Cleveland ZIP codes more than 90 percent of the population was Black.

Exhibit 62: Percent of Population – Hispanic (or Latino), (2015)



Source: Truven Market Expert, 2015.

In 2015, Cuyahoga and Lorain counties had the greatest proportion of Hispanic (or Latino) residents. In Lorain ZIP code 44055 more than 40 percent of the population was Hispanic (or Latino).

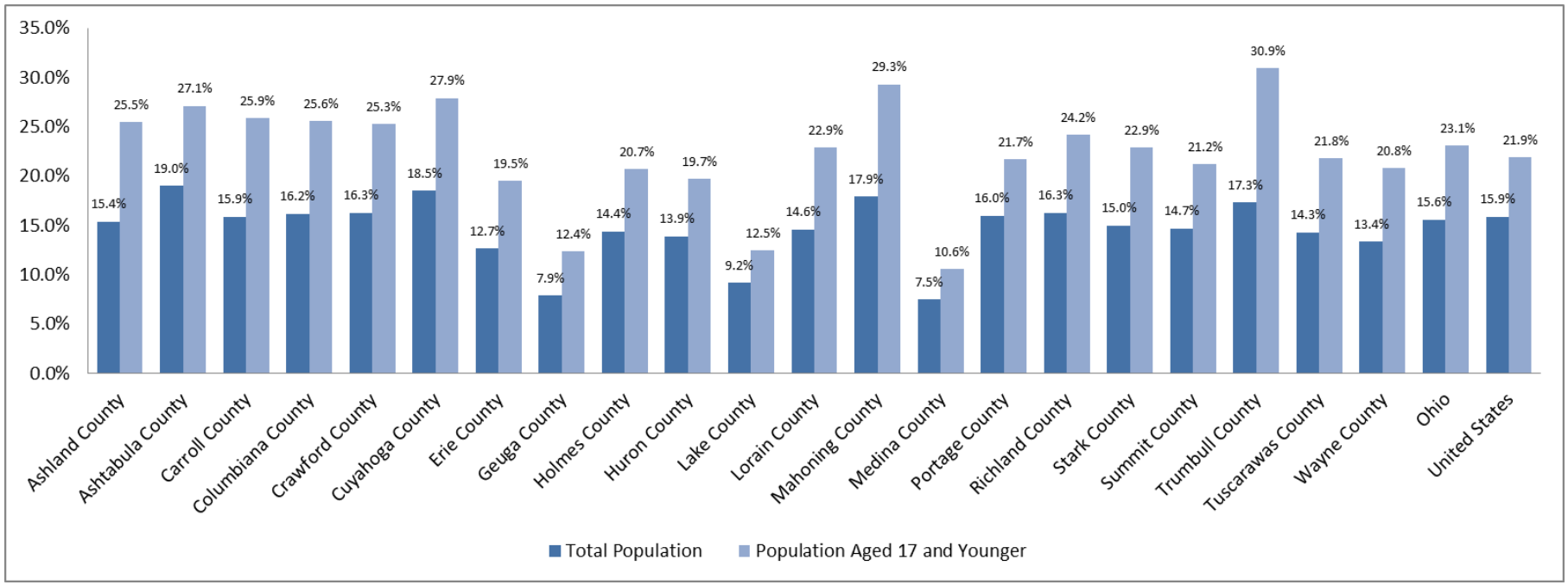
Economic indicators

The following categories of economic indicators with implications for health were assessed: (1) people in poverty; (2) unemployment rate; (3) insurance status; and (4) crime.

People in Poverty

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Portage, Stark, and Trumbull counties poverty rates were higher than Ohio's poverty rate during that year. The poverty rate for individuals aged 17 and younger was higher than the overall poverty rate in every county as well as Ohio. The youth poverty rates in Ashland, Ashtabula, Carroll, Columbiana, Crawford, Cuyahoga, Mahoning, Richland, and Trumbull counties were all higher than the Ohio youth poverty rate (**Exhibit 63**).

Exhibit 63: Percent of People in Poverty, 2014



Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Considerable variation in poverty rates is present across racial and ethnic categories, in Northeast Ohio, the state, nation (**Exhibit 64**).

Exhibit 64: Poverty Rates by Race and Ethnicity, 2014

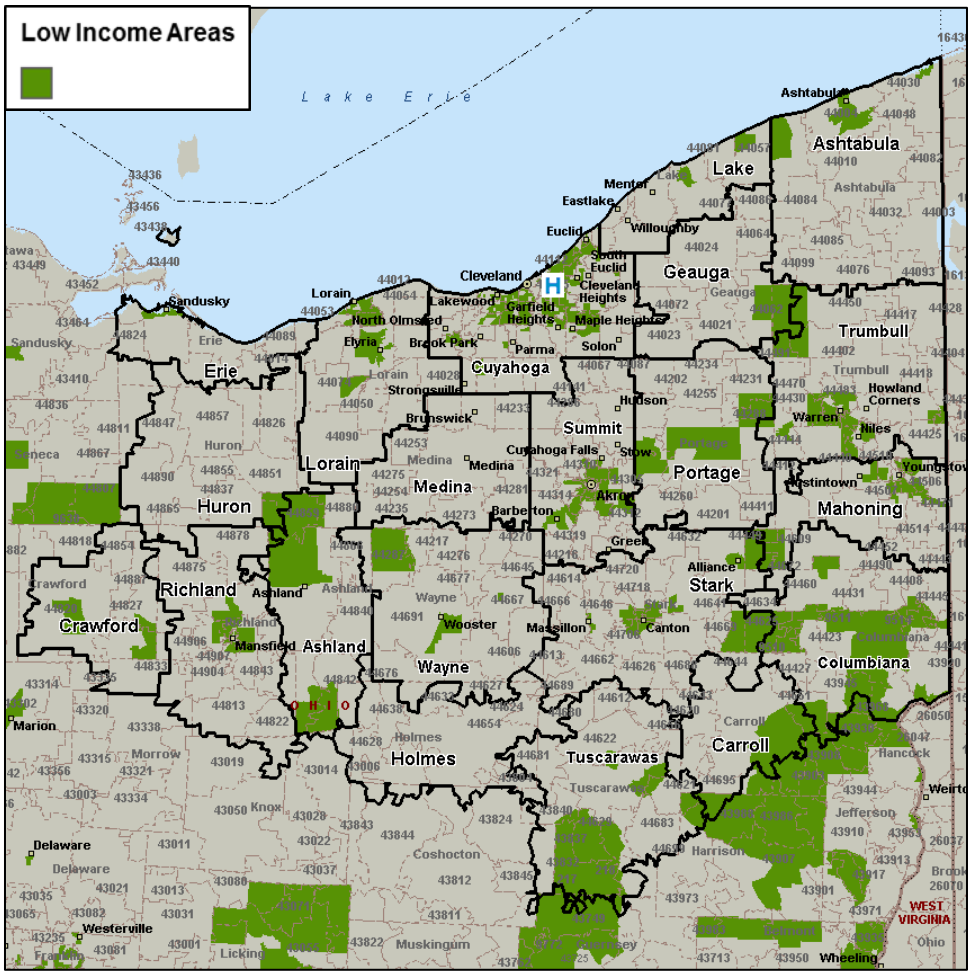
County	White	Black	Asian	Hispanic
Ashland County	15.2%	41.5%	33.0%	10.3%
Ashtabula County	18.0%	40.6%	3.1%	44.1%
Carroll County	16.0%	15.8%	3.2%	3.4%
Columbiana County	15.6%	45.3%	0.0%	20.9%
Crawford County	15.5%	47.1%	22.2%	36.0%
Cuyahoga County	11.2%	33.6%	12.3%	31.5%
Erie County	10.3%	26.9%	11.2%	32.0%
Geauga County	7.7%	24.4%	3.8%	11.6%
Holmes County	14.2%	20.7%	0.0%	44.0%
Huron County	12.3%	38.3%	2.4%	42.8%
Lake County	8.3%	27.7%	6.9%	20.3%
Lorain County	11.1%	39.9%	17.4%	29.5%
Mahoning County	13.2%	40.2%	12.5%	38.0%
Medina County	6.9%	37.1%	13.3%	7.1%
Portage County	14.2%	40.0%	25.8%	22.1%
Richland County	14.6%	31.9%	9.9%	18.2%
Stark County	12.6%	35.2%	8.7%	32.0%
Summit County	11.0%	31.8%	18.9%	21.3%
Trumbull County	14.4%	43.5%	26.9%	38.1%
Tuscarawas County	13.5%	52.9%	16.9%	37.0%
Wayne County	12.8%	40.0%	18.6%	26.6%
Ohio	**12.8%**	**34.2%**	**12.9%**	**29.0%**
United States	**12.8%**	**27.3%**	**12.7%**	**24.8%**

Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Poverty rates in the 21-County community and Ohio have been comparatively high for Black and Hispanic (or Latino) residents.

Exhibit 65 portrays (in green shading) the locations of low income census tracts in the community. The U.S. Department of Agriculture defines "low income census tracts" as areas where poverty rates are 20 percent or higher or where median family incomes are 80 percent or lower than within the metropolitan area.

Exhibit 65: Low Income Census Tracts



Source: US Department of Agriculture Economic Research Service, ESRI, 2015.

Low income census tracts have been prevalent throughout the 21-County community.

Unemployment

Unemployment is problematic because many residents receive health insurance coverage through their (or a family member's) employer. If unemployment rises, access to employer based health insurance can decrease. **Exhibit 66** shows unemployment rates for 2010 through 2015 for the counties in the 21-County community, with state and national rates for comparison.

Exhibit 66: Unemployment Rates, 2010-2015

Region	2010	2011	2012	2013	2014	2015
Ashland County	11.9%	9.9%	8.0%	8.0%	5.8%	5.1%
Ashtabula County	12.9%	10.9%	9.4%	9.5%	7.0%	6.0%
Carroll County	13.0%	10.2%	7.9%	7.9%	6.0%	5.9%
Columbiana County	12.6%	10.2%	8.3%	8.2%	6.4%	5.9%
Crawford County	12.9%	11.5%	9.1%	9.2%	6.5%	5.8%
Cuyahoga County	8.5%	7.6%	6.8%	7.1%	6.4%	5.5%
Erie County	11.3%	9.5%	8.0%	8.1%	6.2%	5.6%
Geauga County	6.9%	6.1%	5.4%	5.8%	5.1%	4.0%
Holmes County	7.6%	6.3%	5.1%	5.2%	3.9%	3.4%
Huron County	13.2%	11.4%	9.9%	10.3%	7.9%	6.6%
Lake County	7.9%	6.8%	6.0%	6.3%	5.6%	4.4%
Lorain County	9.1%	7.9%	7.1%	7.5%	6.6%	5.4%
Mahoning County	11.7%	9.8%	8.3%	8.5%	6.6%	6.1%
Medina County	7.4%	6.4%	5.6%	5.9%	5.2%	4.0%
Portage County	10.3%	8.9%	7.3%	7.7%	5.8%	4.9%
Richland County	12.1%	10.6%	8.7%	8.6%	6.4%	5.6%
Stark County	11.3%	9.3%	7.5%	7.6%	5.7%	5.3%
Summit County	10.6%	9.1%	7.4%	7.6%	5.8%	4.9%
Trumbull County	13.2%	10.7%	9.0%	9.1%	7.0%	6.5%
Tuscarawas County	11.2%	9.3%	7.3%	7.2%	5.4%	5.4%
Wayne County	9.3%	7.7%	6.1%	6.2%	4.6%	3.9%
Ohio	**10.3%**	**8.8%**	**7.4%**	**7.5%**	**5.7%**	**4.9%**
United States	**9.6%**	**8.9%**	**8.1%**	**7.4%**	**6.2%**	**5.3%**

Source: Bureau of Labor Statistics, 2010-2014.

Between 2010 and 2015, unemployment rates at the regional, state, and national level decreased significantly. In 2015, eleven counties in the 21-County community had unemployment rates above the national average.

Insurance Status

Exhibit 67 presents the estimated percent of populations in the 21-County community without health insurance (uninsured).

Exhibit 67: Percent of the Population without Health Insurance, 2015-2020

County	Total Population 2015	% Uninsured 2015	Total Population 2020	% Uninsured 2020
Ashland County	51,111	4.7%	50,944	3.3%
Ashtabula County	99,150	7.4%	97,431	5.0%
Carroll County	21,428	6.0%	20,860	4.5%
Columbiana County	109,473	5.3%	107,532	3.6%
Crawford County	43,751	5.8%	42,906	3.9%
Cuyahoga County	1,262,784	7.0%	1,249,392	4.7%
Erie County	78,587	5.4%	77,566	3.7%
Geauga County	89,153	3.0%	90,062	2.3%
Holmes County	43,073	4.5%	44,528	3.4%
Huron County	60,918	5.2%	60,065	3.5%
Lake County	229,715	4.2%	230,305	2.9%
Lorain County	295,253	6.1%	298,360	4.2%
Mahoning County	228,985	6.6%	223,705	4.4%
Medina County	174,882	3.1%	178,420	2.2%
Portage County	171,141	6.1%	173,198	4.2%
Richland County	120,293	6.5%	117,670	4.4%
Stark County	374,969	5.7%	375,667	3.8%
Summit County	547,778	6.0%	549,948	4.0%
Trumbull County	197,772	6.7%	194,195	4.5%
Tuscarawas County	92,783	5.2%	93,361	3.5%
Wayne County	121,993	4.6%	123,028	3.2%
21-County Community Total	**4,414,992**	**6.0%**	**4,399,142**	**4.1%**

Source: Truven Market Expert, 2015.

In 2015, approximately 6.0 percent of residents in the 21-County community were uninsured. By 2020, it is projected that this percentage will decrease to 4.1 percent.

Exhibit 68 displays the uninsured rates for the total population and population aged 17 and under in 2014.

Exhibit 68: Percent of Population without Health Insurance, 2014
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Region	Total Population	Population Aged 17 and Younger
Ashland County	14.3%	15.1%
Ashtabula County	12.9%	6.4%
Carroll County	14.2%	14.5%
Columbiana County	12.3%	5.9%
Crawford County	10.5%	3.6%
Cuyahoga County	10.8%	4.0%
Erie County	10.6%	5.3%
Geauga County	11.4%	14.4%
Holmes County	43.7%	51.9%
Huron County	10.7%	7.1%
Lake County	9.0%	4.9%
Lorain County	9.0%	3.0%
Mahoning County	10.3%	4.0%
Medina County	7.8%	4.1%
Portage County	9.6%	3.3%
Richland County	11.9%	7.0%
Stark County	10.3%	5.1%
Summit County	10.2%	4.7%
Trumbull County	12.4%	6.7%
Tuscarawas County	12.7%	8.6%
Wayne County	14.8%	16.9%
Ohio	**10.9%**	**5.3%**
United States	**14.2%**	**7.1%**

Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

The population aged 17 and under in Ashland, Carroll, Geauga, Holmes, Tuscarawas, and Wayne counties had uninsured rates more than 50 percent higher than the Ohio average.

Crime

Exhibit 69 provides certain crime statistics for the counties in Northeast Ohio with state comparisons.

Exhibit 69: Crime Rates by Type and County, Per 100,000, 2014
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

County	Violent Crime	Property Crime	Murder	Rape	Robbery	Aggravated Assault	Burglary	Larceny	Motor Vehicle Theft	Arson
Ashland County	43.5	1,673.9	-	32.2	5.7	5.7	423.7	1,214.3	35.9	17.0
Ashtabula County	73.3	1,930.3	1.4	5.7	14.4	51.7	485.8	1,359.7	84.8	4.3
Carroll County	178.5	993.8	-	3.5	3.5	171.5	227.5	647.4	119.0	7.0
Columbiana County	55.0	778.8	5.0	14.0	8.0	28.0	176.9	585.8	16.0	2.0
Crawford County	129.0	3,665.6	-	25.8	46.9	56.3	1,125.7	2,469.5	70.4	-
Cuyahoga County	613.3	3,141.8	6.4	48.8	362.1	196.1	966.2	1,720.5	455.1	32.5
Erie County	125.0	2,233.3	-	10.5	39.5	75.0	549.8	1,652.0	31.6	3.9
Geauga County	44.2	801.9	4.8	3.6	7.2	28.7	88.4	699.2	14.3	2.4
Holmes County	18.6	785.5	-	2.3	7.0	9.3	146.4	606.5	32.5	7.0
Huron County	91.0	2,715.4	-	31.8	27.3	31.8	436.6	2,251.4	27.3	-
Lake County	163.9	1,562.1	-	27.1	29.5	107.3	272.2	1,243.7	46.3	5.4
Lorain County	201.9	2,350.7	3.1	28.0	99.4	71.4	830.5	1,459.0	61.2	22.4
Mahoning County	291.3	3,213.5	6.4	23.1	96.8	164.9	1,057.3	1,977.1	179.1	17.6
Medina County	38.6	966.8	1.2	12.1	10.4	15.0	134.2	813.7	19.0	2.3
Portage County	88.0	1,917.0	1.3	19.5	28.2	39.0	412.6	1,464.2	40.3	15.5
Richland County	196.7	4,654.9	0.8	51.0	88.1	56.8	1,357.9	3,196.5	100.4	25.5
Stark County	275.4	2,796.1	3.2	36.9	128.5	106.7	695.5	1,921.2	179.5	9.7
Summit County	377.7	3,246.1	6.6	47.8	124.0	199.3	845.2	2,239.1	161.7	24.1
Trumbull County	233.6	2,836.5	3.5	26.8	92.9	110.3	930.3	1,771.6	134.7	6.0
Tuscarawas County	54.0	1,089.4	-	11.0	6.6	36.3	237.9	804.1	47.4	2.2
Wayne County	76.3	1,822.2	0.9	23.0	21.1	31.2	505.4	1,247.9	68.9	16.5
Ohio	**278.4**	**2,880.8**	**4.4**	**36.2**	**129.2**	**126.1**	**786.5**	**1,921.8**	**172.5**	**21.1**

Source: FBI, 2014.

2014 crime rates in Cuyahoga and Summit counties were well above the Ohio averages. Rates of violent crime, robbery, aggravated assault, motor vehicle theft, and arson were particularly problematic in Cuyahoga County, as were murder and aggravated assault in Summit County. A third of the counties in the 21-County community reported burglary rates above the Ohio average.

Local Health Status and Access Indicators

This section assesses health status and access indicators for the CCCHR community. Data sources include: (1) County Health Rankings, (2) the Centers for Disease Control's (CDC) Community Health Status Indicators, (3) the Ohio Department of Health, and (4) the CDC's Behavioral Risk Factor Surveillance System.

Throughout this section, data and cells are highlighted if indicators are unfavorable – because they exceed benchmarks (typically, Ohio averages). Where confidence interval data are available, cells are highlighted only if variances are unfavorable and statistically significant.

County Health Rankings

County Health Rankings, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[28] social and economic factors, and physical environment.[29] *County Health Rankings* is updated annually. *County Health Rankings 2016* relies on data from 2006 to 2015, with most data from 2010 to 2013.

Exhibit 70 presents 2016 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in the Ohio, with 1 indicating the most favorable rankings and 88 the least favorable.

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

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

Exhibit 70: County Health Rankings, 2016
(Light grey shading indicates indicator in bottom half of Ohio counties; Dark grey shading indicates in bottom quartile of Ohio counties)

County	Health Outcomes	Health Factors	Length of Life	Quality of Life	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment
Ashland County	21	25	14	36	26	19	25	80
Ashtabula County	62	79	70	59	68	80	76	82
Carroll County	42	47	35	47	49	58	34	72
Columbiana County	57	67	64	52	56	66	58	87
Crawford County	43	32	47	40	13	55	47	24
Cuyahoga County	64	53	54	73	39	5	79	61
Erie County	56	38	50	58	43	15	46	57
Geauga County	2	6	3	4	2	12	10	59
Holmes County	8	31	5	10	23	88	13	1
Huron County	34	51	51	22	35	54	55	60
Lake County	15	13	17	13	6	16	22	49
Lorain County	30	41	30	33	20	29	52	77
Mahoning County	75	62	66	78	52	13	72	86
Medina County	5	5	4	5	5	6	7	79
Portage County	22	26	21	32	15	39	29	73
Richland County	53	52	53	51	61	47	56	33
Stark County	45	36	34	57	36	10	43	81
Summit County	52	46	40	60	40	22	48	84
Trumbull County	65	72	67	65	54	56	75	83
Tuscarawas County	32	40	24	41	31	71	31	46
Wayne County	16	17	18	16	7	31	20	67

Source: County Health Rankings, 2016.

More than half of the counties in the 21-County community ranked in the bottom quartile of Ohio counties for Physical Environment. Over one third of counties in the 21-County community also ranked unfavorably for Social & Economic Factors, Clinical Care, Quality of Life, Length of Life, Health Factors, and Health Outcomes.

Community Health Status Indicators

The Centers for Disease Control and Prevention's *Community Health Status Indicators* provide health profiles for all 3,143 counties in the United States. Counties are assessed using 44 metrics associated with health outcomes including health care access and quality, health behaviors, social factors, and the physical environment.

The *Community Health Status Indicators* allows for a comparison of a given county to other "peer counties." Peer counties are assigned based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly, and poverty rates.

Exhibit 71 compares each county in the 21-County community to its respective peer counties and cities and highlights community health issues found to rank in the bottom quartile of the counties included in the analysis.

Exhibit 71: Community Health Status Indicators, 2015
(Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Ashland County	Ashtabula County	Carroll County	Columbiana County	Crawford County	Cuyahoga County	Erie County
Mortality	Cancer Deaths		■				■	
	Female Life Expectancy		■	■				
	Male Life Expectancy							
	Motor Vehicle Deaths							
	Unintentional Injury (including motor vehicle)							
Morbidity	Cancer							
	HIV							
	Preterm Births			■			■	
	Syphilis							
Health Care Access and Quality	Cost Barrier to Care							
	Primary Care Provider Access		■		■	■		■
	Uninsured			■				
Health Behaviors	Teen Births							
Social Factors	Children in Single-Parent Households						■	
	High Housing Costs	■	■					
	Inadequate Social Support			■	■	■		
	On Time High School Graduation							
	Poverty	■	■	■				
	Unemployment		■	■				
	Violent Crime							
Physical Environment	Access to Parks	■		■				
	Annual Average PM2.5 Concentration	■		■	■		■	
	Drinking Water Violations							
	Housing Stress	■	■					
	Limited Access to Healthy Food		■					
	Living Near Highways							■

Source: Community Health Status Indicators, 2015.

Exhibit 71: Community Health Status Indicators, 2015 (*continued*)
(Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Geauga County	Holmes County	Huron County	Lake County	Lorain County	Mahoning County	Medina County
Mortality	Cancer Deaths			■			■	
	Female Life Expectancy						■	
	Male Life Expectancy						■	
	Motor Vehicle Deaths							
	Unintentional Injury (including motor vehicle)							
Morbidity	Cancer							
	HIV					■		
	Preterm Births						■	
	Syphilis		■					
Health Care Access and Quality	Cost Barrier to Care			■				
	Primary Care Provider Access			■				
	Uninsured	■	■					
Health Behaviors	Teen Births							
Social Factors	Children in Single-Parent Households			■		■	■	
	High Housing Costs					■		
	Inadequate Social Support	■						
	On Time High School Graduation							
	Poverty	■				■		
	Unemployment			■		■		
	Violent Crime							
Physical Environment	Access to Parks		■					
	Annual Average PM2.5 Concentration		■		■	■	■	■
	Drinking Water Violations							
	Housing Stress					■		
	Limited Access to Healthy Food				■		■	
	Living Near Highways			■		■		

Source: Community Health Status Indicators, 2015.

Exhibit 71: Community Health Status Indicators, 2015 (*continued*)
(Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Portage County	Richland County	Stark County	Summit County	Trumbull County	Tuscarawas County	Wayne County
Mortality	Cancer Deaths	■						
	Female Life Expectancy	■						
	Male Life Expectancy	■						
	Motor Vehicle Deaths							
	Unintentional Injury (including motor vehicle)							
Morbidity	Cancer							
	HIV							
	Preterm Births	■			■			
	Syphilis						■	■
Health Care Access and Quality	Cost Barrier to Care							■
	Primary Care Provider Access	■	■					
	Uninsured							
Health Behaviors	Teen Births		■					
Social Factors	Children in Single-Parent Households					■		
	High Housing Costs							
	Inadequate Social Support					■		
	On Time High School Graduation							
	Poverty	■						
	Unemployment					■		
	Violent Crime							
Physical Environment	Access to Parks	■						
	Annual Average PM2.5 Concentration	■	■	■	■	■	■	■
	Drinking Water Violations							
	Housing Stress							
	Limited Access to Healthy Food							
	Living Near Highways				■			

Source: Community Health Status Indicators, 2015.

Exhibit 72 displays the frequency of unfavorable health indicators in 21-County community.

Exhibit 72: Community Health Status Indicators Frequency, 2015

Category	Indicator	Frequency
Mortality	Cancer Deaths	5
	Female Life Expectancy	4
	Male Life Expectancy	2
	Motor Vehicle Deaths	0
	Unintentional Injury (including motor vehicle)	0
Morbidity	Cancer	0
	HIV	1
	Preterm Births	5
	Syphilis	3
Health Care Access and Quality	Cost Barrier to Care	2
	Primary Care Provider Access	7
	Uninsured	3
Health Behaviors	Teen Births	1
Social Factors	Children in Single-Parent Households	5
	High Housing Costs	3
	Inadequate Social Support	5
	On Time High School Graduation	0
	Poverty	6
	Unemployment	5
	Violent Crime	0
Physical Environment	Access to Parks	4
	Annual Average PM2.5 Concentration	16
	Drinking Water Violations	0
	Housing Stress	3
	Limited Access to Healthy Food	3
	Living Near Highways	4

Source: Community Health Status Indicators, 2015.

The CHSI data indicate that within the 21-County community, 16 counties compared unfavorably to peer counties for air pollution, 7 compared unfavorably for primary care provider access, 6 compared unfavorably for poverty, and 5 counties compared unfavorably for cancer deaths, preterm births, children in single parent households, and inadequate social support.

Ohio Department of Health

The Ohio Department of Health maintains a data warehouse that includes county-level indicators regarding maternal and child health (**Exhibit 73**).

Exhibit 73: Maternal and Child Health Indicators, 2012

(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

County	Mortality Rate per 1,000 Live Births			% Deliveries		% Preterm Births				% Births to			
	Infant	Neonatal	Post-Neonatal	Low Birth Weight	Very Low Birth Weight	< 32 weeks of gestation	32-33 weeks of gestation	34-36 weeks of gestation	< 37 weeks of gestation	Unmarried Women 18-54 Years Old	Women 40-54 Years Old	Women <18 Years Old	Births to Females 15-19 Years Old
Ashland County	5.4	3.2	2.2	7.0	-	1.2	1.0	7.6	9.8	27.2	2.2	1.9	22.9
Ashtabula County	8.5	4.8	3.8	8.0	1.4	2.0	1.6	8.5	12.1	45.5	1.8	3.3	43.1
Carroll County	7.4	5.4	2.0	8.2	1.6	2.0	1.7	8.8	12.6	35.1	2.2	2.0	31.4
Columbiana County	5.6	3.0	2.6	7.9	1.2	1.9	1.7	8.4	12.0	43.6	1.6	3.1	39.5
Crawford County	6.1	3.3	2.9	7.3	1.1	1.7	1.0	8.8	11.6	43.9	1.3	3.4	43.6
Cuyahoga County	9.4	6.5	2.9	10.5	2.3	3.1	2.0	9.3	14.4	49.1	2.7	3.7	39.3
Erie County	9.4	4.3	5.1	8.5	1.3	2.0	1.7	9.4	13.0	49.0	1.7	3.4	37.1
Geauga County	4.1	2.6	1.5	6.0	-	1.4	1.9	7.4	9.7	14.0	4.9	1.0	9.9
Holmes County	6.9	5.1	1.7	4.8	1.3	1.4	1.0	5.7	7.8	8.8	3.0	-	15.9
Huron County	5.8	3.9	1.8	7.0	1.1	1.9	1.5	7.1	10.6	42.9	1.3	3.3	43.1
Lake County	4.2	3.2	0.9	7.6	1.3	1.6	1.3	8.3	11.2	32.4	2.8	1.7	21.3
Lorain County	6.8	4.4	2.4	7.7	1.6	2.3	1.6	7.9	11.7	43.2	2.3	3.0	33.8
Mahoning County	9.8	7.0	2.8	10.0	1.9	2.5	1.6	9.6	13.8	49.1	2.1	4.1	38.0
Medina County	3.3	2.2	1.1	6.8	1.3	1.8	1.4	7.9	11.2	22.6	3.1	1.2	16.2
Portage County	6.7	4.2	2.6	7.5	1.3	2.0	1.5	8.3	11.8	36.6	2.3	2.0	15.9
Richland County	7.6	4.5	3.0	8.6	1.7	2.3	1.6	7.5	11.3	42.5	1.4	4.0	52.3
Stark County	8.6	6.2	2.4	8.9	1.7	2.2	1.6	8.2	12.0	43.1	1.8	2.9	33.5
Summit County	7.7	5.4	2.3	9.0	1.8	2.4	1.9	9.3	13.6	40.9	2.4	2.9	32.9
Trumbull County	8.9	6.2	2.7	8.9	1.4	2.1	1.5	8.3	11.8	46.8	1.9	3.4	36.3
Tuscarawas County	5.1	3.3	1.8	7.7	1.4	2.1	1.6	7.8	11.6	36.5	1.4	2.1	34.9
Wayne County	5.6	3.8	1.8	6.6	1.1	1.5	1.3	7.4	10.3	25.3	2.1	1.9	24.5
Ohio	**7.7**	**5.2**	**2.5**	**8.6**	**1.6**	**2.3**	**1.6**	**8.6**	**12.6**	**41.3**	**2.1**	**3.0**	**36.0**
Healthy People 2020	-	-	-	**7.8**	**1.4**	**1.8**	**1.4**	**8.1**	**11.4**	-	-	-	-

Source: Ohio Department of Health, 2012.

Indicators of maternal and infant health have been unfavorable throughout the 21-County community. Cuyahoga County in particular had worse maternal and infant health outcomes than the state average for every indicator. Additionally, more than half of the counties in the 21-County community had unfavorable rates of infant, neonatal, and/or post-neonatal mortality.

Ambulatory Care Sensitive Conditions

This section examines the frequency of discharges for Ambulatory Care Sensitive Conditions (ACSCs, frequently referred to as Prevention Quality Indicators or PQIs) throughout the community.

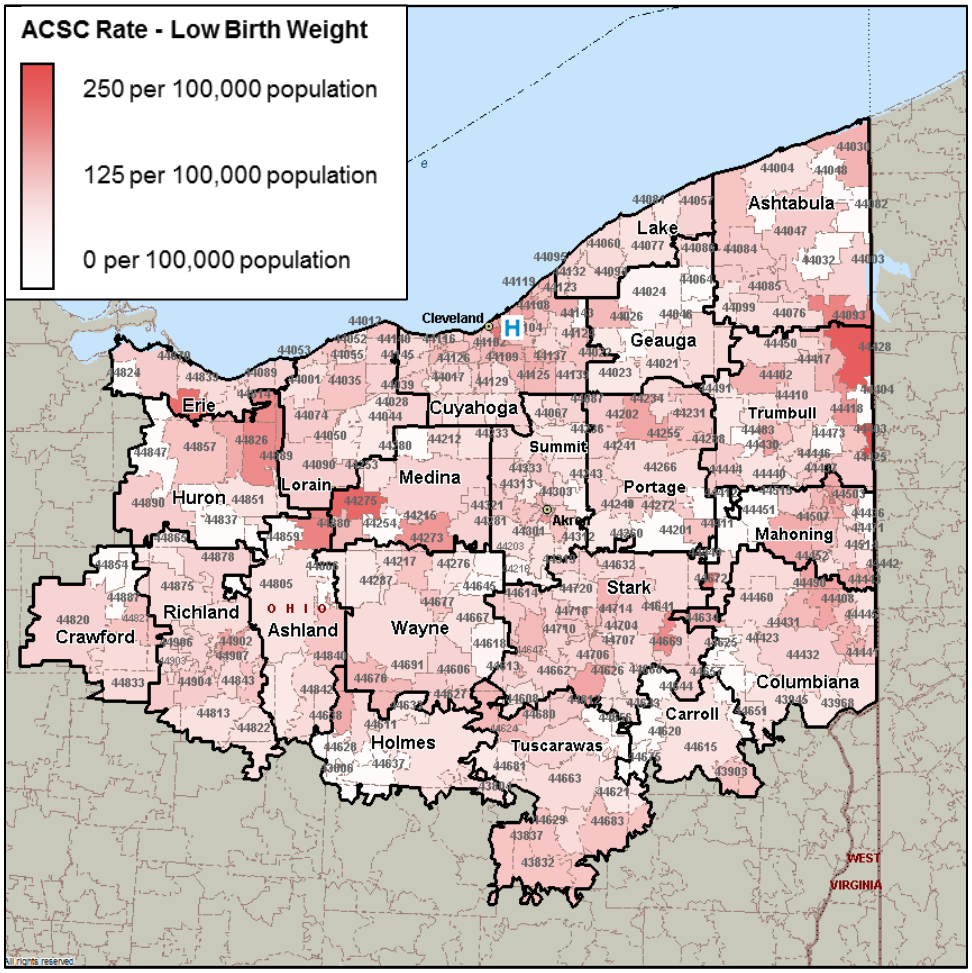
ACSCs are health "conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[30] As such, rates of hospitalization for these conditions can "provide insight into the quality of the health care system outside of the hospital," including the accessibility and utilization of primary care, preventive care and health education. Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, low birth weight, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

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

Exhibit 74 displays the 2014 PQI rate (per 100,000 persons) for low birth weight, by ZIP code.

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

Exhibit 74: ACSC Rate for Low Birth Weight, by ZIP Code, 2014



Source: Cleveland Clinic, 2014.
Note: Rates are not age-sex adjusted.

The average ACSC rate for low birth weight in the 21-County community was 66.2 per 100,000 population. Within this region, Cuyahoga, Erie, Huron, Lorain, Mahoning, Richland, Stark, and Trumbull counties had higher low birth weight rates than the Ohio average of 61.5 per 100,000 population.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

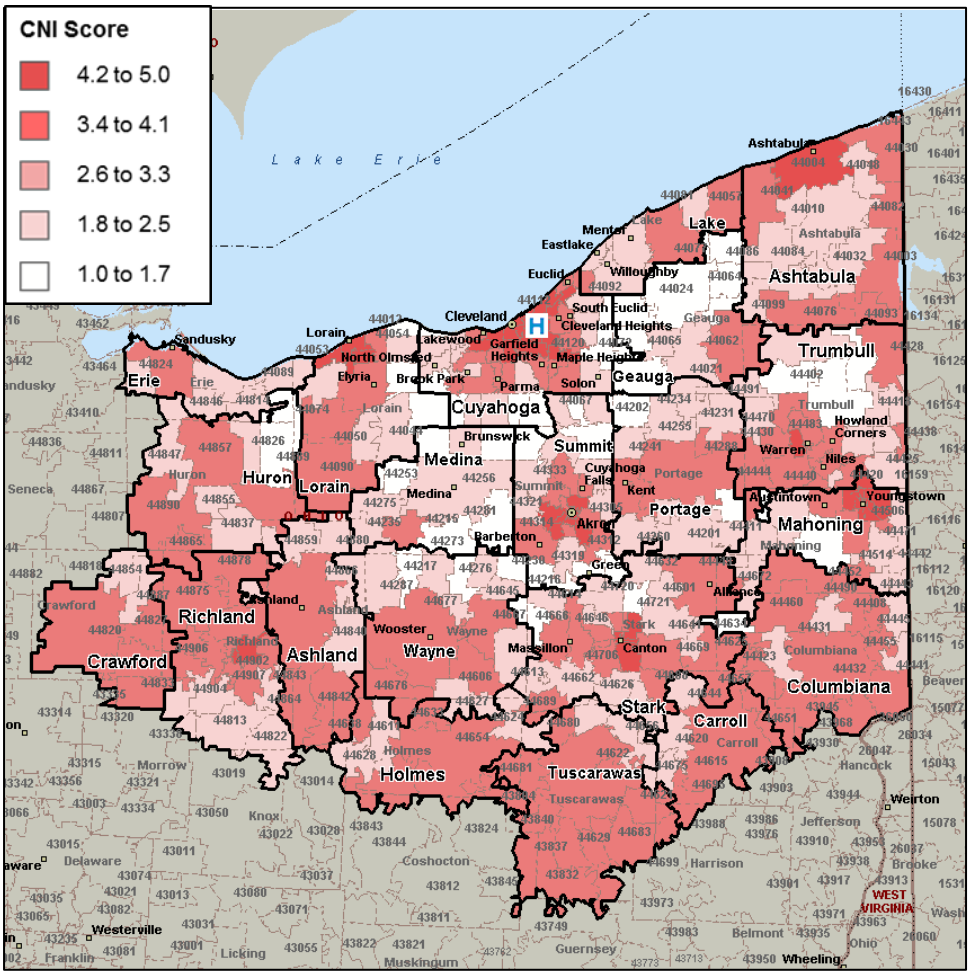
Dignity Health, a California-based hospital system, developed and has made widely available for public use a *Community Need Index*™ that measures barriers to health care access by county/city and ZIP code. The index is based on five social and economic indicators:

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

The *Community Need Index*™ calculates a score for each ZIP code based on these indicators. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0).

Exhibit 75 displays the CNI score for each ZIP code in the 21-County community.

Exhibit 75: Community Need Index, 2015



Source: Microsoft MapPoint and Dignity Health, 2015.

The average CNI in the 21-County community was 3.0. Ashtabula and Cuyahoga counties each had average CNI scores of 3.4, indicated that they are high need areas.

Food Deserts

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

Exhibit 76 illustrates the location of food deserts in the 21-County community.

Exhibit 76: Food Deserts



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2015.

Food deserts are located in Ashland, Ashtabula, Columbiana, Crawford, Cuyahoga, Erie, Huron, Lake, Lorain, Mahoning, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

Medically Underserved Areas and Populations

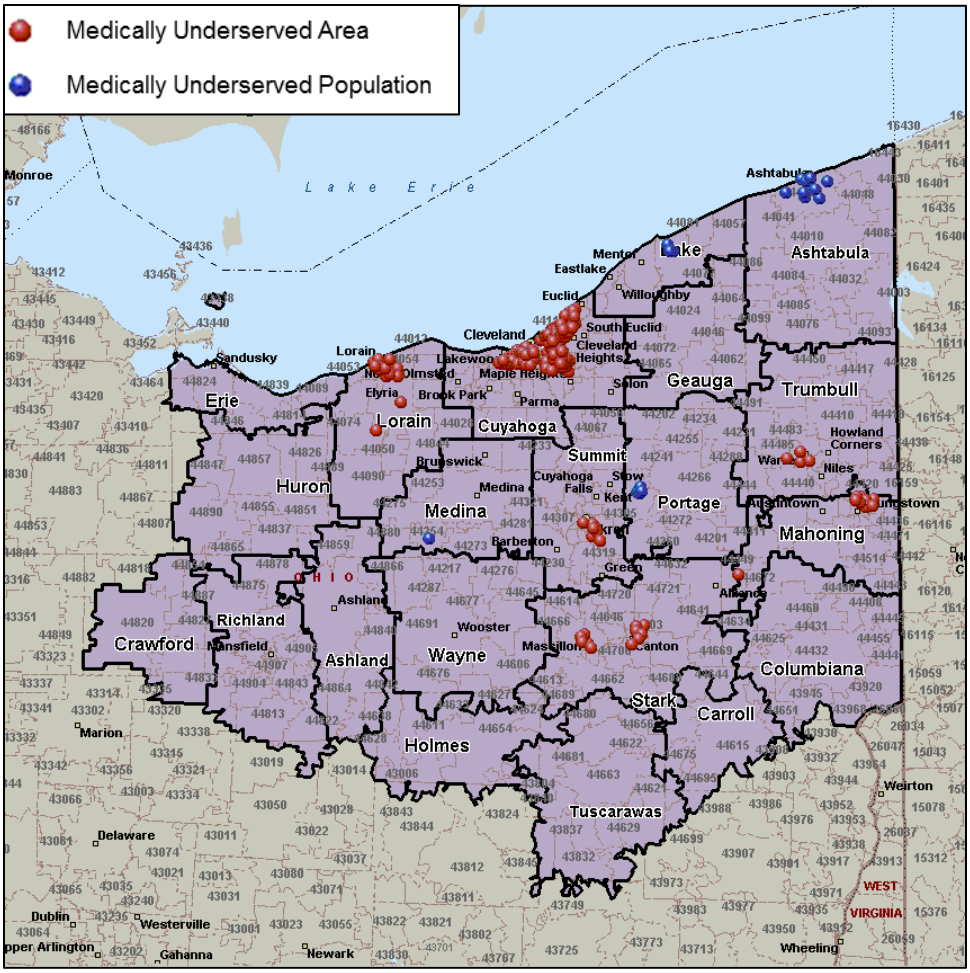
Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[31] Areas with a score of 62 or less are considered "medically underserved."

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if "unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides."[32]

Medically Underserved Areas are present in Cuyahoga, Lorain, and Summit counties. Medically Underserved populations are present in Lake, Medina, and Portage counties (**Exhibit 77**).

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

Exhibit 77: Medically Underserved Areas



Source: Microsoft MapPoint and HRSA, 2015.

Health Professional Shortage Areas

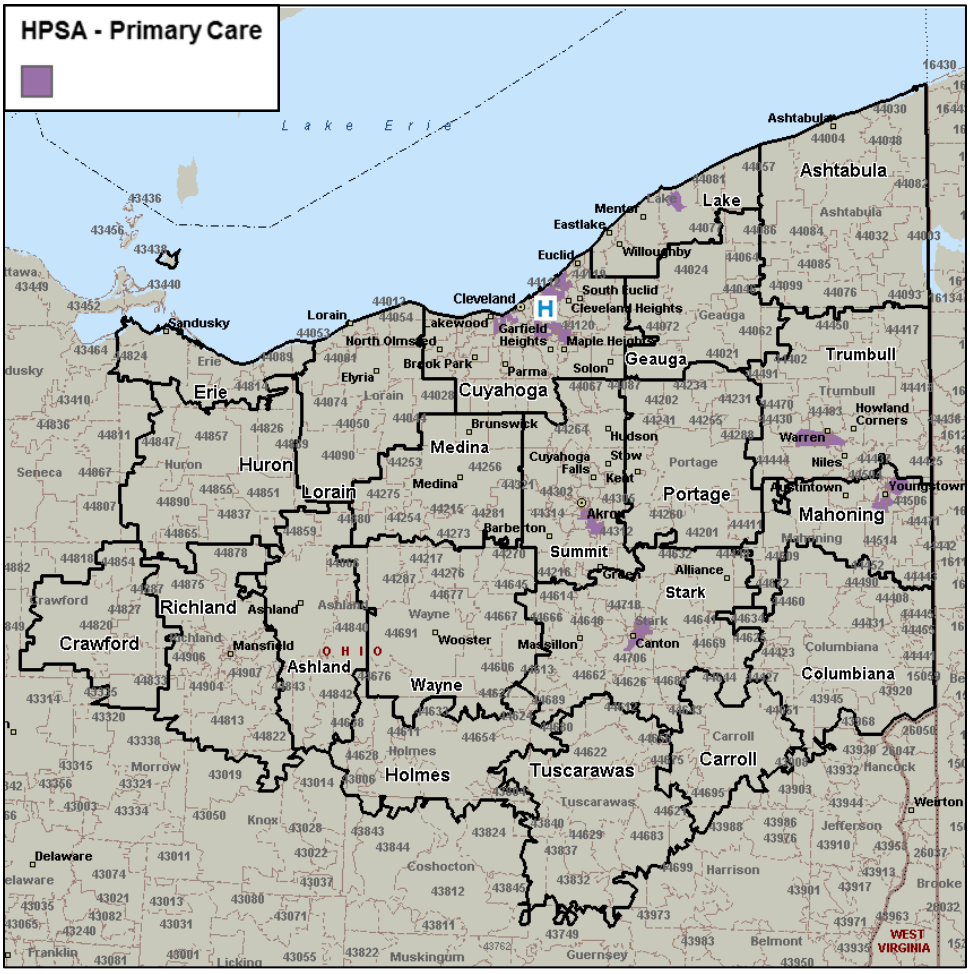
A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can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

HPSAs can be: "(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility."[33]

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

Exhibit 78 illustrates the locations of the federally-designated HPSAs.

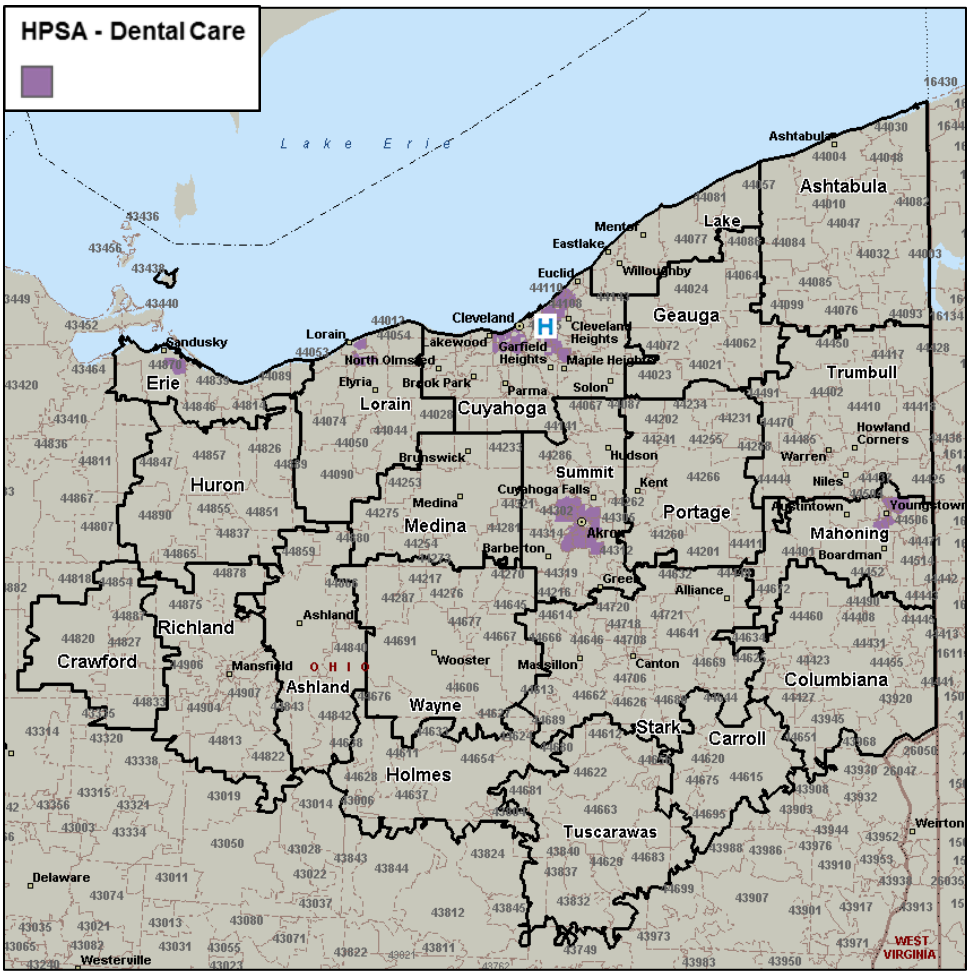
Exhibit 78A: Primary Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

Primary care HPSAs are present in Cuyahoga, Lake, Mahoning, Stark, Summit, and Trumbull counties.

Exhibit 78B: Dental Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

Dental care HPSA designated census tracts are located in Cuyahoga, Erie, Lorain, Mahoning, and Summit counties.

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APPENDIX E – OHIO SECONDARY DATA ASSESSMENT

America's Health Rankings

America's Health Rankings is an annual report produced by the United Health Foundation, which assesses the health status of each state based on 62 indicators. **Exhibit 79** displays Ohio's ranking for select infant and child health indicators compared to the other 49 states.

Exhibit 79: America's Health Rankings, 2015
(Light grey shading indicates indicator in bottom half of states; Dark grey shading indicates in bottom quartile of states)

Measure Name	2012 Rank	2015 Rank	Rank Change	Measure Name	2012 Rank	2015 Rank	Rank Change
Air Pollution	47	45		Infant Mortality	42	44	↓
All Determinants	35	36	↓	Infectious Disease	43	21	
All Outcomes	42	41		Insufficient Sleep	-	38	
Behaviors	-	44		Lack of Health Insurance	21	13	
Cancer Deaths	42	41		Low Birthweight	34	35	↓
Cardiovascular Deaths	40	40		Median Household Income	-	35	
Children in Poverty	25	32	↓	Obesity	38	43	↓
Chlamydia	35	32		Occupational Fatalities	10	18	↓
Clinical Care	-	35		Overall	38	39	↓
Community & Environment	-	28		Personal Income, Per Capita	30	29	
Dental Visit, Annual	-	25		Pertussis	46	34	
Dentists	30	31	↓	Physical Inactivity	35	36	↓
Diabetes	30	42	↓	Policy	-	29	
Disparity in Health Status	27	12		Poor Mental Health Days	34	39	↓
Drug Deaths	34	43	↓	Poor Physical Health Days	32	36	↓
Fruits	35	37	↓	Premature Death	36	38	↓
Heart Attack	35	42	↓	Preterm Birth	34	35	↓
Heart Disease	41	35		Preventable Hospitalizations	42	44	↓
High Blood Pressure	35	33		Primary Care Physicians	19	15	
High Cholesterol	33	19		Public Health Funding	43	45	↓
High Health Status	-	31		Salmonella	7	7	
High School Graduation	18	29	↓	Smoking	43	39	
Immunization HPV female	-	37		Stroke	29	39	↓
Immunization HPV male	-	18		Suicide	8	18	↓
Immunization MCV4	-	32		Teen Births	28	28	
Immunization Tdap	-	38		Underemployment Rate	25	21	
Immunizations - Adolescents	33	33		Unemployment Rate, Annual	30	19	
Immunizations - Children	5	36	↓	Vegetables	34	42	↓
Income Disparity	24	26	↓	Violent Crime	22	20	

Source: America's Health Rankings, 2015.
* '↓' indicates rankings dropped from 2012 to 2015.

In 2015, Ohio ranked in the bottom quartile of states for 20 of the 58 health indicators. Between 2012 and 2015 rankings for 25 health indicators in Ohio dropped.

Youth Risk Behavior Surveillance System

The Centers for Disease Control and Prevention's (CDC) Youth Risk Behavior Surveillance System (YRBSS) monitors six types of health-risk behaviors that contribute to the leading causes of death and disability among youth and adults. YRBSS also measures the prevalence of obesity and asthma and other priority health-related behaviors plus sexual identity and sex of sexual contacts.

Exhibit 80: Ohio YRBSS, 2013
(Light grey shading indicates indicator worse than YRBSS goal; Dark grey shading indicates more than 50 percent worse than YRBSS goal)

Indicator	Ohio	United States	Goal
Increase use of safety belts	91.6	92.3	**92.4**
Reduce physical fighting among adolescents	19.8	32.8	**28.4**
Reduce bullying among adolescents	20.8	20.1	**17.9**
Reduce weapon carrying by adolescents on school property	14.2	16.6	**4.6**
Reduce suicide attempts by adolescents	1.4	2.4	**1.7**
Reduce the proportion of adolescents aged 12 to 17 years who experience a major depressive episode (MDE)	25.8	28.5	**7.4**
Reduce the proportion of adolescents who have been offered, sold or given an illegal drug on school property	19.9	25.6	**20.4**
Reduce use of tobacco products by adolescents in the past thirty days	21.7	23.4	**21.0**
Reduce use of cigarettes by adolescents in the past thirty days	15.1	18.1	**16.0**
Reduce the proportion of children and adolescents who are considered obese	13.0	13.0	**16.1**
Increase the proportion of adolescents who meet current Federal physical activity guidelines for aerobic physical activity	25.9	28.7	**20.2**
Increase the proportion of adolescents who had a wellness checkup in the past 12 months	65.7	-	**75.6**
Increase the proportion of children and adolescents aged two years through 12th grade who view television videos or play video games for no more than two hours a day	62.3	67.6	**86.8**
Increase the proportion of students grades 9 through 12 that get sufficient sleep (defined as 8 or more hours of sleep on anaverage school night)	26.4	31.4	**33.2**

Source: CDC Behavioral Risk Factor Surveillance System, 2013.

A State Health Assessment also recently was published by the Ohio Department of Health.[34] The State Health Assessment (SHA) is a comprehensive report directed by a steering committee comprised of directors of Ohio's health-related state agencies. The Ohio Department of Health contracted with the Health Policy Institute of Ohio to facilitate preparation of the assessment. The purpose of the SHA is both to provide a template for state agencies and local partners for analysis as well as inform the identification and prioritization of community health needs for the State Health Improvement Plan (SHIP).

State-wide infant and child health needs. The assessment found that Ohio performed worse than the U.S. overall on most measures of population health with many opportunities to improve both physical and mental health outcomes. For example:

- The average number of days Ohio residents experienced limited activity due to mental or physical difficulties increased 17 percent between 2013 and 2014.
- Over the same period, adult asthma, child asthma, and diabetes also increased by 10 percent.
- Drug overdose deaths increased 18 percent and were significantly higher in Ohio than the United States (24.7 per 100,000 compared to 14.6).
- Infant mortality also is a significant issue in Ohio, and is particularly problematic for black and Hispanic (or Latino) infants.
- Ohio ranks particularly poorly for the number mothers who smoke during pregnancy. Only 59 percent of black mothers in Ohio receive prenatal care in the first trimester, compared to70.8 percent in the U.S. overall.
- Per-capita health spending has been higher in Ohio than in other states.
- The percentage of hospital inpatients with opiate-related diagnoses increased substantially from 2012 to 2014 (from 25.2 percent to 37.0).
- Ohio has experienced rates of avoidable emergency department visits for Medicare beneficiaries, admissions for pediatric asthma, and admissions for diabetes long-term complications that exceed United States averages.
- Access to mental health services and drug treatment services is particularly problematic, and a comparatively high percentage of Ohio residents live in areas underserved for dental care.
- Ohio has 9.9 public health agency staff per 100,000, a number substantially below the national average of 30.6.
- Infection rates for a number of communicable diseases exceed national averages, including chlamydia. The state's child immunization and HPV vaccination rates have been below average.
- Based on national comparisons, other concerns with children are also present in Ohio, including: childhood poverty rates, number of children in single-parent households, percent of children with adverse childhood experiences, and children exposed to secondhand smoke.
- There are also significant needs related to the physical environment in Ohio. The average amount of particulate matter and cases of lead poisoning are both higher in Ohio than the

[34] Available at: http://www.healthpolicyohio.org/sha-ship/

United States. Food insecurity is higher in the state as well, and Ohio residents have less access to exercise opportunities than the country on average.

The SHA reviewed 211 local health department and hospital community health assessments that covered 94 percent of counties to evaluate what the most significant needs were. That review found ten most commonly identified significant community health needs: obesity, mental health, access to health care, drug and alcohol abuse, maternal and infant health, cancer, cardiovascular disease, diabetes, tobacco, and chronic diseases.

More than 400 stakeholders provided input into the SHA. Ten priority areas were identified based on this input: obesity, access to behavioral health care, drug and alcohol abuse, mental health, employment/poverty/income, equity and disparities, access to dental care, cardiovascular disease, and nutrition.

Northeast Ohio. The northeast Ohio region also had particularly significant needs identified in the SHA. Concerns about the physical environment (air pollution and lead poisoning) are particularly prevalent in northeast Ohio. Other health assessments reviewed as part of the SHA process most frequently identified the following community health needs:

- Access to health and medical care (76 percent)
- Obesity (63 percent)
- Mental health (57 percent)
- Drug and alcohol abuse (47 percent)
- Maternal and infant health (41 percent)
- Diabetes (40 percent)
- Coverage and affordability (32 percent)
- Cardiovascular disease (29 percent)
- Cancer (29 percent)
- Tobacco use (29 percent)

Stakeholders from Northeast Ohio most frequently identified the following as significant community health needs: obesity, drug and alcohol abuse, mental health, access to behavioral health care, employment/ poverty /income, equity and disparities, maternal and infant health, nutrition, coverage and affordability, and diabetes.

Ohio Department of Health, Child Health Priority Areas

The Ohio Department of Health has identified the following child health areas as priority issues:

- Adolescent pregnancy and teen birth rates
- Behavioral health
- Child health disparities:
  - African American: homicide mortality, teen birth rate, overall mortality
  - Hispanic: behavioral health problems including depression, overweight/obesity
  - Disabled: suicide attempts, bullying, substance abuse, forced sexual activity
- Infant mortality
- Oral health
- Overweight and obesity rates; poor nutrition, physical inactivity
- Tobacco use and second-hand tobacco exposure
- Unintentional injury and mortality

Ohio Child Fatality Review Fifteenth Annual Report

The Ohio Department of Health provides a Child Fatality Review Annual Report

The 2015 report reviewed 7,671 deaths for 2009-2013

- 33 percent were Black children (versus 17 percent in population)
- 72 percent were due to medical causes; 23 percent to "external causes" (including asphyxia)

Leading medical causes: prematurity (44 percent), congenital anomalies (17 percent), cardiovascular conditions (7 percent), SIDS (2 percent)
Leading external causes: asphyxia (32 percent), vehicular injuries (23 percent), weapons (18 percent)

The 2015 Child Fatality Review Annual Report identified a number of prevention initiatives across Ohio:

- SIDS and sleep-related deaths
- Child abuse and neglect
- Suicide
- Vehicular injuries
- Infant deaths
- Substance abuse
- General health and safety
- Systems improvements (e.g., consortia formation)

Findings of Other Community Health Needs Assessments

Several other needs assessments and health reports conducted by CCCHRs and other organizations that provide services for the community also were reviewed. The reviewed assessments include the following:

The significant needs identified by these reports are presented in **Exhibit 81**.

Exhibit 81: Significant Needs Identified in Other CHNAs

Significant Need	Akron Children's Hospital CHNA 2013	UH Rainbow Babies & Children's Hospital CHNA 2015	Cincinnati Children's Hospital CHNA 2016	Promedica Toledo Children's Hospital CHNA 2013	Nationwide Children's Hospital Implementation Strategy 2016-2018	Dayton Children's Hospital CHNA 2014	Frequency
Asthma/childhood asthma	•	•	•	•	•	•	6
Mental/Behavioral health	•	•	•	•	•	•	6
Obesity	•	•	•	•	•	•	6
Infant mortality (disparities)	•	•	•		•	•	5
Access to basic/primary health care		•		•	•	•	4
Access to dental care	•	•		•			3
Child safety and injuries			•	•		•	3
Child vaccination/infectious disease management				•	•	•	3
Diabetes	•	•			•		3
Nutrition/ access to healthy food	•			•		•	3
Alcohol abuse and excessive drinking	•	•					2
Cost of care		•				•	2
Drug/ substance abuse	•	•					2
Early Childhood Development/Literacy			•	•			2
Violence (youth)		•		•			2
Access to mental health services	•						1
Access/lack of health insurance coverage	•						1
Bullying				•			1
Chronic conditions					•		1
Drug abuse- opioids/heroin	•						1
Drug abuse- prescriptions	•						1
First trimester prenatal care	•						1
Gun ownership/access		•					1
Health disparities/ equity		•					1
Low birth weight	•						1
Physical inactivitity/lack of exercise	•						1
Poverty		•					1
Premature births	•						1
Prenatal care		•					1
Safe sleep practices						•	1
Seatbelt use		•					1
Sexual activity/no birth control (youth)		•					1
Soft drink consumption		•					1
Tobacco use during pregnancy	•						1
Tobacco use/ smoking		•					1
Underweight children	•						1
Unemployment		•					1
Violence		•					1

Source: Analysis of Other CCCHR CHNA Reports by Verité, 2016.

An additional 38 CHNA reports conducted across the twenty one counties in Northeast Ohio were also reviewed. Significant needs related to children are listed below **(Exhibit 81B)**.

Exhibit 81B: Significant Needs Identified in Other CHNAs

Significant Need	Frequency
Infant mortality (disparities)	15
Asthma/childhood asthma	10
Drug/ substance abuse (youth)	10
Violence (youth)	4
Tobacco use during pregnancy	6
Low birth weight	3
Teenage pregnancy/ births	5
Premature births	3
Prenatal care	2
Pre-term births	3
Bullying	2
Child abuse	2
Underweight children	2
Blood lead levels among children	1
Breastfeeding rates	1
Child injuries	1
Child vaccination	1

Source: Analysis of Other Hospital CHNA Reports by Verité, 2016.

APPENDIX F – NATIONAL DATA ASSESSMENT

Pediatric Workforce Shortage

In 2013, the American Academy of Pediatrics (AAP) identified a national shortage of pediatric medical subspecialists as well as pediatric surgical specialists. The AAP also concluded that the distribution of primary care pediatricians was inadequate and was failing to meet the needs of children living in rural and underserved areas. The demand for more pediatric physicians has been increased in recent years, due to three primary factors. As an increasing number of children in the United States develop chronic health conditions, more pediatricians will be needed to deliver medical care. Approximately 26.6 percent of children currently suffer from a chronic illness, such as asthma, obesity, diabetes, or mental health disorders, and prevalence is increasing. An increasing number of pediatric physicians are also choosing to work part-time. Between 2000 and 2006, the number of pediatric physicians working part time increased from 15 percent to 23 percent. Because part-time physicians work approximately 14.3 fewer hours per week than full time physicians, additional pediatric physicians will be needed to meet the needs of the population. Finally, poor payment rates for pediatric services have adversely affected the pediatric workforce. Between 2000 and 2010, the percentage of pediatric residency graduates planning careers in general pediatrics declined from 68 percent to 61 percent. As access to pediatric services continues to decline, children will increasingly need to receive medical care from emergency departments and other retail-based clinics.[35]

In 2014, Ohio had 279.8 active physicians per 100,000 residents, higher than the national rate of 265.5 active physicians per 100,000 residents. For primary care physicians, Ohio had a rate of 93.0 physicians per 100,000 residents compared the 91.1 nationally.[36] The Robert Graham Center projects that by 2030; Ohio will need an 8 percent increase in its primary care physician workforce to maintain its current rates of utilization, or 681 additional physicians. This increase is the result of an aging population and an increasingly insured population after the passage of the Affordable Care Act.[37]

Healthy People 2020 Leading Health Indicators

The Healthy People 2020 Leading Health Indicators (LHIs) are a select subset of 26 Healthy People 2020 objectives chosen to communicate high-priority health issues in the United States.

Exhibit 82 displays national averages for select Healthy People 2020 objectives related to childhood health.

[35] Pediatrician Workforce Policy Statement
COMMITTEE ON PEDIATRIC WORKFORCE
Pediatrics Jul 2013, peds.2013-1517; DOI: 10.1542/peds.2013-1517
[36] AAMC, 2015 State Physician Workforce Data Book.
[37] Robert Graham Center, 2013.

Exhibit 82: Healthy People 2020 Leading Indicators
(Cells are shaded if indicator does not meet Healthy People 2020 target)

Leading Health Topic and Indicator	Baseline Data Year	Baseline Data	Most Recent Data Year	Most Recent Data	HP2020 Target
Access to Health Services					
Persons with medical insurance (percent, <65 years)	2008	83.2%	2012	83.1%	**100.0%**
Persons with a usual primary care provider (percent)	2007	76.3%	2011	77.3%	**83.9%**
Clinical Preventive Services					
Children receiving the recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella and PCV vaccines (percent, aged 19–35 months)	2009	44.3%	2011	68.5%	**80.0%**
Environmental Quality					
Air Quality Index (AQI) exceeding 100 (number of billion person days, weighted by population and Air Quality Index value)	2006–08	2.2	2009–11	1.3	**2.0**
Children exposed to secondhand smoke (percent; nonsmokers, 3–11 years)	2005–08	52.2%	2009–12	41.3%	**47.0%**
Injury and Violence					
Injury deaths (age adjusted, per 100,000 population)	2007	59.7	2010	57.1	**53.7**
Homicides (age adjusted, per 100,000 population)	2007	6.1	2010	5.3	**5.5**
Maternal, Infant, and Child Health					
Infant deaths (per 1,000 live births, <1 year)	2006	6.7	2010	6.1	**6.0**
Total preterm live births (percent, <37 weeks gestation)	2007	12.7%	2012	11.5%	**11.4%**
Mental Health					
Suicide (age adjusted, per 100,000 population)	2007	11.3	2010	12.1	**10.2**
Adolescents with major depressive episodes (percent, 12–17 years)	2008	8.3%	2012	9.1%	**7.5%**
Nutrition, Physical Activity, and Obesity					
Obesity among children and adolescents (percent, 2–19 years)	2005–08	16.1%	2009–12	16.9%	**14.5%**
Mean daily intake of total vegetables (age adjusted, cup equivalents per 1,000 calories, 2+ years)	2001–04	0.8	2007–10	0.8	**1.1**
Oral Health					
Persons who visited the dentist in the past year (age adjusted, percent, 2+ years)	2007	44.5%	2011	41.8%	**49.0%**
Reproductive and Sexual Health					
Sexually experienced females receiving reproductive health services in the past 12 months (percent, 15–44 years)	2006–10	78.6%	-	-	**86.5%**
Knowledge of serostatus among HIV-positive persons (percent, 13+ years)	2006	80.9%	2010	84.2%	**90.0%**
Social Determinants					
Students awarded a high school diploma 4 years after starting 9th grade (percent)	2007–08	74.9%	2009–10	78.2%	**82.4%**
Substance Abuse					
Adolescents using alcohol or illicit drugs in past 30 days (percent, 12–17 years)	2008	18.4%	2012	17.4%	**16.6%**
Tobacco					
Adolescent cigarette smoking in past 30 days (percent, grades 9–12)	2009	19.5%	2011	18.1%	**16.0%**

Source: Healthy People 2020, 2016.

The Centers for Disease Control and Prevention's *Health, United States* report 2015 national trends in health statistics, assessing selected measures of morbidity, mortality, health care utilization and access, health risk factors, prevention, health insurance, and personal health care expenditures.

Exhibit 83 displays select national health care indicators related to child health.

Exhibit 83: Health, United States, Select Child Health Indicators, 2015

	Baseline Data Year	Baseline Data	Most Recent Data Year	Most Recent Data	Trend
Health Care Utilization					
No health care visit in past 12 months, percent					
Under 18 years	2000	12.3	2014	7.9	
Emergency room visit in past 12 months, percent					
Under 18 years	2000	20.3	2014	16.7	
Dental visit in past year, percent					
2–17 years	2000	74.1	2014	83.0	
Health Insurance and Access to Care					
Uninsured, percent					
Under 18 years	2000	12.6	2014	5.4	
Delay or nonreceipt of needed medical care in past 12 months due to cost, percent					
Under 18 years	2000	4.6	2014	2.8	
Health Care Resources					
Patient care physicians per 10,000 population	2000	22.7	2013	27.6	
Community hospital beds per 1,000 population	2000	2.9	2013	2.5	↓
Health Care Expenditures					
Personal health care expenditures, in dollars					
Total, in trillions	2000	$1.20	2014	$2.60	↓
Per capita	2000	$4,121	2014	$8,054	↓
Life Expectancy and Mortality					
Life expectancy, in years					
At birth	2000	76.8	2014	78.8	
Infant deaths per 1,000 live births					
All infants	2000	6.9	2014	5.8	
Morbidity and Risk Factors					
Fair or poor health, percent					
All ages	2000	8.9	2014	9.8	↓
Obese (BMI at or above sex- and age-specific 95th percentile):					
2–5 years	1999–2002	10.3	2011–2014	8.9	
6–11 years	1999–2002	15.9	2011–2014	17.5	↓
12–19 years	1999–2002	16.0	2011–2014	20.5	↓

Source: Centers for Disease Control and Prevention, 2015.
'↓' indicates indicator has worsened.

Health, United States also reports the following:

- Between 2004 and 2014, infant mortality rate decreased 14% from 6.79 to 5.82deaths per 1,000 live births and neonatal mortality rate and post neonatal mortality rate both decreased as well (13% and 17%, respectively)
- From 2004 to 2014, birth rate among teenagers aged 15-19 fell 40% from 40.5 to 24.2 live births per 1,000 females
- In 2014, 8% of infants were low birth weight; more common among black infants (13.17%) and Puerto Rican infants (9.54%)
- From 2011-2014, prevalence of children with obesity:
  - 8.9% for 2-5 years
  - 17.5% aged 6-11

    - 20.5 % aged 12-19
- In 2014, 4.9% of those aged 12-17 reported smoking cigarettes, a decline from 11.9% in 2004
- In 2012-2014, 4.9% of children under 18 had an asthma attack in the past year and 5.6% had a food allergy
- Among 5-17 year olds, 10.2% were diagnosed with an attention deficit/hyperactivity disorder and 5.4% had serious emotional or behavioral difficulties (2012-2014)
- In 2014, 83% of children aged 2-17 had a dental visit in past year (compared to 62% of adults 18-64)
- In 2014, 71.6% of children aged 19-35 months had completed the combined 7-vaccine series of childhood vaccinations
- HPV vaccinations for those aged 13-17 increased from 36.8 to 39.7% for females and from 13.4% to 21.6% for males
- From 2004 to 2014, among children in families with income of 100% to 199% of poverty, percentage uninsured of children under 18 decreased from 15.1 to 8.7% while Medicaid or CHIP coverage among children increased from 40.2 to 60%
- Among children aged 2-19, Hispanic children and adolescents had the highest percentage of obesity (21.9%)
- In 2014, Black mothers had the highest percentage of preterm births before 37 weeks gestation (11.1%)
- Between 1999-2002 and 2011-2014, prevalence of obesity was stable among children aged 6 to 11, increased among 12 to 19, and decreased for 2-5

Using data collected by the Centers for Disease Control and Prevention, the *Overview of Childhood Injury Morbidity and Mortality in the U.S. Fact Sheet (2015)* reports the five leading causes of unintentional injury-related deaths and unintentional nonfatal injuries, by age group.

Exhibit 84: The Five Leading Causes of Unintentional Injury-Related Deaths, by Age Group, United States, 2013

Rank	Age < 1	% of Deaths	Ages 1-4	% of Deaths	Ages 5-9	% of Deaths	Ages 10-14	% of Deaths	Ages 15-19	% of Deaths
1	Suffocation	84.7%	Drowning	29.9%	MV Traffic	45.8%	MV Traffic	53.4%	MV Traffic	64.0%
2	MV Traffic	5.7%	MV Traffic	24.8%	Drowning	15.5%	Drowning	12.0%	Poisoning	16.1%
3	Drowning	2.0%	Suffocation	12.2%	Fire/burn	11.7%	Other Land Transport	6.3%	Drowning	6.6%
4	Environment	1.6%	Fire/burn	9.8%	Suffocation	5.9%	Fire/burn	6.2%	Other Land Transport	1.9%
5	Fire/burn	1.5%	Pedestrian, Other	6.8%	Other Land Transport	3.9%	Suffocation	4.8%	Fall	1.7%

Source: Centers for Disease Control and Prevention, 2013.

In 2013, injury deaths related to motor vehicle accidents were the leading cause of death for children aged 5-19 and the second leading cause of death for children aged 0-4.

Exhibit 85: The Five Leading Causes of Unintentional Nonfatal Injuries, by Age Group, United States, 2013

Rank	Age < 1	% of Injuries	Ages 1-4	% of Injuries	Ages 5-9	% of Injuries	Ages 10-14	% of Injuries	Ages 15-19	% of Injuries
1	Fall	55.2%	Fall	43.4%	Fall	36.4%	Struck By/Against	27.9%	Struck By/Against	22.5%
2	Struck By/Against	11.8%	Struck By/Against	17.1%	Struck By/Against	23.5%	Fall	27.7%	Fall	1730.0%
3	Other Bite/Sting	5.0%	Other Bite/Sting	8.1%	Cut/Pierce	6.6%	Overexertion	14.6%	Overexertion	15.3%
4	Foreign Body	4.4%	Foreign Body	7.1%	Other Bite/Sting	6.3%	Cut/Pierce	5.7%	MV-Occupant	11.2%
5	Other Specified	4.3%	Cut/Pierce	4.2%	Overexertion	5.4%	Pedal Cyclist	4.2%	Cut/Pierce	7.7%

Source: Centers for Disease Control and Prevention, 2013.

In 2013, falls or being struck by/against something were the leading causes of unintentional nonfatal injuries for all age groups.

APPENDIX G – COMMUNITY INPUT PARTICIPANTS

Individuals from a wide variety of organizations and communities participated in the interview process (shown in **Exhibit 86**). Organizations listed in italics indicate that the interviewee had public health expertise.

Exhibit 86: Interview Participants

Organization	Description	Populations Represented
ADAMHSCC	Alcohol, drug addiction, and mental health services	Mentally ill, substance abuse
Beech Brook	Behavioral health agency	Mentally ill, youth
Boys & Girls Clubs	Nonprofit youth organization	Youth
Brunswick NAMI of Medina County	Mental health agency	Mentally ill,
Children's Dyslexia Center	Dyslexia treatment center	Disabled youth
City of Rocky River	Director of recreation	Youth, general population
Cleveland Heights/University Heights Schools	School system	Youth, students
Cleveland Metropolitan School District	School system	Youth, students
Cornerstone of Hope	Center for grieving children, teens, and adults	General population
CWRU Prevention Research Center	Center foster partnerships within Cleveland's urban neighborhoods for developing, testing, and implementing strategies to prevent and reduce the burden of chronic disease	General population, low income
Make A Wish	National non-profit	Children, terminally ill
Maple Heights City School District	School system	Youth, students
March of Dimes	Social services organization	Pregnant women, infants
Milestones Autism Resources	Autism resource center	Disabled youth
Ohio School Nurses Association and Cloverleaf Schools	School nurse	Youth, students
Ronald McDonald House of Cleveland	Nonprofit youth organization	Low income, severely ill children
Strongsville School District	School system	Youth, students
The Centers (for families and children)	Social services organization	Children, low-income families, mentally ill
United Cerebral Palsy	Social services organization	Disabled youth

APPENDIX H – ACTIONS TAKEN SINCE THE PREVIOUS CHNA

Cleveland Clinic Children's Hospital for Rehabilitation (CCCHR) uses evidence-based approaches in the delivery of healthcare services and educational outreach with the aim of achieving healthy outcomes for the community it serves. It undertakes periodic monitoring of its programs to measure and determine their effectiveness and ensure that best practices continue to be applied.

Given that the process for evaluating the impact of various services and programs on population health is longitudinal by nature, significant changes in health outcomes may not manifest for several community health needs assessment cycles. We continue to evaluate the cumulative impact.

Each identified health need and related action items from our 2013 CHNA Implementation Strategy are described below with representative impacts.

1. **Identified Need: Chronic Disease and Health Conditions, Childhood Asthma**

   Action: CCCHR continues to provide inpatient care, outpatient care, respiratory therapy, and pulmonary rehabilitation services to pediatric patients suffering from asthma.

   Highlighted Impact:

   - Cleveland Clinic Children's was nationally ranked #23 in pediatric care by U.S. News & World Report's 2016-17 edition of America's Best Children's Hospitals for pediatric pulmonology.
   - CCCHR through Cleveland Clinic Children's developed a specialized pediatric asthma care coordination pilot to address the needs of children with asthma.

2. **Identified Need: Chronic Disease and Health Conditions, Childhood Obesity**

   Action: CCCHR continues to provide nutritional counseling, physical therapy, and family centered education on matters relating to childhood obesity. The hospital also conducts community health talks, seminars, and collaborative school programs that target childhood obesity issues.

   Highlighted Impact:

   - CCCHR through Cleveland Clinic Children's provided health education talks in various community locations, covering topics of healthy lifestyles, nutrition, and exercise.
   - The FitYouth program, designed for family participation, long term health, and wellness, celebrated 10 years in 2013.
   - CCCHR through Cleveland Clinic Children's, created the BeWell program was created in to provide medical management of childhood obesity.

3. **Identified Need: Chronic Disease and Health Conditions, Childhood Diabetes**

Action: CCCHR continues to offer inpatient, outpatient and education services, including nutrition counseling focused on diabetes, its long term complications and disease management.

Highlighted Impact:

- CCCHR through Cleveland Clinic Children's provided a school health program including six education sessions in 2015 to juvenile diabetic students in local schools.

4. **Identified Need: Chronic Disease and Health Conditions, Heart Related Disease**

Action: CCCHR continues to offer comprehensive pediatric patient care and outreach services relating to heart related diseases and congenital conditions.

Highlighted Impact:

- Cleveland Clinic Children's was nationally ranked #23 in pediatric care by U.S. News & World Report's 2016-17 edition of America's Best Children's Hospitals for pediatric cardiology and heart surgery.
- CCCHR through Cleveland Clinic Children's serves as a worldwide referral and second opinion center for patients of all ages with pediatric congenital heart disease (CHD)
- Pediatric Cardiology maintains a distributed network of outreach clinics throughout the 7 county service area.

5. **Identified Need: Chronic Disease and Health Conditions, Autism Spectrum Disorder**

Action: CCCHR continues to provide a continuum of services through the Cleveland Clinic Center for Autism and offers diagnostic services and treatment based on applied behavioral analysis in an educational setting.

Highlighted Impact:

- CCCHR continues to grow Autism Services serving as a national resource and consulting program in addition to delivering autism services and ABA therapy in the Cleveland area.
- The percentage of children able to return to their home districts or less specialized educational placements following experiences at the Lerner School in our Autism Center has increased to 9 percent.

6. **Identified Need: Chronic Disease and Health Conditions, Low Birth Weight**

Action: CCCHR neonatologists, developmental pediatricians, and nurse practitioners continue to evaluate and support the acute inpatient needs of premature infants or medically complex babies.

Highlighted Impact:

- The Neonatology (NICU) at Cleveland Clinic Children's is a Level III neonatal unit and offers the highest level of care for neonatal diagnosis, surgery, and rehabilitation.
- The Special Delivery Unit at Cleveland Clinic offers women who are carrying babies with known birth defects a family-centered setting for labor and delivery, with access to adult and pediatric specialists. The Unit also caters to pregnant women with serious conditions such as congenital heart disease, cancer, or autoimmune diseases and provides close proximity of services to keep mom and baby together.

7. Identified Need: Wellness

Action: CCCHR continues to offer outreach programs and community health talks focused on educating children and their families in the communities it serves on healthy behavior choices including exercise, disease management, nutrition, and smoking cessation to promote health and wellness, increase access to healthcare resources, and reduce disease burden.

Highlighted Impact:

- CCCHR through Cleveland Clinic Children's launched a school health program which includes health education programs such as hand washing and hygiene education, asthma, and sickle cell education.
- CCCHR through Cleveland Clinic Children's piloted a program with YMCA, Wellness Avengers, which provided healthy lifestyle classes to children in the community.
- The Healthy Strides for Kids running program was provided in elementary public schools.

8. Identified Need: Access to Health Services

Action: CCCHR continues to provide medically necessary services to all patients regardless of race, color, creed, gender, country of national origin or ability to pay. Cleveland Clinic Children's has a financial assistance policy that is among the most generous in the region and covers both hospital services and physician services provided by physicians employed by the Cleveland Clinic.

Highlighted Impact:

- In 2015, Cleveland Clinic health system provided $69.3 million in financial assistance to the communities served by its main campus, family health centers, and NEO Regional Hospitals.

CCCHR is continually working to improve its scheduling and support service model to provide consistent experience, improve metrics, and increase efficiency including providing Internet scheduling, accelerating technology implementation, and scheduling training.

9. Identified Need: Research

Action: Clinical trials and other clinical and bench research activities occur throughout the Cleveland Clinic health system including at CCCHR. CCCHR is conducting or participating in 147 clinical trials and studies and is creating a pediatric research center.

Highlighted Impact:

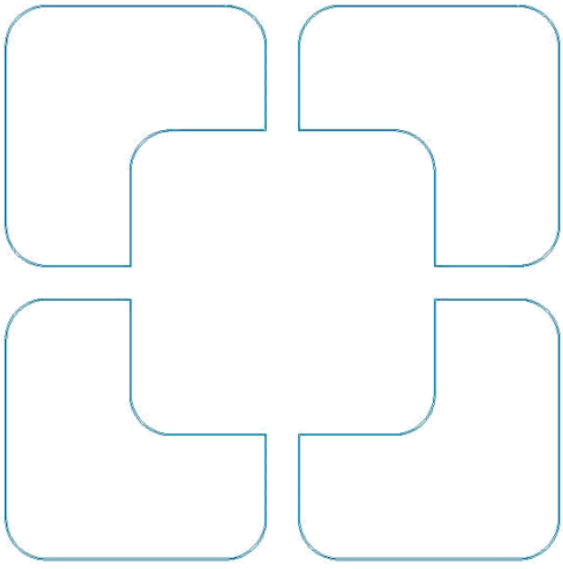
- Cleveland Clinic health system conducts clinical research activities throughout the system, including regional hospitals. In 2015, Cleveland Clinic scientists conducted more than 2,000 clinical trials and generated 54 invention disclosures, 14 new licenses, and 76 patents.

10. Identified Need: Education

Action: CCCHR continues to provide medical education opportunities for pediatric medicine and specialties, nursing, respiratory and occupational therapy, physical therapy, speech therapy and other allied health students.

Highlighted Impact:

- Cleveland Clinic and all regional hospitals provide education of medical professions. In 2015, Cleveland Clinic trained over 1,700 residents and fellows, and provided over 1,800 student rotations in 65 allied health education programs.



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