Cleveland Clinic

Community Health Needs Assessment

2019

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EXECUTIVE SUMMARY

Introduction

This Community Health Needs Assessment (CHNA) was conducted by Cleveland Clinic Main Campus Hospital ("Main Campus" 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.

The Cleveland Clinic Main Campus Hospital is a non-profit multi-specialty academic medical center integrating outpatient clinical and hospital care with research and education. It is in a unique position, along with other national academic medical centers, to assess the health needs of both its communities and the public at large and serve as a health resource for national and international patients.

The Main Campus is located in the City of Cleveland and is the tertiary care hospital that is the flagship of the Cleveland Clinic health system, which includes an academic medical center near downtown Cleveland, eleven regional hospitals in northeast Ohio, a children's hospital, a children's rehabilitation hospital, five southeast Florida hospitals, and a number of other facilities and services across Ohio, Florida, and Nevada. The Main Campus is the location of a medical school; a research institute; an outpatient clinic; 26 specialty institutes, including for heart care, digestive disease, cancer, and eye care; and supporting labs and facilities on a 162-acre campus. Additional information about Cleveland Clinic is available at: https://my.clevelandclinic.org/.

Each Cleveland Clinic hospital also is dedicated to the communities it serves. Each Cleveland Clinic hospital conducts a CHNA in order to understand and plan for the current and future health needs of residents and patients in the communities it serves. The CHNAs inform the development of strategies designed to improve community health, including initiatives designed to address social determinants of health. These assessments are conducted using widely accepted methodologies to identify the significant health needs of a specific community. The assessments also are conducted to comply with federal and state laws and regulations.

This CHNA was prepared for the Main Campus tertiary care hospital. A separate CHNA has been prepared for the children's hospital located on campus.

The Cleveland Clinic was established in 1921 with the same mission that continues today:

Better care for the sick, investigation of their problems
and education of those who serve.

Consistent with its tripartite mission, Cleveland Clinic's activities are patient care provided on a charitable basis, medical research, and education of both medical professionals and the community.

Patient Care

Cleveland Clinic's services are provided via patient-oriented institutes, which are structured on the basis of organ system or disease. The institutes facilitate a multidisciplinary approach and are designed to enhance convenience for patients and the exchange of knowledge, research and educational collaboration for better patient outcomes. Some of the Institutes include: Cole Eye; Digestive Disease, Endocrinology & Metabolism; Glickman Urological & Kidney; Head & Neck; Miller Family Heart & Vascular; Neurological; Ob/Gyn & Women's Health; Orthopaedic & Rheumatology; Pediatric & Children's Hospital; Respiratory; Taussig Cancer; and Wellness.

Cleveland Clinic has one of the highest Medicare case mixes of hospitals with more than 500 beds, an indicator of acuity of care provided. It provides specialized care in more than 120 medical specialties and subspecialties, including to patients transferred from nearly every state and twenty countries due to the unavailability of such high level care in their local community.

Research

Cleveland Clinic's mission includes conducting research to advance biomedical science and improve patient care provided here and across the world, to prevent disease and to find cures for medical issues that impact us all. Cleveland Clinic's Lerner Research Institute ("LRI") is home to a complete spectrum of laboratory-, translational-, and clinical-based research.

LRI is one of the leading NIH-funded research institutes in the United States and has made numerous advances in the diagnosis and treatment of complex medical problems. Scientists and their teams are pursuing a wide range of biomedical questions at LRI, including those related to cardiovascular, cancer, neurological, musculoskeletal, and metabolic diseases, to improve the health status of patients and residents of Cleveland Clinic's communities and the public at large.

LRI has more than 150 faculty-level scientists organized in the following departments: Biomedical Engineering, Cancer Biology, Cell Biology, Genomic Medicine, Immunology, Molecular Cardiology, Molecular Genetics, Neurosciences, Pathobiology, Quantitative Health Sciences, and Stem Cell Biology and Regenerative Medicine.

In addition to basic pre-clinical research, Cleveland Clinic and its staff physicians participate or are primary investigators in many clinical trials. In 2018, Cleveland Clinic was involved in approximately 2,000 clinical trials. The ongoing collaboration between physician investigators and study volunteers is central to testing the safety and effectiveness of drugs and medical procedures and helps to set the standards for patient care. Research at Cleveland Clinic is funded by external sources, such as federal grants, but is also substantially supported by the Clinic's own internal resources. In 2018, Cleveland Clinic spent over $77 million dollars on research.

The Cleveland Clinic's research activities are intended to improve patient care and the health of the public at large, by providing the latest advances in medicine directly to patients and by refining the practice of medicine through the development and promulgation of new techniques, devices, and treatment protocols.

Education

The Cleveland Clinic model of medicine, as developed by its founders, is one that integrates research and education in medical services provided to patients. Thus, Cleveland Clinic physicians have medical residents following them throughout their care, teaching them in patient appointments and at the bedside. Cleveland Clinic operates one of the largest graduate medical education programs in the Midwest and one of the largest programs in the country. Physicians and fellows from other parts of the world also come to Cleveland Clinic for specialized training and take back to their home countries many of the latest techniques in patient care.

Cleveland Clinic operates a medical school and related research institute. The primary focus of Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (the "Lerner College of Medicine") is the teaching and training of medical students who have a particular interest in research. Many Cleveland Clinic physicians serve as faculty for the Lerner College of Medicine, furthering the integration of clinical care with research and education. The Lerner College of Medicine currently provides all students with full tuition scholarships.

In addition to training this nation's future doctors, Cleveland Clinic sponsors a wide range of high quality medical education training through its Education Institute including accredited training programs for nurses and allied health professionals. Cleveland Clinic has one of the largest Continuing Medical Education ("CME") programs in the country.

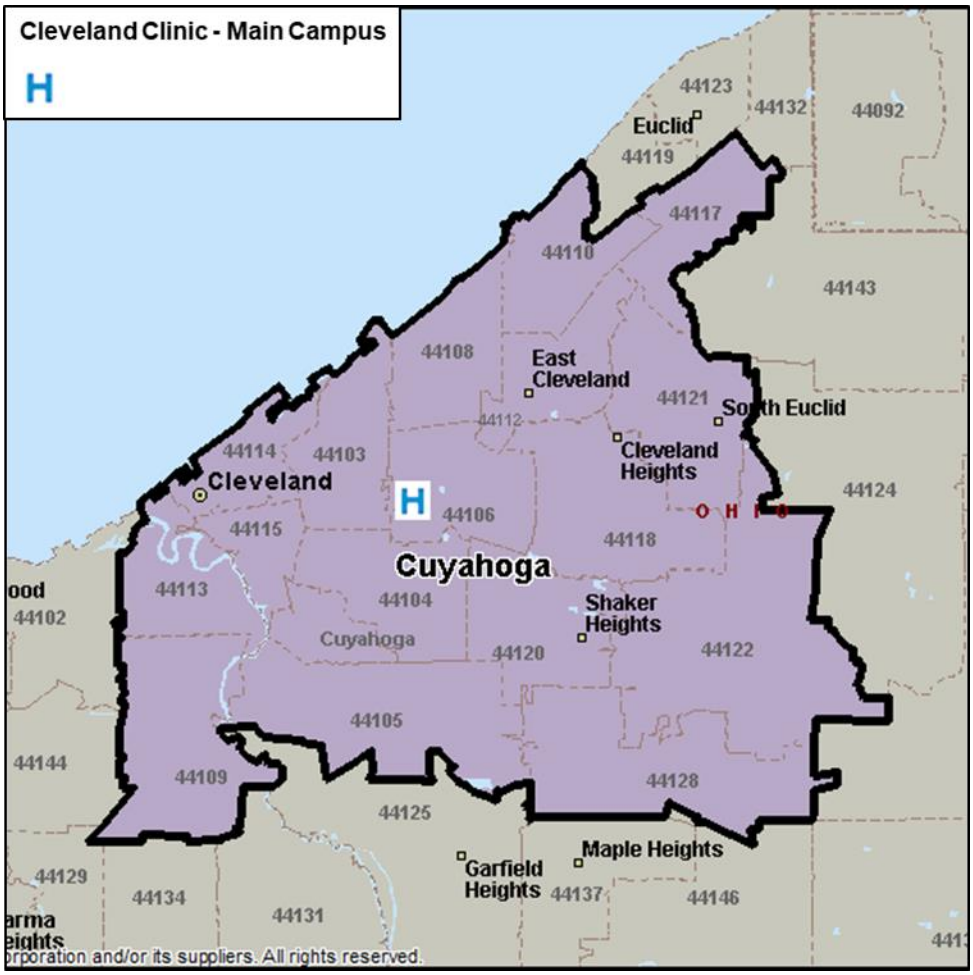
Community Definition

Cleveland Clinic provides a wide range of services from traditional, primary care to highly specialized care to patients in its local communities, across the nation, and around the world. Cleveland Clinic treats some of the most diverse and clinically complex cases providing care in more than 120 medical specialties and subspecialties. 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 communities the Main Campus services in its United States patient care activities are: (1) Local[1] Neighborhoods; (2) the 7-County Community; (3) the 21-County (Northeast Ohio) Community; (4) the state; and (5) the nation.

The following map portrays the Local Neighborhoods community. See p. 18-19 for the maps of the 7-County and 21-County communities.

[1] The local community is comprised of 18 ZIP codes surrounding the Main Campus.



Significant Community Health Needs

Through analyses of quantitative and qualitative data, Main Campus identified the following significant community health needs:

- Access to Affordable Health Care
- Addiction and Mental Health
- Chronic Disease Prevention and Management
- Infant Mortality
- Medical Research and Health Professions Education
- Socioeconomic Concerns

Significant Community Health Needs: Discussion

Access to Affordable Health Care

Access to affordable health care is challenging for some residents of the communities served by Main Campus, particularly to primary care, dental care, mental health services, and addiction treatment services. Access barriers include cost, poverty, a lack of awareness regarding available services, an undersupply of providers, a lack of addiction treatment and dental services, and inadequate transportation.

Federally-designated Medically Underserved Areas (MUAs), Primary Care Health Professional Shortage Areas (HPSAs), and Dental Care HPSAs are present in each Main Campus community. The per-capita supply of primary care physicians, dentists, and mental health providers is comparatively low in communities across Northeast Ohio. More health care professionals are needed to meet current and future access needs.

Admissions for ambulatory care sensitive conditions (for Medicare and for other populations) benchmark unfavorably for each community. Inpatient admissions for young adult asthma, uncontrolled diabetes, and hypertension are particularly high. Quantitative data suggest that rates are highest in lower-income ZIP codes and areas identified as comparatively high need by the Dignity Health Community Need Index™.

Access to care was identified as a top-five priority area in community health assessments prepared by local health departments in Northeast Ohio. Access also represents a "cross-cutting factor" in the most recent Ohio Department of Health State Health Improvement Plan (Ohio SHIP).

Addiction and Mental Health

Drug abuse (also known as substance use disorders), particularly the abuse of opioids, is a primary concern of many key stakeholders interviewed for this CHNA. Perceived over-prescribing of prescription drugs, poverty, and mental health problems were cited as contributing factors. In recent years, mortality rates due to "accidental poisoning by and exposure to drugs and other biological substances" have increased and have benchmarked poorly in the Local Neighborhoods, 7-County, and Ohio communities.

The Ohio SHIP and assessments prepared by 18 local health departments emphasize the need to address the growing opioid epidemic and to reduce drug overdose deaths.

In Cuyahoga County and Ohio, per-capita drug poisoning deaths more than doubled between 2013 and 2017 and consistently have exceeded national averages. Provisional data published by the Centers for Disease Control and Prevention ("CDC") indicate that drug overdose deaths in Cuyahoga County and Ohio declined between 2017 and 2018. This represents the first decrease in nearly a decade, although the state still has one of the highest overdose rates in the country.

Communities served by Main Campus also rank poorly for "percent of driving deaths with alcohol involvement." Ohio's State Health Assessment identifies addressing alcohol abuse (also known as alcohol use disorders) as a priority.

Mental health also was identified by interviewees as a significant concern. Depression, suicide, hopelessness, and isolation (particularly among elderly residents and those exposed to traumas early in life) are perceived to be increasing in severity. Rates of depression have been highest in lower-income ZIP codes. Access to mental health care is challenging due to cost, insurance benefit limits, and an undersupply of psychiatrists and other mental health providers.

The Ohio SHIP and local health department assessments for 17 Northeast Ohio counties identify mental health as a priority issue. These assessments cite the need for additional services, early identification of mental health risks, and greater awareness of existing programs.

Chronic Disease Prevention and Management

Chronic diseases, including heart disease, hypertension, obesity, diabetes, and others are prevalent in the communities served by Main Campus.

Heart disease is the leading causes of death. Across the 21-County community, incidence rates for diabetes, heart disease, heart failure, high blood pressure, high cholesterol, and chronic obstructive pulmonary disease (COPD) have been comparatively high. In *America's Health Rankings (2017),* Ohio ranked 39th overall for health and in the bottom third of states for mortality due to cancer, cardiovascular causes, and a number of other behaviors and factors known to contribute to chronic disease.

Key stakeholder interviewees identified hypertension and cardiovascular diseases as significant concerns. Addressing heart (or cardiovascular) disease was identified as a priority by the Ohio SHIP. Chronic disease was identified as a priority area in eight local health department community health assessments.

Key stakeholders also identified obesity as a persistent and growing problem, driven by physical inactivity and poor nutrition. Obesity rates benchmark poorly in each Main Campus community. Inpatient discharges for uncontrolled diabetes are comparatively high.

Poor nutrition results from the higher cost of fresh and healthy food, the presence of food deserts, and a lack of time and knowledge about how to prepare healthy meals. Physical inactivity is worsened by a lack of safe places to exercise, time, and education regarding the importance of remaining active.

The Ohio SHIP and local health department assessments consistently identify obesity and diabetes (and reducing physical inactivity and enhancing nutrition) as priorities.

Key stakeholders emphasized the importance of changing unhealthy behaviors. The demand for exercise, nutrition, and tobacco cessation programs has been identified, as have health education and literacy programs.

Smoking rates are comparatively high. The Ohio State SHIP emphasizes the need for Ohioans to consume healthy food, reduce physical inactivity, reduce adult smoking, and reduce youth all-tobacco use.

Community 65+ populations are projected to grow much faster than other age groups. Providing an effective continuum of care for seniors will be challenging. Elderly residents are at greater risk for falls, food insecurity, transportation issues, and unsafe or inadequate housing. Social isolation contributes to poor physical and mental health conditions. Preventable admissions for Medicare beneficiaries living in the community are comparatively high.

Infant Mortality

Ohio ranks in the bottom third of U.S. states for infant mortality. In Northeast Ohio, Cuyahoga and Summit counties compare unfavorably to Ohio averages for most maternal and child health indicators. The infant mortality rate in Cuyahoga County has been well above Ohio and U.S. averages. Rates across Northeast Ohio, the state, and the United States have been persistently higher for Black infants than for White infants. Nationally, infant mortality rates have been decreasing, but differences by race and ethnicity have remained. Key stakeholders frequently mentioned this and other racial disparities as important concerns.

The Ohio SHIP established ten "priority outcomes," three of which are addressing: preterm births, low birth weight, and infant mortality. Assessments by several local health departments (including those in Cuyahoga and Summit counties) have established reducing infant mortality as a priority.

Medical Research and Health Professions Education

More trained health professionals are needed locally, regionally, and nationally. Research conducted by Cleveland Clinic, has improved health for community members through advancements in new clinical techniques, devices, and treatment protocols in such areas as cancer, heart disease, and diabetes. More research is necessary to address these and other community health needs.

Socioeconomic Concerns

Key stakeholders consistently identified poverty and other social determinants of health as significant concerns. Poverty has significant implications for health, including the ability for households to access health services, afford basic needs, and benefit from prevention initiatives. Problems with housing, educational achievement, and access to workforce training opportunities also contribute to poor health.

Seven Northeast Ohio counties (including Cuyahoga County) have had higher poverty rates than Ohio (15.4 percent) and the U.S. (15.1 percent). At 31.2 percent the poverty rate in the Local Neighborhoods has been well above average. Across all communities served by Main Campus,

poverty rates for Black and Hispanic (or Latino) populations have been well above rates for Whites. Substantial variation in poverty and crime rates is present.

Racial health disparities were found in secondary data and were identified by stakeholders providing input into this CHNA. Secondary data show that educational attainment, poverty rates, prevalence of chronic disease, infant mortality rates, and other health-related issues vary by race/ethnicity. Stakeholders mentioned problems associated with structural racism and emphasized the need to address these disparities as socioeconomic concerns. A growing body of research identifies structural racism as an overarching factor driving health outcomes. Structural racism is defined by The Aspen Institute as "a system in which public policies, institutional practices, cultural representations, and other norms work in various, often reinforcing, ways to perpetuate racial group inequity."

Adverse Childhood Experiences (ACEs) increasingly are recognized as problematic in Ohio and the nation. ACEs refer to all types of abuse, neglect, and other traumas experienced by children. According to the CDC, ACEs have been linked to risky healthy behaviors, chronic health conditions, low life potential, and premature death.[2] America's Health Rankings indicates that Ohio ranks 43rd nationally for ACEs (a composite indicator that includes: socioeconomic hardship, divorce/parental separation, lived with someone who had an alcohol or drug problem, victim or witness of neighborhood violence, lived with someone was mentally ill or suicidal, domestic violence witness, parent served time in jail, treated or judged unfairly due to race/ethnicity, and death of a parent).[3]

In a number of communties (e.g., Local Communities, Cuyahoga County, Ashtabula County, Lorain County, and Portage County), over 50 percent of rented households have been designated as "rent burdened." As stated by the Federal Reserve, "households that have little income left after paying rent may not be able to afford other necessities, such as food, clothes, health care, and transportation."[4]

The Northeast Ohio Coalition for the Homeless has estimated that "there were about 23,000 people experiencing homelessness in 2018 in Cuyahoga County."[5] In recent years, several Cleveland Clinic hospitals have experienced increases in emergency room encounters by homeless patients.

The Ohio SHIP establishes social determinants of health as a "cross-cutting factor" and emphasizes the need to increase third grade reading proficiency, reduce school absenteeism, address burdens associated with high cost housing, and reduce secondhand smoke exposure for children. The 2018 Cuyahoga County CHIP emphasizes how poverty and income inequality contribute to poor health.

[2] https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/aboutace.html
[3] https://www.americashealthrankings.org/explore/health-of-women-and-children/measure/ACEs/state/OH
[4] *Ibid.*
[5] https://www.neoch.org/2019-overview-of-the-numbers

DATA AND ANALYSIS

Definition of Community Assessed

This section identifies the communities assessed by Main Campus. The communities were defined by considering the geographic origins of the hospital's discharges in calendar year 2017. The definitions also considered the hospital's mission, target populations, principal functions, and strategies.

On these bases, the Local Neighborhoods community is comprised of 18 ZIP codes in Cuyahoga County, Ohio. These ZIP codes accounted for 18 percent of the hospital's recent inpatient volumes (**Exhibit 1**). The 7-County community accounted for nearly 54 percent of the hospital's discharges and is comprised of the 7 counties proximate to the hospital. The 21-County community is comprised of counties in Northeast Ohio and accounts for nearly 75 percent of the hospital's inpatient discharges. Main Campus also serves the state of Ohio and the United States.

Exhibit 1: Main Campus Inpatient Discharges by ZIP Code, 2017

ZIP Code	County	City/Town	Discharges	Percent of Discharges
44103	Cuyahoga	Cleveland	930	1.8%
44106	Cuyahoga	Cleveland	921	1.8%
44120	Cuyahoga	Cleveland	902	1.7%
44108	Cuyahoga	Cleveland	840	1.6%
44105	Cuyahoga	Cleveland	752	1.4%
44118	Cuyahoga	Cleveland	746	1.4%
44104	Cuyahoga	Cleveland	646	1.2%
44112	Cuyahoga	Cleveland	560	1.1%
44122	Cuyahoga	Beachwood	556	1.1%
44121	Cuyahoga	Cleveland	517	1.0%
44128	Cuyahoga	Cleveland	503	1.0%
44110	Cuyahoga	Cleveland	482	0.9%
44109	Cuyahoga	Cleveland	325	0.6%
44117	Cuyahoga	Euclid	236	0.5%
44113	Cuyahoga	Cleveland	203	0.4%
44114	Cuyahoga	Cleveland	140	0.3%
44115	Cuyahoga	Cleveland	110	0.2%
44127	Cuyahoga	Cleveland	90	0.2%
Community ZIP Codes			**9,459**	**18.0%**
7-County Subtotal			**28,170**	**53.7%**
21-County Subtotal			**39,126**	**74.6%**
Other Areas			13,317	25.4%
Total Discharges			**52,443**	**100.0%**

Source: Analysis of Cleveland Clinic Discharge Data, 2018.

The total population of the Local Neighborhoods community in 2017 was approximately 425,000 persons (**Exhibit 2**).

Exhibit 2: Local Neighborhoods Community Population, 2017

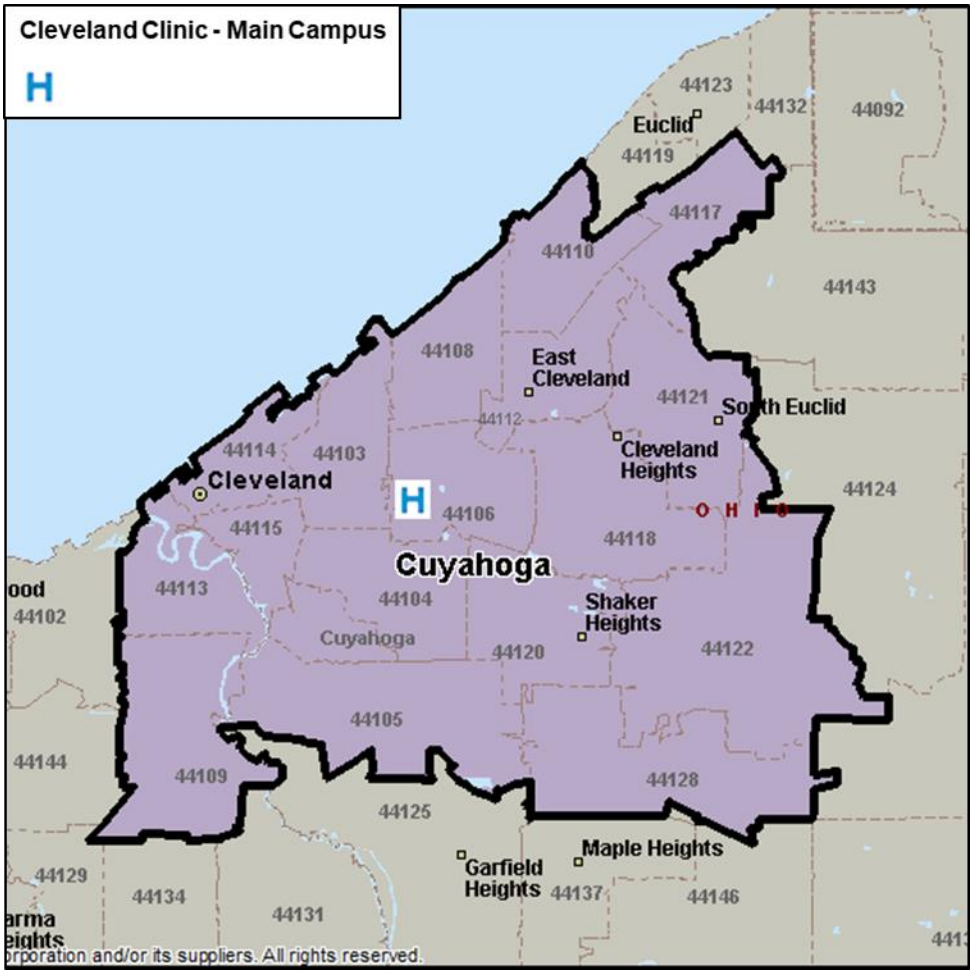
ZIP Code	County	City/Town	Total Population 2017	Percent of Total Population 2017
44118	Cuyahoga	Cleveland	39,364	9.3%
44109	Cuyahoga	Cleveland	38,259	9.0%
44105	Cuyahoga	Cleveland	36,906	8.7%
44120	Cuyahoga	Cleveland	35,517	8.4%
44122	Cuyahoga	Beachwood	34,331	8.1%
44121	Cuyahoga	Cleveland	32,090	7.6%
44128	Cuyahoga	Cleveland	28,023	6.6%
44106	Cuyahoga	Cleveland	26,981	6.3%
44108	Cuyahoga	Cleveland	23,491	5.5%
44104	Cuyahoga	Cleveland	22,061	5.2%
44112	Cuyahoga	Cleveland	21,671	5.1%
44113	Cuyahoga	Cleveland	20,094	4.7%
44110	Cuyahoga	Cleveland	18,683	4.4%
44103	Cuyahoga	Cleveland	16,808	4.0%
44117	Cuyahoga	Euclid	10,099	2.4%
44115	Cuyahoga	Cleveland	9,092	2.1%
44114	Cuyahoga	Cleveland	6,420	1.5%
44127	Cuyahoga	Cleveland	5,109	1.2%
Community Total			**424,999**	**100.0%**

Source: Truven Market Expert, 2018.

The hospital is located in ZIP code 44106.

Exhibit 3 portrays the ZIP codes and counties that comprise the Main Campus communities.

Exhibit 3A: Local Neighborhoods Community



Source: Microsoft MapPoint and Cleveland Clinic, 2018.

Exhibit 3B: 7-County Community

Source: Microsoft MapPoint and Cleveland Clinic, 2018.

In 2017, approximately 2,765,000 people lived in the 7-County community.

County	Total Population 2017	Percent of Total Population 2017
Cuyahoga County	1,255,781	45.4%
Geauga County	89,096	3.2%
Lake County	228,823	8.3%
Lorain County	298,039	10.8%
Medina County	176,170	6.4%
Portage County	169,560	6.1%
Summit County	547,767	19.8%
7-County Community Total	**2,765,236**	**100.0%**

Source: Truven Market Expert, 2018.

Exhibit 3C: 21-County Community

Source: Microsoft MapPoint and Cleveland Clinic, 2018.

In 2017, approximately 4,403,000 million people lived in the 21-County community.

County	Total Population 2017	County	Total Population 2017	County	Total Population 2017
Ashland County	51,388	Geauga County	89,096	Portage County	169,560
Ashtabula County	98,311	Holmes County	43,293	Richland County	120,817
Carroll County	20,871	Huron County	60,417	Stark County	374,140
Columbiana County	108,431	Lake County	228,823	Summit County	547,767
Crawford County	43,346	Lorain County	298,039	Trumbull County	194,711
Cuyahoga County	1,255,781	Mahoning County	227,665	Tuscarawas County	92,940
Erie County	78,171	Medina County	176,170	Wayne County	123,192

Source: Truven Market Expert, 2018.

Secondary Data Summary

The following section summarizes principal findings from the secondary data analysis. Appendices B-G provide more detailed information. For detailed information related to children, see the CHNA for Cleveland Clinic Children's Hospital.

Demographics

Population characteristics and changes directly influence community health needs. Demographic characteristics of communities served by Main Campus are summarized below.

Local Neighborhoods

The total population in the Local Neighborhoods community is expected to decrease 1.4 percent from 2017 to 2022. Thirteen of 18 ZIP codes are projected to lose population.

While the total population is expected to decrease, the number of persons aged 65 years and older is projected to increase by 11.0 percent. The growth of older populations is likely to lead to the growing demand for health services, since on an overall per-capita basis, older individuals typically need and use more services than younger persons.

In 2017, over 90 percent of the population in four ZIP codes was Black (44104, 44108, 44112, and 44128). The percentage was over 50 percent in 12 of the 18 ZIP codes.

7-County Community

The total population in the 7-County community is projected to remain virtually unchanged between 2017 and 2022. Growth is projected for six of seven counties, and population in Cuyahoga County is projected to decrease by 0.8 percent. The 65 and older population is projected to increase by 13.7 percent.

In 2017, Cuyahoga County had the highest proportion of Black residents (29.4 percent) and Geauga County had the lowest (1.3 percent).

Cuyahoga County had a higher percentage of residents aged 25 years and older without a high school diploma than the Ohio average. Cuyahoga, Geauga, Lake, and Lorain counties also had above average proportions of the population that are linguistically isolated.[6]

21-County Community

In 2017, the total population in the 21-County community was approximately 4,403,000 persons. Between 2017 and 2022, the total population in the 21-County community is projected to decrease by 0.1 percent. The population aged 65 and older is projected to increase by 12.7 percent.

[6] Linguistic isolation is defined as residents who speak a language other than English and speak English less than "very well."

In 2017, Cuyahoga, Mahoning, and Summit counties had the greatest proportions of Black residents. Lorain County had the greatest proportion of Hispanic (or Latino) residents.

Compared to Ohio, thirteen counties had a higher percentage of residents aged 25 years and older without a high school diploma. Eight had an above average percentage of the population that is linguistically isolated.

Economic Indicators

Local Neighborhoods

Many health needs have been associated with poverty. In 2012-2016, approximately 15.4 percent of people in Ohio were living in poverty. At 31.2 percent, the poverty rate in the Local Neighborhoods community was significantly higher. Low income census tracts are prevalent throughout this community. The highest rates are observed for Black and for Hispanic (or Latino) residents.

According to the U.S. Census, approximately 54 percent of rented households in the Local Neighborhoods community are "rent burdened" because they spend more than 30 percent of income on housing. These households may be unable to affortd other necessities such as food, clothes, health care, and transportation.

The percentage of people uninsured has declined in recent years due to declining unemployment rates and the continued effects of expanded Medicaid eligibility in Ohio. However, at 6.3 percent the 2017 estimated "uninsurance rate" in the Local Neighborhoods community was well above the 3.9 percent average for Northeast Ohio.

7-County Community

In 2012-2016, approximately 18.5 percent of the population in Cuyahoga County was living in poverty. Poverty rates across the 7-County community and Ohio consistently have been highest for Black and Hispanic (or Latino) residents. Low income census tracts exist in Cuyahoga, Lorain, Portage, and Summit counties.

Both Cuyahoga and Summit counties have experienced above average rates of crime. About 50 percent of 7-County community households are considered rent burdened – with the highest percentages in Portage, Lorain, and Cuyahoga counties.

21-County Community

Seven of 21 counties have experienced above average poverty rates: Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Richland, and Trumbull. As elsewhere, rates have been comparatively high for Black and Hispanic (or Latino) residents.

In 2017, Ohio's 2017 unemployment rate was above the U.S. average; in that year, rates in 14 of 21-County community counties were above the state average.

Community Need Index™

Dignity Health, a California-based hospital system, developed and published a *Community Need Index*™ (CNI) that measures barriers to health care access. 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

A CNI score is calculated for each ZIP code. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0). The CNI is constructed such that the national median score is 3.0.

Local Neighborhoods

The weighted average CNI score for the Local Neighborhoods community was 4.3 – in the "highest need" category. Fifteen of 18 ZIP codes scored in this category. Six ZIP codes received a score of 5.0 – the highest score possible.

7-County Community

The average CNI score in the 7-County community (weighted by population) was 2.9. At 3.3, Cuyahoga County had the highest average CNI score in this region.

21-County Community

The average CNI score in the 21-County community was 2.9. Ashtabula and Cuyahoga counties had the highest scores.

Other Local Health Status and Access Indicators

Local Neighborhoods

In the 2018 *County Health Rankings*, Cuyahoga County ranked in the bottom 50th percentile among Ohio counties for 28 of the 42 indicators assessed. Of those, 15 were in the bottom quartile, including quality of life, social and economic factors, physical environment, and various socioeconomic indicators. Cuyahoga County ranked last (or close to last) for:

- Low birth-weight births,
- High school graduation rates,
- Income inequality,
- Children in single-parent households,
- Violent crime,
- Air pollution, and
- Severe housing problems.

In the 2018 *Community Health Status Indicators*, which compares community health indicators for each county with those for peers across the United States, the following needs appear to be most significant in Cuyahoga County:

- Percent of births with low birth weight,
- Percent of adults who smoke,
- Percent of driving deaths with alcohol involvement,
- Air pollution (average daily PM2.5), and
- Percent of workforce who drives alone.

According to data from the Ohio Department of Health, Cuyahoga County's age-adjusted mortality and incidence rates for cancer have been slightly above average.

Ohio Department of Health data also indicate that:

- The incidence of several communicable diseases has been particularly high, including chlamydia, HIV, gonorrhea, and syphilis.
- Virtually all maternal and child health indicators (infant mortality rates, low birth weights, preterm births, and teen pregnancies) are problematic. Infant mortality rates for Black infants exceed those of White infants.

Per-capita drug poisoning deaths in Cuyahoga County and Ohio more than doubled between 2013 and 2017. Mortality rates in Cuyahoga County and Ohio were more than double the United States rate in 2017.

Data from the Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) indicate comparatively high rates of arthritis, asthma, depression, diabetes, high blood pressure, high cholesterol, smoking, COPD, and back pain in Local Neighborhoods community ZIP codes.

7-County Community

In the 2018 *County Health Rankings*, the following indicators contributed to low rankings for multiple counties in the 7-County community:

- Air pollution (average daily PM2.5)
- Injury mortality rate
- Percent of children in single-parent households
- Percent of driving deaths with alcohol involvement
- Percent workers drive alone to work
- Percent workers with long commute who drive alone
- Preventable hospitalizations rate
- Ratio of population to dentists
- Ratio of population to mental health professionals
- Ratio of population to primary care physicians
- Social associations rate

- Unemployment

Community Health Status Indicators data indicate that the following indicators compare unfavorably in at least six of the seven counties:

- Percent of adults who smoke
- Percent of driving deaths with alcohol involvement
- Preventable hospitalizations rate
- Diabetes monitoring
- Unemployment
- Air pollution (average daily PM2.5)

The following indicators compare unfavorably in at least four community counties:

- Percent of births with low birth weight
- Percent of adults obese
- Food environment index
- Percent of adults physically inactive
- Excessive drinking
- High school graduation rate
- Income ratio
- Social associations rate
- Percent workers who drive alone to work

According to the Ohio Department of Health, the age-adjusted mortality rate is below average for six of the seven counties. However, mortality associated with accidental poisoning by and exposure to drugs and other biological substances was above average in five of the seven counties.

The two most populous counties in the 7-County community (Cuyahoga and Summit counties) also have comparatively high rates of communicable diseases and poor maternal and child health indicators. Infant mortality rates have been particularly high for Black infants.

Per-capita drug poisoning deaths have increased significantly in each county between 2013 and 2017. Mortality rates in each county in the 7-County community were above the United States rate in 2017.

BRFSS data show that 7-County community averages for the incidence of diabetes, high blood pressure, and high cholesterol were worse than the Ohio averages. At least three community counties compared unfavorably for the incidence of arthritis and high cholesterol.

21-County Community

In the 2018 *County Health Rankings*, Ashtabula, Columbiana, and Trumbull counties ranked in the bottom half of Ohio counties for all indicators. Eight counties ranked in the bottom quartile of Ohio counties for Physical Environment index.

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:

- Percent of adults who smoke
- Percent of adults obese
- Food environment index
- Percent of driving deaths with alcohol involvement
- Primary care physicians rate
- Dentists rate
- Preventable hospitalizations rate
- Diabetes monitoring
- Mammography screening
- Percent of adults with some college education
- Unemployment
- Air pollution (average daily PM2.5)
- Percent workers drive alone to work

Ohio Department of Health data indicate that in 2016, age-adjusted mortality rates (all causes) were above average in ten of 21 counties. Rates for accidental poisoning (drugs and other substances) and atherosclerotic cardiovascular disease were more than 50 percent above average in multiple counties.

Ohio Department of Health data also indicate that several counties in the 21-County community had unfavorable infant mortality rates. Rates for Black infants consistently have been above those for White infants.

Per-capita drug poisoning deaths have increased significantly in each county between 2013 and 2017. Mortality rates in 17 counties in the 21-County community were above the United States rate in 2017.

BRFSS data indicate that rates for a number of chronic conditions (arthritis, diabetes, heart disease, heart failure, high blood pressure, high cholesterol, and COPD) have been comparatively high in the 21-County community. BRFSS indicators for Ashtabula, Crawford, Richland, and Tuscarawas counties compared unfavorably to Ohio averages for all conditions.

Ohio

2018 CHSI data indicate that at least a two-thirds of Ohio counties rank in the bottom half of their peers for the following indicators:

- Air pollution (average daily PM2.5)
- Percent of adults who smoke
- Percent workers drive alone to work
- Percent of driving deaths with alcohol involvement
- Preventable hospitalizations rate
- Percent of adults obese

- Mammography screening
- Unemployment
- Average mentally unhealthy days
- Diabetes monitoring
- Food environment index

America's Health Rankings is an annual report produced by the United Health Foundation, which ranks the health status of each state based on 62 indicators. In 2017, Ohio was ranked 39th overall for health. Ohio ranked in the bottom third of states for the following indicators:

- Health behaviors
- Drug deaths
- Air pollution
- Insufficient sleep
- Public health funding
- Smoking
- Preventable hospitalizations
- All health determinants
- Cancer deaths
- Children in poverty
- HPV immunizations
- Infant mortality
- All health outcomes
- Cardiovascular deaths
- Premature death
- High blood pressure
- Child immunizations

BRFSS data indicate that within Ohio several populations experienced a greater risk of poor health outcomes. Ohio residents who were Black, Hispanic, aged 65 years and older, had less than a high school education, or made less than $15,000 annually had significantly higher rates of poor health behaviors, chronic disease, and mental health problems.

National

The Healthy People 2020 *Leading Health Indicators (LHIs)* are a select subset of 26 Healthy People 2020 objectives associated with high-priority health issues and challenges in the United States. Based on the most recently available data, several indicators have "little or no detectable change" in recent years, including:

- Persons with a usual primary care provider
- Adults with diagnosed diabetes whose A1c value is greater than nine percent
- Obesity among adults
- Obesity among children and adolescents
- Mean daily intake of total vegetables
- Sexually active females receiving reproductive health services (15–44 years)

- Binge drinking in past 30 days (adults)

The following indicators are "getting worse":

- Suicides
- Adolescents with a major depressive episode in the past 12 months (12-17 years old)
- Children, adolescents, and adults who visited the dentist in the past year

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
- Unintentional injuries
- Chronic lower respiratory diseases
- Stroke
- Alzheimer's disease
- Diabetes
- Influenza and pneumonia
- Kidney disease
- Suicide

Beginning in 2014, life expectancy at birth has decreased for the first time since 1993. Infant mortality rates have been declining; however, differences by race and ethnicity have remained. Between 2006 and 2016, deaths from drug overdoses have increased from 11.5 to 19.8 per 100,000. Suicide rates also have increased from 11.0 to 13.5 per 100,000.

Ambulatory Care Sensitive Conditions

Ambulatory Care Sensitive Conditions (ACSCs) are fourteen 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."[7] Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

Local Neighborhoods

2017 ACSC rates in the Local Neighborhoods community far exceed Ohio and U.S. averages for all but one condition (perforated appendix). Discharges for young adult asthma, hypertension, and uncontrolled diabetes are more than double the averages. Cuyahoga County rates for Hypertension, Uncontrolled Diabetes, and Young Adult Asthma were more than fifty percent higher.

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

7-County Community

Similarly, rates of admissions for ACSC in the 7-County community exceeded Ohio averages for all conditions.

21-County Community

Rates of admissions for ACSC in the 21-County community exceeded Ohio averages for all but two of fourteen conditions (Perforated Appendix and Lower-Extremity Amputation Among Patients with Diabetes).

Ohio

Ohio-wide ACSC rates exceeded national averages for all but two of fourteen conditions (Bacterial Pneumonia and Young Adult Asthma).

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.

Food Deserts are present in each of the communities assessed by Main Campus. For example, six of the 7-County community counties include one or more such census tracts.

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."

MUAs and/or MUPs also are present throughout the communities. Many have been designated in Cleveland, Lorain, Akron, Lake, and Ashtabula.

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.

Primary care, dental, and mental health HPSAs are present in each of the communities assessed by Main Campus.

Relevant Findings of Other CHNAs

Twenty (20) community health assessments have been conducted in recent years by local health departments (LHDs) in Northeast Ohio. The following table identifies the priority areas most frequently found in those assessments. *See* Appendix G for a comprehensive list of each assessment that was analyzed.

Priority Area	Total
Addiction and substance use disorders (including opioids)	18
Mental health	17
Obesity	9
Chronic disease	8
Access to care	7
Tobacco use	6
Childhood obesity	5
Maternal and child health	4
Suicide	4
Infant mortality	3
Cardiovascular disease	2
Diabetes	2
Lack of physical activity	2
Alcohol abuse	2

The Ohio Department of Health prepared a 2017-2019 State Health Improvement Plan (SHIP), informed by its State Health Assessment. The SHIP established two overall health outcomes (improving health status and reducing premature death) and ten priority outcomes organized into three "topics," as follows:

1. Mental Health and Addiction
2. Chronic Disease
3. Maternal and infant health

For each outcome, the plan calls for achieving equity for "priority populations" identified in the SHIP, including low-income adults, Black (non-Hispanic males), and other specific groups.

The plan also addresses the outcomes through strategies focused on "cross-cutting factors," namely:

1. Social Determinants of Health
2. Public Health System, prevention and health behaviors
3. Healthcare system and access
4. Equity strategies likely to decrease disparities for priority populations

Significant Indicators

Exhibit 4 highlights many of the indicators and issues discussed in the above secondary data summary. The exhibit identifies indicators that appear problematic in the Local Neighborhoods, 7-County, 21-County, and Ohio communities assessed by Main Campus. Verité Healthcare Consulting identified indicators as *significant* if they varied materially from a benchmark statistic (e.g., an average value for peer counties, the State of Ohio, or the United States).

Exhibit 4: Significant Indicators

Indicator	Local Neighborhoods	7-County	21-County	Ohio
Growth of 65+ population	•	•	•	•
Poverty rate - all residents	•			•
Poverty rate - Black residents	•		•	•
Unemployment rate	•	•	•	•
Percent of households rent burdened	•	•	•	
Educational achievement	•		•	•
Violent crimes per 100,000	•			
Percent births with low birth weight	•	•	•	•
Teen birth rate per 1,000 females ages 15-19	•		•	•
Infant mortality rate	•			•
Infant mortality rate, Black	•	•	•	•
Adults with Body Mass Index > 30 (obese)	•	•	•	•
Percent adults physically inactive		•	•	•
Diabetes incidence	•	•	•	
High blood pressure incidence	•	•	•	
Percent driving deaths w/alcohol involvement	•	•	•	•
Mortality rate for accidental poisoning by drugs and other substances per 100,000	•	•	•	•
Drug poisoning mortality per 100,000	•	•	•	•
Percent of adults who smoke	•	•	•	•
Cancer incidence	•	•		
COPD incidence	•		•	
Chlamydia rate	•			•
HIV rate	•			
Mortality rate for organic dementia per 100,000	•	•		
Ratio of population to primary care physicians		•	•	•
Ratio of population to dentists		•	•	•
Ratio of population to mental health providers		•		•
Preventable admissions (for ambulatory care sensitive conditions)	•	•	•	•
PQI: Young adult asthma rate per 100,000	•	•	•	•
PQI: Uncontrolled diabetes per 100,000	•	•	•	•
PQI: Hypertension per 100,000	•	•	•	
Average Daily PM 2.5 (Particulate Matter, a measure of air pollution)	•	•	•	•
Percent driving alone to work	•	•	•	•

Source: Verité Analysis.

A number of secondary data indicators (e.g., Poverty Rate – Black residents, Infant Mortality Rate – Black, Adults with Body Mass Index > 30, Percent of adults who smoke, rates of preventable admissions for ambulatory care sensitive conditions, and a measure of air pollution) appear to be problematic in each of the communities assessed.

Primary Data Summary

Primary data were gathered by conducting interviews with key stakeholders (*See* Appendix C for additional information on those providing input). Forty-two (42) interviews were conducted with individuals regarding significant community health needs in the community served by Main Campus and why such needs are present. A community conversation also was held at the Karamu House with over 120 Fairfax neighborhood residents to discuss community issues.

Interviewees most frequently identified the following community health issues as significant concerns.

- **Poverty and other social determinants of health** were identified as significant concerns. Interviewees stated that poverty has significant implications for health, including the ability for households to access health services, afford basic needs, and benefit from prevention initiatives.
    - **Housing** is an issue, with many community residents unable to find housing that is both affordable and safe. Low income and elderly populations were identified as especially vulnerable. Poor housing contributes to lead exposure and falling risks, among other health problems.
    - Problems with **educational achievement** and access to **workforce training** opportunities reduce employment prospects and increase poverty rates.
- **Obesity** (and its contributions to chronic diseases including diabetes, hypertension, and cardiovascular diseases) was identified as growing problem, driven by ongoing difficulties with physical inactivity and poor nutrition.
    - Many are not eating healthy foods due to the higher costs of fresh and healthy options, food deserts that create access problems, a lack of knowledge about healthy cooking, and a lack of time (particularly for people working several jobs) to prepare meals.
    - Contributors to physical inactivity include a lack of safe places to exercise, a lack of time, and a lack of education regarding the importance of remaining active.
- **Mental health** was identified by many as a significant concern. Depression, suicide, hopelessness, and isolation (particularly among elderly residents and those exposed to traumas early in life) are perceived to be increasing in severity. Access to mental health care is challenging due to cost (and limited benefits) and an undersupply of psychiatrists and other providers.

- **Transportation** was identified as a barrier to maintaining good health. Few public transportation options are available, and many neighborhoods are not serviced at all. Transportation affects access to health care services, healthy foods, and employment opportunities. Low-income and elderly residents were identified as groups that had the largest unmet transportation needs.

- **Substance abuse and addiction**, particularly the abuse of opioids, was a primary concern of many interviewees. Perceived over-prescribing of prescription drugs, poverty and economic insecurity, and mental health problems were cited as contributing factors.

    - While problems with opioids were mentioned most frequently, several interviewees stated that misuse of other drugs (primarily methamphetamines) is on the rise. They emphasized that underlying addiction is the real problem.

- **Health disparities** are present – particularly for infant mortality rates and the prevalence of chronic conditions. Low-income, Black, and Hispanic (or Latino) residents were specifically identified as groups with disproportionately poor health outcomes.

    - Health care services need to be more culturally competent. Language and cultural barriers make it challenging for providers to improve the health of many residents.

    - A lack of trust between providers and residents was reported by some interviewees. The lack of trust leads some members of the community to avoid seeking treatment until issues become emergencies.

- Many identified a need for more **localized, community-based health clinics and programs**. While the region has many hospitals and physician groups, these entities "do not have a great connection with the community." Health systems need to improve their local presence, building up connections with local stakeholders and communities.

- **Smoking and tobacco usage** is a concern, and leading to chronic diseases such as cancer, COPD, and others. Vaping and electronic cigarettes have also emerged as a concern, particularly among young adults and youth.

- **Dental and oral health** is a significant concern, particularly affecting low-income and uninsured populations. Untreated dental health concerns were also thought to contribute to many other physical health concerns. Additionally, it was believed that an undersupply of dentists existed in certain areas of the community.

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

This section identifies other facilities and resources available in the Local Neighborhoods community served by Main Campus 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. 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 22 FQHC sites operating in the Main Campus Local Neighborhoods community (**Exhibit 5**).

Exhibit 5: Federally Qualified Health Centers, 2018

County	ZIP Code	Site Name	City	Address
Cuyahoga	44105	Miles Broadway Health Center	Cleveland	9127 Miles Ave
Cuyahoga	44112	East Cleveland Health Center	Cleveland	15201 Euclid Ave
Cuyahoga	44114	Asian Services In Action	Cleveland	3631 Perkins Ave Ste 2aw
Cuyahoga	44115	Central Neighborhood Clinic	Cleveland	2916 Central Ave
Cuyahoga	44114	St. Clair Clinic	Cleveland	1530 Saint Clair Ave NE
Cuyahoga	44112	NEON Dental Mobile Unit	East Cleveland	15320 Euclid Ave
Cuyahoga	44104	Carl B. Stokes Clinic	Cleveland	6001 Woodland Ave
Cuyahoga	44122	Signature Health, Inc. Connections Location	Beachwood	24200 Chagrin Blvd
Cuyahoga	44103	Hough Health Center	Cleveland	8300 Hough Ave
Cuyahoga	44113	Tremont Community Health Center	Cleveland	2358 Professor Ave
Cuyahoga	44103	Norwood Health Center	Cleveland	1468 E 55th St
Cuyahoga	44114	Mobile Clinic	Cleveland	1530 Saint Clair Ave NE
Cuyahoga	44106	Superior Health Center	Cleveland	12100 Superior Ave
Cuyahoga	44106	The Free Medical Clinic of Greater Cleveland	Cleveland	12201 Euclid Ave
Cuyahoga	44113	Riverview Towers Clinic	Cleveland	1795 W 25th St
Cuyahoga	44103	NEON Administration Center	Cleveland	4800 Payne Ave
Cuyahoga	44110	Collinwood Health Center	Cleveland	15322 Saint Clair Ave
Cuyahoga	44114	Asian Services In Action - International Community Health Center	Cleveland	3820 Superior Ave E Ste
Cuyahoga	44113	Neighborhood Family Practice Administrative Office	Cleveland	4115 Bridge Ave
Cuyahoga	44106	Magnolia Clubhouse	Cleveland	11101 Magnolia Dr
Cuyahoga	44105	Southeast Health Center	Cleveland	13301 Miles Ave
Cuyahoga	44103	Health and Wellness East	Cleveland	4400 Euclid Ave

Source: HRSA, 2018.

Data published by HRSA indicate that in 2017, FQHCs served approximately 38 percent of uninsured, Local Neighborhoods community residents and 22 percent of the community's Medicaid recipients.[8] In Ohio, FQHCs served about 15 percent of both population groups. Nationally, FQHCs served 22 percent of uninsured individuals and 18 percent of Medicaid recipients. These percentages ranged from 6 percent (Nevada) to 40 percent (Washington State).

[8] HRSA refers to these statistics as FQHC "penetration rates."

Hospitals

Exhibit 6 presents information on hospital facilities located in the Local Neighborhoods community.

Exhibit 6: Hospitals, 2018

ZIP Code	County	City/Town	Hospital Name	Address
44104	Cuyahoga	Cleveland	Cleveland Clinic Children's Hospital For Rehab	2801 Martin Luther King, Jr Drive
44195	Cuyahoga	Cleveland	Cleveland Clinic Main Campus	9500 Euclid Ave
44111	Cuyahoga	Cleveland	Fairview Hospital	18101 Lorain Avenue
44113	Cuyahoga	Cleveland	Lutheran Hospital	1730 West 25th Street
44125	Cuyahoga	Cleveland	Marymount Hospital	12300 Mccracken Road
44109	Cuyahoga	Cleveland	MetroHealth System	2500 Metrohealth Drive
44129	Cuyahoga	Cleveland	Parma Community General Hospital	7007 Powers Boulevard
44106	Cuyahoga	Cleveland	Rainbow Babies And Childrens Hospital	11100 Euclid Avenue
44120	Cuyahoga	Cleveland	Select Specialty Hospital- Cleveland Fairhill	11900 Fairhill Road
44115	Cuyahoga	Cleveland	Select Specialty Hospital- Cleveland Gateway	2351 East 22nd Street, 7th Floor
44130	Cuyahoga	Cleveland	Southwest General Health Center	18697 Bagley Road
44145	Cuyahoga	Westlake	St John Medical Center	29000 Center Ridge Road
44115	Cuyahoga	Cleveland	St Vincent Charity Medical Center	2351 East 22nd Street
44106	Cuyahoga	Cleveland	UH Cleveland Medical Center	11100 Euclid Avenue

Source: Ohio Department of Health, 2019.

Other Community Resources

A wide range of agencies, coalitions, and organizations that provide health and social services is available in the region served by Main Campus. 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 – 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.[9] In conducting a CHNA, each tax-exempt hospital facility must:

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

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

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

Ohio law[10] requires local health departments (LHDs) and tax-exempt hospitals to submit their Community Health Improvement Plans and Implementation Strategy reports to the Ohio Department of Health (the department). Beginning January 1, 2020, Ohio law also requires LHDs and tax-exempt hospitals to complete assessments and plans "in alignment on a three-year interval established by the department." Specific methods and approaches for achieving "alignment" are evolving.

Methodology

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

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

[9] Internal Revenue Code, Section 501(r).
[10] ORC 3701.981

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

Federal regulations allow hospital facilities to define the community they serve based on "all of the relevant facts and circumstances," including the "geographic location" served by the hospital facility, "target populations served" (e.g., children, women, or the aged), and/or the hospital facility's principal functions (e.g., focus on a particular specialty area or targeted disease)."[11] Accordingly, the community definition considered the geographic origins of the hospital's patients and also the hospital's mission, target populations, principal functions, and strategies.

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

Data from multiple sources were gathered and assessed, including secondary data[12] published by others and primary data obtained through community input. *See* Appendix B. Input from the community was received through key informant interviews. These informants represented the broad interests of the community and included individuals with special knowledge of or expertise in public health. *See* Appendix C. Considering a wide array of information is important when assessing community health needs to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively.

Certain community health needs were determined to be "significant" if they were identified as problematic in at least two of the following three data sources: (1) the most recently available secondary data regarding the community's health, (2) recent assessments developed by the State of Ohio and local health departments, 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 D.

Collaborating Organizations

For this assessment, Main Campus collaborated with the following Cleveland Clinic and Cleveland Clinic – Select Medical hospitals: Main Campus, Cleveland Clinic Children's, Cleveland Clinic Children's Hospital for Rehabilitation, Avon, Akron General, Euclid, Fairview, Hillcrest, Lodi, Lutheran, Marymount, Medina, South Pointe, Union, Cleveland Clinic Florida, Select Specialty Hospital – Cleveland Fairhill, Select Specialty Hospital – Cleveland Gateway, Regency Hospital of Cleveland East, and Regency Hospital of Cleveland West. These facilities

[11] 501(r) Final Rule, 2014.
[12] "Secondary data" refers to data published by others, for example the U.S. Census and the Ohio Department of Health. "Primary data" refers to data observed or collected from first-hand experience, for example by conducting interviews.

collaborated by gathering and assessing community health data together and relying on shared methodologies, report formats, and staff to manage the CHNA process.

Data Sources

Community health needs were identified by collecting and analyzing data from multiple sources. Statistics for numerous community health status, health care access, and related indicators were analyzed, including data provided by local, state, and federal government agencies, local community service organizations, and 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 42 persons representing the broad interests of the 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.

The Cleveland Clinic health system posts CHNA reports online at www.clevelandclinic.org/CHNAReports and makes an email address (chna@ccf.org) available for purposes of receiving comments and questions. No written comments have yet been received on CHNA reports.

Information Gaps

This CHNA relies on multiple data sources and community input gathered between July 2018 and January 2019. A number of data limitations should be recognized when interpreting results. For example, some data (e.g., County Health Rankings, Community Health Status Indicators, 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.

The Local Neighborhoods community assessed by Main Campus includes portions of Cuyahoga County. County-wide data for this county should be assessed accordingly.

Secondary data upon which this assessment relies measure community health in prior years and may not reflect current conditions. 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 that assessed this community. Differences in data sources, geographic areas assessed (e.g., hospital service areas versus counties or cities), interview questions, and prioritization processes can contribute to differences in findings.

Consultant Qualifications

Verité Healthcare Consulting, LLC (Verité) was founded in May 2006 and is located in Arlington, Virginia. The firm serves clients throughout the United States as a resource that helps hospitals conduct Community Health Needs Assessments and develop Implementation Strategies to address significant health needs. Verité has conducted more than 60 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 Local Neighborhoods community. The Local Neighborhoods community is comprised of 18 ZIP codes in Cuyahoga County, Ohio.

Demographics

Exhibit 7: Percent Change in Community Population by ZIP Code, 2017-2022

County	City/Town	ZIP Code	Estimated Population 2017	Projected Population 2022	Percent Change 2017 - 2022
Cuyahoga	Cleveland	44114	6,420	6,693	4.3%
Cuyahoga	Cleveland	44115	9,092	9,420	3.6%
Cuyahoga	Cleveland	44113	20,094	20,646	2.7%
Cuyahoga	Cleveland	44106	26,981	27,017	0.1%
Cuyahoga	Beachwood	44122	34,331	34,351	0.1%
Cuyahoga	Cleveland	44104	22,061	21,971	-0.4%
Cuyahoga	Cleveland	44118	39,364	38,835	-1.3%
Cuyahoga	Euclid	44117	10,099	9,959	-1.4%
Cuyahoga	Cleveland	44121	32,090	31,635	-1.4%
Cuyahoga	Cleveland	44103	16,808	16,533	-1.6%
Cuyahoga	Cleveland	44128	28,023	27,523	-1.8%
Cuyahoga	Cleveland	44112	21,671	21,195	-2.2%
Cuyahoga	Cleveland	44109	38,259	37,399	-2.2%
Cuyahoga	Cleveland	44120	35,517	34,621	-2.5%
Cuyahoga	Cleveland	44110	18,683	18,144	-2.9%
Cuyahoga	Cleveland	44108	23,491	22,738	-3.2%
Cuyahoga	Cleveland	44127	5,109	4,936	-3.4%
Cuyahoga	Cleveland	44105	36,906	35,622	-3.5%
Community Total			**424,999**	**419,238**	**-1.4%**

Source: Truven Market Expert, 2018.

Description

Exhibit 7 portrays the estimated population by ZIP code in 2017 and projected to 2022.

Observations

- Between 2017 and 2022, 13 of 18 ZIP codes are projected to decrease in population. In total, the community population is expected to decrease by 1.4 percent between 2017 and 2022. For reference, the population across Northeast Ohio (21-County community) is projected to decrease -0.1 percent over this time.

Exhibit 8: Percent Change in Population by Age/Sex Cohort, 2017-2022

Age/Sex Cohort	Estimated Population 2017	Projected Population 2022	Percent Change 2017 - 2022
0 - 17	96,928	94,399	-2.6%
Female 18 - 34	53,491	49,752	-7.0%
Male 18 - 34	51,531	49,856	-3.3%
35 - 64	155,123	149,810	-3.4%
65+	67,926	75,421	11.0%
Community Total	**424,999**	**419,238**	**-1.4%**

Source: Truven Market Expert, 2018.

Description

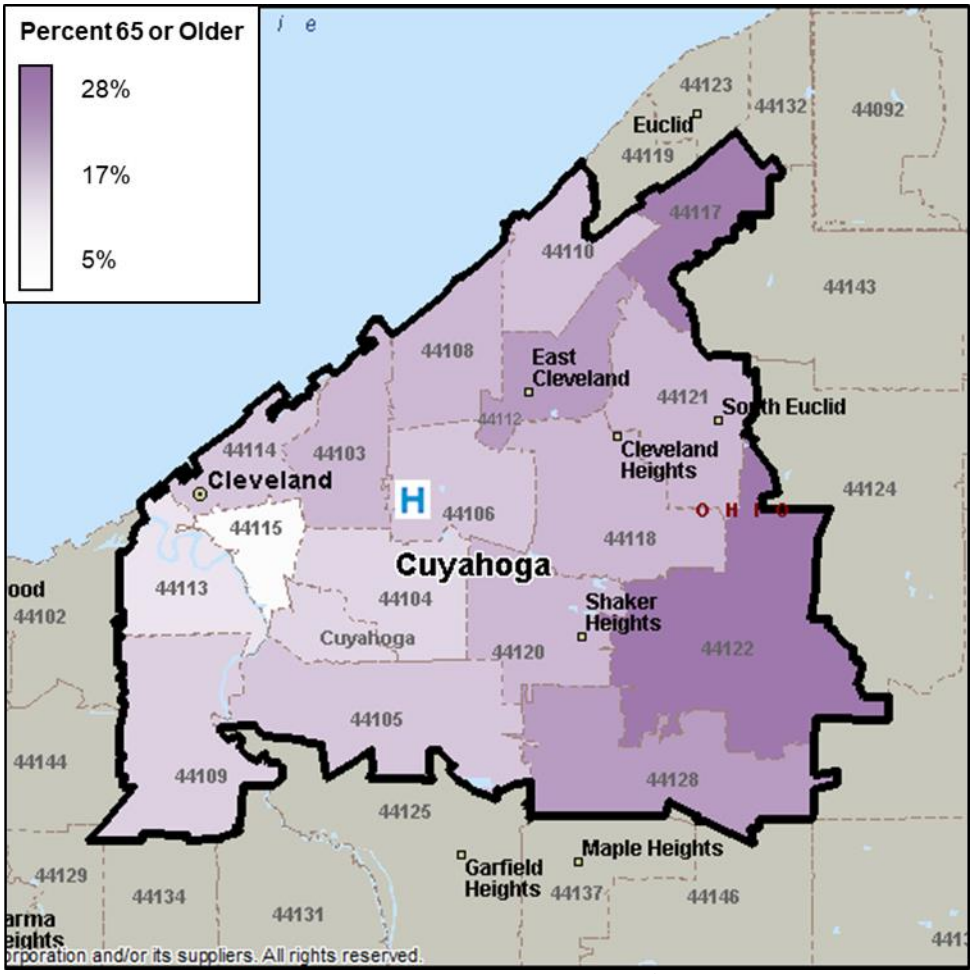
Exhibit 8 shows the Local Neighborhood community population for certain age and sex cohorts in 2017, with projections to 2022.

Observations

- While the total population is expected to decrease between 2017 and 2022, the number of persons aged 65 years and older is projected to increase by 11.0 percent. This population is projected to increase 12.7 percent in Northeast Ohio (21-County community).

- The growth of older populations is likely to lead to growing need for health services, since on an overall per-capita basis, older individuals typically need and use more services than younger persons.

Exhibit 9: Percent of Population Aged 65+ by ZIP Code, 2017



Source: Truven Market Expert, 2018, and Microsoft MapPoint.

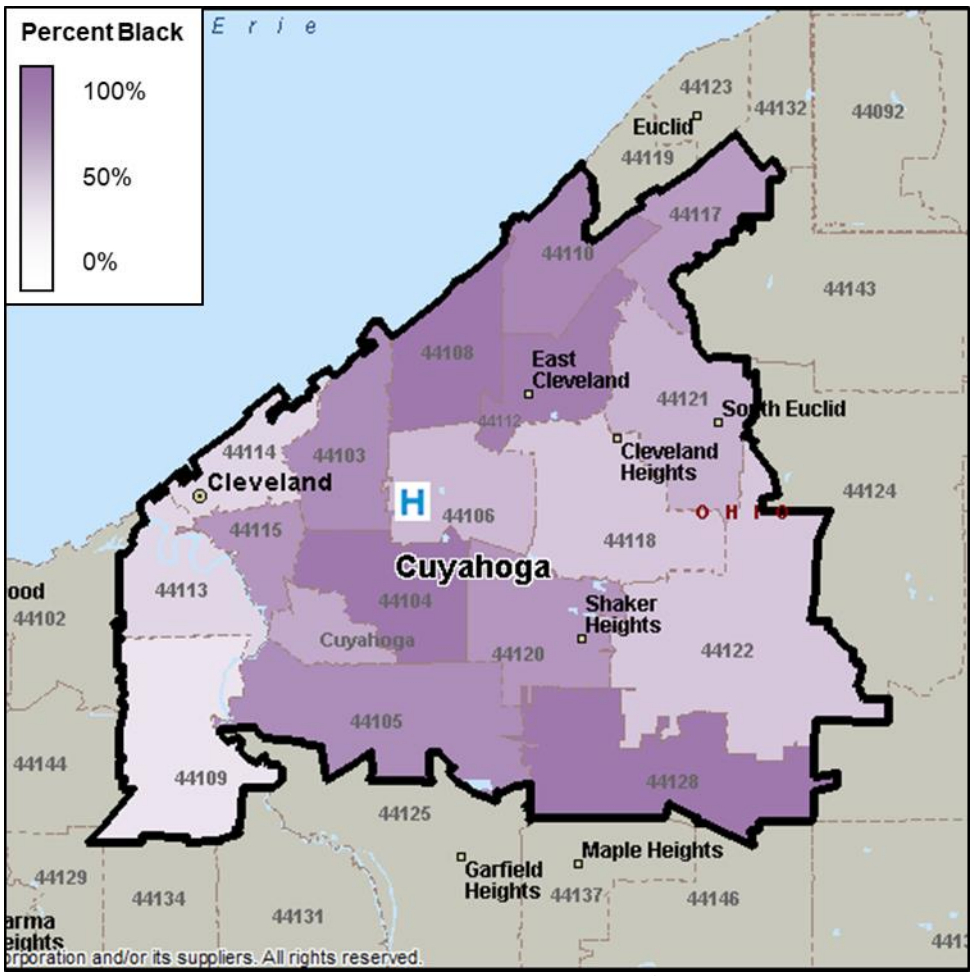
Description

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

Observations

- ZIP codes 44122 and 44147 have the highest proportions of the population 65 years of age and older (each over 25 percent).

Exhibit 10: Percent of Population - Black, 2017



Source: Truven Market Expert, 2018, and Microsoft MapPoint.

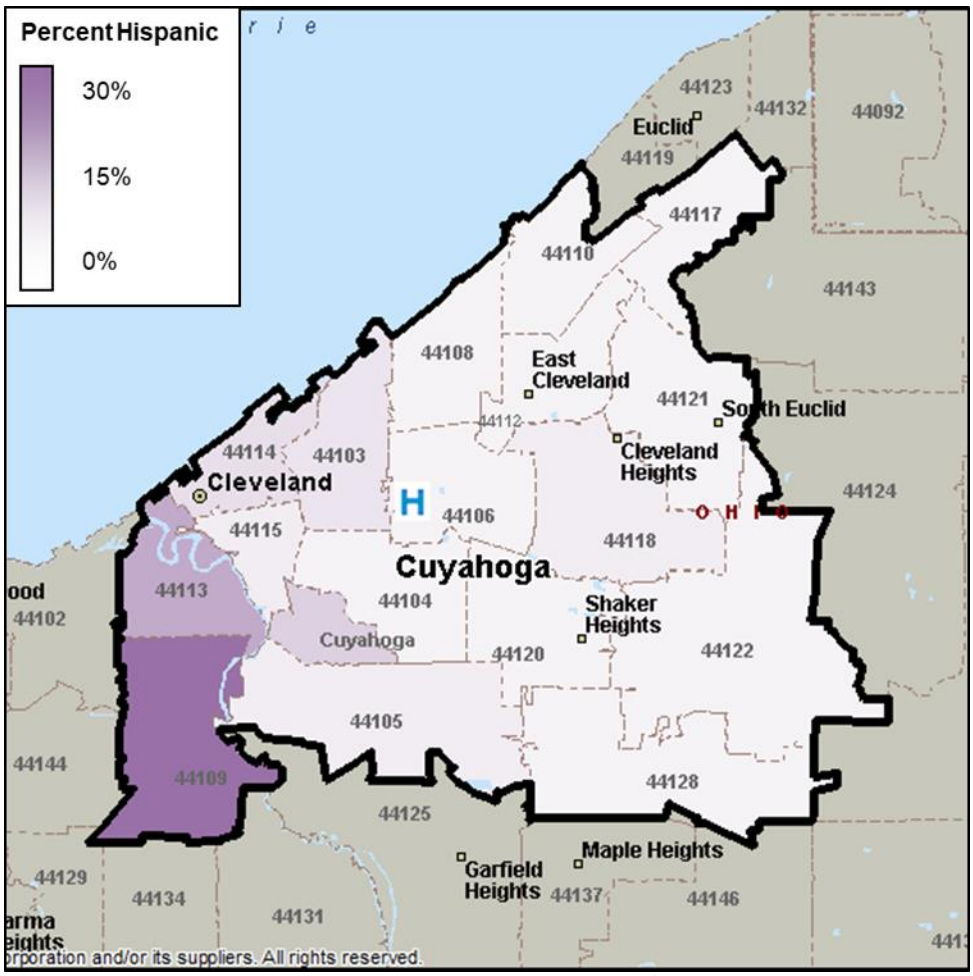
Description

Exhibit 10 portrays locations where the percentages of the population that are Black were highest in 2017.

Observations

- In four ZIP codes, over 90 percent of residents were Black (44104, 44128, 44108, and 44112).
- In 2017, the percentage of residents who are Black was above 50 percent in 12 of 18 ZIP codes.

Exhibit 11: Percent of Population – Hispanic (or Latino), 2017



Source: Truven Market Expert, 2018, and Microsoft MapPoint.

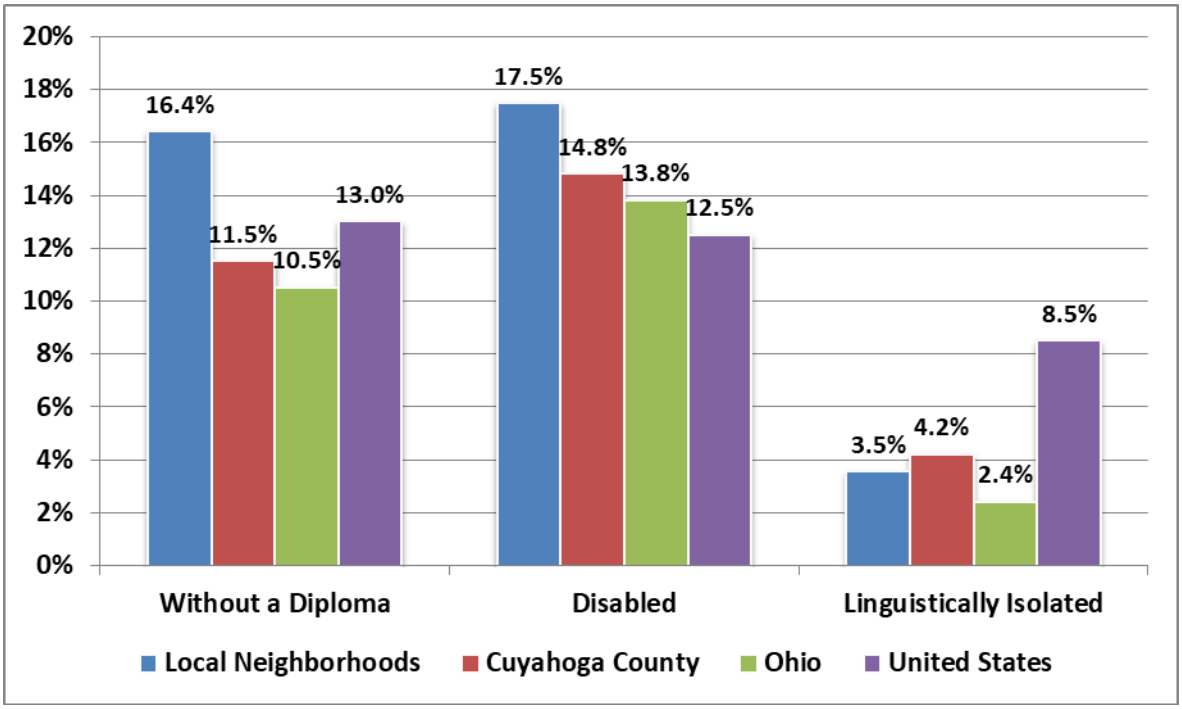
Description

Exhibit 11 portrays locations where the percentages of the population that are Hispanic (or Latino) were highest in 2017.

Observations

- The percentage of residents that are Hispanic (or Latino) was highest in ZIP codes 44109 (29 percent) and 44113 (18 percent).
- All other Local Neighborhoods community ZIP code were below 10 percent.

Exhibit 12: Other Socioeconomic Indicators, 2012-2016



Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 12 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated.

Observations

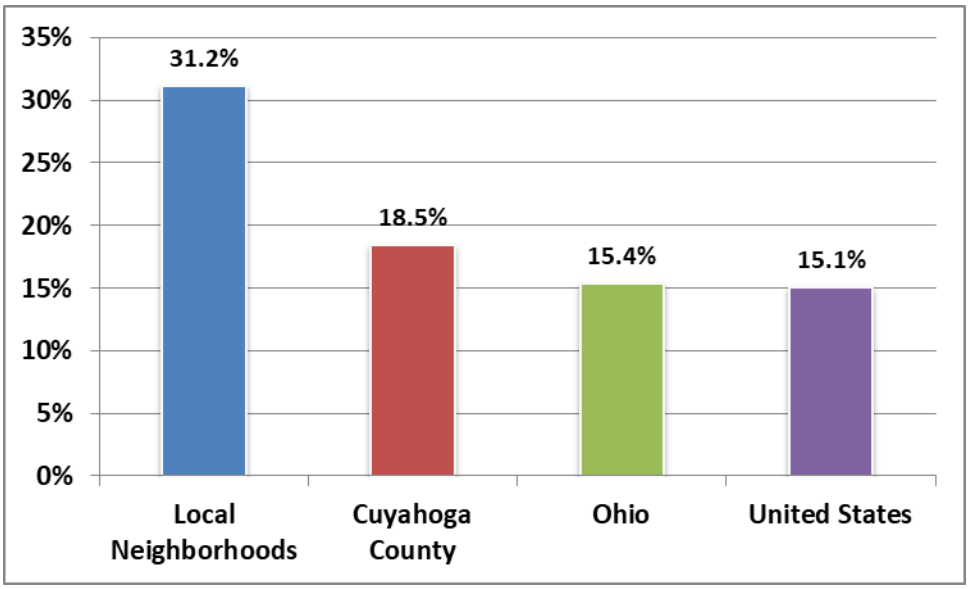
- About 16 percent of Local Neighborhoods community residents (aged 25 years and above) are without a high school diploma – a level well above average.
- Rates of disability also have been above average in the Local Neighborhoods community and in Cuyahoga County.
- Compared to Ohio (but not to the United States), Cuyahoga County had a slightly higher proportion of the population that is linguistically isolated. Linguistic isolation is defined as residents who speak a language other than English and speak English less than "very well."

Economic indicators

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

People in Poverty

Exhibit 13: Percent of People in Poverty, 2012-2016



Source: U.S. Census, ACS 5-Year Estimates, 2017.

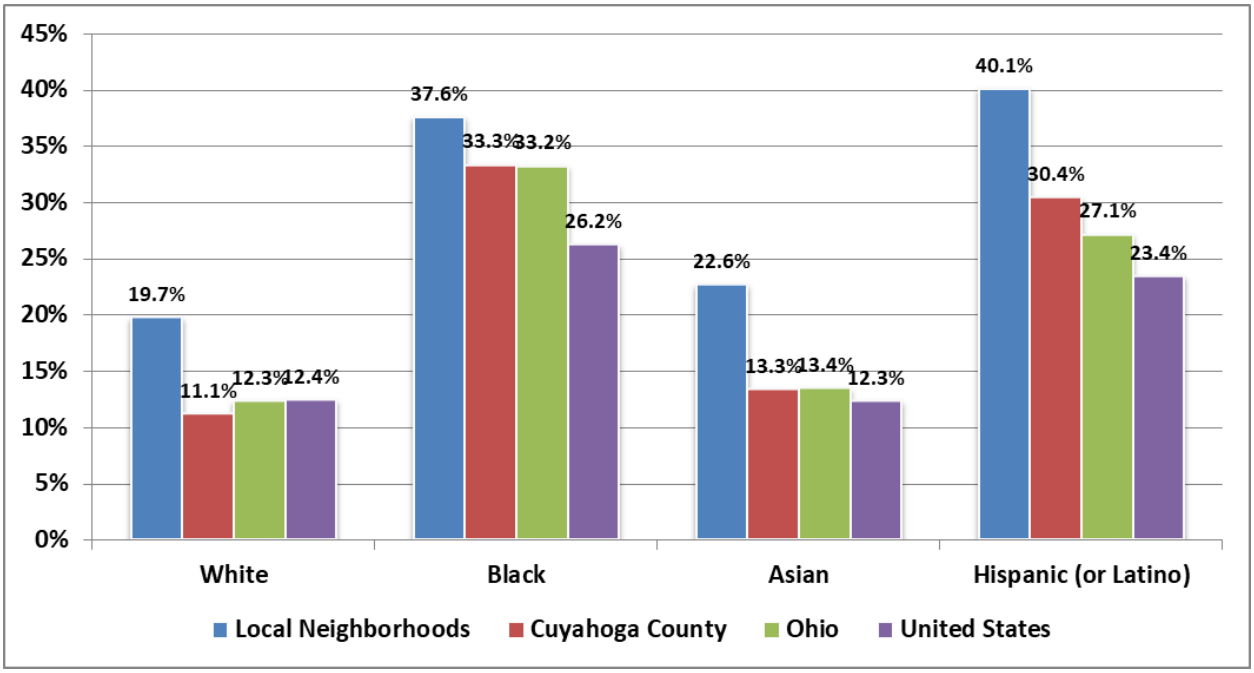
Description

Exhibit 13 portrays poverty rates.

Observations

- The poverty rate in the Local Neighborhoods community has exceeded 30 percent.
- The poverty rate in Cuyahoga County also was higher than Ohio and national averages throughout 2012-2016.

Exhibit 14: Poverty Rates by Race and Ethnicity, 2012-2016



Source: U.S. Census, ACS 5-Year Estimates, 2017.

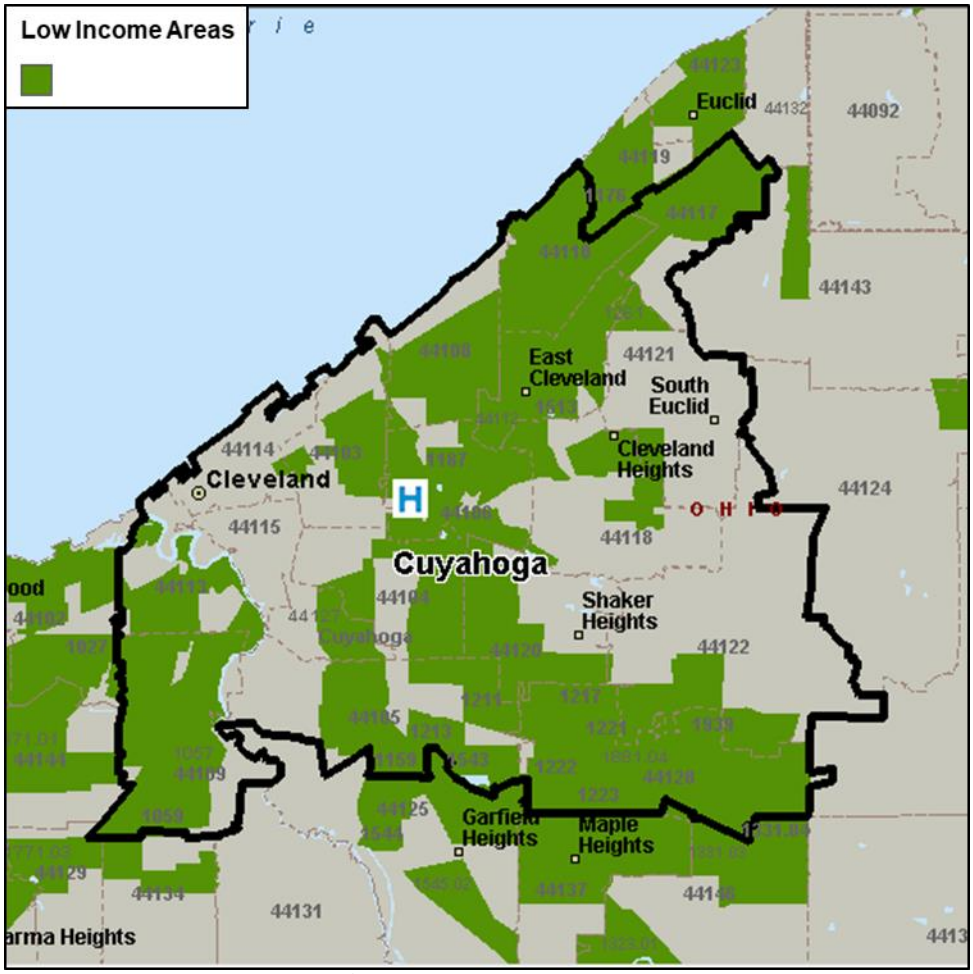
Description

Exhibit 14 portrays poverty rates by race and ethnicity.

Observations

- Poverty rates have been higher for Black and Hispanic (or Latino) residents than for Whites.
- The poverty rate for Black residents in Cuyahoga County (33.3 percent) has been higher than poverty rates for Black individuals across Ohio (33.2 percent) and the United States (26.2 percent).

Exhibit 15: Low Income Census Tracts, 2017



Source: US Department of Agriculture Economic Research Service, ESRI, 2017.

Description

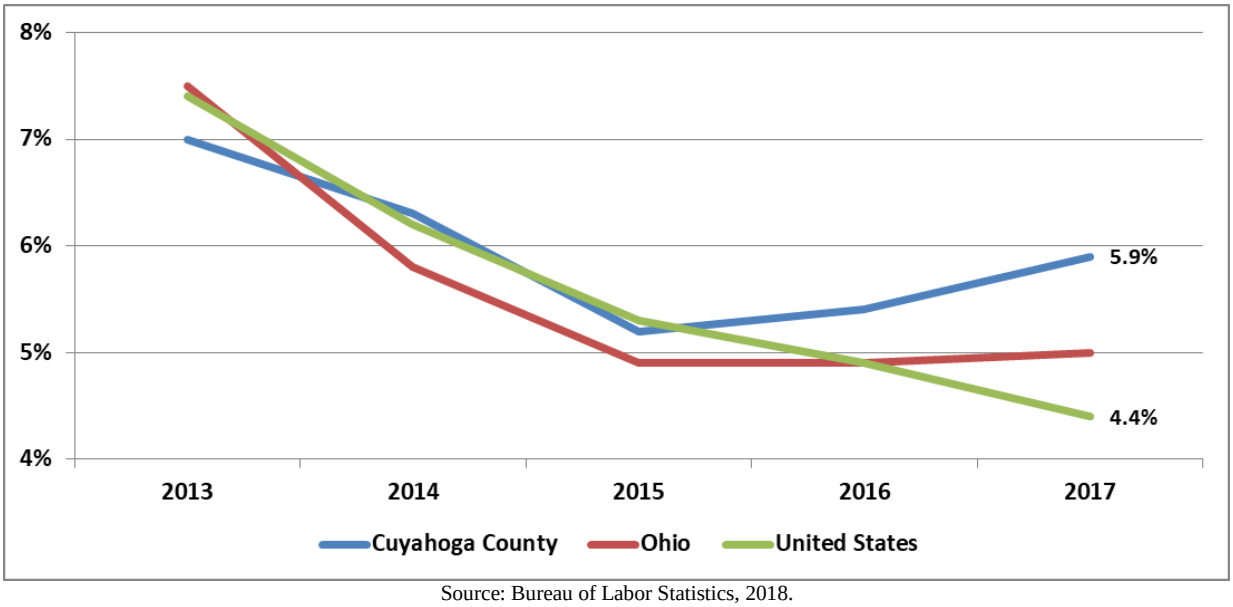
Exhibit 15 portrays the location of federally-designated low income census tracts.

Observations

- Low income census tracts have been present throughout the Local Neighborhoods community.

Unemployment

Exhibit 16: Unemployment Rates, 2013-2017



Source: Bureau of Labor Statistics, 2018.

Description

Exhibit 16 shows unemployment rates for 2013 through 2017 by county, with Ohio and national rates for comparison.

Observations

- Between 2012 and 2015, unemployment rates at the local, state, and national levels declined significantly. Between 2015 and 2017, unemployment rates increased slightly in Cuyahoga County.

- The rate in Cuyahoga County was above Ohio and U.S. averages in 2017.

Insurance Status

Exhibit 17: Percent of the Population without Health Insurance, 2017-2022

County	City/Town	ZIP Code	Total Population 2017	Percent Uninsured 2017	Total Population 2022	Percent Uninsured 2022
Cuyahoga	Cleveland	44115	9,092	9.0%	9,420	8.3%
Cuyahoga	Cleveland	44104	22,061	8.1%	21,971	7.6%
Cuyahoga	Cleveland	44103	16,808	8.0%	16,533	7.1%
Cuyahoga	Cleveland	44114	6,420	7.8%	6,693	6.3%
Cuyahoga	Cleveland	44106	26,981	7.6%	27,017	6.5%
Cuyahoga	Cleveland	44110	18,683	7.5%	18,144	6.7%
Cuyahoga	Cleveland	44127	5,109	7.4%	4,936	6.5%
Cuyahoga	Cleveland	44108	23,491	7.4%	22,738	6.5%
Cuyahoga	Cleveland	44112	21,671	7.3%	21,195	6.4%
Cuyahoga	Euclid	44117	10,099	7.2%	9,959	6.4%
Cuyahoga	Cleveland	44105	36,906	7.0%	35,622	6.2%
Cuyahoga	Cleveland	44113	20,094	6.7%	20,646	5.5%
Cuyahoga	Cleveland	44120	35,517	6.4%	34,621	5.6%
Cuyahoga	Cleveland	44109	38,259	6.3%	37,399	5.4%
Cuyahoga	Cleveland	44128	28,023	5.7%	27,523	5.0%
Cuyahoga	Cleveland	44118	39,364	4.2%	38,835	3.6%
Cuyahoga	Cleveland	44121	32,090	4.1%	31,635	3.5%
Cuyahoga	Beachwood	44122	34,331	3.3%	34,351	2.9%
Community Total			**424,999**	**6.3%**	**419,238**	**5.5%**

Source: Truven Market Expert, 2018.

Description

Exhibit 17 presents the estimated percent of population in Local Neighborhoods community ZIP codes without health insurance (uninsured) – in 2017 and with projections to 2022.

Observations

- In 2017, average "uninsurance rate" was 6.3 percent in the Local Neighborhoods Community. For reference, across Northeast Ohio (the 21-County Community), this rate was 3.9 percent.

- 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. Across the United States, uninsurance rates have fallen most in states that decided to expand Medicaid.[13]

[13] See: http://hrms.urban.org/briefs/Increase-in-Medicaid-under-the-ACA-reduces-uninsurance.html

Crime Rates

Exhibit 18: Crime Rates by Type and Jurisdiction, Per 100,000, 2016

Crime	Cuyahoga County	Ohio
Violent Crime	694.9	**305.9**
Property Crime	2,977.7	**2,537.4**
Murder	15.1	**5.9**
Rape	57.6	**47.4**
Robbery	327.7	**111.1**
Aggravated Assault	294.5	**141.5**
Burglary	753.6	**573.5**
Larceny	1,742.1	**1,789.7**
Motor Vehicle Theft	482.0	**174.2**
Arson	33.6	**23.4**

Source: FBI, 2017.

Description

Exhibit 18 provides crime statistics. Light grey shading indicates rates that were higher (worse) than the Ohio average; dark grey shading indicates rates that were more than 50 percent higher.

Observations

- 2016 crime rates in Cuyahoga County were more than 50 percent higher than Ohio averages for violent crime, murder, robbery, aggravated assault, and motor vehicle theft.

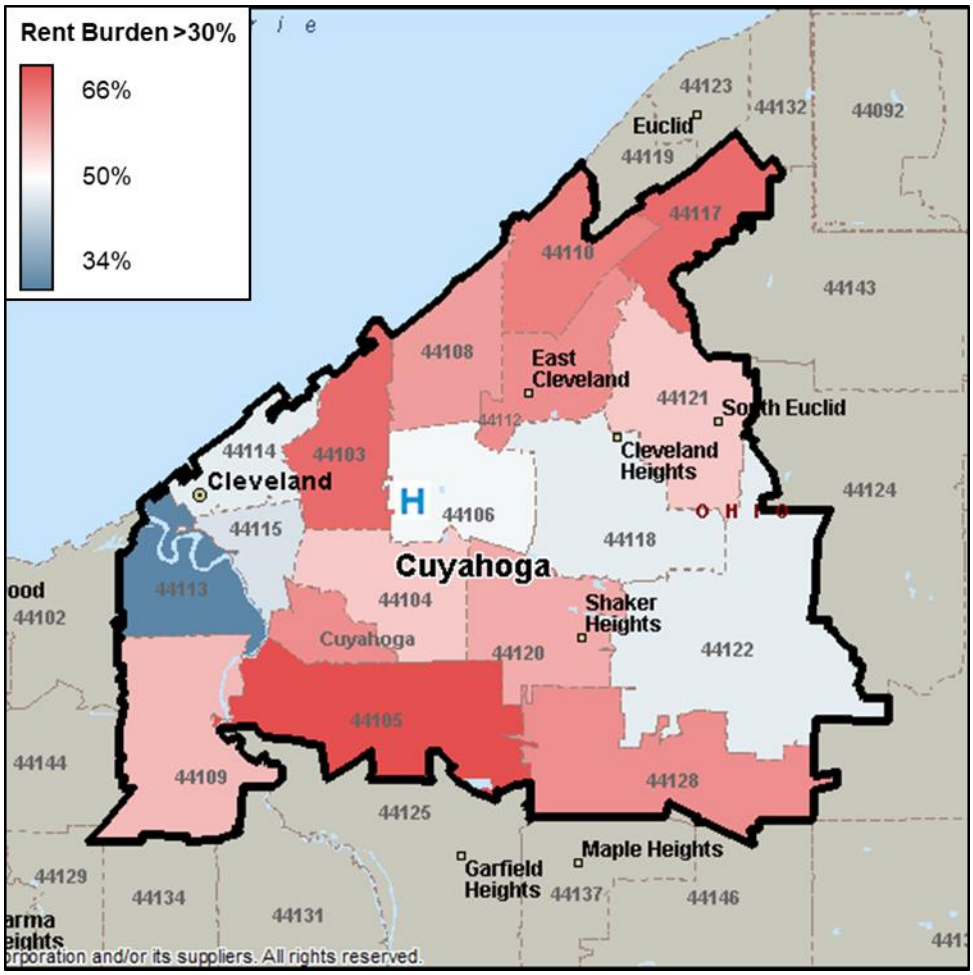
Housing Affordability

Exhibit 19: Percent of Rented Households Rent Burdened, 2013-2017

County	City/Town	ZIP Code	Occupied Units Paying Rent	Households Paying >30%	Rent Burden > 30% of Income
Cuyahoga	Cleveland	44105	7,182	4,689	65.3%
Cuyahoga	Euclid	44117	2,597	1,636	63.0%
Cuyahoga	Cleveland	44103	4,185	2,593	62.0%
Cuyahoga	Cleveland	44110	5,142	3,141	61.1%
Cuyahoga	Cleveland	44127	1,180	708	60.0%
Cuyahoga	Cleveland	44128	5,469	3,246	59.4%
Cuyahoga	Cleveland	44112	5,346	3,171	59.3%
Cuyahoga	Cleveland	44108	4,223	2,449	58.0%
Cuyahoga	Cleveland	44120	8,325	4,798	57.6%
Cuyahoga	Cleveland	44109	8,491	4,702	55.4%
Cuyahoga	Cleveland	44121	4,362	2,401	55.0%
Cuyahoga	Cleveland	44104	5,239	2,857	54.5%
Cuyahoga	Cleveland	44106	6,824	3,361	49.3%
Cuyahoga	Cleveland	44114	3,076	1,476	48.0%
Cuyahoga	Cleveland	44118	5,793	2,752	47.5%
Cuyahoga	Beachwood	44122	4,529	2,143	47.3%
Cuyahoga	Cleveland	44115	2,901	1,346	46.4%
Cuyahoga	Cleveland	44113	6,476	2,202	34.0%
Community Total			91,340	49,671	54.4%
Ohio			1,453,379	678,101	46.7%
United States			39,799,272	20,138,321	50.6%

Source: U.S. Census, ACS 5-Year Estimates, 2018.

Exhibit 20: Map of Percent of Rented Households Rent Burdened, 2013-2017



Source: U.S. Census, ACS 5-Year Estimates, 2018.

Description

The U.S. Department of Housing and Urban Development ("HUD") has defined households that are "rent burdened" as those spending more than 30 percent of income on housing.[14] On that basis and based on data from the U.S. Census, Exhibits 19 and 20 portray the percentage of rented households in each ZIP code that are rent burdened.

Observations

As stated by the Federal Reserve, "households that have little income left after paying rent may not be able to afford other necessities, such as food, clothes, health care, and transportation."[15]

[14] https://www.federalreserve.gov/econres/notes/feds-notes/assessing-the-severity-of-rent-burden-on-low-income-families-20171222.htm

[15] *Ibid.*

- Over 54 percent of households have been designated as "rent burdened," a level above the Ohio average.

- The percentage of rented households rent burdened was highest in ZIP codes where poverty rates and the Dignity Health Community Need Index™ (CNI) also are above average (see next section for information on the CNI).

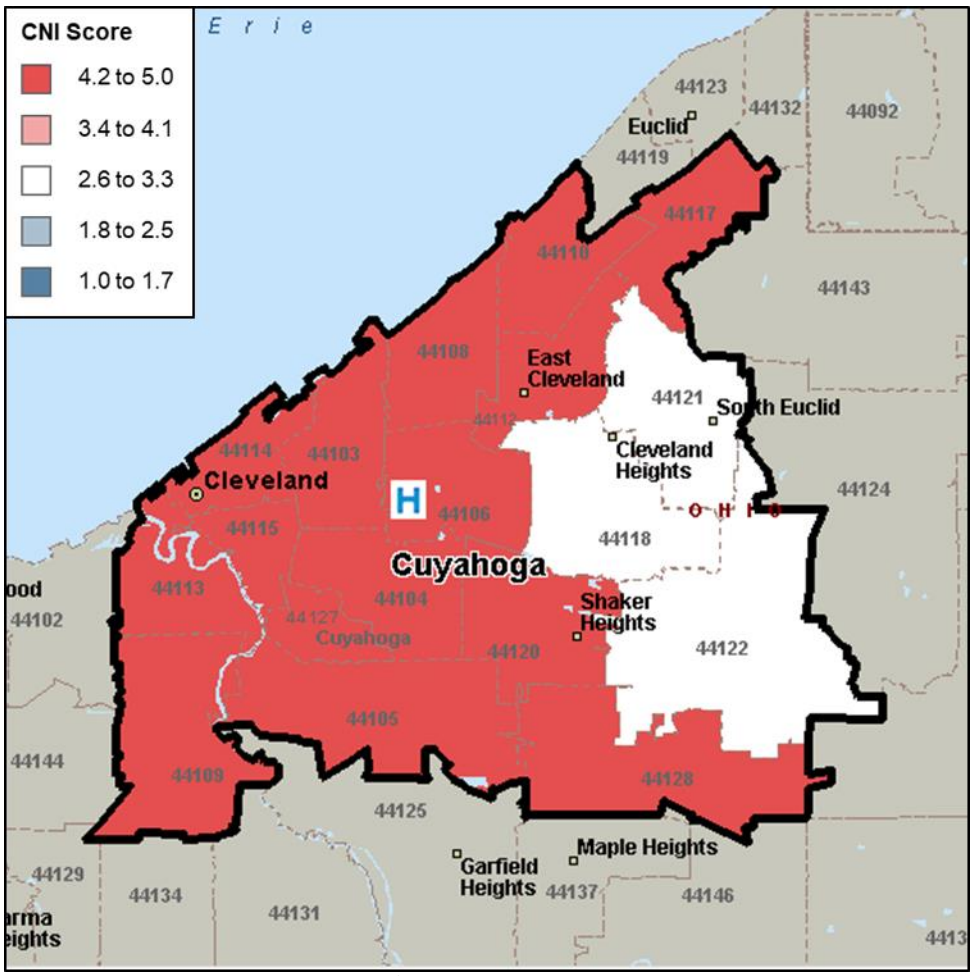
Dignity Health Community Need Index

Exhibit 21: Community Need Index™ Score by ZIP Code, 2018

County	City/Town	ZIP Code	CNI Score
Cuyahoga	Cleveland	44103	5.0
Cuyahoga	Cleveland	44104	5.0
Cuyahoga	Cleveland	44105	5.0
Cuyahoga	Cleveland	44108	5.0
Cuyahoga	Cleveland	44115	5.0
Cuyahoga	Cleveland	44127	5.0
Cuyahoga	Cleveland	44109	4.8
Cuyahoga	Cleveland	44110	4.8
Cuyahoga	Cleveland	44113	4.8
Cuyahoga	Cleveland	44114	4.8
Cuyahoga	Cleveland	44106	4.6
Cuyahoga	Cleveland	44112	4.6
Cuyahoga	Euclid	44117	4.6
Cuyahoga	Cleveland	44120	4.4
Cuyahoga	Cleveland	44128	4.2
Cuyahoga	Cleveland	44118	3.2
Cuyahoga	Cleveland	44121	3.0
Cuyahoga	Beachwood	44122	3.0
Community Average			**4.3**
Cuyahoga County Average			3.3

Source: Dignity Health, 2018.

Exhibit 22: Community Need Index™, 2018



Source: Microsoft MapPoint and Dignity Health, 2018.

Description

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

Dignity Health, a California-based hospital system, developed and published the CNI as a way to assess barriers to health care access. The index, available for every ZIP code in the United States, is derived from five social and economic indicators:

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

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

Observations

- Fifteen (15) of the 18 ZIP codes in the Local Neighborhoods community scored in the “highest need” category. Six ZIP codes scored 5.0, the highest possible value.

- At 4.3, the weighted average CNI score for the Local Neighborhoods community is significantly above the U.S. median of 3.0.

Exhibit 23: Statistics Arrayed by CNI Range, Cuyahoga County

Indicators	Highest Need	<== CNI Range ==>			Lowest Need
	4.2-5.0	3.4-4.1	2.6-3.3	1.8-2.5	1.0-1.7
Demographic Characteristics					
ZIP Codes	17	8	8	10	8
Total Persons	387,943	181,185	291,614	262,222	132,817
Poverty Rate	37%	18%	12%	6%	4%
% African American	59%	40%	17%	5%	4%
BRFSS Indicators					
% Arthritis	27.3%	27.1%	22.5%	21.9%	21.1%
% Asthma	14.3%	13.1%	11.4%	11.0%	10.1%
% Depression	21.6%	20.7%	18.1%	17.3%	15.9%
% Diabetes	22.1%	17.6%	16.8%	15.9%	13.1%
% Heart Disease	9.7%	11.0%	11.4%	11.4%	9.9%
% Heart Failure	3.9%	4.5%	3.8%	4.0%	3.2%
PQI Rates					
COPD	1,603	1,130	676	714	315
Congestive Heart Failure	1,088	854	629	630	512
Diabetes long-term complications	231	189	130	104	70
Bacterial pneumonia	289	279	234	290	198
Dehydration	339	354	264	286	161
Diabetes short-term complications	143	117	52	48	28
Urinary tract infection	263	245	228	272	168
Hypertension	196	114	76	65	47
Low birth weight (per 1,000 births)	23	22	11	7	5
Young adult asthma	130	66	29	32	7
Lower-extremity amputation among patients with diabetes	72	46	40	32	24

Source: Verité Analysis.
Note: Data not available for 4 Cuyahoga County ZIP codes

Description

Exhibit 23 provides data for Cuyahoga County ZIP codes arranged by CNI Score.

Observations

- ZIP codes found to be higher need are associated with higher rates of poverty, a higher proportion of the population Black, more problematic BRFSS indicators (e.g., rates of smoking and high blood pressure), and higher rates of admissions for Ambulatory Care Sensitive Conditions (“PQI rates” or “ACSCs”).

Other Local Health Status and Access Indicators

This section assesses other health status and access indicators for the Local Neighborhoods community. Data sources include:

(1) County Health Rankings
(2) Community Health Status Indicators, published by County Health Rankings
(3) Ohio Department of Health
(4) 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

Exhibit 24: County Health Rankings, 2015 and 2018
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

Measure	Cuyahoga County	
	2015	2018
Health Outcomes	65	60
Health Factors	50	62
Length of Life	51	48
Premature death	51	48
Quality of Life	72	67
Poor or fair health	32	46
Poor physical health days	24	24
Poor mental health days	49	12
Low birthweight	87	88
Health Behaviors	36	49
Adult smoking	14	50
Adult obesity	9	12
Food environment index	75	71
Physical inactivity	23	12
Access to exercise opportunities	3	2
Excessive drinking	33	22
Alcohol-impaired driving deaths	67	79
Sexually transmitted infections	87	86
Teen births	51	47
Clinical Care	6	4
Uninsured	53	49
Primary care physicians	2	2
Dentists	1	1
Mental health providers	2	3
Preventable hospital stays	33	25
Diabetes monitoring	65	62
Mammography screening	8	18
Social & Economic Factors	78	79
High school graduation	85	83
Some college	8	9
Unemployment	51	52
Children in poverty	68	72
Income inequality	86	85
Children in single-parent households	88	86
Social associations	79	77
Violent crime	85	85
Injury deaths	31	47
Physical Environment	68	86
Air pollution	63	87
Severe housing problems	87	87
Driving alone to work	7	7
Long commute - driving alone	45	48

Source: County Health Rankings, 2018.

Description

Exhibit 24 presents *County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation that incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[16] social and economic factors, and physical environment.[17] *County Health Rankings* is updated annually. *County Health Rankings 2018* relies on data from 2006 to 2017, with most data from 2011 to 2016.

The exhibit presents 2015 and 2018 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. Light grey shading indicates rankings in the bottom half of Ohio counties; dark grey shading indicates rankings in bottom quartile of Ohio counties.

Observations

- In 2018, Cuyahoga County ranked in the bottom 50th percentile among Ohio counties for 28 of the 42 indicators assessed. Of those, 15 were in the bottom quartile, including quality of life, social and economic factors, physical environment, and various socioeconomic indicators.

- Cuyahoga County ranked last (or close to last) for:

    - Low birth-weight births,
    - High school graduation rates,
    - Income inequality,
    - Children in single-parent households,
    - Violent crime,
    - Air pollution, and
    - Severe housing problems.

[16] 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.

[17] 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 25: County Health Rankings Data Compared to Ohio and U.S. Averages, 2018
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

Indicator Category	Data	Cuyahoga County	Ohio	United States
Health Outcomes				
Length of Life	Years of potential life lost before age 75 per 100,000 population	8,037	**7,734**	6,700
Quality of Life	Percent of adults reporting fair or poor health	16.4%	**17.0%**	16.0%
	Average number of physically unhealthy days reported in past 30 days	3.7	**4.0**	3.7
	Average number of mentally unhealthy days reported in past 30 days	3.7	**4.3**	3.8
	Percent of live births with low birthweight (<2500 grams)	10.6%	**8.6%**	8.0%
Health Factors				
Health Behaviors				
Adult Smoking	Percent of adults that report smoking >= 100 cigarettes and currently smoking	20.6%	**22.5%**	17.0%
Adult Obesity	Percent of adults that report a BMI >= 30	29.9%	**31.6%**	28.0%
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	7.0	**6.6**	7.7
Physical Inactivity	Percent of adults aged 20 and over reporting no leisure-time physical activity	24.3%	**25.7%**	23.0%
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	96.1%	**84.7%**	83.0%
Excessive Drinking	Binge plus heavy drinking	16.8%	**19.1%**	18.0%
Alcohol-Impaired Driving Deaths	Percent of driving deaths with alcohol involvement	44.0%	**34.3%**	29.0%
STDs	Chlamydia rate per 100,000 population	720	**489**	479
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	30.3	**27.6**	27.0
Clinical Care				
Uninsured	Percent of population under age 65 without health insurance	7.8%	**7.7%**	11.0%
Primary Care Physicians	Ratio of population to primary care physicians	898:1	**1,307:1**	1,320:1
Dentists	Ratio of population to dentists	979:1	**1,656:1**	1,480:1
Mental Health Providers	Ratio of population to mental health providers	356:1	**561:1**	470:1
Preventable Hospital Stays	Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	53	**57**	49
Diabetes Screening	Percent of diabetic Medicare enrollees that receive HbA1c monitoring	83.8%	**85.1%**	85.0%
Mammography Screening	Percent of female Medicare enrollees, ages 67-69, that receive mammography screening	64.7%	**61.2%**	63.0%

Source: County Health Rankings, 2018.

Exhibit 25: County Health Rankings Data Compared to Ohio and U.S. Averages, 2018 (*continued*)
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

Indicator Category	Data	Cuyahoga County	Ohio	United States
Health Factors				
Social & Economic Factors				
High School Graduation	Percent of ninth-grade cohort that graduates in four years	74.8%	**81.2%**	83.0%
Some College	Percent of adults aged 25-44 years with some post-secondary education	68.7%	**64.5%**	65.0%
Unemployment	Percent of population age 16+ unemployed but seeking work	5.4%	**4.9%**	4.9%
Children in Poverty	Percent of children under age 18 in poverty	26.4%	**20.4%**	20.0%
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	5.6	**4.8**	5.0
Children in Single-Parent Households	Percent of children that live in a household headed by single parent	45.0%	**35.7%**	34.0%
Social Associations	Number of associations per 10,000 population	9.3	**11.3**	9.3
Violent Crime	Number of reported violent crime offenses per 100,000 population	589	**290**	380
Injury Deaths	Injury mortality per 100,000	76.4	**75.5**	65.0
Physical Environment				
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	12.9	**11.3**	8.7
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	18.5%	**15.0%**	19.0%
Driving Alone to Work	Percent of the workforce that drives alone to work	79.8%	**83.4%**	76.0%
Long Commute – Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	32.6%	**30.0%**	35.0%

Source: County Health Rankings, 2018.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Description

Exhibit 25 provides data that underlie the County Health Rankings.[18] The exhibit also includes Ohio and national averages. Light grey shading highlights indicators found to be worse than the Ohio average; dark grey shading highlights indicators more than 50 percent worse than the Ohio average.

Observations

- Cuyahoga County's violent crime rate is more than 50 percent worse than the Ohio average.

- The following indicators (presented alphabetically) also compared unfavorably:

    - Air pollution (average daily PM2.5)
    - Chlamydia rate
    - High school graduation rate
    - Income inequality ratio
    - Injury mortality rate
    - Percent of births with low birth weight
    - Percent of children in poverty
    - Percent of children in single-parent households
    - Percent of driving deaths with alcohol involvement
    - Percent of households with severe housing problems
    - Percent of population without health insurance
    - Percent workers with long commute who drive alone
    - Social associations rate
    - Teen birth rate
    - Unemployment
    - Years of potential life lost rate

- Ohio-wide indicators are worse than U.S. averages for virtually all of the indicators presented.

[18] County Health Rankings provides details about what each indicator measures, how it is defined, and data sources at http://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources

Community Health Status Indicators

Exhibit 26: Community Health Status Indicators, 2018
(Light Grey Shading Denotes Bottom Half of Peer Counties; Dark Grey Denotes Bottom Quartile)

Indicator	Cuyahoga County
Years of Potential Life Lost Rate	
% Fair/Poor Health	
Physically Unhealthy Days	
Mentally Unhealthy Days	
% Births - Low Birth Weight	
% Smokers	
% Obese	
Food Environment Index	
% Physically Inactive	
% With Access to Exercise Opportunities	
% Excessive Drinking	
% Driving Deaths Alcohol-Impaired	
Chlamydia Rate	
Teen Birth Rate	
% Uninsured	
Primary Care Physicians Rate	
Dentist Rate	
Mental Health Professionals Rate	
Preventable Hosp. Rate	
% Receiving HbA1c Screening	
% Mammography Screening	
High School Graduation Rate	
% Some College	
% Unemployed	
% Children in Poverty	
Income Ratio	
% Children in Single-Parent Households	
Social Association Rate	
Violent Crime Rate	
Injury Death Rate	
Average Daily PM2.5	
% Severe Housing Problems	
% Drive Alone to Work	
% Long Commute - Drives Alone	

Source: Community Health Status Indicators, 2018.

Description

County Health Rankings has organized community health data for all 3,143 counties in the United States. Following a methodology developed by the Centers for Disease Control's *Community Health Status Indicators* Project (CHSI), County Health Rankings also publishes lists of "peer counties," so comparisons with peer counties in other states can be made. Each

county in the U.S. is assigned 30 to 35 peer counties based on 19 variables including population size, population growth, population density, household income, unemployment, percent children, percent elderly, and poverty rates.

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

Exhibit 26 compares Cuyahoga County to its respective peer counties and highlights community health issues found to rank in the bottom half and bottom quartile of the counties included in the analysis. Light grey shading indicates rankings in the bottom half of peer counties; dark grey shading indicates rankings in the bottom quartile of peer counties.

Observations

- The CHSI data indicate that Cuyahoga County compared most unfavorably to its peers for the following indicators:
    - Percent of births with low birth weight,
    - Percent of adults who smoke,
    - Percent of driving deaths with alcohol involvement,
    - Air pollution (average daily PM2.5), and
    - Percent of workforce who drives alone.

Ohio Department of Health

Exhibit 27: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Specific Causes of Death	Cuyahoga County	Ohio
All Causes of Death	827.3	**832.3**
All other forms of chronic ischemic heart disease	52.3	**53.2**
Other chronic obstructive pulmonary disease	33.6	**43.7**
Organic dementia	46.5	**38.4**
Alzheimer's disease	20.5	**33.4**
Acute myocardial infarction	24.4	**32.1**
Accidental poisoning by and exposure to drugs and other biological substances	44.6	**36.8**
Diabetes mellitus	25.9	**24.6**
Conduction disorders and cardiac dysrhythmias	21.0	**20.2**
Congestive heart failure	17.8	**19.5**
Stroke, not specified as hemorrhage or infarction	16.1	**17.8**
Atherosclerotic cardiovascular disease	34.5	**15.4**
Renal failure	15.3	**15.1**
Septicemia	17.1	**13.7**
Pneumonia	9.3	**13.3**
All other diseases of nervous system	9.6	**12.3**
Hypertensive heart disease	15.0	**11.9**
All other diseases of respiratory system	8.3	**11.4**
Other cerebrovascular diseases and their sequelae	7.7	**10.4**
Parkinson's disease	6.9	**8.7**
Intentional self-harm (suicide) by discharge of firearms	6.2	**7.4**
Alcoholic liver disease	5.8	**5.1**
Unspecified fall	0.7	**4.7**

Source: Ohio Department of Health, 2017.

Description

The Ohio Department of Health maintains a database that includes county-level mortality rates and cancer incidence rates. Exhibit 27 provides age-adjusted mortality rates for selected causes of death in 2016.

Observations

- Cuyahoga County's atherosclerotic cardiovascular disease mortality rate is more than 50 percent worse than the Ohio average.

- The following mortality rates also compared unfavorably:
    - Organic dementia
    - Accidental poisoning by and exposure to drugs and other biological substances
    - Diabetes mellitus
    - Conduction disorders and cardiac dysrhythmias
    - Renal failure
    - Septicemia
    - Hypertensive heart disease
    - Alcohol liver disease

Exhibit 28: Age-Adjusted Cancer Mortality Rates per 100,000 Population, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Cancer Site/Type	Cuyahoga County	Ohio
All Cancer Types	180.0	**173.8**
Lung and Bronchus	44.7	**47.9**
Prostate	23.2	**19.8**
Other Sites/Types	21.5	**19.6**
Colon & Rectum	14.5	**15.5**
Breast	12.7	**12.0**
Pancreas	13.1	**11.5**
Ovary	8.9	**7.8**
Leukemia	7.9	**6.9**
Liver & Intrahepatic Bile Duct	7.6	**6.1**
Non-Hodgkins Lymphoma	5.7	**5.9**
Uterus	6.9	**5.2**
Esophagus	4.7	**5.1**
Bladder	6.2	**5.1**
Brain and Other CNS	4.1	**4.8**
Kidney & Renal Pelvis	3.4	**3.8**
Multiple Myeloma	3.3	**3.3**
Oral Cavity & Pharynx	3.1	**2.9**
Melanoma of Skin	1.4	**2.6**
Stomach	4.1	**2.5**
Cervix	3.3	**2.1**
Larynx	1.0	**1.2**
Thyroid	0.8	**0.4**

Source: Ohio Department of Health, 2017.

Description

Exhibit 28 provides age-adjusted mortality rates for selected types of cancer in 2016.

Observations

- The overall cancer mortality rate in Cuyahoga County was higher than the Ohio average.
- Cuyahoga County's age-adjusted stomach, cervix, and thyroid cancer mortality rates were significantly higher than the Ohio average.

Exhibit 29: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2011-2015 (Light Grey Shading Denotes Indicators Worse than Ohio Average)

Cancer Site/Type	Cuyahoga County	Ohio
All Cancer Types	483.2	**461.6**
Prostate	131.7	**108.0**
Lung and Bronchus	65.6	**69.3**
Breast	73.1	**68.0**
Colon & Rectum	43.4	**41.7**
Other Sites/Types	39.5	**36.4**
Uterus	32.5	**29.2**
Bladder	20.9	**21.9**
Melanoma of Skin	16.8	**21.7**
Non-Hodgkins Lymphoma	20.1	**19.0**
Kidney & Renal Pelvis	16.9	**16.8**
Thyroid	16.4	**14.8**
Pancreas	13.8	**12.7**
Leukemia	12.7	**12.2**
Oral Cavity & Pharynx	11.1	**11.7**
Ovary	12.2	**11.4**
Cervix	6.6	**7.6**
Brain and Other CNS	6.7	**6.9**
Liver & Intrahepatic Bile Duct	8.9	**6.7**
Stomach	7.9	**6.4**
Multiple Myeloma	7.4	**5.8**
Testis	6.8	**5.8**
Esophagus	5.1	**5.1**
Larynx	4.3	**4.1**
Hodgkins Lymphoma	3.3	**2.7**

Source: Ohio Department of Health, 2016.

Description

Exhibit 29 presents age-adjusted cancer incidence rates.

Observations

- The overall cancer incidence rate in Cuyahoga County was higher than the Ohio average.
- Incidence rates were also higher in Cuyahoga County for a variety of indicators, including prostate, breast, colon and rectum, and uterus cancers.

Exhibit 30: Communicable Disease Incidence Rates per 100,000 Population, 2017 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Indicator	Cuyahoga County	Ohio
Living with diagnosis of HIV infection (2016)	373.2	**199.5**
Gonorrhea	408.5	**206.6**
Chlamydia	884.8	**528.9**
Total Syphilis	29.8	**16.4**
Tuberculosis	2.2	**1.3**

Source: Ohio Department of Health, 2018.

Description

Exhibit 30 presents incidence rates for various communicable diseases.

Observations

- Cuyahoga County rates for all indicators were more than 50 percent worse than Ohio averages.

Exhibit 31: Maternal and Child Health Indicators, 2014-2018
(Light Grey Shading Denotes Indicators Worse than Ohio Average)

Indicator	Cuyahoga County	Ohio
Low Birth Weight Percent	8.5%	**7.2%**
Very Low Birth Weight Percent	2.2%	**1.6%**
Births to Unmarried Mothers	51.7%	**43.2%**
Preterm Births Percent	9.5%	**8.7%**
Very Preterm Births Percent	2.5%	**1.8%**

Source: Ohio Department of Health, 2018.

Description

Exhibit 31 presents various maternal and infant health indicators.

Observations

- All Cuyahoga County indicators were worse than Ohio averages.

Exhibit 32: Infant Mortality Rates by County, 2010-2016 and for Ohio, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average)

Indicator	Cuyahoga County	Ohio
Overall Infant Mortality Rate	9.3	**7.4**
Black Infant Mortality Rate	16.3	**15.2**
Hispanic Infant Mortality Rate	6.0	**7.3**
White Infant Mortality Rate	5.2	**5.8**

Source: County Health Rankings, 2018 and Ohio Department of Health, 2017 (for Ohio-wide averages).

Description

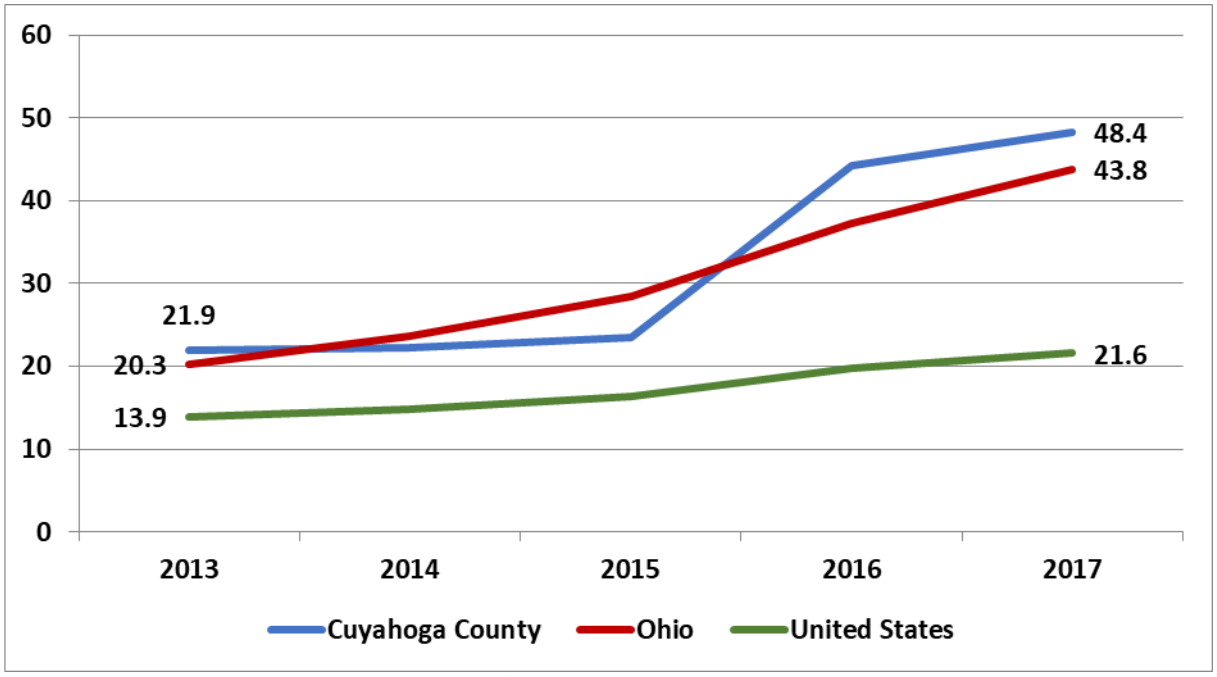
Exhibit 32 presents infant mortality rates by race and ethnicity.

Observations

- The overall infant mortality rate and the Black infant mortality rate in Cuyahoga County were higher than the Ohio averages.
- As documented by many, infant mortality rates have been particularly high for Black infants across Ohio.

Drug Poisoning Mortality

Exhibit 33: Drug Poisoning Mortality per 100,000, 2013-2017



Sources: Centers for Disease Control and Prevention, 2018.
Note: Rates are not age-adjusted.

Description

Exhibit 33 portrays annual drug poisoning mortality rates per 100,000 (2013 through 2017) for Cuyahoga County, Ohio, and the United States.

Mortality data in Exhibit 33 were classified using ICD-10 and include drug poisoning deaths where the intent was: unintentional, suicide, homicide, or "undetermined."

Observations

- Per-capita drug poisoning in Cuyahoga County and Ohio more than doubled between 2013 and 2017.
- Mortality rates in Cuyahoga County and Ohio consistently have exceeded national averages.

Behavioral Risk Factor Surveillance System

Exhibit 34: Behavioral Risk Factor Surveillance System, Chronic Conditions, 2017 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	City/Town	ZIP Code	Total Population 18+	% Arthritis	% Asthma	% Depression	% Diabetes	% Heart Disease	% Heart Failure	% High Blood Pressure	% High Cholesterol	% Adult Smoking	% COPD	% Back Pain
Cuyahoga	Cleveland	44114	4,626	20.8%	13.9%	15.4%	20.4%	11.6%	2.8%	32.5%	24.4%	29.9%	5.8%	28.5%
Cuyahoga	Cleveland	44115	6,344	20.8%	14.0%	19.6%	22.4%	11.2%	2.6%	25.5%	24.1%	28.6%	4.6%	34.6%
Cuyahoga	Cleveland	44113	16,615	20.1%	14.6%	17.3%	21.0%	11.6%	2.5%	30.6%	23.3%	30.3%	5.8%	30.1%
Cuyahoga	Cleveland	44106	23,636	22.3%	14.5%	18.1%	20.7%	11.2%	2.8%	30.2%	24.7%	31.1%	5.3%	31.9%
Cuyahoga	Beachwood	44122	27,750	23.6%	11.1%	15.9%	18.1%	12.8%	4.2%	31.0%	29.3%	21.0%	5.6%	29.8%
Cuyahoga	Cleveland	44104	13,885	29.0%	15.1%	24.3%	25.9%	9.1%	4.2%	37.6%	28.7%	34.0%	6.9%	38.6%
Cuyahoga	Cleveland	44118	28,841	19.9%	10.3%	15.6%	15.2%	11.3%	3.1%	28.7%	23.5%	25.3%	4.9%	30.1%
Cuyahoga	Euclid	44117	9,080	30.7%	14.3%	19.7%	20.6%	13.2%	6.1%	35.8%	30.2%	29.4%	8.0%	35.6%
Cuyahoga	Cleveland	44121	25,637	17.6%	11.8%	18.1%	13.3%	8.8%	3.4%	29.3%	20.6%	27.6%	6.2%	26.5%
Cuyahoga	Cleveland	44103	14,146	30.7%	15.1%	23.0%	24.4%	9.2%	4.1%	42.5%	28.9%	34.4%	7.5%	35.3%
Cuyahoga	Cleveland	44128	21,270	30.1%	13.5%	21.2%	21.2%	11.3%	5.4%	36.6%	28.6%	32.0%	7.8%	32.7%
Cuyahoga	Cleveland	44112	16,206	31.6%	14.8%	22.3%	24.5%	9.4%	4.5%	43.0%	31.1%	35.3%	8.3%	36.5%
Cuyahoga	Cleveland	44109	28,800	27.4%	14.2%	23.5%	21.8%	9.8%	3.7%	36.7%	28.2%	33.7%	7.1%	33.8%
Cuyahoga	Cleveland	44120	28,209	26.3%	12.9%	20.0%	20.1%	9.0%	3.8%	37.8%	25.9%	30.2%	6.7%	32.7%
Cuyahoga	Cleveland	44110	13,582	29.4%	15.2%	23.1%	23.5%	9.7%	4.2%	39.9%	27.7%	34.1%	7.4%	35.1%
Cuyahoga	Cleveland	44108	17,334	29.6%	14.3%	22.8%	23.7%	7.9%	4.0%	42.1%	26.7%	34.0%	7.7%	32.8%
Cuyahoga	Cleveland	44127	3,768	28.0%	15.5%	24.0%	23.3%	7.7%	3.5%	40.6%	26.8%	36.4%	7.5%	34.0%
Cuyahoga	Cleveland	44105	28,310	29.2%	14.8%	23.5%	22.8%	7.8%	4.2%	41.0%	26.5%	35.9%	8.2%	33.8%
Hospital Community			**328,039**	**25.6%**	**13.5%**	**20.2%**	**20.6%**	**10.1%**	**3.8%**	**35.4%**	**26.5%**	**30.7%**	**6.7%**	**32.5%**
Ohio Average			**9,044,061**	**24.2%**	**11.9%**	**19.2%**	**15.7%**	**10.7%**	**4.5%**	**31.8%**	**25.0%**	**27.5%**	**6.0%**	**31.1%**

Source: Truven Market Expert/Behavioral Risk Factor Surveillance System, 2018.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Description

The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) gathers data through a telephone survey regarding health risk behaviors, healthcare access, and preventive health measures. Data are collected for the entire United States. Analysis of BRFSS data can identify localized health issues, trends, and health disparities, and can enable county, state, or nation-wide comparisons.

Exhibit 34 depicts BRFSS data for each ZIP code in the Local Neighborhoods community and compared to the averages for Ohio.

Observations

- Local Neighborhoods community averages for arthritis, asthma, depression, diabetes, high blood pressure, high cholesterol, smoking, COPD, and back pain were worse than the Ohio averages.

- ZIP codes 44117 and 44128 compared unfavorably for all twelve conditions presented.

Ambulatory Care Sensitive Conditions

Exhibit 35: PQI (ACSC) Rates per 100,000, 2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	City/Town	ZIP Code	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure
Cuyahoga	Cleveland	44114	71	333	89	1,271	231	462
Cuyahoga	Cleveland	44115	246	-	148	1,764	230	820
Cuyahoga	Cleveland	44113	66	600	204	1,370	60	498
Cuyahoga	Cleveland	44106	58	1,000	151	1,897	164	913
Cuyahoga	Beachwood	44122	43	615	105	562	119	941
Cuyahoga	Cleveland	44104	74	750	249	1,396	269	1,145
Cuyahoga	Cleveland	44118	53	900	60	500	100	489
Cuyahoga	Euclid	44117	71	500	179	2,135	238	1,476
Cuyahoga	Cleveland	44121	24	300	128	614	116	741
Cuyahoga	Cleveland	44103	145	833	298	2,178	343	1,618
Cuyahoga	Cleveland	44128	119	455	251	1,438	228	1,652
Cuyahoga	Cleveland	44112	124	333	289	1,641	236	1,440
Cuyahoga	Cleveland	44109	132	600	406	1,350	97	750
Cuyahoga	Cleveland	44120	102	286	73	1,179	227	1,018
Cuyahoga	Cleveland	44110	170	1,000	262	1,971	276	1,316
Cuyahoga	Cleveland	44108	169	429	153	1,137	311	1,271
Cuyahoga	Cleveland	44127	754	-	215	1,974	188	915
Cuyahoga	Cleveland	44105	204	600	251	1,811	251	1,278
Community Averages			**111**	**576**	**193**	**1,300**	**189**	**1,024**
Ohio Averages			**70**	**595**	**120**	**696**	**72**	**584**
United States Averages			69	351	102	481	49	322

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Exhibit 35: PQI (ACSC) Rates per 100,000, 2017 (*continued*) (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	City/Town	ZIP Code	Low Birth Weight	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Uncontrolled Diabetes	Young Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Cuyahoga	Cleveland	44114	14	249	195	160	89	70	89
Cuyahoga	Cleveland	44115	26	164	279	197	98	106	82
Cuyahoga	Cleveland	44113	5	204	198	96	60	-	60
Cuyahoga	Cleveland	44106	22	328	270	235	75	80	53
Cuyahoga	Beachwood	44122	10	420	300	347	69	52	54
Cuyahoga	Cleveland	44104	38	357	189	236	121	217	74
Cuyahoga	Cleveland	44118	13	246	186	216	70	47	7
Cuyahoga	Euclid	44117	58	452	345	333	179	138	107
Cuyahoga	Cleveland	44121	26	275	255	155	92	63	44
Cuyahoga	Cleveland	44103	22	343	336	336	176	184	153
Cuyahoga	Cleveland	44128	21	580	351	361	151	198	105
Cuyahoga	Cleveland	44112	13	413	366	348	201	256	94
Cuyahoga	Cleveland	44109	10	233	278	219	104	114	83
Cuyahoga	Cleveland	44120	32	395	220	216	84	130	22
Cuyahoga	Cleveland	44110	54	311	460	382	219	211	78
Cuyahoga	Cleveland	44108	53	390	203	299	198	164	40
Cuyahoga	Cleveland	44127	13	323	269	188	108	427	81
Cuyahoga	Cleveland	44105	34	342	284	237	138	157	76
Community Averages			**25**	**341**	**273**	**255**	**117**	**123**	**64**
Ohio Averages			**18**	**218**	**238**	**198**	**50**	**36**	**36**
United States Averages			N/A	130	250	156	13	41	17

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Description

Exhibit 35 provides 2017 PQI rates (per 100,000 persons) for ZIP codes in the Local Neighborhoods community – with comparisons to Ohio averages.

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."[19] 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, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

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

Observations

- The rates of admissions for ACSC in the Local Neighborhoods community exceeded Ohio averages for all conditions except perforated appendix, and were more than 50 percent higher for nine conditions: diabetes short-term complications, diabetes long-term complications, chronic obstructive pulmonary disease, hypertension, congestive heart failure, dehydration, uncontrolled diabetes, young adult asthma, and lower-extremity amputation among patients with diabetes.

- ZIP codes 44103, 44110, and 44105 had comparatively high PQI rates for every condition.

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

Exhibit 36: Ratio of PQI Rates for Local Neighborhoods Community and Ohio, 2017

Indicator	Community Averages	Ohio Averages	Ratio: Local Neighborhoods / Ohio
Young Adult Asthma	122.9	35.7	3.44
Hypertension	189.3	71.6	2.64
Uncontrolled Diabetes	117.4	50.2	2.34
Chronic Obstructive Pulmonary Disease	1,300.3	695.6	1.87
Lower-Extremity Amputation Among Patients with Diabetes	64.3	36.3	1.77
Congestive Heart Failure	1,024.2	584.2	1.75
Diabetes Long-Term Complications	193.3	120.2	1.61
Diabetes Short-Term Complications	111.0	70.1	1.58
Dehydration	340.8	218.3	1.56
Low Birth Weight	25.3	18.1	1.40
Urinary Tract Infection	254.8	197.5	1.29
Bacterial Pneumonia	272.5	238.4	1.14
Perforated Appendix	575.8	594.7	0.97

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Description

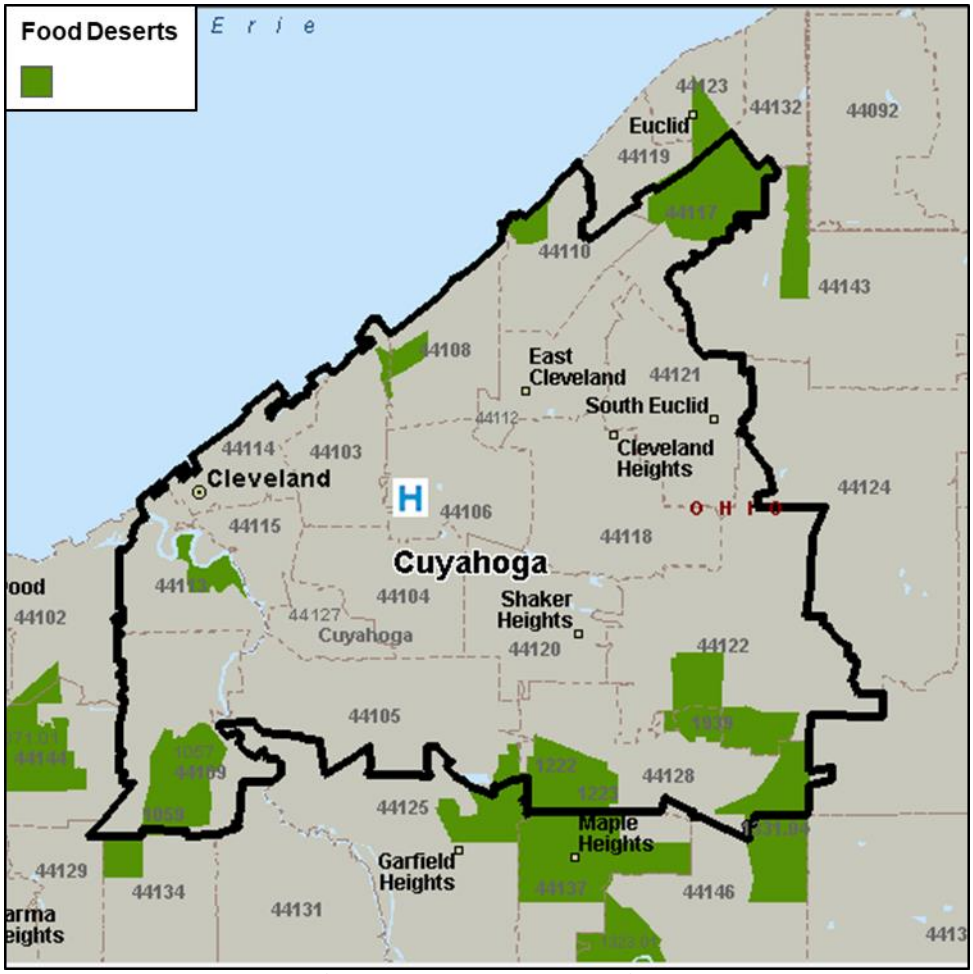
Exhibit 36 provides the ratio of PQI rates in the Local Neighborhoods community to rates for Ohio as a whole. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

Observations

- The community ACSC rate for young adult asthma was more than three times the Ohio average.
- Rates for hypertension and uncontrolled diabetes were more than double.

Food Deserts

Exhibit 37: Food Deserts, 2017



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2017.

Description

Exhibit 37 shows the location of "food deserts" in the community.

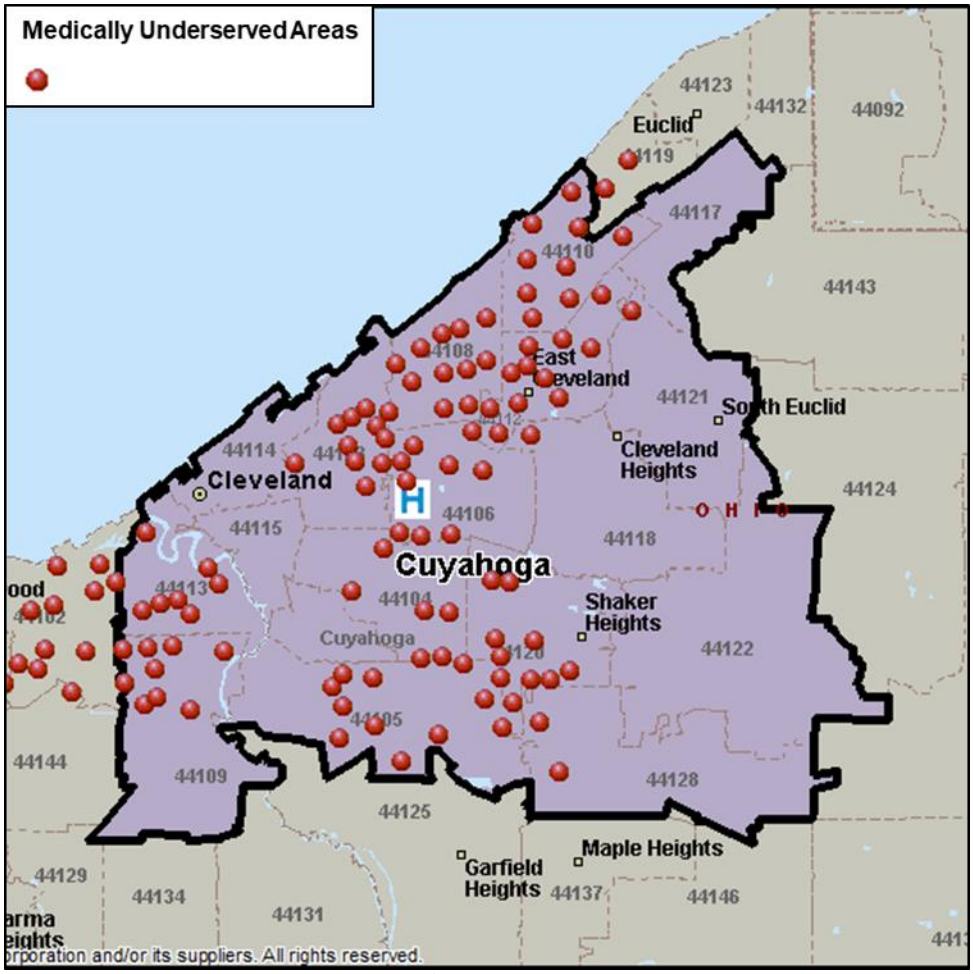
The U.S. Department of Agriculture's Economic Research Service defines urban food deserts as low-income areas more than one mile from a supermarket or large grocery store and rural food deserts as more than 10 miles from a supermarket or large grocery store. Many government-led initiatives aim to increase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

Observations

- Several census tracts have been designated as food deserts.

Medically Underserved Areas and Populations

Exhibit 38: Medically Underserved Areas and Populations, 2018



Source: Microsoft MapPoint and HRSA, 2018.

Description

Exhibit 38 illustrates the location of Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) in the community.

Medically Underserved Areas and Populations (MUA/Ps) are designated by HRSA based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[20] 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

[20] Heath Resources and Services Administration. See http://www.hrsa.gov/shortage/mua/index.html

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."[21]

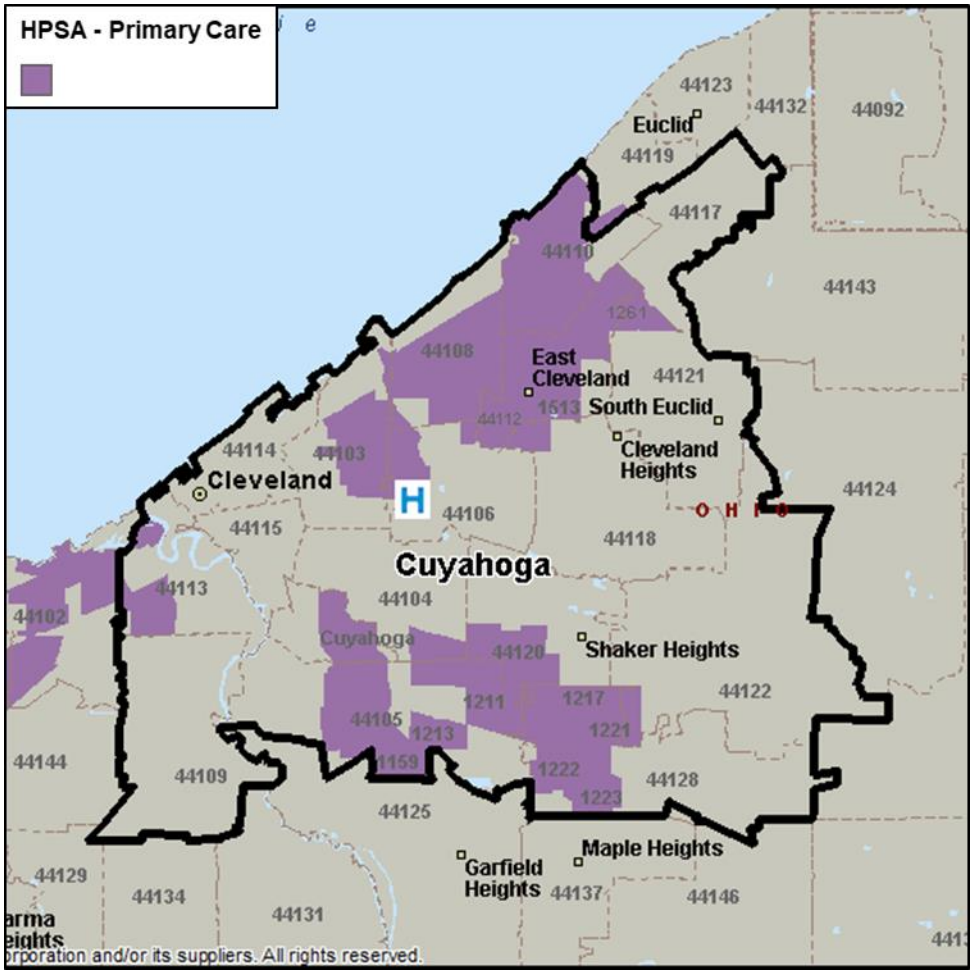
Observations

- Many census tracts in the Local Neighborhoods community have been designated as Medically Underserved Areas.

[21] *Ibid.*

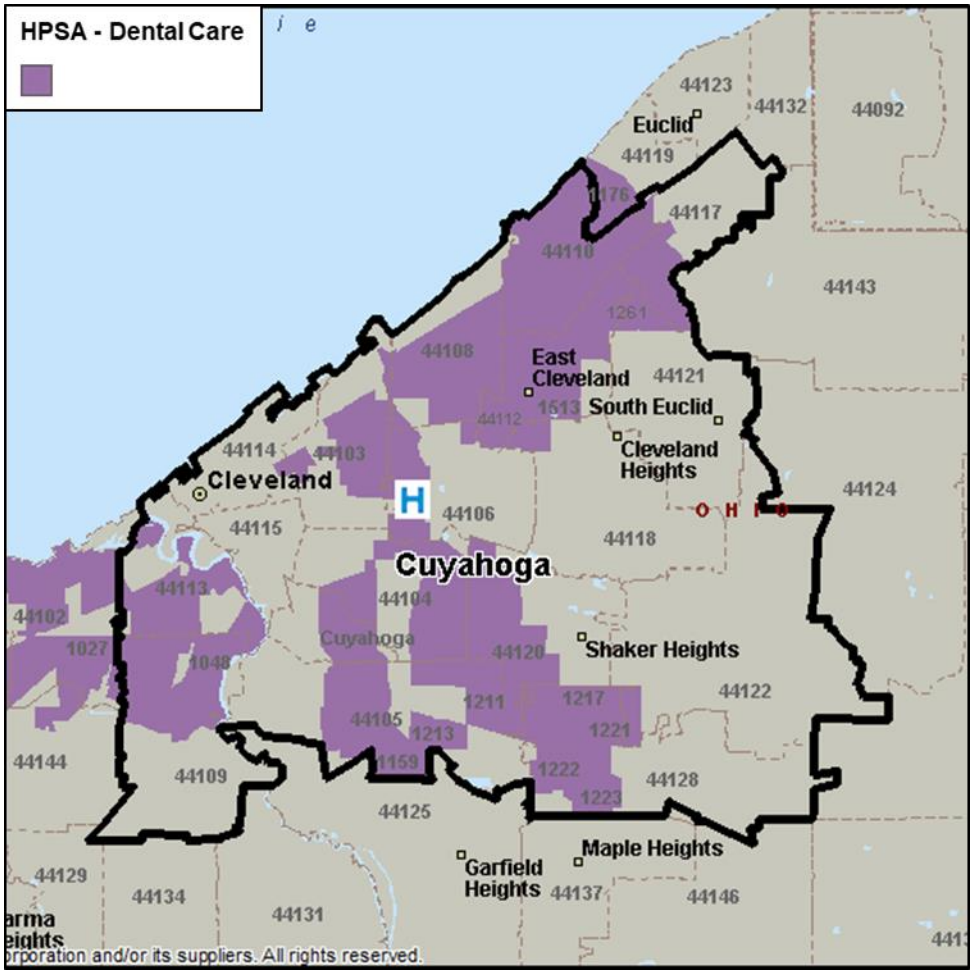
Health Professional Shortage Areas

Exhibit 39: Primary Care Health Professional Shortage Areas, 2018



Source: Health Resources and Services Administration, 2018.

Exhibit 40: Dental Care Health Professional Shortage Areas, 2018



Source: Health Resources and Services Administration, 2018.

Description

Exhibits 39 and 40 show the locations of federally-designated primary care and dental care HPSA Census Tracts.

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."[22]

Observations

- Many census tracts in the Local Neighborhoods Community have been designated as primary care and dental care HPSAs.

[22] 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

APPENDIX C – 7-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the 7-County community. The 7-County community is comprised of Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit counties in Ohio.

Demographics

Exhibit 41: Percent Change in Community Population by County, 2017-2022

County	Estimated Population 2017	Projected Population 2022	Percent Change 2017-2022
Cuyahoga County	1,255,781	1,245,537	-0.8%
Geauga County	89,096	89,889	0.9%
Lake County	228,823	229,379	0.2%
Lorain County	298,039	302,589	1.5%
Medina County	176,170	179,668	2.0%
Portage County	169,560	171,099	0.9%
Summit County	547,767	550,126	0.4%
7-County Community Total	**2,765,236**	**2,768,287**	**0.1%**

Source: Truven Market Expert, 2018.

Description

Exhibit 41 portrays the estimated population by county in 2017 and projected to 2022.

Observations

- Between 2017 and 2022, Cuyahoga County is projected to decrease in population by 0.8 percent.
- Population growth is anticipated for each of the other counties.

Exhibit 42: Percent Change in Population by Age/Sex Cohort, 2017-2022

Age/Sex Cohort	Estimated Population 2017	Projected Population 2022	Percent Change 2017 - 2022
0 - 17	587,436	565,099	-3.8%
Female 18 - 34	298,805	295,968	-0.9%
Male 18 - 34	299,393	302,468	1.0%
35 - 64	1,094,209	1,052,827	-3.8%
65+	485,393	551,925	13.7%
Community Total	**2,765,236**	**2,768,287**	**0.1%**

Source: Truven Market Expert, 2018.

Description

Exhibit 42 shows the community's population for certain age and sex cohorts in 2017, with projections to 2022.

Observations

- While the total community population is expected to increase slightly between 2017 and 2022, the number of persons aged 65 years and older is projected to increase by 13.7 percent.

- The growth of older populations is likely to lead to growing need for health services, since on an overall per-capita basis, older individuals typically need and use more services than younger persons.

Exhibit 43: Percent of Population Aged 65+ by ZIP Code, 2017

Source: Truven Market Expert, 2018, and Microsoft MapPoint.

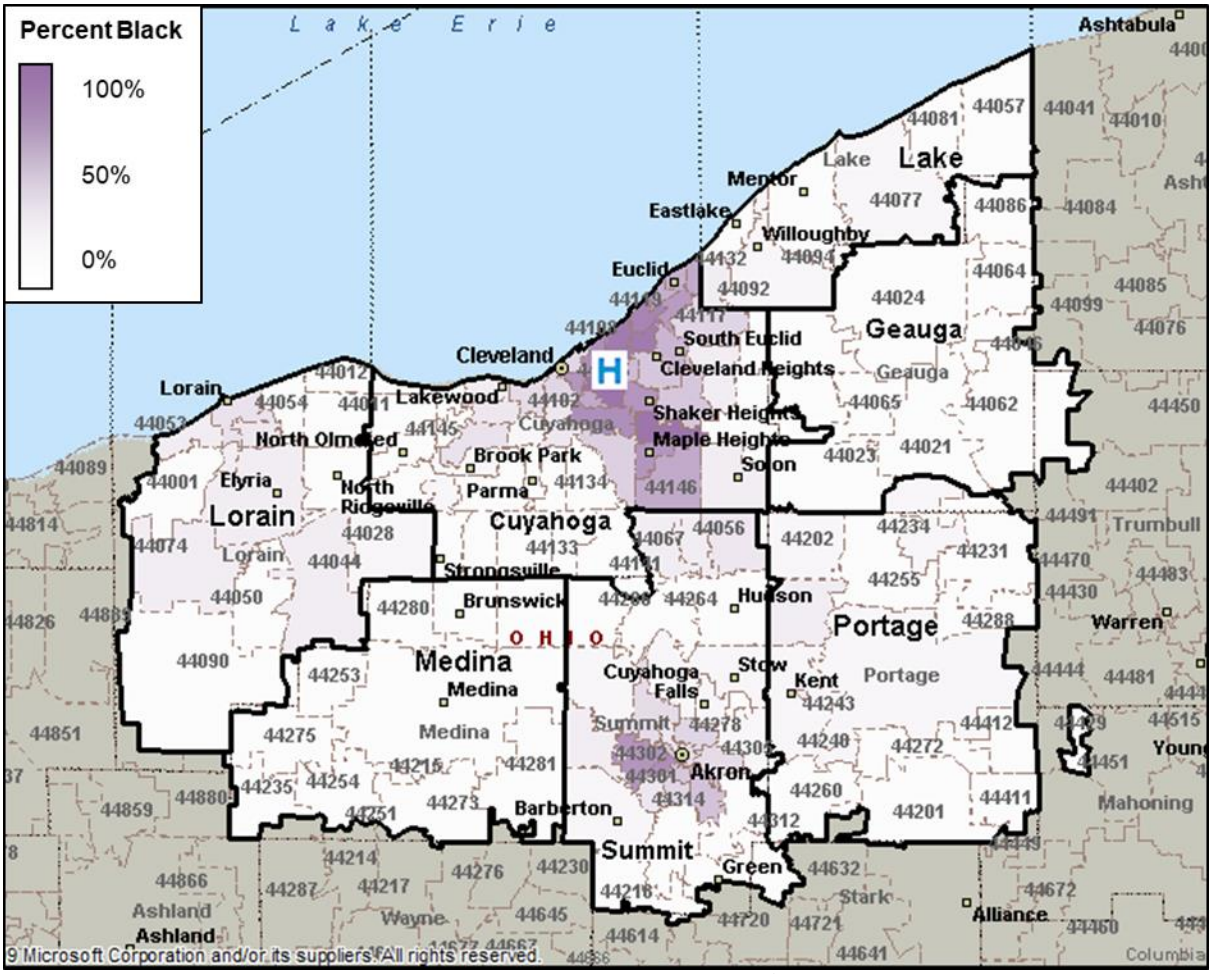
Description

Exhibit 43 portrays the percent of the population 65 years of age and older by ZIP code.

Observations

- In the 7-County community, 17.6 percent of the population was aged 65 and older.
- Lake County had the highest proportion of the population 65 years of age and older (19.2 percent), while Portage County had the lowest proportion (16.0 percent).

Exhibit 44: Percent of Population - Black, 2017



Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 44 portrays locations where the percentages of the population that are Black were highest in 2017.

Observations

- Cuyahoga County (29.4 percent) and Summit County (14.4 percent) had the highest proportions of Black residents.
- Geauga County (1.3 percent) and Medina County (1.5 percent) had the lowest proportions of Black residents.

Exhibit 45: Percent of Population – Hispanic (or Latino), 2017

Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 45 portrays locations where the percentages of the population that are Hispanic (or Latino) were highest in 2017.

Observations

- Lorain County (10.0 percent) and Cuyahoga County (5.8 percent) had the highest proportions of Hispanic (or Latino) residents.
- Geauga County (1.6 percent) and Portage County (1.9 percent) had the lowest proportions.

Exhibit 46: Other Socioeconomic Indicators, 2012-2016

Region	Population 25+ without High School Diploma	Population with a Disability	Population Linguistically Isolated
Cuyahoga County	11.5%	14.8%	4.2%
Geauga County	9.0%	10.5%	3.7%
Lake County	8.1%	12.2%	2.8%
Lorain County	10.9%	15.4%	2.6%
Medina County	6.4%	10.5%	1.2%
Portage County	8.1%	12.8%	1.8%
Summit County	9.0%	12.6%	2.4%
Ohio	**10.5%**	**13.8%**	**2.4%**
United States	**13.0%**	**12.5%**	**8.5%**

Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 46 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated, by county.

Observations

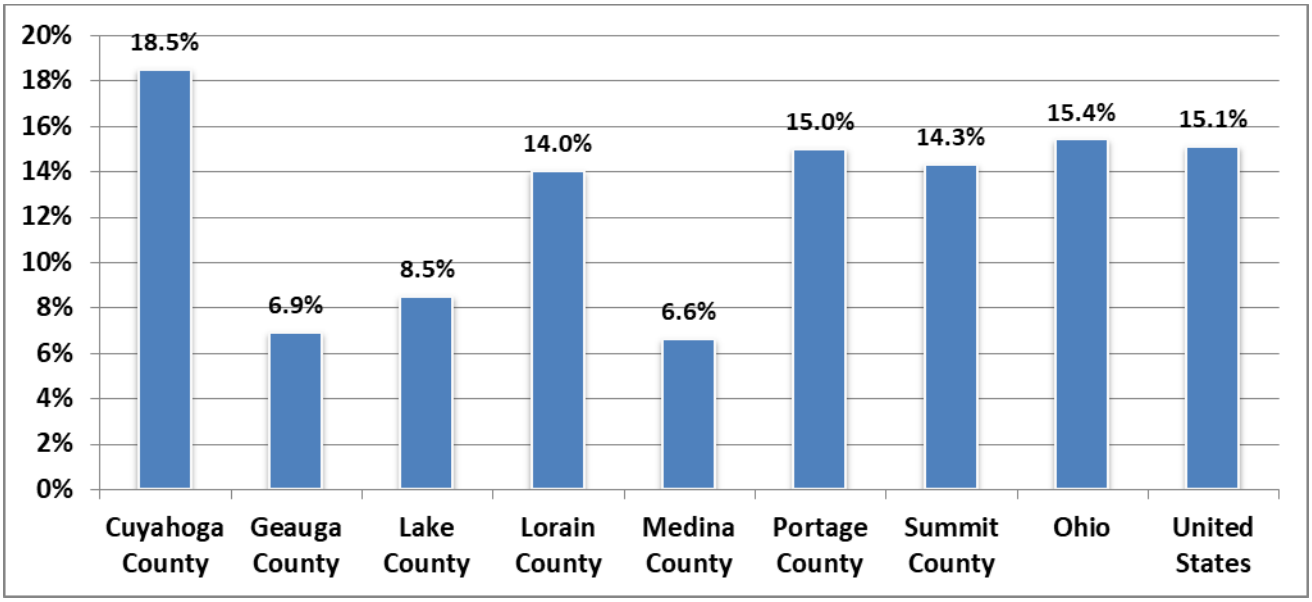
- Cuyahoga and Lorain counties had a higher percentage of residents aged 25 years and older without a high school diploma than the Ohio average.
- Cuyahoga and Lorain counties also had above average percentages of the population with a disability.
- Compared to Ohio (but not to the United States), Cuyahoga, Geauga, Lake, and Lorain counties all had a higher proportion of the population that is linguistically isolated. Linguistic isolation is defined as residents who speak a language other than English and speak English less than “very well.”

Economic indicators

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

People in Poverty

Exhibit 47: Percent of People in Poverty, 2012-2016



Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 47 portrays poverty rates by county.

Observations

- The poverty rate in Cuyahoga County was higher than Ohio and national averages throughout 2012-2016.
- All other counties in the 7-County community had rates below state and national averages.

Exhibit 48: Poverty Rates by Race and Ethnicity, 2012-2016

Measure	Total	White	Black	Asian	Hispanic (or Latino)
Cuyahoga County	18.5%	11.1%	33.3%	13.3%	30.4%
Geauga County	6.9%	6.5%	25.8%	5.2%	9.0%
Lake County	8.5%	7.6%	27.1%	8.2%	18.8%
Lorain County	14.0%	11.0%	36.5%	29.9%	25.4%
Medina County	6.6%	6.0%	32.7%	11.9%	10.6%
Portage County	15.0%	13.2%	37.9%	30.2%	28.0%
Summit County	14.3%	10.2%	32.9%	15.6%	18.3%
Ohio	**15.4%**	**12.3%**	**33.2%**	**13.4%**	**27.1%**
United States	**15.1%**	**12.4%**	**26.2%**	**12.3%**	**23.4%**

Source: U.S. Census, ACS 5-Year Estimates, 2017.

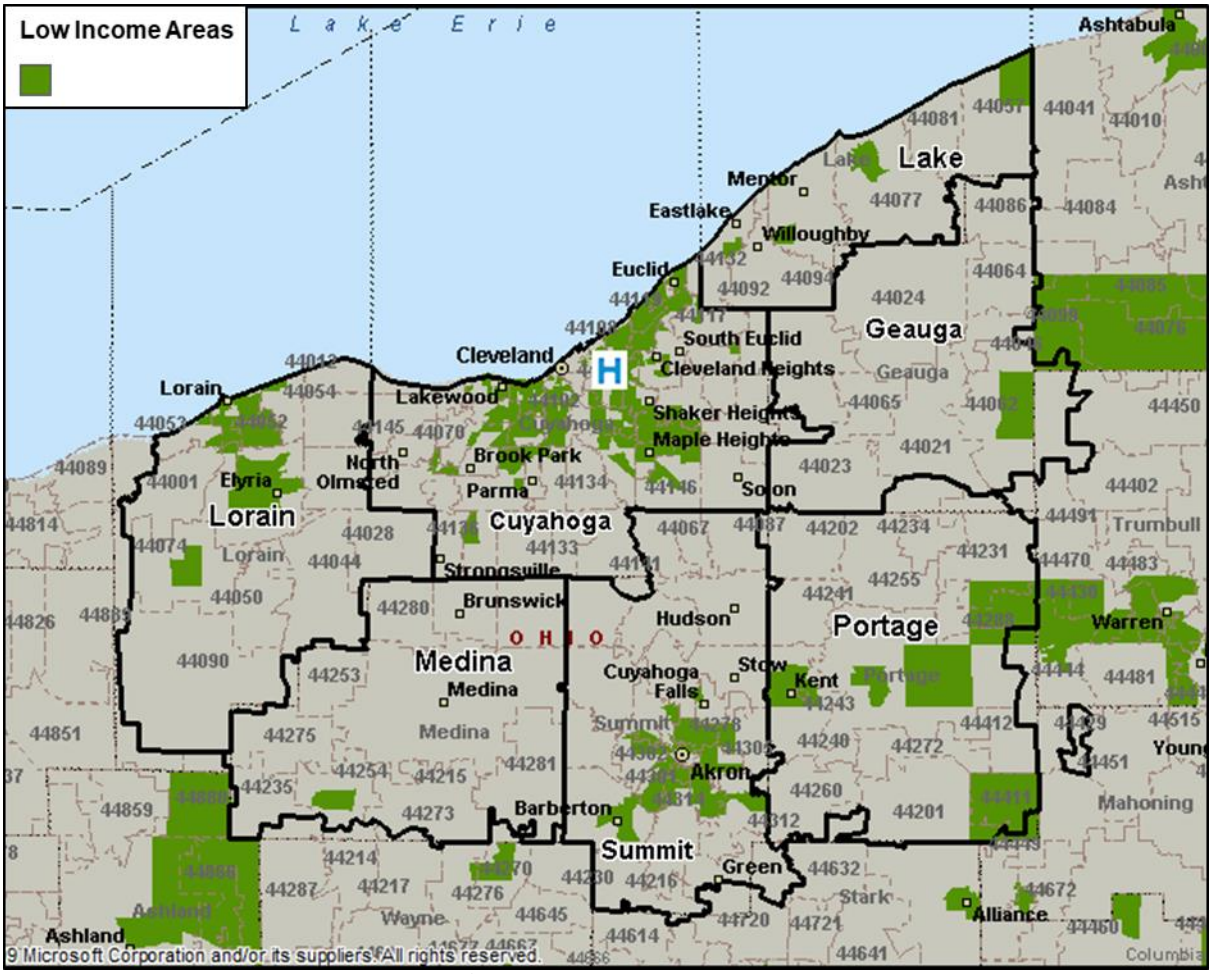
Description

Exhibit 48 portrays poverty rates by race and ethnicity.

Observations

- Poverty rates have been higher for Black and Hispanic (or Latino) residents than for Whites.

Exhibit 49: Low Income Census Tracts, 2017



Source: US Department of Agriculture Economic Research Service, ESRI, 2017.

Description

Exhibit 49 portrays the location of federally-designated low income census tracts.

Observations

- Low income census tracts have been most prevalent in Cuyahoga, Lorain, Portage, and Summit counties.

Unemployment

Exhibit 50: Unemployment Rates, 2013-2017

Area	2013	2014	2015	2016	2017
Cuyahoga County	7.0%	6.3%	5.2%	5.4%	5.9%
Geauga County	5.7%	5.0%	4.2%	4.4%	4.8%
Lake County	6.3%	5.5%	4.5%	4.8%	5.2%
Lorain County	7.4%	6.4%	5.6%	5.9%	6.2%
Medina County	5.8%	5.1%	4.1%	4.3%	4.7%
Portage County	7.7%	5.9%	4.9%	5.0%	5.0%
Summit County	7.6%	5.9%	5.0%	5.0%	5.1%
Ohio	**7.5%**	**5.8%**	**4.9%**	**4.9%**	**5.0%**
United States	**7.4%**	**6.2%**	**5.3%**	**4.9%**	**4.4%**

Source: Bureau of Labor Statistics, 2018.

Description

Exhibit 50 shows unemployment rates for 2013 through 2017 by county, with Ohio and national rates for comparison.

Observations

- Between 2012 and 2015, unemployment rates at the county, state, and national levels declined significantly. Between 2015 and 2017, unemployment rates increased slightly in each county.
- Rates in Cuyahoga, Lake, Lorain, and Summit counties were above Ohio and U.S. averages in 2017.
- Rates in Cuyahoga and Summit counties have been comparatively high in almost every year presented.

Insurance Status

Exhibit 51: Percent of the Population without Health Insurance, 2017-2022

County	Total Population 2017	Percent Uninsured 2017	Total Population 2022	Percent Uninsured 2022
Cuyahoga County	1,255,781	4.6%	1,245,537	3.9%
Geauga County	89,096	2.3%	89,889	2.1%
Lake County	228,823	2.6%	229,379	2.2%
Lorain County	298,039	3.7%	302,589	3.2%
Medina County	176,170	1.9%	179,668	1.6%
Portage County	169,560	4.0%	171,099	3.4%
Summit County	547,767	3.8%	550,126	3.3%
7-County Community Total	**2,765,236**	**3.9%**	**2,768,287**	**3.3%**

Source: Truven Market Expert, 2018.

Description

Exhibit 51 presents the estimated percent of population in community counties without health insurance (uninsured) in 2017 and with projections to 2022.

Observations

- In 2017, the average "uninsurance rate" of community counties was 3.9 percent. Residents of Cuyahoga and Portage counties had higher rates of uninsured residents.

- 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. Across the United States, uninsurance rates have fallen most in states that decided to expand Medicaid.[23]

[23] See: http://hrms.urban.org/briefs/Increase-in-Medicaid-under-the-ACA-reduces-uninsurance.html

Crime Rates

Exhibit 52: Crime Rates by Type and Jurisdiction, Per 100,000, 2016

Crime	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Violent Crime	694.9	36.4	214.1	150.9	47.0	101.6	300.0	**305.9**
Property Crime	2,977.7	436.6	1,514.8	1,369.6	682.1	1,649.7	2,825.9	**2,537.4**
Murder	15.1	2.4	1.1	4.5	1.7	3.3	6.8	**5.9**
Rape	57.6	9.7	19.6	33.4	9.2	12.6	59.7	**47.4**
Robbery	327.7	3.6	31.6	50.3	1.7	25.2	93.0	**111.1**
Aggravated Assault	294.5	20.6	161.8	62.7	34.4	60.4	140.4	**141.5**
Burglary	753.6	69.1	217.9	373.4	93.4	304.1	644.5	**573.5**
Larceny	1,742.1	346.9	1,244.7	930.8	577.9	1,298.5	2,008.0	**1,789.7**
Motor Vehicle Theft	482.0	20.6	52.3	65.3	10.9	47.1	173.4	**174.2**
Arson	33.6	2.4	5.4	9.0	2.9	7.3	22.7	**23.4**

Source: FBI, 2017.

Description

Exhibit 52 provides crime statistics. Light grey shading indicates rates that were higher (worse) than the Ohio average; dark grey shading indicates rates that were more than 50 percent higher than the Ohio average.

Observations

- 2016 crime rates in Cuyahoga County were comparitively high for nearly all types presented, and were more than 50 percent higher than the Ohio averages for violent crime, murder, robbery, aggravated assault, and motor vehicle theft.
- Rates for property crime, murder, rape, burglary, and larceny were comparitively high in Summit County, and the rate for aggravated assault was comparitively high in Lake County.
- Crime rates in Geauga, Lorain, Medina, and Portage counties were below Ohio averages for all types.

Housing Affordability

Exhibit 53: Percent of Rented Households Rent Burdened, 2013-2017

County	Occupied Units Paying Rent	Households Paying >30%	Rent Burden > 30% of Income
Cuyahoga County	203,368	102,500	50.4%
Geauga County	4,390	1,782	40.6%
Lake County	22,801	9,917	43.5%
Lorain County	31,076	16,092	51.8%
Medina County	12,793	5,175	40.5%
Portage County	17,986	9,513	52.9%
Summit County	71,639	34,333	47.9%
7-County Community Total	**364,053**	**179,312**	**49.3%**
Ohio	**1,453,379**	**678,101**	**46.7%**
United States	**39,799,272**	**20,138,321**	**50.6%**

Source: U.S. Census, ACS 5-Year Estimates, 2018.

Description

The U.S. Department of Housing and Urban Development ("HUD") has defined households that are "rent burdened" as those spending more than 30 percent of income on housing.[24] On that basis and based on data from the U.S. Census, Exhibit 53 portrays the percentage of rented households in each county that are rent burdened.

Observations

As stated by the Federal Reserve, "households that have little income left after paying rent may not be able to afford other necessities, such as food, clothes, health care, and transportation."[25]

- Across the 7-County community, over 49 percent of households have been designated as "rent burdened," a level above the Ohio average.
- The percentage of rented households rent burdened was highest in Portage, Lorain, and Cuyahoga counties.

[24] https://www.federalreserve.gov/econres/notes/feds-notes/assessing-the-severity-of-rent-burden-on-low-income-families-20171222.htm
[25] *Ibid.*

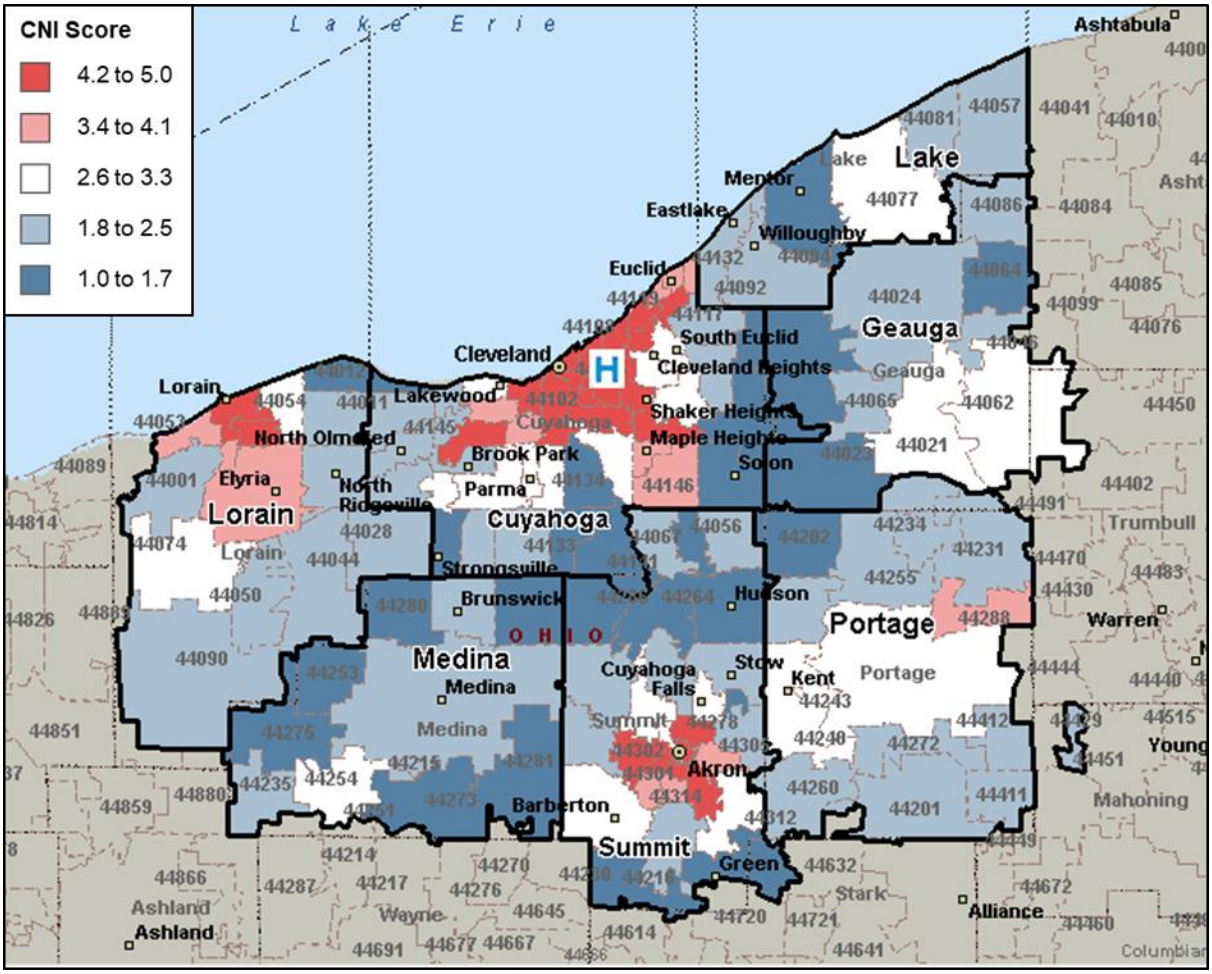
Dignity Health Community Need Index

Exhibit 54: Weighted Average Community Need Index™ Score by County, 2018

County	CNI Score
Cuyahoga County	3.3
Geauga County	1.9
Lake County	2.3
Lorain County	3.0
Medina County	1.7
Portage County	2.6
Summit County	2.7
7-County Average	**2.9**
Ohio Average	**2.9**

Source: Dignity Health, 2018.

Exhibit 55: Community Need Index™, 2018



Source: Microsoft MapPoint and Dignity Health, 2018.

Description

Exhibits 54 and 55 present the *Community Need Index*™ (CNI) score for each county and ZIP code in the 7-County community. Higher scores (e.g., 4.2 to 5.0) indicate the highest levels of community need. The index is calibrated such that 3.0 represents a U.S.-wide median score.

Dignity Health, a California-based hospital system, developed and published the CNI as a way to assess barriers to health care access. The index, available for every ZIP code in the United States, is derived from five social and economic indicators:

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

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

Observations

- At 2.9, the weighted average CNI score for the 7-County community is slightly below the U.S. median of 3.0.
- Cuyahoga County (3.3) and Lorain County (3.0) had the highest CNI scores.

Other Local Health Status and Access Indicators

This section assesses other health status and access indicators for the 7-County community. Data sources include:

(1) County Health Rankings
(2) Community Health Status Indicators, published by County Health Rankings
(3) Ohio Department of Health
(4) 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

Exhibit 56: County Health Rankings, 2015 and 2018
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

Measure	Cuyahoga County		Geauga County		Lake County		Lorain County		Medina County		Portage County		Summit County	
	2015	2018	2015	2018	2015	2018	2015	2018	2015	2018	2015	2018	2015	2018
Health Outcomes	65	60	3	2	19	13	28	38	4	4	17	31	42	46
Health Factors	50	62	4	4	14	9	43	37	3	5	33	24	36	44
Length of Life	51	48	3	2	15	20	31	33	4	5	16	21	40	44
Premature death	51	48	3	2	15	20	31	33	4	5	16	21	40	44
Quality of Life	72	67	2	2	29	11	30	47	5	4	22	41	53	52
Poor or fair health	32	46	1	3	23	7	41	54	4	2	14	19	30	20
Poor physical health days	24	24	12	5	20	7	22	59	7	2	22	32	32	39
Poor mental health days	49	12	13	4	22	5	20	45	13	2	10	32	26	22
Low birthweight	87	88	5	6	36	37	41	48	16	23	31	59	71	79
Health Behaviors	36	49	3	2	9	6	37	27	4	9	28	16	21	43
Adult smoking	14	50	8	3	27	9	34	34	4	8	68	46	14	27
Adult obesity	9	12	3	12	1	3	28	16	7	29	13	10	9	23
Food environment index	75	71	3	4	28	27	50	47	7	8	46	56	73	66
Physical inactivity	23	12	17	43	4	16	7	21	15	12	21	27	6	21
Access to exercise opportunities	3	2	11	13	9	12	14	9	8	8	25	23	1	5
Excessive drinking	33	22	54	56	63	49	45	34	34	79	31	63	41	47
Alcohol-impaired driving deaths	67	79	9	49	42	68	83	84	76	85	10	23	86	87
Sexually transmitted infections	87	86	3	4	57	47	72	71	18	6	61	19	80	79
Teen births	51	47	1	1	10	12	29	31	7	6	5	4	25	24
Clinical Care	6	4	9	32	25	16	31	18	5	5	37	45	24	14
Uninsured	53	49	31	76	10	24	13	15	4	6	28	20	38	40
Primary care physicians	2	2	22	21	47	41	25	27	29	24	58	57	6	7
Dentists	1	1	32	35	8	7	29	30	20	21	42	36	12	13
Mental health providers	2	3	19	18	26	24	37	28	24	37	21	21	11	12
Preventable hospital stays	33	25	14	45	40	40	58	58	49	17	43	51	38	29
Diabetes monitoring	65	62	19	29	60	46	52	40	13	33	25	42	69	67
Mammography screening	8	18	16	9	18	7	11	4	3	2	36	58	43	39
Social & Economic Factors	78	79	8	7	15	25	51	47	7	5	28	29	48	50
High school graduation	85	83	26	16	50	60	73	64	23	4	42	52	78	73
Some college	8	9	16	18	13	14	19	19	6	6	20	15	12	12
Unemployment	51	52	13	26	25	36	59	59	15	23	36	43	32	46
Children in poverty	68	72	6	5	9	14	47	42	3	4	26	23	38	50
Income inequality	86	85	41	28	30	30	59	60	8	11	64	61	80	78
Children in single-parent households	88	86	3	3	31	27	73	69	11	6	44	34	66	61
Social associations	79	77	77	73	83	80	70	69	75	76	78	79	60	59
Violent crime	85	85	7	5	69	63	70	66	47	6	39	46	80	81
Injury deaths	31	47	14	17	17	39	9	49	3	5	4	15	24	54
Physical Environment	68	86	61	72	58	11	63	40	70	62	81	50	82	81
Air pollution	63	87	70	51	65	4	57	42	67	64	79	51	75	84
Severe housing problems	87	87	59	53	34	41	69	68	33	31	77	78	71	72
Driving alone to work	7	7	11	8	85	77	48	32	79	80	28	24	81	68
Long commute - driving alone	45	48	78	79	50	45	58	59	79	74	64	66	36	35

Source: County Health Rankings, 2018.

Description

Exhibit 56 presents *County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation that incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[26] social and economic factors, and physical environment.[27] *County Health Rankings* is updated annually. *County Health Rankings 2018* relies on data from 2006 to 2017, with most data from 2011 to 2016.

The exhibit presents 2015 and 2018 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. Light grey shading indicates rankings in the bottom half of Ohio counties; dark grey shading indicates rankings in bottom quartile of Ohio counties.

Observations

- Throughout the 7-County community, rankings for the following issues were unfavorable:
    - excessive drinking,
    - alcohol-impaired driving deaths,
    - high school graduation rates,
    - social associations,
    - violent crime rates,
    - physical environment,
    - air pollution,
    - severe housing problems, and
    - long commute-driving alone.

[26]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.

[27]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 57: County Health Rankings Data Compared to Ohio and U.S. Averages, 2018
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

Indicator Category	Data	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	United States
Health Outcomes										
Length of Life	Years of potential life lost before age 75 per 100,000 population	8,037	4,243	6,569	7,137	5,438	6,579	7,691	**7,734**	6,700
Quality of Life	Percent of adults reporting fair or poor health	16.4%	12.0%	12.8%	16.9%	11.3%	15.1%	15.2%	**17.0%**	16.0%
	Average number of physically unhealthy days reported in past 30 days	3.7	3.3	3.4	4.0	3.0	3.7	3.8	**4.0**	3.7
	Average number of mentally unhealthy days reported in past 30 days	3.7	3.6	3.6	4.0	3.5	3.9	3.9	**4.3**	3.8
	Percent of live births with low birthweight (<2500 grams)	10.6%	5.8%	7.4%	7.8%	7.0%	8.2%	9.3%	**8.6%**	8.0%
Health Factors										
Health Behaviors										
Adult Smoking	Percent of adults that report smoking >= 100 cigarettes and currently smoking	20.6%	15.7%	17.6%	19.9%	17.3%	20.4%	19.5%	**22.5%**	17.0%
Adult Obesity	Percent of adults that report a BMI >= 30	29.9%	29.9%	28.8%	30.4%	31.6%	29.8%	31.2%	**31.6%**	28.0%
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	7.0	8.7	8.0	7.6	8.5	7.4	7.2	**6.6**	7.7
Physical Inactivity	Percent of adults aged 20 and over reporting no leisure-time physical activity	24.3%	27.5%	24.7%	25.4%	24.3%	26.0%	25.4%	**25.7%**	23.0%
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	96.1%	87.6%	88.7%	92.2%	93.2%	83.6%	95.0%	**84.7%**	83.0%
Excessive Drinking	Binge plus heavy drinking	16.8%	18.2%	17.9%	17.3%	19.7%	18.5%	17.9%	**19.1%**	18.0%
Alcohol-Impaired Driving Deaths	Percent of driving deaths with alcohol involvement	44.0%	33.3%	37.7%	46.4%	46.7%	27.9%	50.0%	**34.3%**	29.0%
STDs	Chlamydia rate per 100,000 population	720	162	277	378	172	208	495	**489**	479
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	30.3	8.1	17.9	27.8	12.4	11.4	24.9	**27.6**	27.0
Clinical Care										
Uninsured	Percent of population under age 65 without health insurance	7.8%	9.1%	7.0%	6.5%	6.0%	6.9%	7.5%	**7.7%**	11.0%
Primary Care Physicians	Ratio of population to primary care physicians	898:1	1,448:1	2,142:1	1,744:1	1,633:1	2,459:1	1,025:1	**1,307:1**	1,320:1
Dentists	Ratio of population to dentists	979:1	2,294:1	1,465:1	2,142:1	1,947:1	2,313:1	1,642:1	**1,656:1**	1,480:1
Mental Health Providers	Ratio of population to mental health providers	356:1	547:1	676:1	772:1	900:1	645:1	472:1	**561:1**	470:1
Preventable Hospital Stays	Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	53	61	59	65	51	62	55	**57**	49
Diabetes Screening	Percent of diabetic Medicare enrollees that receive HbA1c monitoring	83.8%	86.9%	85.5%	86.0%	86.4%	85.8%	83.0%	**85.1%**	85.0%
Mammography Screening	Percent of female Medicare enrollees, ages 67-69, that receive mammography screening	64.7%	66.4%	67.6%	67.9%	68.6%	58.0%	60.5%	**61.2%**	63.0%

Source: County Health Rankings, 2018.

Exhibit 57: County Health Rankings Data Compared to Ohio and U.S. Averages, 2018 (*continued*)
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

Indicator Category	Data	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	United States
Health Factors										
Social & Economic Factors										
High School Graduation	Percent of ninth-grade cohort that graduates in four years	74.8%	94.2%	87.3%	86.6%	95.8%	88.2%	82.8%	**81.2%**	83.0%
Some College	Percent of adults aged 25-44 years with some post-secondary education	68.7%	65.4%	67.0%	64.9%	71.6%	66.7%	67.2%	**64.5%**	65.0%
Unemployment	Percent of population age 16+ unemployed but seeking work	5.4%	4.4%	4.8%	5.9%	4.3%	5.0%	5.0%	**4.9%**	4.9%
Children in Poverty	Percent of children under age 18 in poverty	26.4%	8.3%	12.5%	17.9%	8.1%	15.0%	19.7%	**20.4%**	20.0%
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	5.6	4.0	4.0	4.5	3.7	4.5	4.9	**4.8**	5.0
Children in Single-Parent Households	Percent of children that live in a household headed by single parent	45.0%	15.4%	28.5%	37.4%	20.5%	30.6%	36.1%	**35.7%**	34.0%
Social Associations	Number of associations per 10,000 population	9.3	9.8	9.1	10.2	9.5	9.1	11.5	**11.3**	9.3
Violent Crime	Number of reported violent crime offenses per 100,000 population	589	43	174	180	50	105	378	**290**	380
Injury Deaths	Injury mortality per 100,000	76.4	59.8	71.8	77.0	53.1	59.7	78.7	**75.5**	65.0
Physical Environment										
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	12.9	11.4	10.7	11.3	11.7	11.4	12.3	**11.3**	8.7
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	18.5%	13.4%	12.6%	14.6%	11.9%	15.5%	14.9%	**15.0%**	19.0%
Driving Alone to Work	Percent of the workforce that drives alone to work	79.8%	80.3%	87.4%	84.1%	87.6%	83.6%	86.5%	**83.4%**	76.0%
Long Commute – Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	32.6%	46.1%	32.3%	35.6%	43.7%	37.5%	27.3%	**30.0%**	35.0%

Source: County Health Rankings, 2018.

Description

Exhibit 57 provides data that underlie the County Health Rankings.[28] The exhibit also includes Ohio and national averages. Light grey shading highlights indicators found to be worse than the Ohio average; dark grey shading highlights indicators more than 50 percent worse than the Ohio average.

Observations

- The following indicators are comparatively unfavorable in at least three of the counties:
    - Air pollution (average daily PM2.5)
    - Injury mortality rate
    - Percent of children in single-parent households
    - Percent of driving deaths with alcohol involvement
    - Percent workers drive alone to work
    - Percent workers with long commute who drive alone
    - Preventable hospitalizations rate
    - Ratio of population to dentists
    - Ratio of population to mental health professionals
    - Ratio of population to primary care physicians
    - Social associations rate
    - Unemployment

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

Community Health Status Indicators

Exhibit 58: Community Health Status Indicators, 2018
(Light Grey Shading Denotes Bottom Half of Peer Counties; Dark Grey Denotes Bottom Quartile)

Category	Indicator	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County
Length of Life	Years of Potential Life Lost Rate							
Quality of Life	% Fair/Poor Health							
	Physically Unhealthy Days							
	Mentally Unhealthy Days							
	% Births - Low Birth Weight							
Health Behaviors	% Smokers							
	% Obese							
	Food Environment Index							
	% Physically Inactive							
	% With Access to Exercise Opportunities							
	% Excessive Drinking							
	% Driving Deaths Alcohol-Impaired							
	Chlamydia Rate							
	Teen Birth Rate							
Clinical Care	% Uninsured							
	Primary Care Physicians Rate							
	Dentist Rate							
	Mental Health Professionals Rate							
	Preventable Hosp. Rate							
	% Receiving HbA1c Screening							
	% Mammography Screening							
Social & Economic Factors	High School Graduation Rate							
	% Some College							
	% Unemployed							
	% Children in Poverty							
	Income Ratio							
	% Children in Single-Parent Households							
	Social Association Rate							
	Violent Crime Rate							
	Injury Death Rate							
Physical Environment	Average Daily PM2.5							
	% Severe Housing Problems							
	% Drive Alone to Work							
	% Long Commute - Drives Alone							

Source: Community Health Status Indicators, 2018.

Description

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

This *Community Health Status Indicators* analysis formerly was available from the CDC. Because comparisons with peer counties (rather than only counties in the same state) are

meaningful, Verité Healthcare Consulting rebuilt the CHSI comparisons for this and other CHNAs.

Exhibit 58 compares each county to its peer counties and highlights community health issues found to rank in the bottom half and bottom quartile of the counties included in the analysis. Light grey shading indicates rankings in the bottom half of peer counties; dark grey shading indicates rankings in the bottom quartile of peer counties.

Observations

- The CHSI data indicate that the following indicators compare unfavorably in at least six of the counties:
    - Percent of adults who smoke
    - Percent of driving deaths with alcohol involvement
    - Preventable hospitalizations rate
    - Diabetes monitoring
    - Unemployment
    - Air pollution (average daily PM2.5)
- The following indicators compare unfavorably in at least four community counties:
    - Percent of births with low birth weight
    - Percent of adults obese
    - Food environment index
    - Percent of adults physically inactive
    - Excessive drinking
    - High school graduation rate
    - Income ratio
    - Social associations rate
    - Percent workers who drive alone to work

Ohio Department of Health

Exhibit 59: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Specific Causes of Death	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
All Causes of Death	827.3	676.2	787.8	790.0	661.7	809.9	845.1	**832.3**
All other forms of chronic ischemic heart disease	52.3	50.7	65.1	52.1	46.2	63.7	47.8	**53.2**
Other chronic obstructive pulmonary disease	33.6	28.8	37.7	52.6	35.2	43.2	39.0	**43.7**
Organic dementia	46.5	50.2	46.5	33.1	40.5	30.4	41.3	**38.4**
Alzheimer's disease	20.5	23.8	31.1	31.9	22.0	28.8	37.5	**33.4**
Acute myocardial infarction	24.4	29.9	19.4	25.4	21.7	22.9	29.5	**32.1**
Accidental poisoning by and exposure to drugs and other biological substances	44.6	36.0	46.4	52.0	26.5	30.1	57.8	**36.8**
Diabetes mellitus	25.9	21.2	11.8	17.8	21.4	28.7	23.1	**24.6**
Conduction disorders and cardiac dysrhythmias	21.0	26.6	20.7	17.9	20.1	15.6	19.6	**20.2**
Congestive heart failure	17.8	14.1	18.9	16.9	25.3	22.0	18.8	**19.5**
Stroke, not specified as hemorrhage or infarction	16.1	9.6	15.6	14.3	11.0	15.0	15.9	**17.8**
Atherosclerotic cardiovascular disease	34.5	13.7	37.0	16.0	N/A	12.8	9.1	**15.4**
Renal failure	15.3	9.9	11.2	12.4	9.8	13.0	13.3	**15.1**
Septicemia	17.1	7.9	13.4	13.9	9.5	13.5	13.5	**13.7**
Pneumonia	9.3	15.8	11.9	14.5	5.8	14.0	10.0	**13.3**
All other diseases of nervous system	9.6	11.0	9.5	10.6	13.0	10.1	12.2	**12.3**
Hypertensive heart disease	15.0	N/A	8.6	7.0	10.1	10.4	21.3	**11.9**
All other diseases of respiratory system	8.3	N/A	6.7	9.5	10.5	7.7	10.7	**11.4**
Other cerebrovascular diseases and their sequelae	7.7	N/A	9.2	7.3	7.7	9.5	13.0	**10.4**
Parkinson's disease	6.9	10.6	6.3	10.8	9.4	8.7	7.9	**8.7**
Intentional self-harm (suicide) by discharge of firearms	6.2	N/A	6.4	7.6	9.4	8.6	7.0	**7.4**
Alcoholic liver disease	5.8	N/A	6.5	6.8	N/A	7.3	6.8	**5.1**
Unspecified fall	0.7	N/A	3.3	N/A	N/A	N/A	2.6	**4.7**

Source: Ohio Department of Health, 2017.

Description

The Ohio Department of Health maintains a database that includes county-level mortality rates and cancer incidence rates. Exhibit 59 provides age-adjusted mortality rates for selected causes of death in 2016.

Observations

- The following indicators compared unfavorably in at least three community counties:
    - Organic dementia
    - Accidental poisoning by and exposure to drugs and other biological substances
    - Conduction disorders and cardiac dysrhythmias
    - Atherosclerotic cardiovascular disease
    - Pneumonia
    - Parkinson’s disease
    - Intentional self-harm (suicide) by discharge of firearms
    - Alcoholic liver disease

Exhibit 60: Age-Adjusted Cancer Mortality Rates per 100,000 Population, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Cancer Site/Type	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
All Cancer Types	180.0	144.3	170.2	172.9	144.3	176.4	170.1	**173.8**
Lung and Bronchus	44.7	29.5	51.2	49.4	35.6	40.9	42.8	**47.9**
Prostate	23.2	21.1	19.3	18.0	24.1	12.8	20.5	**19.8**
Other Sites/Types	21.5	23.9	13.5	19.6	15.4	15.4	20.6	**19.6**
Colon & Rectum	14.5	6.8	14.6	16.0	12.2	18.7	17.0	**15.5**
Breast	12.7	9.5	10.8	13.9	8.7	14.7	14.4	**12.0**
Pancreas	13.1	13.1	9.3	11.2	9.3	11.8	14.0	**11.5**
Ovary	8.9	N/A	9.7	5.9	14.8	12.9	7.5	**7.8**
Leukemia	7.9	N/A	8.3	7.4	5.4	5.3	6.9	**6.9**
Liver & Intrahepatic Bile Duct	7.6	7.4	6.5	6.5	4.8	8.2	4.9	**6.1**
Non-Hodgkins Lymphoma	5.7	N/A	5.9	6.6	5.0	5.9	6.3	**5.9**
Uterus	6.9	N/A	N/A	4.4	N/A	N/A	3.3	**5.2**
Esophagus	4.7	N/A	4.6	5.3	5.3	7.4	4.0	**5.1**
Bladder	6.2	N/A	8.9	4.3	5.9	N/A	3.7	**5.1**
Brain and Other CNS	4.1	N/A	5.6	2.6	N/A	5.3	4.9	**4.8**
Kidney & Renal Pelvis	3.4	N/A	4.2	3.5	N/A	N/A	2.9	**3.8**
Multiple Myeloma	3.3	N/A	3.0	3.3	N/A	N/A	2.9	**3.3**
Oral Cavity & Pharynx	3.1	N/A	2.9	3.6	N/A	N/A	2.8	**2.9**
Melanoma of Skin	1.4	N/A	N/A	N/A	N/A	N/A	1.7	**2.6**
Stomach	4.1	N/A	N/A	N/A	N/A	N/A	2.2	**2.5**
Cervix	3.3	N/A	N/A	N/A	N/A	N/A	N/A	**2.1**
Larynx	1.0	N/A	N/A	N/A	N/A	N/A	1.8	**1.2**
Testis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.4**
Thyroid	0.8	N/A	N/A	N/A	N/A	N/A	N/A	**0.4**

Source: Ohio Department of Health, 2017.

Description

Exhibit 60 provides age-adjusted mortality rates for selected types of cancer in 2016.

Observations

- Overall cancer mortality rates in Cuyahoga and Portage counties were higher than the Ohio average.

Exhibit 61: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2011-2015 (Light Grey Shading Denotes Indicators Worse than Ohio Average)

Cancer Site/Type	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
All Cancer Types	483.2	432.2	486.1	463.7	471.9	466.8	451.0	**461.6**
Prostate	131.7	99.2	100.9	122.6	124.5	113.1	111.8	**108.0**
Lung and Bronchus	65.6	48.3	70.4	69.0	60.0	67.1	65.4	**69.3**
Breast	73.1	68.5	74.7	68.6	68.9	65.9	69.2	**68.0**
Colon & Rectum	43.4	38.7	43.2	41.2	39.9	40.3	37.0	**41.7**
Other Sites/Types	39.5	31.0	39.5	33.3	34.9	37.2	37.9	**36.4**
Uterus	32.5	30.9	32.6	27.1	27.4	28.3	26.9	**29.2**
Bladder	20.9	18.1	26.5	23.0	23.4	25.7	22.2	**21.9**
Melanoma of Skin	16.8	24.3	23.2	20.2	26.8	25.2	22.4	**21.7**
Non-Hodgkins Lymphoma	20.1	25.8	20.9	18.6	22.3	19.6	18.5	**19.0**
Kidney & Renal Pelvis	16.9	12.5	18.4	18.7	18.3	13.2	15.0	**16.8**
Thyroid	16.4	19.4	18.4	17.5	16.4	14.7	13.9	**14.8**
Pancreas	13.8	13.9	12.4	14.4	12.7	13.6	12.8	**12.7**
Leukemia	12.7	12.2	14.0	10.6	16.0	13.5	12.2	**12.2**
Oral Cavity & Pharynx	11.1	11.8	11.8	10.5	9.1	12.2	11.1	**11.7**
Ovary	12.2	11.1	13.1	8.2	13.5	13.2	10.6	**11.4**
Cervix	6.6	4.7	4.8	8.3	3.4	6.6	6.6	**7.6**
Brain and Other CNS	6.7	6.3	8.2	7.0	7.6	8.5	7.0	**6.9**
Liver & Intrahepatic Bile Duct	8.9	5.3	5.7	6.2	5.6	6.1	6.0	**6.7**
Stomach	7.9	4.7	5.8	7.1	6.5	5.4	6.0	**6.4**
Multiple Myeloma	7.4	6.2	5.1	4.7	5.4	5.0	5.4	**5.8**
Testis	6.8	7.9	8.3	7.4	8.5	7.7	6.3	**5.8**
Esophagus	5.1	3.3	4.3	4.4	4.4	6.2	5.4	**5.1**
Larynx	4.3	2.4	3.3	3.6	4.0	3.1	3.6	**4.1**
Hodgkins Lymphoma	3.3	4.0	3.5	2.3	3.6	2.3	2.7	**2.7**

Source: Ohio Department of Health, 2016.

Description

Exhibit 61 presents age-adjusted cancer incidence rates by county.

Observations

- Overall cancer incidence rates in Cuyahoga, Lake, Lorain, Medina, and Portage counties were higher than the Ohio average.

Exhibit 62: Communicable Disease Incidence Rates per 100,000 Population, 2017 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Indicator	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Living with diagnosis of HIV infection (2016)	373.2	45.7	76.5	114.9	49.7	56.8	166.8	**199.5**
Gonorrhea	408.5	24.5	57.3	171.0	38.4	64.2	209.7	**206.6**
Chlamydia	884.8	166.9	303.1	487.0	218.4	335.3	587.6	**528.9**
Total Syphilis	29.8	1.1	6.1	12.4	2.8	8.6	14.8	**16.4**
Tuberculosis	2.2	-	0.4	2.3	0.6	1.2	0.6	**1.3**

Source: Ohio Department of Health, 2018.

Description

Exhibit 62 presents incidence rates for various communicable diseases in the community.

Observations

- Cuyahoga County rates for all indicators were more than 50 percent worse than Ohio averages.
- Summit County compared unfavorably for gonorrhea and chlamydia incidence.
- Lorain County compared unfavorably for tuberculosis.

Exhibit 63: Maternal and Child Health Indicators, 2014-2018
(Light Grey Shading Denotes Indicators Worse than Ohio Average)

Indicator	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Low Birth Weight Percent	8.5%	5.2%	6.0%	7.0%	5.9%	6.8%	7.6%	**7.2%**
Very Low Birth Weight Percent	2.2%	0.9%	1.3%	1.4%	0.9%	1.5%	1.6%	**1.6%**
Births to Unmarried Mothers	51.7%	16.2%	35.9%	48.4%	24.9%	36.5%	42.9%	**43.2%**
Preterm Births Percent	9.5%	6.6%	7.7%	8.3%	7.6%	8.1%	8.7%	**8.7%**
Very Preterm Births Percent	2.5%	1.2%	1.5%	1.6%	1.1%	1.8%	1.9%	**1.8%**

Source: Ohio Department of Health, 2018.

Description

Exhibit 63 presents various maternal and infant health indicators.

Observations

- All Cuyahoga County indicators were worse than Ohio averages.
- Summit County compared unfavorably for all indicators except births to unmarried mothers.
- Lorain County compared unfavorably for births to unmarried mothers, and Portage County compared unfavorably for very preterm births.

Exhibit 64: Infant Mortality Rates by County, 2010-2016 and for Ohio, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average)

Indicator	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Overall Infant Mortality Rate	9.3	4.5	4.3	5.9	3.8	5.7	7.4	**7.4**
Black Infant Mortality Rate	16.3	N/A	N/A	10.9	N/A	N/A	13.4	**15.2**
Hispanic Infant Mortality Rate	6.0	N/A	N/A	6.0	N/A	N/A	N/A	**7.3**
White Infant Mortality Rate	5.2	N/A	N/A	5.1	N/A	N/A	5.6	**5.8**

Source: County Health Rankings, 2018 and Ohio Department of Health, 2017 (for Ohio-wide averages).

Description

Exhibit 64 presents infant mortality rates by race and ethnicity by county and for Ohio.

Observations

- The overall infant mortality rate and the Black infant mortality rate in Cuyahoga County were higher than the Ohio averages.
- As documented by many, infant mortality rates have been particularly high for Black infants across Ohio.

Drug Poisoning Mortality

Exhibit 65: Drug Poisoning Mortality per 100,000, 2013-2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average)

County	2013	2014	2015	2016	2017
Cuyahoga County	21.9	22.3	23.5	44.2	48.4
Geauga County	13.5	14.8	16.0	22.6	23.5
Lake County	19.5	22.9	22.3	39.0	39.1
Lorain County	23.9	22.7	21.9	43.4	40.2
Medina County	11.0	12.1	17.8	22.3	23.4
Portage County	14.1	18.4	20.5	25.9	23.1
Summit County	15.7	22.5	32.6	54.7	43.7
Ohio	**20.3**	**23.7**	**28.5**	**37.3**	**43.8**
United States	**13.9**	**14.8**	**16.3**	**19.7**	**21.6**

Sources: Centers for Disease Control and Prevention, 2018.
Note: Rates are not age-adjusted.

Description

Exhibit 65 portrays annual drug poisoning mortality rates per 100,000 (2013 through 2017) by county, Ohio, and the United States.

Mortality data in Exhibit 65 were classified using ICD-10 and include drug poisoning deaths where the intent was: unintentional, suicide, homicide, or "undetermined."

Observations

- Per-capita drug poisoning deaths have increased annually in all counties and regions between 2013 and 2017.
- Mortality rates in each county exceeded the United States rate in 2017.

Behavioral Risk Factor Surveillance System

Exhibit 66: Behavioral Risk Factor Surveillance System, Chronic Conditions, 2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Total Population 18+	% Arthritis	% Asthma	% Depression	% Diabetes	% Heart Disease	% Heart Failure	% High Blood Pressure	% High Cholesterol	% Adult Smoking	% COPD	% Back Pain
Cuyahoga County	989,879	24.3%	12.3%	19.1%	17.9%	10.7%	3.9%	33.5%	26.2%	27.4%	6.0%	30.3%
Geauga County	70,088	23.0%	10.1%	16.5%	13.7%	9.7%	4.3%	30.0%	26.1%	24.1%	5.0%	26.9%
Lake County	182,858	23.6%	11.1%	17.9%	15.1%	10.9%	4.5%	32.6%	25.4%	24.4%	5.4%	28.4%
Lorain County	233,469	24.5%	11.5%	18.5%	15.0%	10.6%	4.7%	31.5%	25.1%	26.8%	6.0%	30.9%
Medina County	137,882	22.1%	10.6%	16.8%	14.4%	10.1%	4.0%	30.2%	24.8%	23.9%	4.8%	27.4%
Portage County	138,586	21.5%	11.0%	17.4%	13.6%	9.9%	4.1%	28.8%	23.3%	26.8%	5.7%	29.2%
Summit County	430,679	24.4%	11.6%	18.4%	14.7%	10.6%	4.3%	30.5%	24.8%	26.2%	5.7%	30.3%
7-County Average	**2,183,441**	**23.9%**	**11.7%**	**18.5%**	**16.1%**	**10.5%**	**4.1%**	**32.0%**	**25.4%**	**26.5%**	**5.7%**	**29.9%**
Ohio Average	**9,044,061**	**24.2%**	**11.9%**	**19.2%**	**15.7%**	**10.7%**	**4.5%**	**31.8%**	**25.0%**	**27.5%**	**6.0%**	**31.1%**

Source: Truven Market Expert/Behavioral Risk Factor Surveillance System, 2018.

Description

The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) gathers data through a telephone survey regarding health risk behaviors, healthcare access, and preventive health measures. Data are collected for the entire United States. Analysis of BRFSS data can identify localized health issues, trends, and health disparities, and can enable county, state, or nation-wide comparisons.

Exhibit 66 depicts BRFSS data for each county in the 7-County community and compared to the averages for Ohio.

Observations

- 7-County community averages for the incidence of diabetes, high blood pressure, and high cholesterol were worse than the Ohio averages.

- At least three community counties compared unfavorably for incidence of arthritis and high cholesterol.

Ambulatory Care Sensitive Conditions

Exhibit 67: PQI (ACSC) Rates per 100,000, 2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure
Cuyahoga County	85	578	157	963	112	787
Geauga County	19	775	92	492	22	489
Lake County	53	482	91	966	58	654
Lorain County	80	620	131	1,089	66	666
Medina County	55	614	83	531	42	489
Portage County	39	542	94	425	44	503
Summit County	67	653	104	602	51	574
7-County Average	**72**	**595**	**127**	**830**	**79**	**675**
Ohio Average	**70**	**595**	**120**	**696**	**72**	**584**
United States Average	69	351	102	481	49	322

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Exhibit 67: PQI (ACSC) Rates per 100,000, 2017 (*continued*)
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Low Birth Weight	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Uncontrolled Diabetes	Young Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Cuyahoga County	16	293	265	244	78	67	47
Geauga County	22	220	290	165	18	10	26
Lake County	14	262	252	306	53	43	27
Lorain County	9	284	293	231	51	45	32
Medina County	14	218	184	200	34	11	27
Portage County	39	174	229	163	36	25	33
Summit County	53	226	236	206	48	27	29
7-County Average	**23**	**262**	**255**	**230**	**60**	**47**	**37**
Ohio Average	**18**	**218**	**238**	**198**	**50**	**36**	**36**
United States Average	N/A	130	250	156	13	41	17

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Description

Exhibit 67 provides 2017 PQI rates (per 100,000 persons) for counties in the 7-County community – with comparisons to Ohio averages.

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."[29] 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, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

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

Observations

- The rates of admissions for ACSC in the 7-County community exceeded Ohio and national averages for all conditions.

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

Exhibit 68: Ratio of PQI Rates for 7-County Community and Ohio, 2017

Indicator	Community Averages	Ohio Averages	Ratio: 7-County / Ohio
Young Adult Asthma	47.4	35.7	1.33
Low Birth Weight	23.4	18.1	1.29
Dehydration	261.6	218.3	1.20
Chronic Obstructive Pulmonary Disease	830.0	695.6	1.19
Uncontrolled Diabetes	59.7	50.2	1.19
Urinary Tract Infection	229.9	197.5	1.16
Congestive Heart Failure	674.7	584.2	1.16
Hypertension	78.9	71.6	1.10
Bacterial Pneumonia	254.7	238.4	1.07
Diabetes Long-Term Complications	127.5	120.2	1.06
Lower-Extremity Amputation Among Patients with Diabetes	37.4	36.3	1.03
Diabetes Short-Term Complications	71.5	70.1	1.02
Perforated Appendix	594.8	594.7	1.00

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Description

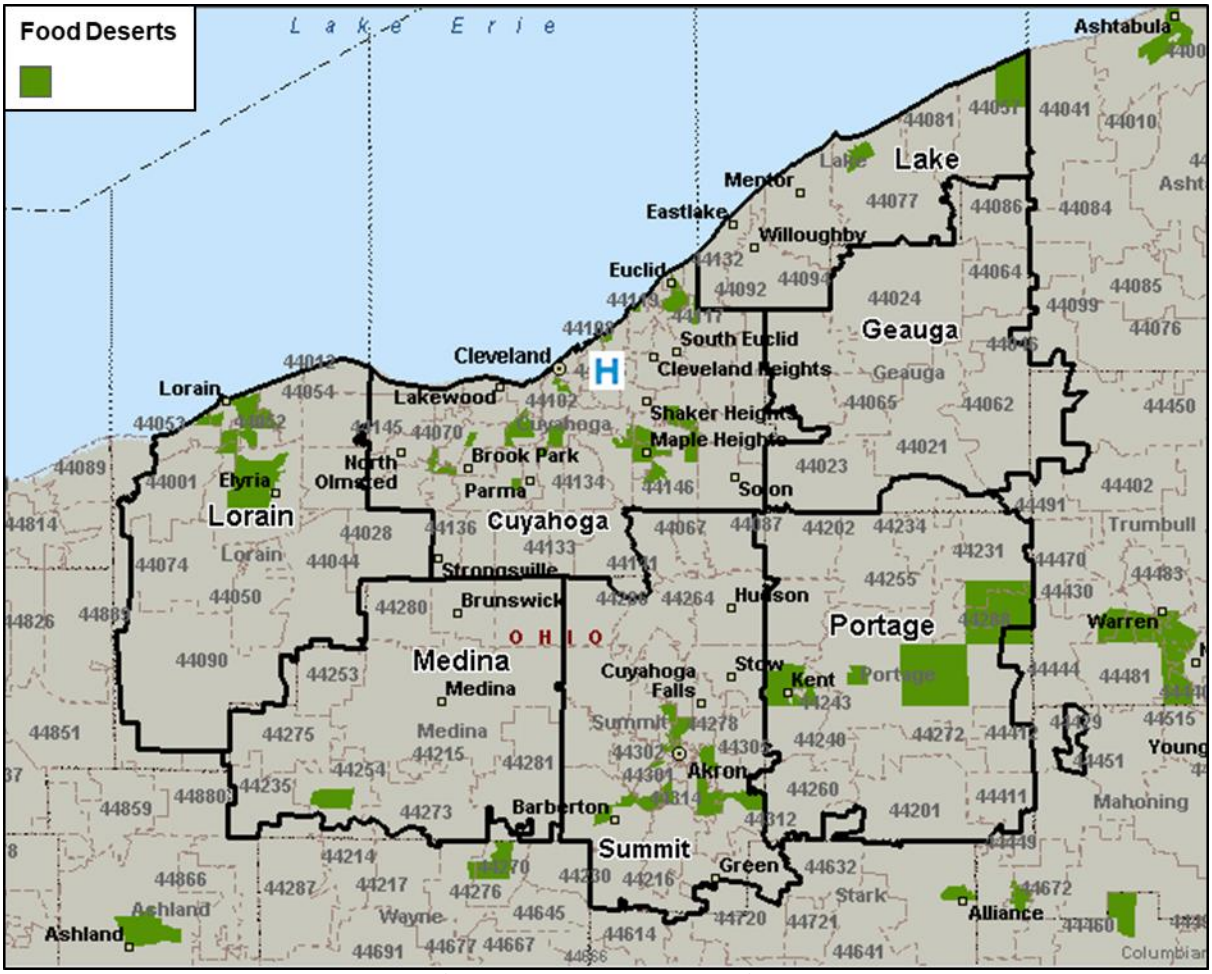
Exhibit 68 provides the ratio of PQI rates in 7-County community to rates for Ohio as a whole. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

Observations

- The community ACSC rate for young adult asthma, low birth-weight births, and dehydration were above Ohio averages by 20 percent or more.

Food Deserts

Exhibit 69: Food Deserts, 2017



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2017.

Description

Exhibit 69 shows the location of "food deserts" in the community.

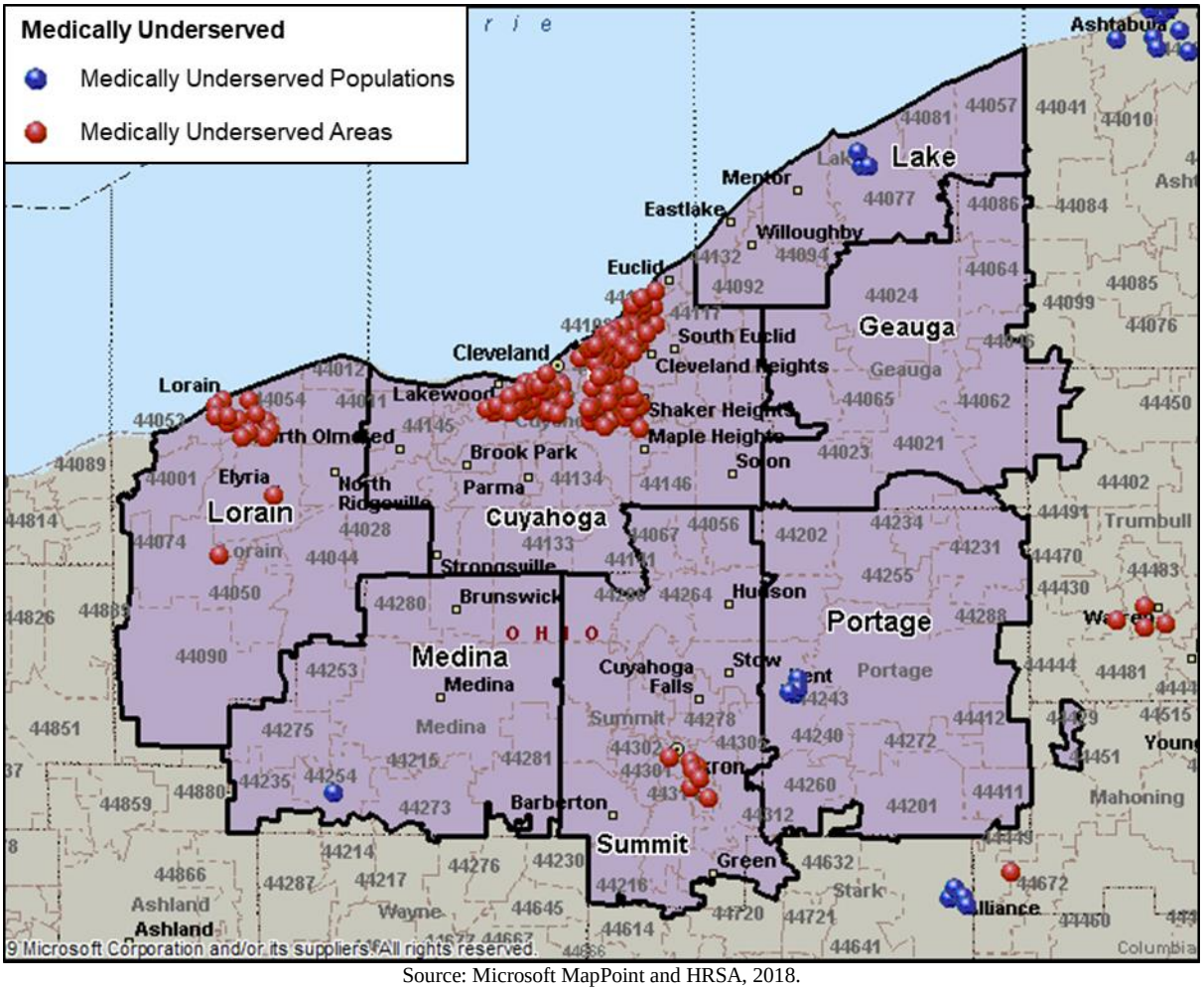
The U.S. Department of Agriculture's Economic Research Service defines urban food deserts as low-income areas more than one mile from a supermarket or large grocery store and rural food deserts as more than 10 miles from a supermarket or large grocery store. Many government-led initiatives aim to increase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

Observations

- All counties except Geauga contain one or more food deserts.

Medically Underserved Areas and Populations

Exhibit 70: Medically Underserved Areas and Populations, 2018



Source: Microsoft MapPoint and HRSA, 2018.

Description

Exhibit 70 illustrates the location of Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) in the community.

Medically Underserved Areas and Populations (MUA/Ps) are designated by HRSA based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[30] 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

[30] Heath Resources and Services Administration. See http://www.hrsa.gov/shortage/mua/index.html

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."[31]

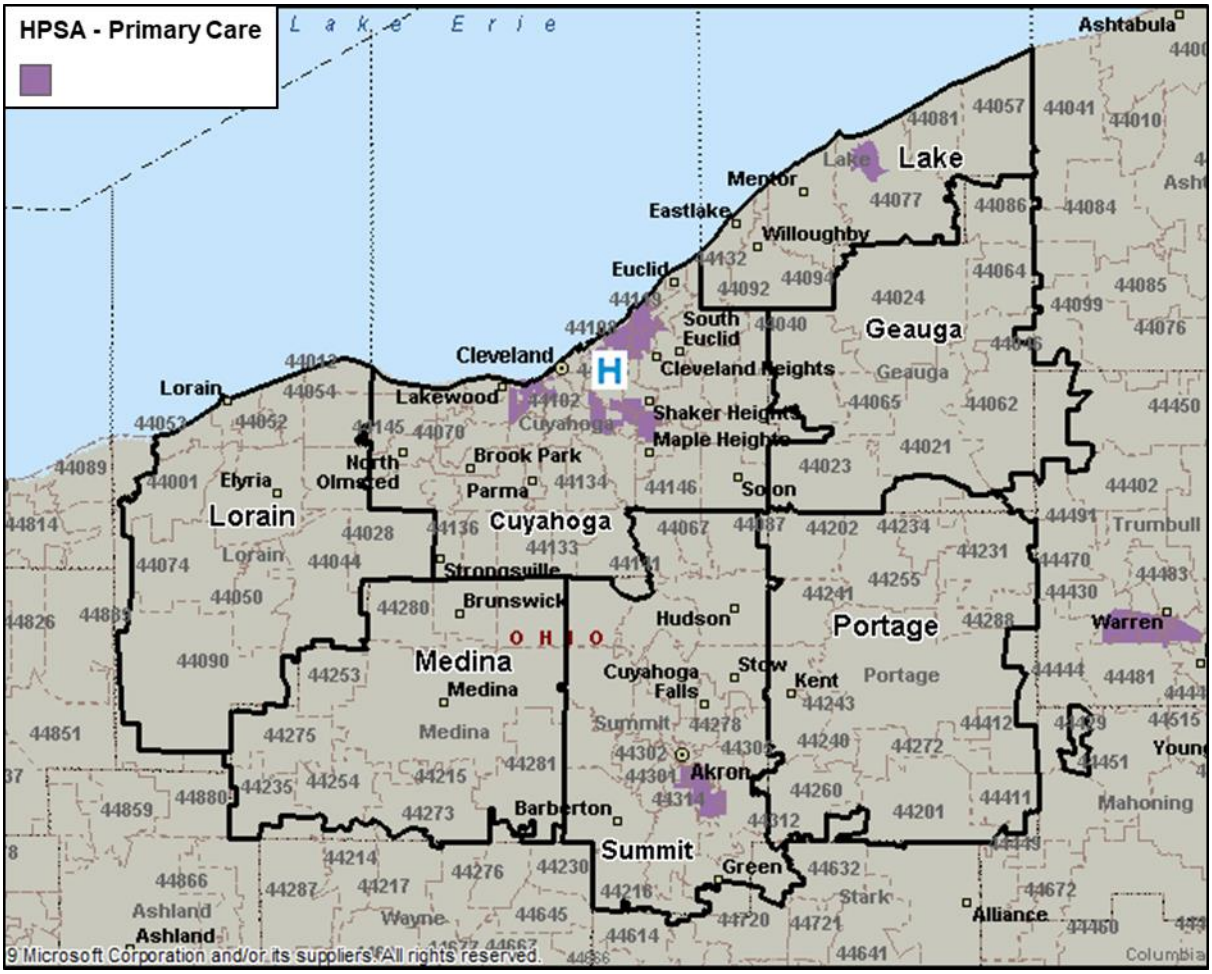
Observations

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

[31] *Ibid.*

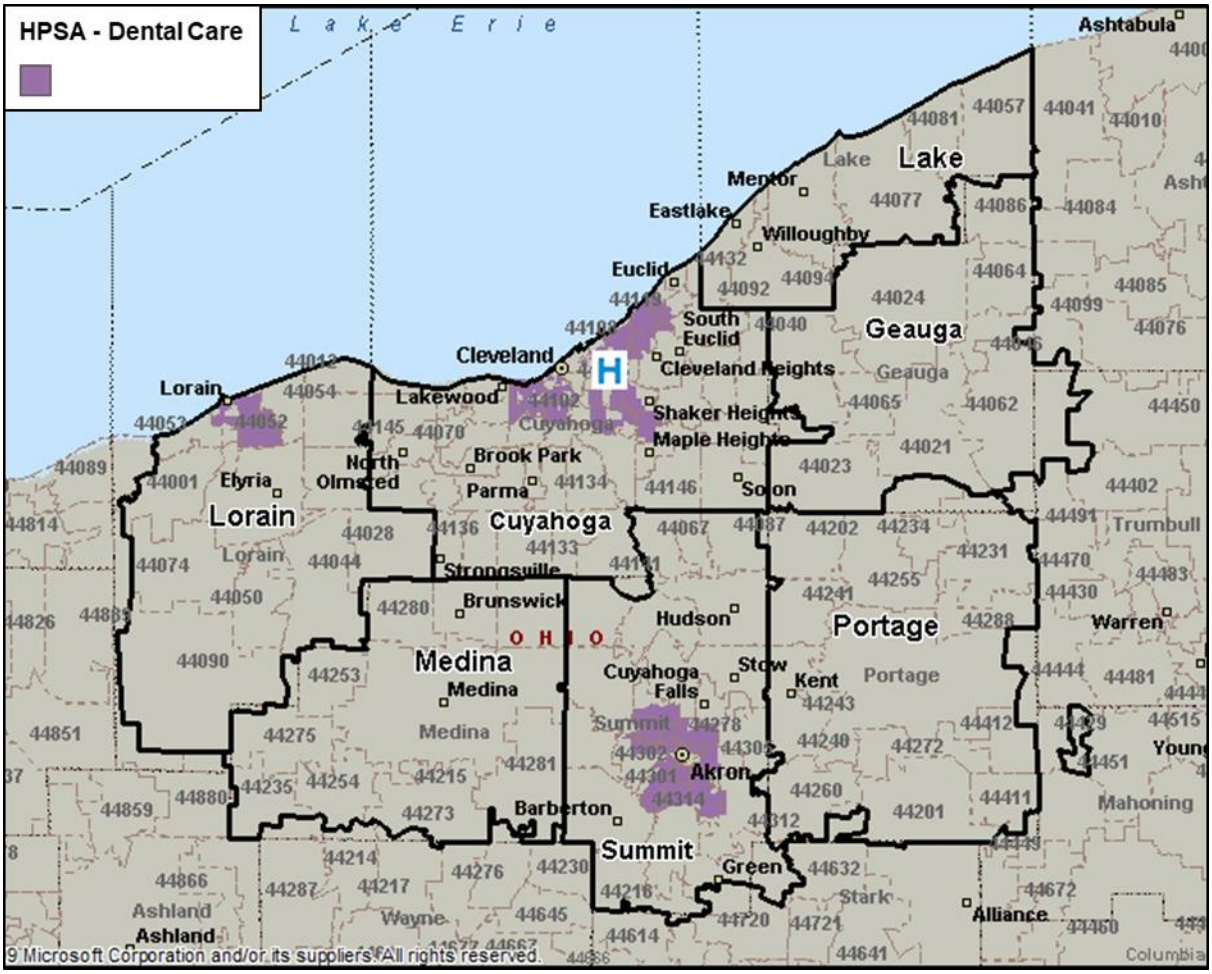
Health Professional Shortage Areas

Exhibit 71: Primary Care Health Professional Shortage Areas, 2018



Source: Health Resources and Services Administration, 2018.

Exhibit 72: Dental Care Health Professional Shortage Areas, 2018



Source: Health Resources and Services Administration, 2018.

Description

Exhibits 71 and 72 show the locations of federally-designated primary care and dental care HPSA Census Tracts.

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."[32]

Observations

- Census tracts in Cuyahoga, Lake, and Summit counties have been designated as primary care HPSAs.
- Census tracts in Cuyahoga, Lorain, and Summit counties have been designated as dental care HPSAs.
- HRSA also has designated 13 facilities in four of the seven counties as mental health HPSAs.

[32] 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

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

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

Demographics

Exhibit 73: Percent Change in Community Population by County, 2017-2022

County	Estimated Population 2017	Projected Population 2022	Percent Change 2017-2022
Ashland County	51,388	51,666	0.5%
Ashtabula County	98,311	96,756	-1.6%
Carroll County	20,871	20,308	-2.7%
Columbiana County	108,431	106,675	-1.6%
Crawford County	43,346	42,659	-1.6%
Cuyahoga County	1,255,781	1,245,537	-0.8%
Erie County	78,171	77,442	-0.9%
Geauga County	89,096	89,889	0.9%
Holmes County	43,293	44,325	2.4%
Huron County	60,417	59,846	-0.9%
Lake County	228,823	229,379	0.2%
Lorain County	298,039	302,589	1.5%
Mahoning County	227,665	223,801	-1.7%
Medina County	176,170	179,668	2.0%
Portage County	169,560	171,099	0.9%
Richland County	120,817	119,821	-0.8%
Stark County	374,140	375,054	0.2%
Summit County	547,767	550,126	0.4%
Trumbull County	194,711	191,049	-1.9%
Tuscarawas County	92,940	93,646	0.8%
Wayne County	123,192	124,996	1.5%
21-County Community Total	**4,402,929**	**4,396,331**	**-0.1%**

Source: Truven Market Expert, 2018.

Description

Exhibit 73 portrays the estimated population by ZIP code in 2017 and projected to 2022.

Observations

- Between 2017 and 2022, the 21-County community is expected to decrease in population by 0.1 percent.

- Holmes County is expected to increase in population by 2.4 percent between 2017 and 2022, the largest increase of any community county. Carroll County is expected to decrease in population by 2.7 percent, the largest decrease of any community county.

Exhibit 74: Percent Change in Population by Age/Sex Cohort, 2017-2022

Age/Sex Cohort	Estimated Population 2017	Projected Population 2022	Percent Change 2017 - 2022
0 - 17	940,552	903,041	-4.0%
Female 18 - 34	460,761	460,296	-0.1%
Male 18 - 34	471,444	479,814	1.8%
35 - 64	1,730,769	1,652,231	-4.5%
65+	799,403	900,949	12.7%
Community Total	**4,402,929**	**4,396,331**	**-0.1%**

Source: Truven Market Expert, 2018.

Description

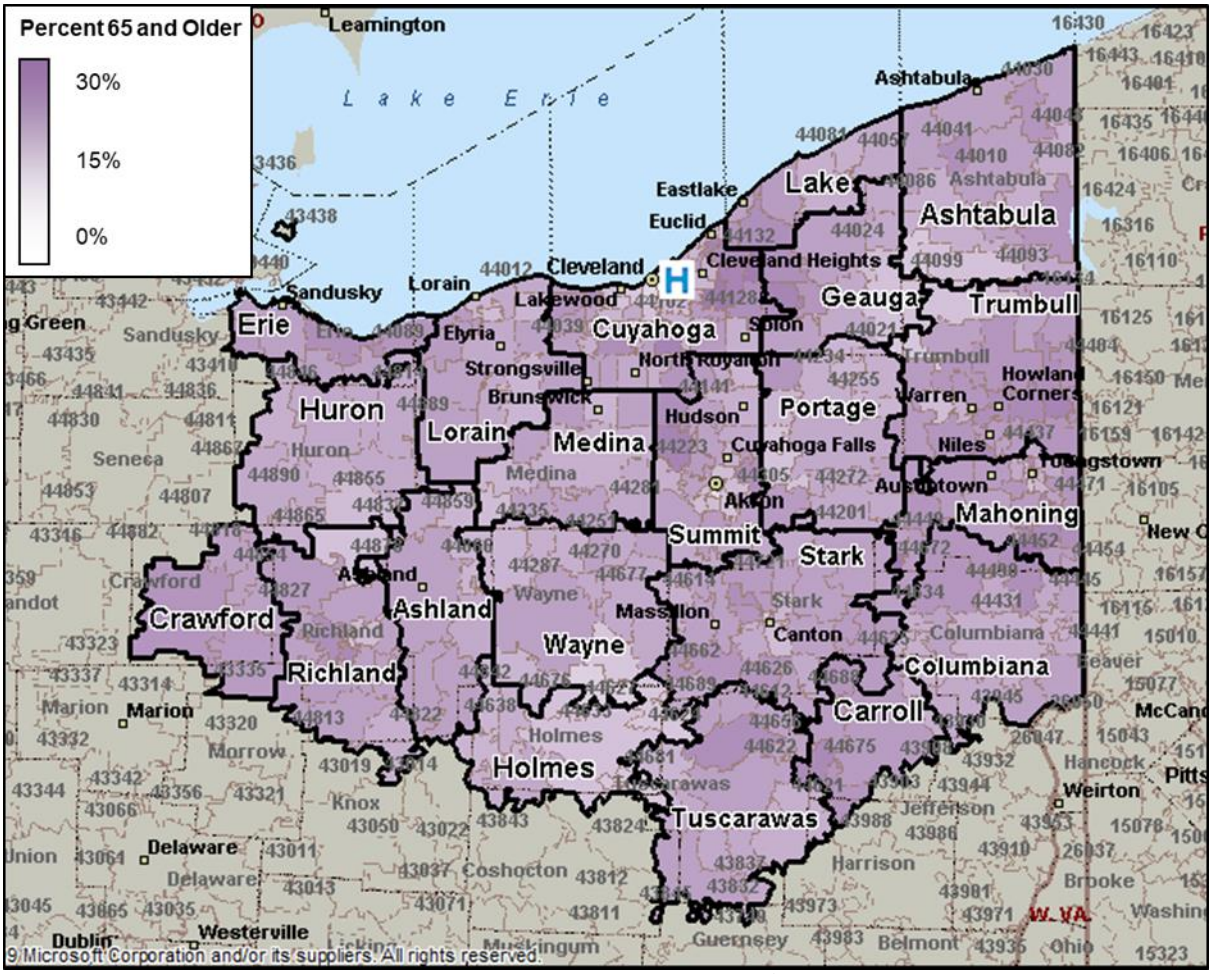
Exhibit 74 shows the community's population for certain age and sex cohorts in 2017, with projections to 2022.

Observations

- While the total community population is expected to decrease slightly between 2017 and 2022, the number of persons aged 65 years and older is projected to increase by 12.7 percent.

- The growth of older populations is likely to lead to growing need for health services, since on an overall per-capita basis, older individuals typically need and use more services than younger persons.

Exhibit 75: Percent of Population Aged 65+ by ZIP Code, 2017



Source: Truven Market Expert, 2018, and Microsoft MapPoint.

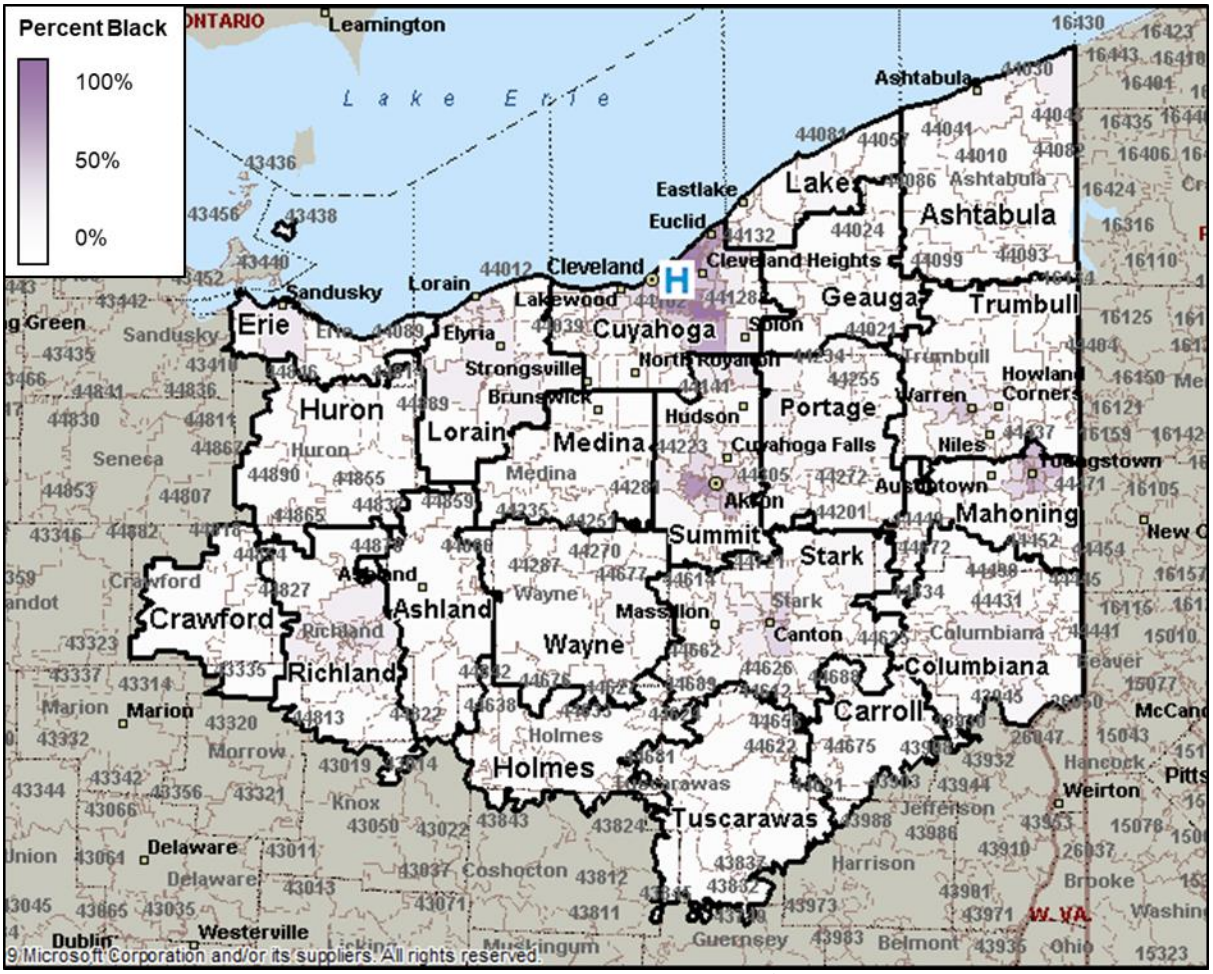
Description

Exhibit 75 portrays the percent of the population 65 years of age and older by ZIP code.

Observations

- In the 21-County community, 18.2 percent of the population was aged 65 and older.
- Carroll County had the highest proportion of the population 65 years of age and older (21.0 percent). Holmes County had the lowest proportion (13.1 percent).

Exhibit 76: Percent of Population - Black, 2017



Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 76 portrays locations where the percentages of the population that are Black were highest in 2017.

Observations

- Cuyahoga County (29.4 percent), Mahoning (15.9 percent), and Summit County (14.4 percent) had the highest proportions of Black residents. No other county was above ten percent.

- Holmes County (0.5 percent), Carroll County (0.6 percent), Tuscarawas (0.8 percent), and Ashland County (0.9 percent) had the lowest proportion of Black residents, all under one percent.

Exhibit 77: Percent of Population – Hispanic (or Latino), 2017

Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 77 portrays locations where the percentages of the population that are Hispanic (or Latino) were highest in 2017.

Observations

- Lorain County (10.0 percent) had the highest proportion of Hispanic (or Latino) residents.
- Holmes County (1.0 percent) had the lowest proportion of Hispanic (or Latino) residents.

Exhibit 78: Other Socioeconomic Indicators, 2012-2016

Region	Population 25+ without High School Diploma	Population with a Disability	Population Linguistically Isolated
Ashland County	12.6%	14.5%	3.9%
Ashtabula County	14.6%	16.0%	1.9%
Carroll County	12.9%	14.0%	1.1%
Columbiana County	12.4%	15.9%	0.8%
Crawford County	11.6%	17.1%	0.7%
Cuyahoga County	11.5%	14.8%	4.2%
Erie County	9.4%	14.1%	0.8%
Geauga County	9.0%	10.5%	3.7%
Holmes County	41.6%	8.8%	20.2%
Huron County	12.3%	13.6%	2.6%
Lake County	8.1%	12.2%	2.8%
Lorain County	10.9%	15.4%	2.6%
Mahoning County	9.9%	15.6%	2.3%
Medina County	6.4%	10.5%	1.2%
Portage County	8.1%	12.8%	1.8%
Richland County	12.8%	15.4%	0.9%
Stark County	9.6%	13.3%	1.0%
Summit County	9.0%	12.6%	2.4%
Trumbull County	11.1%	14.6%	1.2%
Tuscarawas County	14.1%	14.1%	2.4%
Wayne County	14.6%	11.0%	4.5%
Ohio	**10.5%**	**13.8%**	**2.4%**
United States	**13.0%**	**12.5%**	**8.5%**

Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 78 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated, by county.

Observations

- Thirteen (13) counties had a higher percentage of residents aged 25 years and older without a high school diploma than the Ohio average.

- Twelve (12) counties also had a higher percentage of the population with a disability compared to Ohio and United States averages.

- Compared to Ohio (but not to the United States), eight counties all had a higher proportion of the population that is linguistically isolated. Linguistic isolation is defined

as residents who speak a language other than English and speak English less than "very well."

Economic indicators

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

People in Poverty

Exhibit 79: Poverty Rates by Race and Ethnicity, 2012-2016

Measure	Total	White	Black	Asian	Hispanic (or Latino)
Ashland County	15.4%	15.4%	16.1%	22.8%	12.1%
Ashtabula County	19.6%	18.7%	31.8%	0.0%	43.4%
Carroll County	14.0%	14.0%	37.3%	8.7%	20.1%
Columbiana County	15.8%	15.0%	45.8%	0.0%	26.0%
Crawford County	15.7%	15.0%	45.0%	34.1%	7.8%
Cuyahoga County	18.5%	11.1%	33.3%	13.3%	30.4%
Erie County	12.8%	10.4%	26.9%	6.7%	37.7%
Geauga County	6.9%	6.5%	25.8%	5.2%	9.0%
Holmes County	12.9%	12.7%	25.0%	25.0%	27.8%
Huron County	12.9%	12.6%	25.0%	2.4%	21.1%
Lake County	8.5%	7.6%	27.1%	8.2%	18.8%
Lorain County	14.0%	11.0%	36.5%	29.9%	25.4%
Mahoning County	18.1%	13.0%	41.4%	16.8%	38.3%
Medina County	6.6%	6.0%	32.7%	11.9%	10.6%
Portage County	15.0%	13.2%	37.9%	30.2%	28.0%
Richland County	16.5%	14.4%	37.5%	5.5%	33.5%
Stark County	14.1%	11.6%	36.8%	7.5%	26.7%
Summit County	14.3%	10.2%	32.9%	15.6%	18.3%
Trumbull County	17.5%	14.6%	41.5%	26.2%	31.2%
Tuscarawas County	13.6%	12.8%	51.9%	23.2%	28.2%
Wayne County	12.7%	12.2%	34.2%	6.4%	28.7%
Ohio	**15.4%**	**12.3%**	**33.2%**	**13.4%**	**27.1%**
United States	**15.1%**	**12.4%**	**26.2%**	**12.3%**	**23.4%**

Source: U.S. Census, ACS 5-Year Estimates, 2017.

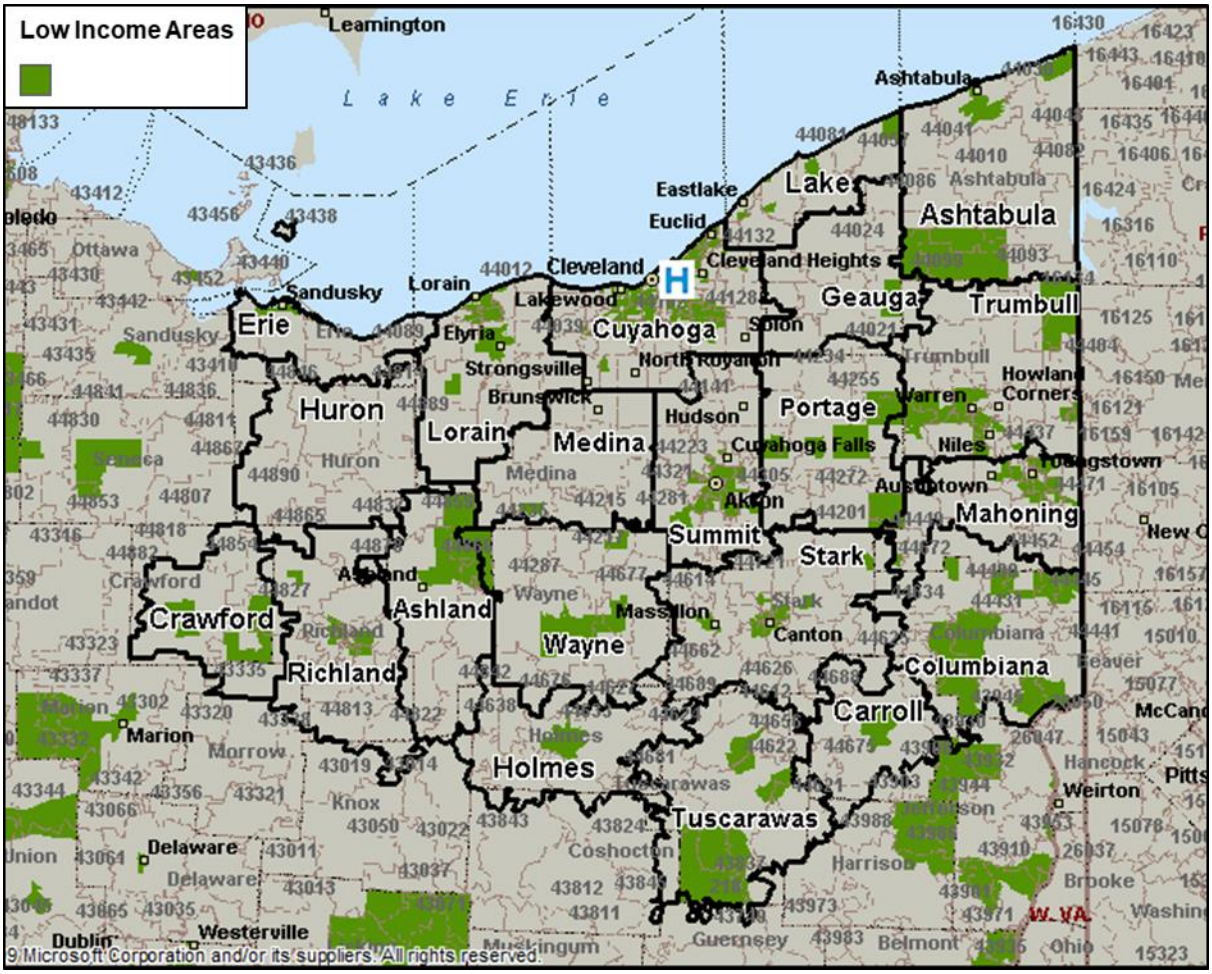
Description

Exhibit 79 portrays poverty rates by county and by race and ethnicity.

Observations

- Poverty rates have been higher for Black and Hispanic (or Latino) residents than for Whites.

Exhibit 80: Low Income Census Tracts, 2017



Source: US Department of Agriculture Economic Research Service, ESRI, 2017.

Description

Exhibit 80 portrays the location of federally-designated low income census tracts.

Observations

- Low income census tracts have been present throughout Northeast Ohio.

Unemployment

Exhibit 81: Unemployment Rates, 2013-2017

Area	2013	2014	2015	2016	2017
Ashland County	8.1%	6.0%	5.0%	5.0%	4.9%
Ashtabula County	9.5%	7.2%	6.0%	6.0%	5.9%
Carroll County	7.9%	6.1%	6.0%	6.8%	5.9%
Columbiana County	8.3%	6.5%	5.9%	6.6%	6.0%
Crawford County	9.2%	6.7%	5.8%	6.0%	5.7%
Cuyahoga County	7.0%	6.3%	5.2%	5.4%	5.9%
Erie County	8.1%	6.4%	5.5%	5.5%	6.2%
Geauga County	5.7%	5.0%	4.2%	4.4%	4.8%
Holmes County	5.2%	4.0%	3.4%	3.5%	3.6%
Huron County	10.2%	8.0%	6.6%	6.5%	6.5%
Lake County	6.3%	5.5%	4.5%	4.8%	5.2%
Lorain County	7.4%	6.4%	5.6%	5.9%	6.2%
Mahoning County	8.5%	6.7%	6.1%	6.3%	6.9%
Medina County	5.8%	5.1%	4.1%	4.3%	4.7%
Portage County	7.7%	5.9%	4.9%	5.0%	5.0%
Richland County	8.6%	6.5%	5.6%	5.5%	5.5%
Stark County	7.6%	5.8%	5.3%	5.4%	5.2%
Summit County	7.6%	5.9%	5.0%	5.0%	5.1%
Trumbull County	9.4%	7.3%	6.4%	6.7%	7.2%
Tuscarawas County	7.3%	5.5%	5.4%	5.7%	5.0%
Wayne County	6.2%	4.6%	3.9%	3.9%	3.9%
Ohio	**7.5%**	**5.8%**	**4.9%**	**4.9%**	**5.0%**
United States	**7.4%**	**6.2%**	**5.3%**	**4.9%**	**4.4%**

Source: Bureau of Labor Statistics, 2018.

Description

Exhibit 81 shows unemployment rates for 2013 through 2017 by county, with Ohio and national rates for comparison.

Observations

- Between 2012 and 2015, unemployment rates at the county, state, and national levels declined significantly. Between 2015 and 2017, unemployment rates increased slightly in most counties.

- Rates in 14 counties have been above average (compared to the Ohio). Rates in 19 counties have been above the United States average.

Insurance Status

Exhibit 82: Percent of the Population without Health Insurance, 2017-2022

County	Total Population 2017	Percent Uninsured 2017	Total Population 2022	Percent Uninsured 2022
Ashland County	51,388	3.1%	51,666	2.7%
Ashtabula County	98,311	4.6%	96,756	4.0%
Carroll County	20,871	3.4%	20,308	3.1%
Columbiana County	108,431	3.7%	106,675	3.2%
Crawford County	43,346	4.3%	42,659	3.7%
Cuyahoga County	1,255,781	4.6%	1,245,537	3.9%
Erie County	78,171	3.5%	77,442	3.0%
Geauga County	89,096	2.3%	89,889	2.1%
Holmes County	43,293	2.7%	44,325	2.5%
Huron County	60,417	3.4%	59,846	3.0%
Lake County	228,823	2.6%	229,379	2.2%
Lorain County	298,039	3.7%	302,589	3.2%
Mahoning County	227,665	4.2%	223,801	3.7%
Medina County	176,170	1.9%	179,668	1.6%
Portage County	169,560	4.0%	171,099	3.4%
Richland County	120,817	3.7%	119,821	3.3%
Stark County	374,140	3.6%	375,054	3.1%
Summit County	547,767	3.8%	550,126	3.3%
Trumbull County	194,711	4.4%	191,049	3.9%
Tuscarawas County	92,940	3.9%	93,646	3.4%
Wayne County	123,192	3.5%	124,996	3.0%
21-County Community Total	**4,402,929**	**3.9%**	**4,396,331**	**3.3%**

Source: Truven Market Expert, 2018.

Description

Exhibit 82 presents the estimated percent of population in community counties without health insurance (uninsured) – in 2017 and with projections to 2022.

Observations

- In 2017, the average "uninsurance rate" of community counties was 3.9 percent. Residents of Ashtabula and Cuyahoga counties had higher rates of uninsured residents.

Crime Rates

Exhibit 83: Crime Rates by Type and Jurisdiction, Per 100,000, 2016

County	Violent Crime	Property Crime	Murder	Rape	Robbery	Aggravated Assault	Burglary	Larceny	Motor Vehicle Theft	Arson
Ashland County	132.0	1,226.5	5.7	68.9	9.6	47.8	267.9	922.2	36.4	1.9
Ashtabula County	116.3	1,275.2	3.8	22.9	26.7	62.9	345.0	871.1	59.1	7.6
Carroll County	151.4	1,665.0	-	-	-	151.4	151.4	1,412.7	100.9	-
Columbiana County	48.9	723.6	1.3	16.7	3.9	27.0	88.8	623.1	11.6	5.1
Crawford County	136.5	2,602.6	-	41.4	36.6	58.5	631.2	1,910.5	60.9	12.2
Cuyahoga County	694.9	2,977.7	15.1	57.6	327.7	294.5	753.6	1,742.1	482.0	33.6
Erie County	98.3	2,504.3	1.5	10.4	40.2	46.2	446.7	2,001.0	56.6	4.5
Geauga County	36.4	436.6	2.4	9.7	3.6	20.6	69.1	346.9	20.6	2.4
Holmes County	18.2	674.9	2.3	9.1	6.8	-	123.1	515.3	36.5	2.3
Huron County	48.3	2,622.6	-	13.8	13.8	20.7	479.7	2,077.4	65.6	3.5
Lake County	214.1	1,514.8	1.1	19.6	31.6	161.8	217.9	1,244.7	52.3	5.4
Lorain County	150.9	1,369.6	4.5	33.4	50.3	62.7	373.4	930.8	65.3	9.0
Mahoning County	258.8	2,496.1	7.1	23.9	86.7	141.1	666.7	1,674.1	155.3	63.3
Medina County	47.0	682.1	1.7	9.2	1.7	34.4	93.4	577.9	10.9	2.9
Portage County	101.6	1,649.7	3.3	12.6	25.2	60.4	304.1	1,298.5	47.1	7.3
Richland County	241.4	3,692.7	5.0	74.9	60.8	100.7	1,002.9	2,566.6	123.2	25.8
Stark County	314.8	2,580.3	3.5	47.0	76.9	187.3	562.6	1,881.1	136.5	15.0
Summit County	300.0	2,825.9	6.8	59.7	93.0	140.4	644.5	2,008.0	173.4	22.7
Trumbull County	237.1	2,242.2	3.0	30.0	77.4	126.7	596.7	1,528.4	117.1	6.0
Tuscarawas County	43.4	944.6	2.2	12.2	2.2	26.7	173.6	729.8	41.2	3.3
Wayne County	119.3	1,436.8	2.8	39.1	16.8	60.6	372.7	1,009.1	55.0	12.1
Ohio	**305.9**	**2,537.4**	**5.9**	**47.4**	**111.1**	**141.5**	**573.5**	**1,789.7**	**174.2**	**23.4**

Source: FBI, 2017.

Description

Exhibit 83 provides crime statistics. Light grey shading indicates rates that were higher (worse) than the Ohio average; dark grey shading indicates rates that were more than 50 percent higher than the Ohio average.

Observations

- 2016 crime rates in Cuyahoga County were comparitively high for nearly all types.

Housing Affordability

Exhibit 84: Percent of Rented Households Rent Burdened, 2013-2017

County	Occupied Units Paying Rent	Households Paying >30%	Rent Burden > 30% of Income
Ashland County	5,038	1,764	35.0%
Ashtabula County	10,002	5,234	52.3%
Carroll County	1,707	636	37.3%
Columbiana County	9,536	4,341	45.5%
Crawford County	5,016	1,964	39.2%
Cuyahoga County	203,368	102,500	50.4%
Erie County	8,993	3,896	43.3%
Geauga County	4,390	1,782	40.6%
Holmes County	2,249	806	35.8%
Huron County	6,369	2,688	42.2%
Lake County	22,801	9,917	43.5%
Lorain County	31,076	16,092	51.8%
Mahoning County	27,924	14,161	50.7%
Medina County	12,793	5,175	40.5%
Portage County	17,986	9,513	52.9%
Richland County	14,612	6,606	45.2%
Stark County	45,388	19,878	43.8%
Summit County	71,639	34,333	47.9%
Trumbull County	23,016	11,115	48.3%
Tuscarawas County	9,779	4,250	43.5%
Wayne County	10,675	4,459	41.8%
21-County Community Total	**544,357**	**261,110**	**48.0%**
Ohio	**1,453,379**	**678,101**	**46.7%**
United States	**39,799,272**	**20,138,321**	**50.6%**

Source: U.S. Census, ACS 5-Year Estimates, 2018.

Description

The U.S. Department of Housing and Urban Development ("HUD") has defined households that are "rent burdened" as those spending more than 30 percent of income on housing.[33] On that basis and based on data from the U.S. Census, Exhibit 84 portrays the percentage of rented households in each county that are rent burdened.

[33] https://www.federalreserve.gov/econres/notes/feds-notes/assessing-the-severity-of-rent-burden-on-low-income-families-20171222.htm

Observations

As stated by the Federal Reserve, "households that have little income left after paying rent may not be able to afford other necessities, such as food, clothes, health care, and transportation."[34]

- In total in the 21-County community, 48 percent of households have been designated as "rent burdened," a level above the Ohio average.

- The percentage of rented households rent burdened was above the state average in a third of community counties. Rates in Ashtabula, Lorain, Mahoning, and Portage counties exceeded both Ohio and national averages.

[34] *Ibid.*

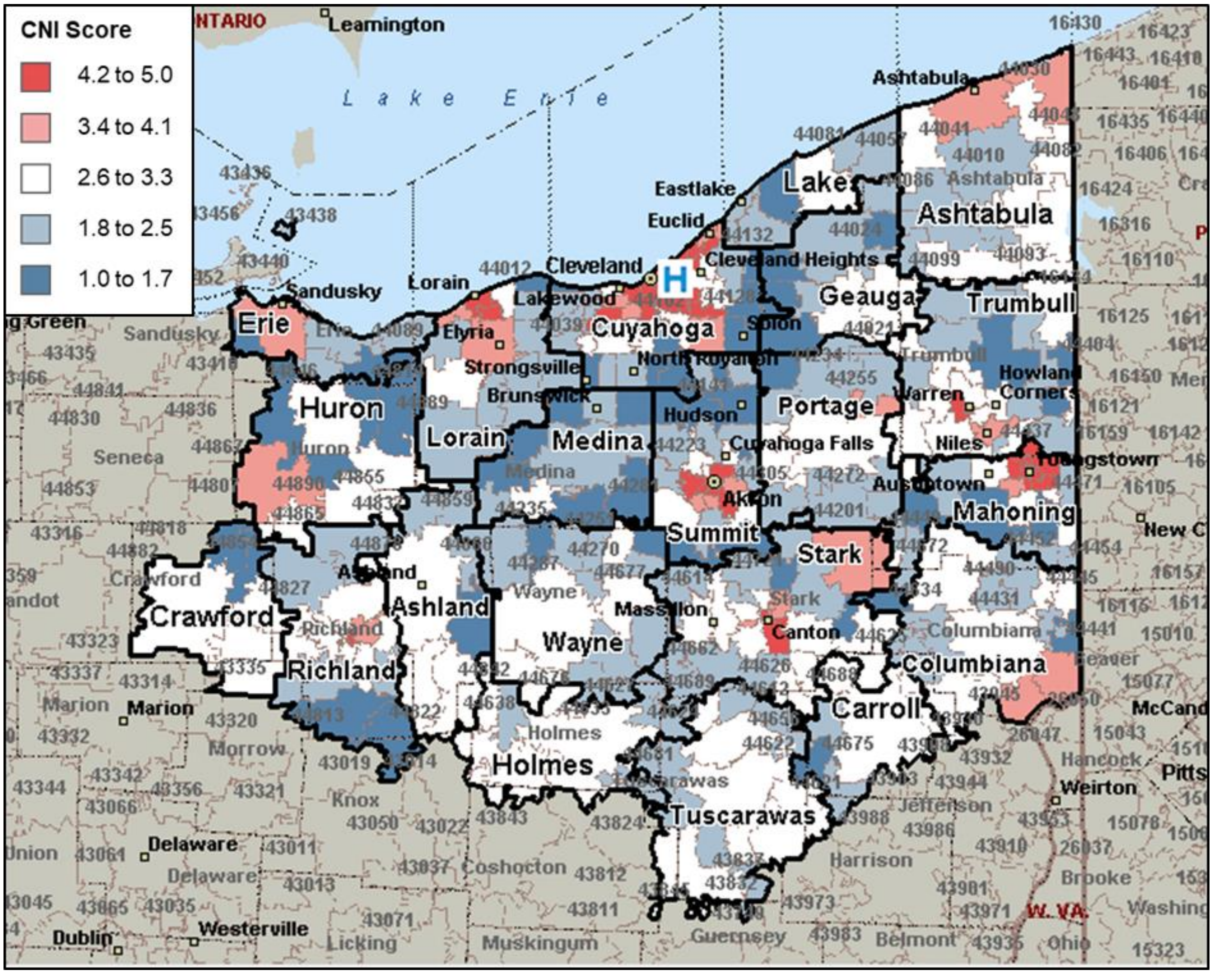
Dignity Health Community Need Index

Exhibit 85: Weighted Average Community Need Index™ Score by County, 2018

County	CNI Score
Ashland County	2.7
Ashtabula County	3.2
Carroll County	2.6
Columbiana County	2.9
Crawford County	3.0
Cuyahoga County	3.3
Erie County	2.8
Geauga County	1.9
Holmes County	2.7
Huron County	2.8
Lake County	2.3
Lorain County	3.0
Mahoning County	3.1
Medina County	1.7
Portage County	2.6
Richland County	3.0
Stark County	2.8
Summit County	2.7
Trumbull County	2.9
Tuscarawas County	2.8
Wayne County	2.6
21-County Average	**2.9**
Ohio Average	**2.9**

Source: Dignity Health, 2018.

Exhibit 86: Community Need Index™, 2018



Source: Microsoft MapPoint and Dignity Health, 2018.

Description

Exhibits 85 and 86 present the *Community Need Index™* (CNI) score for each county and ZIP code in the 21-County community. Higher scores (e.g., 4.2 to 5.0) indicate the highest levels of community need. The index is calibrated such that 3.0 represents a U.S.-wide median score.

Dignity Health, a California-based hospital system, developed and published the CNI as a way to assess barriers to health care access. The index, available for every ZIP code in the United States, is derived from five social and economic indicators:

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

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

Observations

- At 2.9, the weighted average CNI score for the 21-County community is slightly below the U.S. median of 3.0.
- Cuyahoga County (3.3), Ashtabula County (3.2), and Mahoning County (3.1) had the highest CNI scores, each above the U.S. median.

Other Local Health Status and Access Indicators

This section assesses other health status and access indicators for the 21-County community. Data sources include:

(1) County Health Rankings
(2) Community Health Status Indicators, published by County Health Rankings
(3) Ohio Department of Health
(4) 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

Exhibit 87: County Health Rankings – Select Indicators, 2018
(Light Grey Shading Denotes Bottom Half of Ohio Counties; Dark Grey Denotes Bottom Quartile)

County	Health Outcomes	Health Factors	Length of Life	Quality of Life	Health Behaviors	Clinical Care	Social & Economic Factors	Physical Environment
Ashland County	18	27	13	26	18	43	26	79
Ashtabula County	69	77	71	68	75	81	71	60
Carroll County	39	54	36	44	28	73	52	53
Columbiana County	63	70	60	65	63	64	65	85
Crawford County	54	46	56	51	31	54	43	59
Cuyahoga County	60	62	48	67	49	4	79	86
Erie County	58	35	63	50	54	8	45	3
Geauga County	2	4	2	2	2	32	7	72
Holmes County	7	45	8	10	24	88	22	1
Huron County	34	41	52	21	26	55	46	8
Lake County	13	9	20	11	6	16	25	11
Lorain County	38	37	33	47	27	18	47	40
Mahoning County	68	61	64	72	48	15	75	83
Medina County	4	5	5	4	9	5	5	62
Portage County	31	24	21	41	16	45	29	50
Richland County	57	55	58	54	66	50	55	10
Stark County	42	39	30	55	36	9	44	84
Summit County	46	44	44	52	43	14	50	81
Trumbull County	64	74	65	59	59	58	81	73
Tuscarawas County	28	49	19	38	52	69	38	43
Wayne County	15	13	15	15	7	36	18	49

Source: County Health Rankings, 2018.

Description

Exhibit 87 presents *County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation that incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[35] social and economic factors, and physical environment.[36] *County Health Rankings* is updated annually. *County Health Rankings 2018* relies on data from 2006 to 2017, with most data from 2011 to 2016.

The exhibit presents 2018 rankings for selected indicator category. Rankings indicate how the county ranked in relation to all 88 counties in Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. Light grey shading indicates rankings in the bottom half of Ohio counties; dark grey shading indicates rankings in bottom quartile of Ohio counties.

Observations

- Ashtabula, Columbiana, and Trumbull counties ranked in the bottom half of Ohio counties for all indicators.

- Eight counties ranked in the bottom quartile of Ohio counties for Physical Environment index.

[35]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.

[36]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.

Community Health Status Indicators

Exhibit 88: Community Health Status Indicators, 2018
(Light Grey Shading Denotes Bottom Half of Peer Counties; Dark Grey Denotes Bottom Quartile)

Category	Indicator	Ashland County	Ashtabula County	Carroll County	Columbiana County	Crawford County	Cuyahoga County	Erie County
Length of Life	Years of Potential Life Lost Rate							
Quality of Life	% Fair/Poor Health							
	Physically Unhealthy Days							
	Mentally Unhealthy Days							
	% Births - Low Birth Weight							
Health Behaviors	% Smokers							
	% Obese							
	Food Environment Index							
	% Physically Inactive							
	% With Access to Exercise Opportunities							
	% Excessive Drinking							
	% Driving Deaths Alcohol-Impaired							
	Chlamydia Rate							
	Teen Birth Rate							
Clinical Care	% Uninsured							
	Primary Care Physicians Rate							
	Dentist Rate							
	Mental Health Professionals Rate							
	Preventable Hosp. Rate							
	% Receiving HbA1c Screening							
	% Mammography Screening							
Social & Economic Factors	High School Graduation Rate							
	% Some College							
	% Unemployed							
	% Children in Poverty							
	Income Ratio							
	% Children in Single-Parent Households							
	Social Association Rate							
	Violent Crime Rate							
	Injury Death Rate							
Physical Environment	Average Daily PM2.5							
	% Severe Housing Problems							
	% Drive Alone to Work							
	% Long Commute - Drives Alone							

Source: Community Health Status Indicators, 2018.

Exhibit 88: Community Health Status Indicators, 2018 (*continued*)
(Light Grey Shading Denotes Bottom Half of Peer Counties; Dark Grey Denotes Bottom Quartile)

Category	Indicator	Geauga County	Holmes County	Huron County	Lake County	Lorain County	Mahoning County	Medina County
Length of Life	Years of Potential Life Lost Rate							
Quality of Life	% Fair/Poor Health							
	Physically Unhealthy Days							
	Mentally Unhealthy Days							
	% Births - Low Birth Weight							
Health Behaviors	% Smokers							
	% Obese							
	Food Environment Index							
	% Physically Inactive							
	% With Access to Exercise Opportunities							
	% Excessive Drinking							
	% Driving Deaths Alcohol-Impaired							
	Chlamydia Rate							
	Teen Birth Rate							
Clinical Care	% Uninsured							
	Primary Care Physicians Rate							
	Dentist Rate							
	Mental Health Professionals Rate							
	Preventable Hosp. Rate							
	% Receiving HbA1c Screening							
	% Mammography Screening							
Social & Economic Factors	High School Graduation Rate							
	% Some College							
	% Unemployed							
	% Children in Poverty							
	Income Ratio							
	% Children in Single-Parent Households							
	Social Association Rate							
	Violent Crime Rate							
	Injury Death Rate							
Physical Environment	Average Daily PM2.5							
	% Severe Housing Problems							
	% Drive Alone to Work							
	% Long Commute - Drives Alone							

Source: Community Health Status Indicators, 2018.

Exhibit 88: Community Health Status Indicators, 2018 (*continued*)
(Light Grey Shading Denotes Bottom Half of Peer Counties; Dark Grey Denotes Bottom Quartile)

Category	Indicator	Portage County	Richland County	Stark County	Summit County	Trumbull County	Tuscarawas County	Wayne County
Length of Life	Years of Potential Life Lost Rate							
Quality of Life	% Fair/Poor Health							
	Physically Unhealthy Days							
	Mentally Unhealthy Days							
	% Births - Low Birth Weight							
Health Behaviors	% Smokers							
	% Obese							
	Food Environment Index							
	% Physically Inactive							
	% With Access to Exercise Opportunities							
	% Excessive Drinking							
	% Driving Deaths Alcohol-Impaired							
	Chlamydia Rate							
	Teen Birth Rate							
Clinical Care	% Uninsured							
	Primary Care Physicians Rate							
	Dentist Rate							
	Mental Health Professionals Rate							
	Preventable Hosp. Rate							
	% Receiving HbA1c Screening							
	% Mammography Screening							
Social & Economic Factors	High School Graduation Rate							
	% Some College							
	% Unemployed							
	% Children in Poverty							
	Income Ratio							
	% Children in Single-Parent Households							
	Social Association Rate							
	Violent Crime Rate							
	Injury Death Rate							
Physical Environment	Average Daily PM2.5							
	% Severe Housing Problems							
	% Drive Alone to Work							
	% Long Commute - Drives Alone							

Source: Community Health Status Indicators, 2018.

Exhibit 89: Community Health Status Indicators Frequency, 2018

Category	Indicator	Frequency
Length of Life	Years of Potential Life Lost Rate	4
Quality of Life	% Fair/Poor Health	5
	Physically Unhealthy Days	5
	Mentally Unhealthy Days	3
	% Births - Low Birth Weight	4
Health Behaviors	% Smokers	16
	% Obese	7
	Food Environment Index	9
	% Physically Inactive	6
	% With Access to Exercise Opportunities	2
	% Excessive Drinking	1
	% Driving Deaths Alcohol-Impaired	9
	Chlamydia Rate	3
	Teen Birth Rate	1
Clinical Care	% Uninsured	6
	Primary Care Physicians Rate	9
	Dentist Rate	7
	Mental Health Professionals Rate	4
	Preventable Hosp. Rate	8
	% Receiving HbA1c Screening	9
	% Receiving Mammography Screening	8
Social & Economic Factors	High School Graduation Rate	2
	% Some College	11
	% Unemployed	9
	% Children in Poverty	6
	Income Ratio	1
	% Children in Single-Parent Households	4
	Social Association Rate	2
	Violent Crime Rate	1
	Injury Death Rate	4
Physical Environment	Average Daily PM2.5	18
	% Severe Housing Problems	5
	% Drive Alone to Work	11
	% Long Commute - Drives Alone	5

Source: Community Health Status Indicators, 2018.

Description

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

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

Exhibits 88 and 89 compare 21-County community counties to their respective peer counties and highlights community health issues found to rank in the bottom half and bottom quartile of the counties included in the analysis. Light grey shading indicates rankings in the bottom half of peer counties; dark grey shading indicates rankings in the bottom quartile of peer counties.

Observations

- The CHSI data indicate that at least a third of community counties rank in the bottom quartile among peers for the following indicators:
    - Percent of adults who smoke
    - Percent of adults obese
    - Food environment index
    - Percent of driving deaths with alcohol involvement
    - Primary care physicians rate
    - Dentists rate
    - Preventable hospitalizations rate
    - Diabetes monitoring
    - Mammography screening
    - Percent of adults with some college education
    - Unemployment
    - Air pollution (average daily PM2.5)
    - Percent workers drive alone to work

Ohio Department of Health

Exhibit 90: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	All Causes of Death	Ischemic Heart Disease	Chronic Obstructive Pulmonary Disease	Organic dementia	Alzheimer's disease	Accidental Poisoning (Drugs and Other Substances)	Diabetes mellitus	Congestive heart failure	Stroke	Renal failure	Atherosclerotic cardiovascular disease
Ashland County	837.5	66.4	56.5	16.8	58.5	N/A	32.3	13.8	25.9	N/A	N/A
Ashtabula County	892.6	77.1	47.4	48.7	26.8	42.4	32.8	15.8	17.5	13.1	8.1
Carroll County	776.3	46.0	46.8	36.0	33.3	N/A	36.2	N/A	N/A	30.7	N/A
Columbiana County	887.5	55.3	36.9	31.9	19.1	41.8	18.8	21.4	23.5	19.4	N/A
Crawford County	903.9	64.7	77.6	24.0	36.3	N/A	41.6	N/A	28.0	N/A	N/A
Cuyahoga County	827.3	52.3	33.6	46.5	20.5	44.6	25.9	17.8	16.1	15.3	34.5
Erie County	879.5	41.2	52.5	40.3	44.3	52.8	29.6	26.8	17.8	19.0	24.5
Geauga County	676.2	50.7	28.8	50.2	23.8	36.0	21.2	14.1	9.6	9.9	13.7
Holmes County	740.2	57.0	24.5	32.2	36.3	N/A	N/A	22.0	N/A	N/A	N/A
Huron County	805.4	50.0	55.7	27.7	28.1	31.1	14.8	19.5	14.8	N/A	16.2
Lake County	787.8	65.1	37.7	46.5	31.1	46.4	11.8	18.9	15.6	11.2	37.0
Lorain County	790.0	52.1	52.6	33.1	31.9	52.0	17.8	16.9	14.3	12.4	16.0
Mahoning County	859.1	45.2	35.7	28.6	33.4	40.0	25.2	24.5	17.2	16.9	7.4
Medina County	661.7	46.2	35.2	40.5	22.0	26.5	21.4	25.3	11.0	9.8	N/A
Portage County	809.9	63.7	43.2	30.4	28.8	30.1	28.7	22.0	15.0	13.0	12.8
Richland County	868.7	51.2	40.8	35.5	21.2	63.6	22.7	27.7	23.6	12.1	N/A
Stark County	837.9	49.6	44.0	32.5	49.0	29.2	26.3	16.2	15.7	15.4	10.7
Summit County	845.1	47.8	39.0	41.3	37.5	57.8	23.1	18.8	15.9	13.3	9.1
Trumbull County	873.9	60.7	41.5	40.8	28.0	60.8	22.3	18.6	15.5	18.4	5.3
Tuscarawas County	799.7	48.6	47.5	22.4	38.1	18.3	32.0	11.5	12.4	10.1	N/A
Wayne County	790.1	57.0	39.3	37.0	32.2	34.6	28.0	17.4	18.4	7.5	11.3
Ohio	**832.3**	**53.2**	**43.7**	**38.4**	**33.4**	**36.8**	**24.6**	**19.5**	**17.8**	**15.1**	**15.4**

Source: Ohio Department of Health, 2017.

Description

The Ohio Department of Health maintains a database that includes county-level mortality rates and cancer incidence rates. Exhibit 90 provides age-adjusted mortality rates for selected causes of death in 2016.

Observations

- Mortality rates for accidental poisoning (drugs and other substances) and atherosclerotic cardiovascular disease were particularly problematic in multiple Northeast Ohio counties.

Exhibit 91: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2011-2015 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	All Cancer Types	Prostate	Lung and Bronchus	Breast	Colon & Rectum	Other Sites/Types	Uterus
Ashland County	443.5	77.0	61.2	60.4	47.4	37.4	32.3
Ashtabula County	458.0	85.4	76.0	63.2	46.4	37.3	29.3
Carroll County	444.3	102.8	71.4	48.3	42.0	31.5	31.4
Columbiana County	435.2	89.7	66.9	57.7	47.1	36.7	26.9
Crawford County	460.0	80.9	76.2	64.4	42.2	43.1	45.0
Cuyahoga County	483.2	131.7	65.6	73.1	43.4	39.5	32.5
Erie County	489.0	97.0	60.8	70.0	49.9	42.0	33.4
Geauga County	432.2	99.2	48.3	68.5	38.7	31.0	30.9
Holmes County	359.0	82.7	44.7	37.3	48.0	29.7	23.8
Huron County	461.4	94.9	70.2	65.2	41.7	39.7	23.2
Lake County	486.1	100.9	70.4	74.7	43.2	39.5	32.6
Lorain County	463.7	122.6	69.0	68.6	41.2	33.3	27.1
Mahoning County	439.6	98.4	65.3	65.6	48.2	33.0	26.3
Medina County	471.9	124.5	60.0	68.9	39.9	34.9	27.4
Portage County	466.8	113.1	67.1	65.9	40.3	37.2	28.3
Richland County	459.8	92.0	70.2	64.2	44.0	39.5	27.6
Stark County	448.1	121.8	65.6	64.4	35.8	37.5	26.4
Summit County	451.0	111.8	65.4	69.2	37.0	37.9	26.9
Trumbull County	464.8	103.6	77.4	62.6	45.4	32.8	26.4
Tuscarawas County	437.1	125.8	64.8	58.6	37.1	31.3	31.1
Wayne County	431.1	93.3	55.7	62.7	41.1	35.7	24.8
Ohio	**461.6**	**108.0**	**69.3**	**68.0**	**41.7**	**36.4**	**29.2**

Source: Ohio Department of Health, 2017.

Description

Exhibit 91 provides age-adjusted incidence rates for selected types of cancer in 2016.

Observations

- The overall cancer incidence rates in Cuyahoga, Erie, Lake, Lorain, Medina, Portage, and Trumbull counties were higher than the Ohio average.

Exhibit 92: Communicable Disease Incidence Rates per 100,000 Population, 2017 (Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Living with diagnosis of HIV infection (2016)	Gonorrhea	Chlamydia	Total Syphilis	Tuberculosis
Ashland County	48.5	55.9	257.2	-	-
Ashtabula County	111.0	82.5	304.4	3.1	-
Carroll County	39.8	36.1	245.8	3.6	-
Columbiana County	65.6	41.5	207.4	3.9	-
Crawford County	47.5	45.1	404.0	-	-
Cuyahoga County	373.2	408.5	884.8	29.8	2.2
Erie County	107.8	332.9	529.9	18.6	-
Geauga County	45.7	24.5	166.9	1.1	-
Holmes County	11.4	4.6	86.5	-	-
Huron County	61.6	68.4	320.0	5.1	-
Lake County	76.5	57.3	303.1	6.1	0.4
Lorain County	114.9	171.0	487.0	12.4	2.3
Mahoning County	204.3	185.6	542.6	7.8	-
Medina County	49.7	38.4	218.4	2.8	0.6
Portage County	56.8	64.2	335.3	8.6	1.2
Richland County	106.5	182.5	567.3	4.1	0.8
Stark County	120.4	140.8	476.4	7.0	0.5
Summit County	166.8	209.7	587.6	14.8	0.6
Trumbull County	110.5	115.0	434.0	5.9	0.5
Tuscarawas County	30.3	30.3	265.1	3.2	2.2
Wayne County	67.0	30.9	221.5	5.2	-
Ohio	**199.5**	**206.6**	**528.9**	**16.4**	**1.3**

Source: Ohio Department of Health, 2018.

Description

Exhibit 92 presents incidence rates for various communicable diseases in the community.

Observations

- Cuyahoga County rates for all indicators were more than 50 percent worse than Ohio averages.
- Erie, Mahoning, and Summit counties all compared unfavorably to Ohio averages for at least two communicable diseases.

Exhibit 93: Maternal and Child Health Indicators, 2014-2018
(Light Grey Shading Denotes Indicators Worse than Ohio Average)

County	Low Birth Weight Percent	Very Low Birth Weight Percent	Births to Unmarried Mothers	Preterm Births Percent	Very Preterm Births Percent
Ashland County	5.2%	0.7%	31.1%	5.9%	1.0%
Ashtabula County	7.3%	1.2%	50.2%	8.2%	1.5%
Carroll County	6.6%	1.4%	40.5%	7.7%	1.8%
Columbiana County	6.2%	1.1%	50.3%	8.2%	1.4%
Crawford County	5.9%	1.4%	50.3%	7.8%	1.6%
Cuyahoga County	8.5%	2.2%	51.7%	9.5%	2.5%
Erie County	6.2%	1.6%	50.2%	8.0%	1.7%
Geauga County	5.2%	0.9%	16.2%	6.6%	1.2%
Holmes County	3.6%	0.9%	11.5%	5.6%	1.2%
Huron County	5.8%	1.0%	46.1%	8.1%	1.3%
Lake County	6.0%	1.3%	35.9%	7.7%	1.5%
Lorain County	7.0%	1.4%	48.4%	8.3%	1.6%
Mahoning County	8.9%	1.6%	54.1%	10.1%	2.0%
Medina County	5.9%	0.9%	24.9%	7.6%	1.1%
Portage County	6.8%	1.5%	36.5%	8.1%	1.8%
Richland County	6.9%	1.5%	46.9%	8.5%	1.9%
Stark County	6.8%	1.6%	46.4%	8.0%	1.8%
Summit County	7.6%	1.6%	42.9%	8.7%	1.9%
Trumbull County	7.3%	1.6%	50.7%	8.6%	2.0%
Tuscarawas County	5.8%	1.1%	39.0%	8.1%	1.3%
Wayne County	5.1%	0.9%	25.4%	6.5%	1.1%
Ohio	**7.2%**	**1.6%**	**43.2%**	**8.7%**	**1.8%**

Source: Ohio Department of Health, 2018.

Description

Exhibit 93 presents various maternal and infant health indicators.

Observations

- All indicators for Cuyahoga and Mahoning counties were worse than Ohio averages.
- Births to unmarried mothers were particularly prevalent in community counties compared to the Ohio average.

Exhibit 94: Infant Mortality Rates by County, 2010-2016 and for Ohio, 2016 (Light Grey Shading Denotes Indicators Worse than Ohio Average)

County	Overall Infant Mortality Rate	Black Infant Mortality Rate	Hispanic Infant Mortality Rate	White Infant Mortality Rate
Ashland County	6.1	N/A	N/A	N/A
Ashtabula County	7.1	N/A	N/A	N/A
Carroll County	N/A	N/A	N/A	N/A
Columbiana County	5.7	N/A	N/A	N/A
Crawford County	N/A	N/A	N/A	N/A
Cuyahoga County	9.3	16.3	6.0	5.2
Erie County	9.2	N/A	N/A	N/A
Geauga County	4.5	N/A	N/A	N/A
Holmes County	6.4	N/A	N/A	N/A
Huron County	6.1	N/A	N/A	N/A
Lake County	4.3	N/A	N/A	N/A
Lorain County	5.9	10.9	6.0	5.1
Mahoning County	9.1	18.9	N/A	6.4
Medina County	3.8	N/A	N/A	N/A
Portage County	5.7	N/A	N/A	N/A
Richland County	7.0	N/A	N/A	N/A
Stark County	8.1	15.0	N/A	7.1
Summit County	7.4	13.4	N/A	5.6
Trumbull County	7.8	15.2	N/A	6.7
Tuscarawas County	5.1	N/A	N/A	N/A
Wayne County	5.6	N/A	N/A	N/A
Ohio	**7.4**	**15.2**	**7.3**	**5.8**

Source: County Health Rankings, 2018 and Ohio Department of Health, 2017 (for Ohio-wide averages).

Description

Exhibit 94 presents infant mortality rates by race and ethnicity by county and for Ohio.

Observations

- The overall infant mortality rates and the Black infant mortality rates in Cuyahoga, Mahoning, and Trumbull counties were higher than the Ohio averages.

- As documented by many, infant mortality rates have been particularly high for Black infants across Ohio.

Drug Poisoning Mortality

Exhibit 95: Drug Poisoning Mortality per 100,000, 2013-2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average)

County	2013	2014	2015	2016	2017
Ashland County	12.7	13.7	14.7	18.9	18.7
Ashtabula County	19.1	24.6	22.7	35.0	36.8
Carroll County	14.8	16.7	18.0	19.5	22.9
Columbiana County	22.7	19.2	26.0	33.4	39.3
Crawford County	15.1	18.6	21.8	21.3	31.0
Cuyahoga County	21.9	22.3	23.5	44.2	48.4
Erie County	18.4	19.1	24.0	34.6	33.7
Geauga County	13.5	14.8	16.0	22.6	23.5
Holmes County	11.3	13.7	14.9	15.7	17.1
Huron County	18.7	21.1	17.8	24.4	35.1
Lake County	19.5	22.9	22.3	39.0	39.1
Lorain County	23.9	22.7	21.9	43.4	40.2
Mahoning County	19.6	21.7	25.8	35.4	45.8
Medina County	11.0	12.1	17.8	22.3	23.4
Portage County	14.1	18.4	20.5	25.9	23.1
Richland County	18.0	21.9	25.6	45.4	34.7
Stark County	14.1	17.9	19.4	27.0	26.4
Summit County	15.7	22.5	32.6	54.7	43.7
Trumbull County	21.6	27.8	41.3	52.0	60.8
Tuscarawas County	12.6	12.0	13.1	16.4	20.3
Wayne County	10.4	12.6	17.0	25.5	19.0
Ohio	**20.3**	**23.7**	**28.5**	**37.3**	**43.8**
United States	**13.9**	**14.8**	**16.3**	**19.7**	**21.6**

Sources: Centers for Disease Control and Prevention, 2018.
Note: Rates are not age-adjusted.

Description

Exhibit 95 portrays annual drug poisoning mortality rates per 100,000 (2013 through 2017) by county, Ohio, and the United States.

Mortality data in Exhibit 95 were classified using ICD-10 and include drug poisoning deaths where the intent was: unintentional, suicide, homicide, or "undetermined."

Observations

- Per-capita drug poisoning deaths have increased annually in all regions between 2013 and 2017.
- In 2017, mortality rates in Cuyahoga, Mahoning, and Trumbull counties exceeded the state and national averages.
- Mortality rates in 17 of the 21 counties exceeded the United States rate in 2017.

Behavioral Risk Factor Surveillance System

Exhibit 96: Behavioral Risk Factor Surveillance System, Chronic Conditions, 2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Total Population 18+	% Arthritis	% Asthma	% Depression	% Diabetes	% Heart Disease	% Heart Failure	% High Blood Pressure	% High Cholesterol	% Adult Smoking	% COPD	% Back Pain
Ashland County	40,665	26.1%	11.9%	20.0%	15.7%	11.5%	5.7%	32.1%	26.8%	30.1%	6.9%	33.8%
Ashtabula County	76,427	28.0%	12.6%	21.8%	16.5%	11.2%	6.3%	34.9%	26.4%	30.1%	7.2%	33.6%
Carroll County	18,920	29.3%	10.7%	19.8%	16.5%	10.4%	7.2%	34.1%	26.4%	28.5%	7.6%	32.6%
Columbiana County	87,803	27.4%	11.8%	20.1%	16.0%	11.5%	6.1%	34.9%	20.7%	24.6%	6.4%	28.0%
Crawford County	34,630	29.1%	12.7%	21.0%	16.4%	12.3%	7.2%	38.2%	25.6%	29.3%	8.2%	35.6%
Cuyahoga County	989,879	24.3%	12.3%	19.1%	17.9%	10.7%	3.9%	33.5%	26.2%	27.4%	6.0%	30.3%
Erie County	61,789	26.6%	11.0%	18.4%	15.9%	11.1%	5.5%	32.9%	27.0%	27.6%	7.0%	32.6%
Geauga County	70,088	23.0%	10.1%	16.5%	13.7%	9.7%	4.3%	30.0%	26.1%	24.1%	5.0%	26.9%
Holmes County	31,976	22.2%	11.3%	19.7%	15.2%	10.4%	4.3%	29.3%	24.9%	30.8%	5.6%	29.1%
Huron County	45,500	25.6%	11.9%	20.1%	16.4%	11.4%	6.0%	34.8%	26.0%	30.1%	6.9%	34.1%
Lake County	182,858	23.6%	11.1%	17.9%	15.1%	10.9%	4.5%	32.6%	25.4%	24.4%	5.4%	28.4%
Lorain County	233,469	24.5%	11.5%	18.5%	15.0%	10.6%	4.7%	31.5%	25.1%	26.8%	6.0%	30.9%
Mahoning County	296,695	25.0%	11.4%	18.6%	15.2%	10.7%	4.8%	31.8%	25.2%	26.8%	6.1%	31.0%
Medina County	137,882	22.1%	10.6%	16.8%	14.4%	10.1%	4.0%	30.2%	24.8%	23.9%	4.8%	27.4%
Portage County	138,586	21.5%	11.0%	17.4%	13.6%	9.9%	4.1%	28.8%	23.3%	26.8%	5.7%	29.2%
Richland County	95,135	27.2%	12.6%	20.9%	15.9%	11.7%	6.0%	34.2%	26.0%	29.8%	7.4%	33.9%
Stark County	295,102	26.3%	11.6%	19.4%	16.0%	10.9%	5.3%	32.2%	25.5%	27.5%	6.3%	32.0%
Summit County	430,679	24.4%	11.6%	18.4%	14.7%	10.6%	4.3%	30.5%	24.8%	26.2%	5.7%	30.3%
Trumbull County	320,766	25.0%	12.2%	19.2%	15.2%	10.6%	4.5%	31.0%	24.8%	27.9%	6.2%	31.8%
Tuscarawas County	68,294	26.3%	12.1%	20.2%	17.0%	11.8%	6.2%	34.4%	27.3%	29.7%	7.0%	33.8%
Wayne County	89,030	25.1%	11.6%	19.6%	15.7%	11.3%	5.3%	33.1%	25.9%	29.1%	6.2%	31.5%
21-County Average	**3,746,173**	**24.8%**	**11.8%**	**18.9%**	**15.9%**	**10.7%**	**4.6%**	**32.3%**	**25.4%**	**27.1%**	**6.0%**	**30.7%**
Ohio Average	**9,044,061**	**24.2%**	**11.9%**	**19.2%**	**15.7%**	**10.7%**	**4.5%**	**31.8%**	**25.0%**	**27.5%**	**6.0%**	**31.1%**

Source: Truven Market Expert/Behavioral Risk Factor Surveillance System, 2018.

Description

The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) gathers data through a telephone survey regarding health risk behaviors, healthcare access, and preventive health measures. Data are collected for the entire United States. Analysis of BRFSS data can identify localized health issues, trends, and health disparities, and can enable county, state, or nation-wide comparisons.

Exhibit 96 depicts BRFSS data for each county in the 21-County community and compared to the averages for Ohio.

Observations

- 21-County community averages for the incidence of arthritis, diabetes, heart disease, heart failure, high blood pressure, high cholesterol, and COPD were worse than the Ohio averages.

- Ashtabula, Crawford, Richland, and Tuscarawas counties compared unfavorably to Ohio averages for all conditions.

Ambulatory Care Sensitive Conditions

Exhibit 97: PQI (ACSC) Rates per 100,000, 2017
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure	Low Birth Weight
Ashland County	40	400	88	768	68	464	29
Ashtabula County	60	583	135	1,072	73	797	17
Carroll County	84	500	84	652	66	473	20
Columbiana County	66	492	123	661	139	687	35
Crawford County	70	583	146	407	29	486	29
Cuyahoga County	85	578	157	963	112	787	16
Erie County	108	385	149	1,326	63	616	2
Geauga County	19	775	92	492	22	489	22
Holmes County	20	765	64	564	34	287	14
Huron County	37	667	124	945	43	533	20
Lake County	53	482	91	966	58	654	14
Lorain County	80	620	131	1,089	66	666	9
Mahoning County	77	426	133	796	123	932	51
Medina County	55	614	83	531	42	489	14
Portage County	39	542	94	425	44	503	39
Richland County	89	793	160	663	46	663	37
Stark County	62	538	90	664	57	539	11
Summit County	67	653	104	602	51	574	53
Trumbull County	89	565	163	993	62	876	51
Tuscarawas County	51	774	91	554	33	635	4
Wayne County	69	702	81	644	43	523	28
21-County Average	**71**	**579**	**124**	**810**	**75**	**672**	**25**
Ohio Average	**70**	**595**	**120**	**696**	**72**	**584**	**18**
National Average	**69**	**351**	**102**	**481**	**49**	**322**	**N/A**

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Exhibit 97: PQI (ACSC) Rates per 100,000, 2017 (*continued*)
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

County	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Uncontrolled Diabetes	Young Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Ashland County	183	276	253	43	7	15
Ashtabula County	310	547	370	55	24	52
Carroll County	168	204	198	6	-	24
Columbiana County	272	337	242	85	22	20
Crawford County	202	421	266	53	9	38
Cuyahoga County	293	265	244	78	67	47
Erie County	283	313	326	45	47	63
Geauga County	220	290	165	18	10	26
Holmes County	98	230	81	17	8	24
Huron County	286	301	238	33	51	61
Lake County	262	252	306	53	43	27
Lorain County	284	293	231	51	45	32
Mahoning County	324	299	195	67	75	44
Medina County	218	184	200	34	11	27
Portage County	174	229	163	36	25	33
Richland County	238	315	248	56	22	39
Stark County	207	210	185	35	34	23
Summit County	226	236	206	48	27	29
Trumbull County	315	281	235	76	39	34
Tuscarawas County	231	219	164	30	17	19
Wayne County	177	139	140	34	24	27
21-County Average	**258**	**264**	**226**	**56**	**43**	**36**
Ohio Average	**218**	**238**	**198**	**50**	**36**	**36**
National Average	**130**	**250**	**156**	**13**	**41**	**17**

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Description

Exhibit 97 provides 2017 PQI rates (per 100,000 persons) for counties in the 7-County community – with comparisons to Ohio averages.

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."[37] 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, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

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

Observations

- The rates of admissions for ACSC in the 21-County community exceeded Ohio averages for all conditions except perforated appendix and lower-extremity amputation among patients with diabetes.

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

Exhibit 98: Ratio of PQI Rates for 21-County Community and Ohio, 2017

Indicator	Community Averages	Ohio Averages	Ratio: 21-County / Ohio
Low Birth Weight	24.7	18.1	1.36
Young Adult Asthma	42.9	35.7	1.20
Dehydration	257.8	218.3	1.18
Chronic Obstructive Pulmonary Disease	810.3	695.6	1.16
Congestive Heart Failure	672.1	584.2	1.15
Urinary Tract Infection	225.6	197.5	1.14
Uncontrolled Diabetes	56.3	50.2	1.12
Bacterial Pneumonia	263.9	238.4	1.11
Hypertension	75.4	71.6	1.05
Diabetes Long-Term Complications	124.5	120.2	1.04
Diabetes Short-Term Complications	70.8	70.1	1.01
Lower-Extremity Amputation Among Patients with Diabetes	36.0	36.3	0.99
Perforated Appendix	579.2	594.7	0.97

Source: Cleveland Clinic, 2018.
Note: Rates are not age-sex adjusted. Perforated appendix rate calculated per 1,000; low birth weight calculated per 1,000 births.

Description

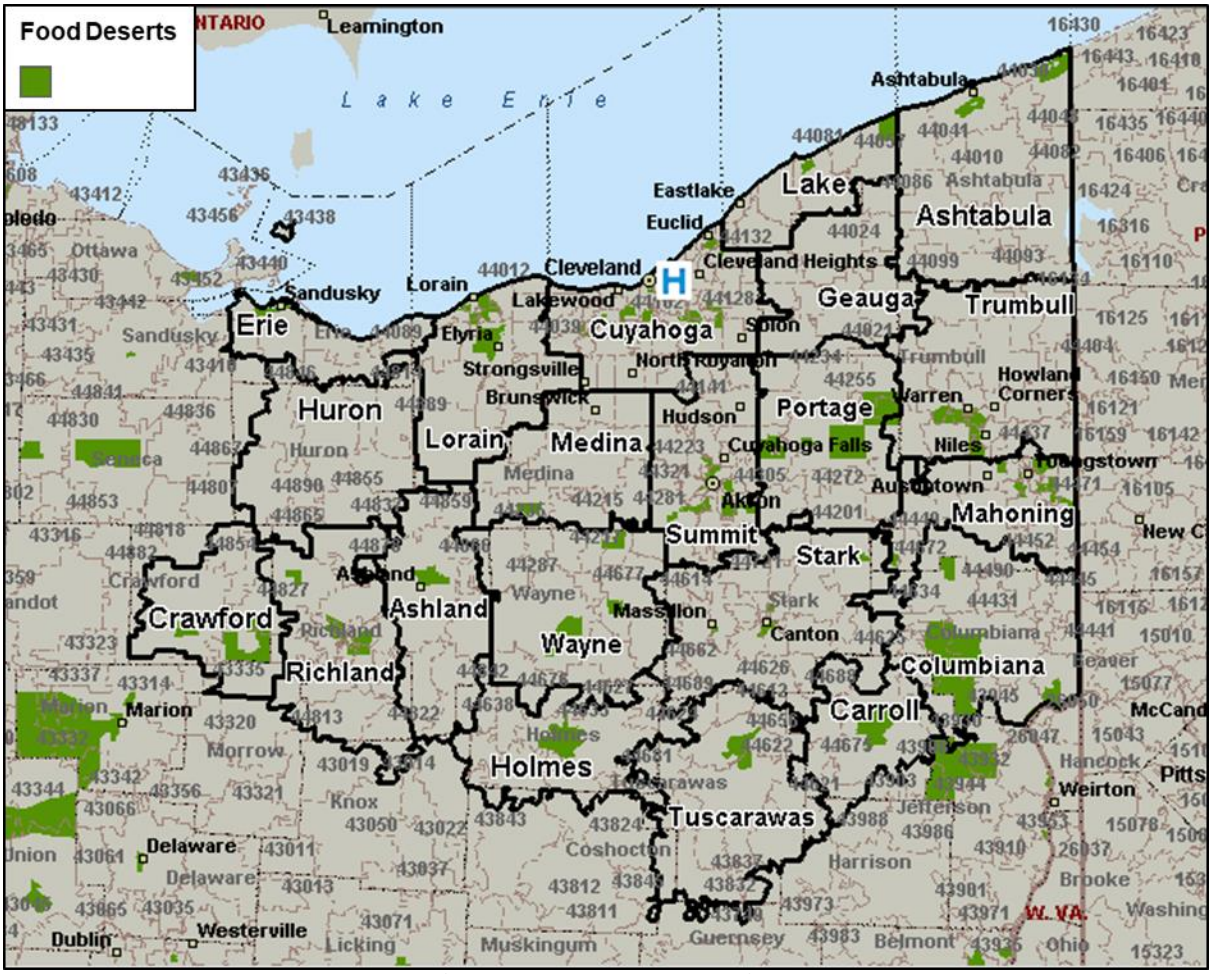
Exhibit 98 provides the ratio of PQI rates in 21-County community to rates for Ohio as a whole. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

Observations

- The community ACSC rate for young low birth-weight births and young adult asthma were above Ohio averages by 20 percent or more.

Food Deserts

Exhibit 99: Food Deserts, 2017



Source: Microsoft MapPoint and U.S. Department of Agriculture, 2017.

Description

Exhibit 99 shows the location of "food deserts" in the community.

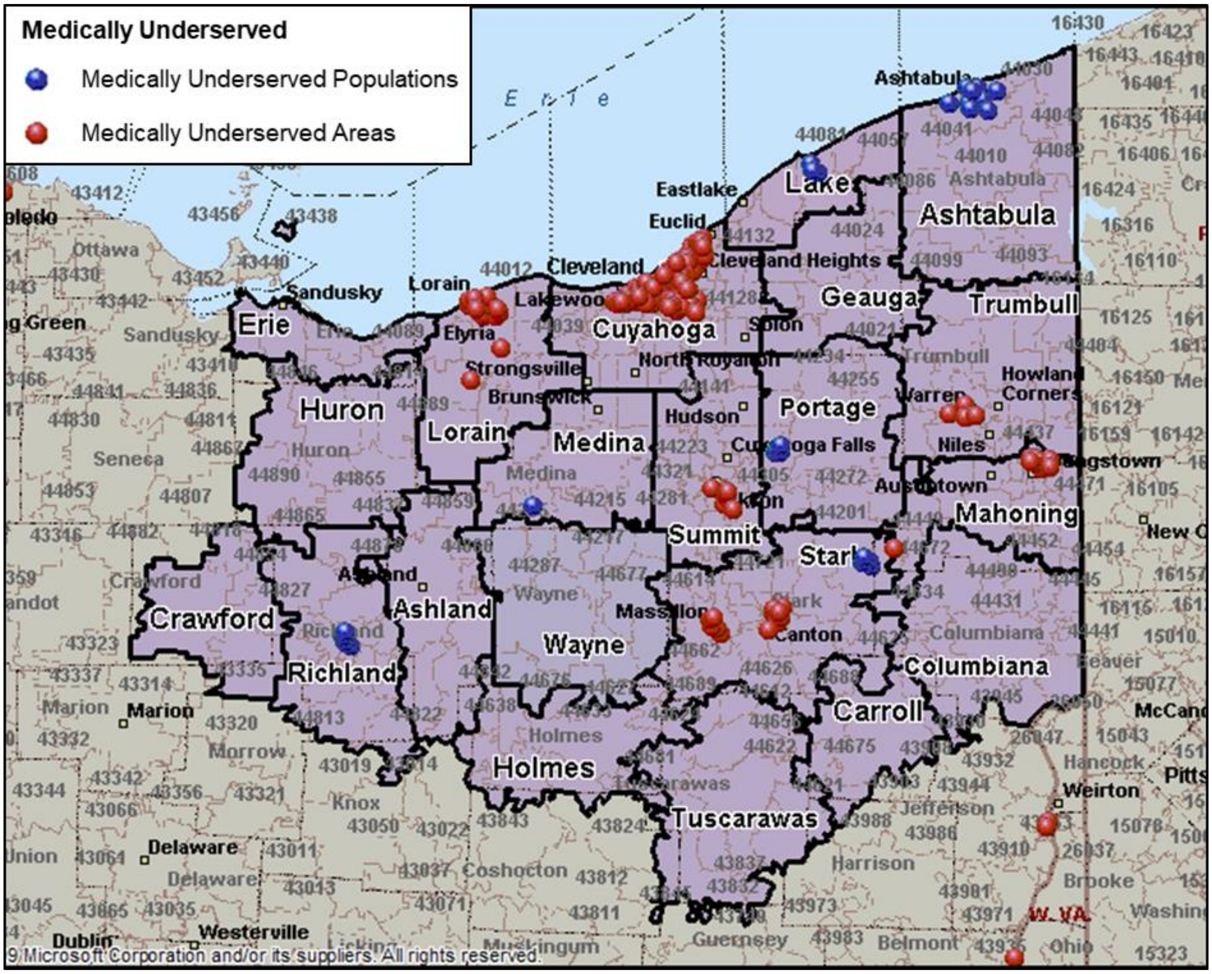
The U.S. Department of Agriculture's Economic Research Service defines urban food deserts as low-income areas more than one mile from a supermarket or large grocery store and rural food deserts as more than 10 miles from a supermarket or large grocery store. Many government-led initiatives aim to increase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

Observations

- Food deserts are present in many of the community counties.

Medically Underserved Areas and Populations

Exhibit 100: Medically Underserved Areas and Populations, 2018



Source: Microsoft MapPoint and HRSA, 2018.

Description

Exhibit 100 illustrates the location of Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) in the community.

Medically Underserved Areas and Populations (MUA/Ps) are designated by HRSA based on an "Index of Medical Underservice." The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[38] 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

[38] Heath Resources and Services Administration. See http://www.hrsa.gov/shortage/mua/index.html

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."[39]

Observations

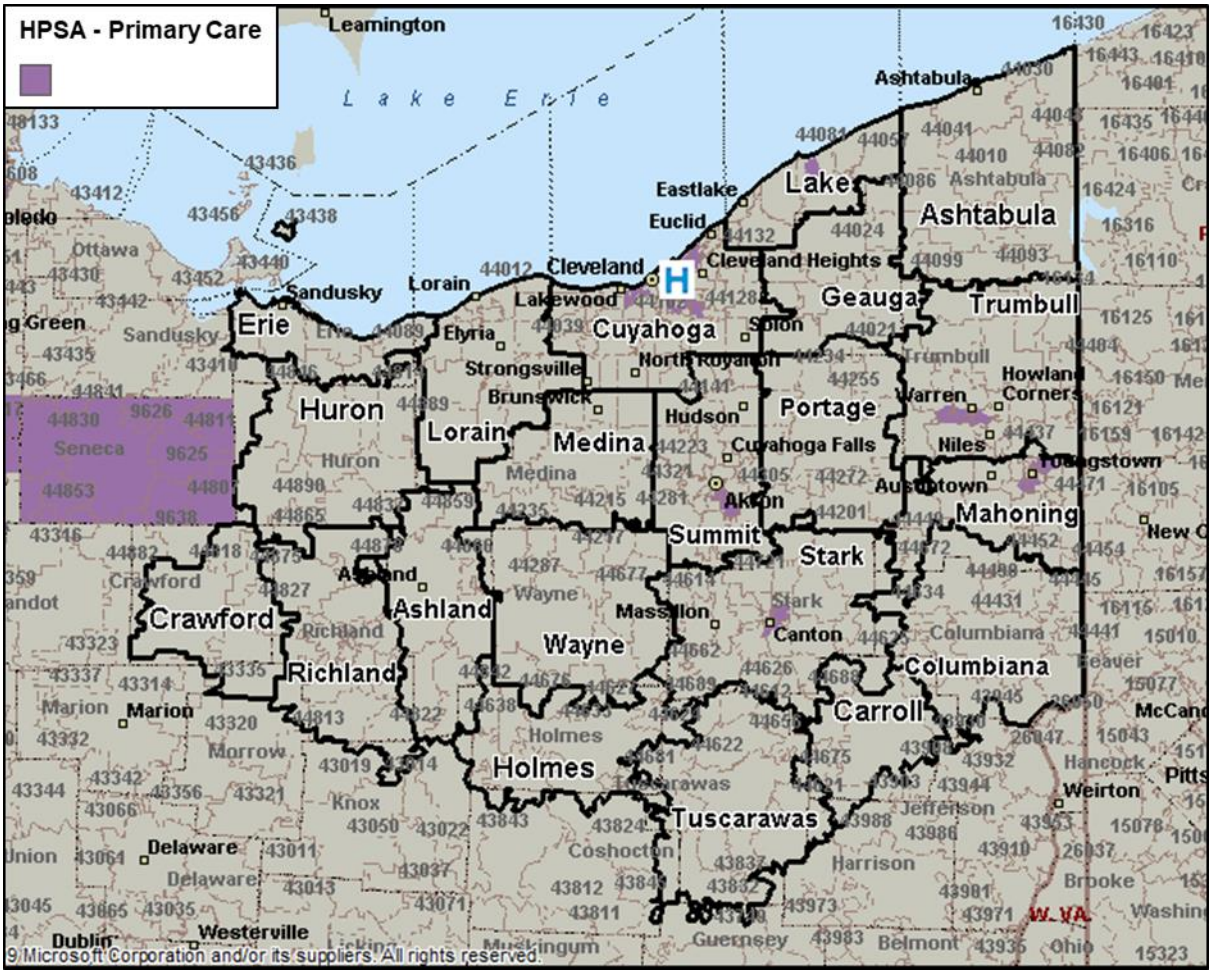
- Medically Underserved Areas are present in Cuyahoga, Lorain, Mahoning, Stark, Summit, and Trumbull counties.

- Medically Underserved Populations are present in Ashtabula, Lake, Medina, Portage, Richland, and Stark counties.

[39] *Ibid.*

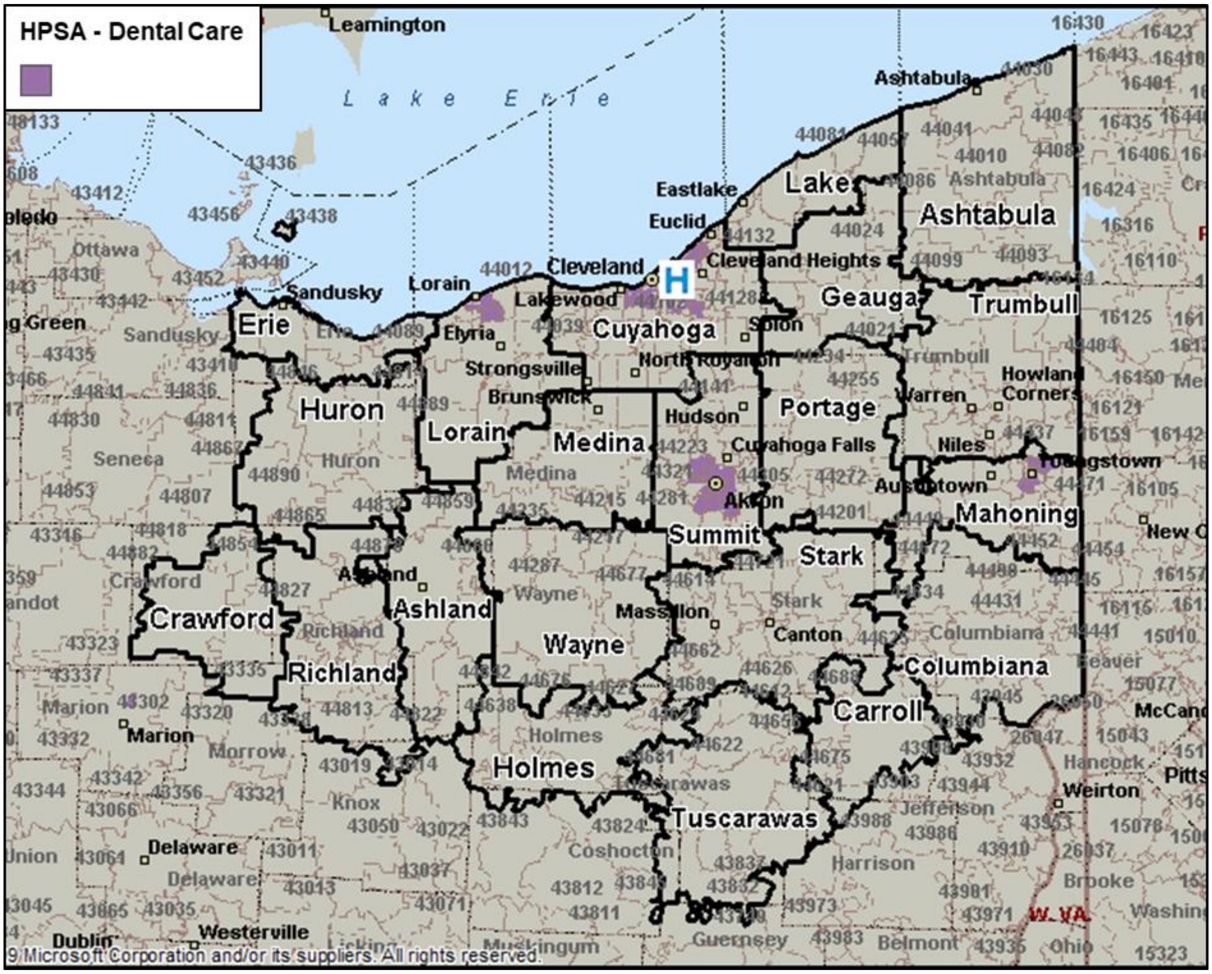
Health Professional Shortage Areas

Exhibit 101: Primary Care Health Professional Shortage Areas, 2018



Source: Health Resources and Services Administration, 2018.

Exhibit 102: Dental Care Health Professional Shortage Areas, 2018



Source: Health Resources and Services Administration, 2018.

Description

Exhibits 101 and 102 show the locations of federally-designated primary care and dental care HPSA Census Tracts.

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."[40]

Observations

- Census tracts in a number of counties have been designated as primary care and dental care HPSAs.

- HRSA also has designated 27 facilities in 11 of the 21 counties as mental health HPSAs. Nine geographic areas (full counties) also have been designated as mental health HPSAs: Ashtabula, Carroll, Columbiana, Crawford, Erie, Holmes, Huron, Tuscarawas, and Wayne counties.

[40] 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

APPENDIX E – OHIO SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the state of Ohio.

Exhibit 103: Community Health Status Indicators, 2018

Indicator	Number of Ohio Counties	
	In Bottom Half of Peers	In Bottom Quartile of Peers
Average Daily PM2.5	88	83
% Smokers	84	60
% Drive Alone to Work	73	47
% Driving Deaths Alcohol-Impaired	63	30
Preventable Hosp. Rate	61	33
% Obese	59	34
% Receiving Mammography Screening	59	34
% Unemployed	59	33
Mentally Unhealthy Days	59	17
% Receiving HbA1c Screening	57	30
Food Environment Index	57	26
% Physically Inactive	55	29
Dentist Rate	55	26
Primary Care Physicians Rate	54	25
Years of Potential Life Lost Rate	54	22
Teen Birth Rate	52	11
% Some College	51	31
Mental Health Providers Rate	50	16
% Fair/Poor Health	46	23
% Long Commute - Drives Alone	46	21
% Births - Low Birth Weight	46	16
Social Association Rate	46	15
% Children in Single-Parent Households	45	22
Physically Unhealthy Days	45	17
Income Inequality Ratio	45	17
Injury Death Rate	41	18
% Excessive Drinking	41	12
Chlamydia Rate	40	16
% Children in Poverty	37	20
% Severe Housing Problems	36	19
% With Access to Exercise Opportunities	36	14
High School Graduation Rate	35	11
% Uninsured	31	7
Violent Crime Rate	17	6

Source: Community Health Status Indicators, 2018.

Description

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

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

Exhibit 103 compares Ohio community counties to their respective peer counties and highlights community health issues found to rank in the bottom half and bottom quartile of the counties included in the analysis. Light grey shading indicates that the number of Ohio counties ranked in the bottom half or quartile is at least two thirds of Ohio counties.

Observations

- The CHSI data indicate that at least a two-thirds of Ohio counties rank in the bottom half of their peers for the following indicators:
    - Air pollution (average daily PM2.5)
    - Percent of adults who smoke
    - Percent workers drive alone to work
    - Percent of driving deaths with alcohol involvement
    - Preventable hospitalizations rate
    - Percent of adults obese
    - Mammography screening
    - Unemployment
    - Average mentally unhealthy days
    - Diabetes monitoring
    - Food environment index

Exhibit 104: America's Health Rankings, 2017

Measure Name	2017 Rank	Measure Name	2017 Rank
Health Behaviors	46	Mental Health Providers	32
Drug Deaths	46	Obesity	32
Air Pollution	45	Binge Drinking	31
Insufficient Sleep	45	Diabetes	31
Public Health Funding	45	Excessive Drinking	30
Smoking	45	Injury Deaths	30
Preventable Hospitalizations	42	High Health Status	29
All Determinants	40	Personal Income, Per Capita	29
Cancer Deaths	40	High Cholesterol	28
Children in Poverty	40	Immunization Meningococcal	28
Immunization HPV Females	40	Underemployment Rate	28
Infant Mortality	40	Colorectal Cancer Screening	27
All Outcomes	39	Income Inequity	26
Cardiovascular Deaths	39	Neighborhood Amenities	26
Heart Disease	39	Unemployment Rate, Annual	26
Overall	39	Chronic Drinking	24
Premature Death	39	Policy	24
High Blood Pressure	38	Cholesterol Check	23
Immunizations - Children	38	Occupational Fatalities	22
Median Household Income	37	Immunization HPV Males	21
Stroke	37	Immunizations - Adolescents	20
Chlamydia	35	Infectious Disease	20
Frequent Mental Distress	35	Dental Visit, Annual	19
Physical Inactivity	35	Disparity in Health Status	19
Clinical Care	34	Suicide	19
Frequent Physical Distress	34	Disconnected Youth	18
High School Graduation	34	Violent Crime	18
Pertussis	34	Immunization Tdap	16
Seat Belt Use	34	Dedicated Health Care Provider	15
Community & Environment	33	Uninsured	14
Dentists	33	Primary Care Physicians	13
Heart Attack	33	Fruits	12
Poor Mental Health Days	33	Water Fluoridation	11
Poor Physical Health Days	33	Salmonella	9
Low Birthweight	32	Vegetables	9

Source: America's Health Rankings, 2018.

Description

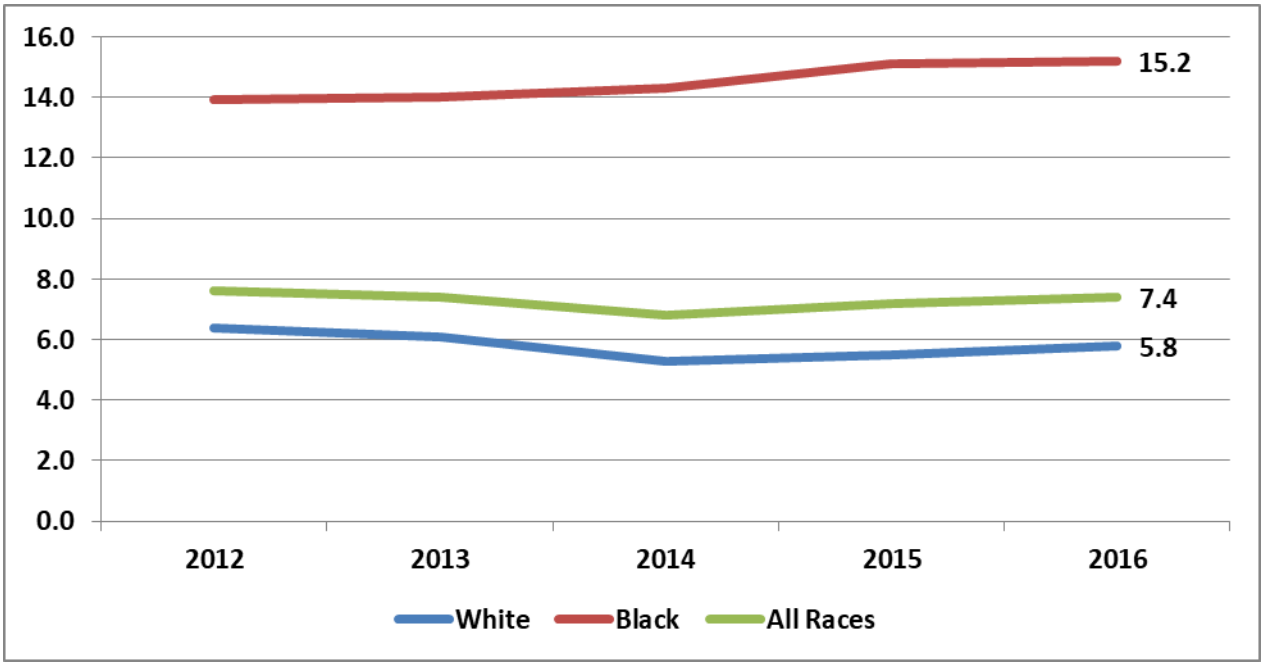
America's Health Rankings compares state-level health data to develop national health benchmarks and state rankings.

Exhibit 104 shows how Ohio ranked in 2017 by community health indicator. Light grey shading indicates rankings in the bottom half of states; dark grey shading indicates rankings in bottom quartile of states.

Observations

- Ohio ranked 39th overall for health, ranking it in the bottom third of all states.
- Ohio also ranked in the bottom third of states for the following indicators:
    - Health behaviors
    - Drug deaths
    - Air pollution
    - Insufficient sleep
    - Public health funding
    - Smoking
    - Preventable hospitalizations
    - All health determinants
    - Cancer deaths
    - Children in poverty
    - HPV immunizations
    - Infant mortality
    - All health outcomes
    - Cardiovascular deaths
    - Premature death
    - High blood pressure
    - Child immunizations

Exhibit 105: Infant Mortality Rates by Race, Ohio overall, 2012-2016



Source: Ohio Department of Health, 2018.

Description

Exhibit 105 presents infant mortality rates in Ohio by race for each year from 2012 to 2016.

Observations

- Infant mortality rates for Black infants in Ohio were consistently higher than rates for White infants and infants of all races.

Exhibit 106: Ohio BRFSS Report, 2016
(Light Grey Shading Denotes Indicators Worse than Ohio Average; Dark Grey Denotes Indicators More than 50 Percent Worse than Ohio Average)

Indicator	Male	Female	White	Black	Hispanic	Aged 65+	Less than H.S. Diploma	<$15,000	Ohio
Fair or Poor Health	17.4%	18.5%	17.4%	22.5%	18.2%	25.2%	40.4%	39.4%	**18.0%**
Heart Disease	9.2%	5.6%	7.8%	6.1%	N/A	18.7%	15.7%	12.7%	**7.4%**
Stroke	3.7%	3.5%	3.5%	3.0%	N/A	8.0%	6.8%	7.3%	**3.6%**
Asthma	12.5%	15.4%	13.2%	16.1%	26.3%	11.1%	24.1%	23.1%	**14.0%**
Childhood Asthma	12.0%	9.5%	9.1%	13.2%	11.4%	N/A	N/A	16.4%	**10.7%**
Cancer	5.9%	5.5%	6.8%	0.0%	N/A	17.1%	5.1%	3.0%	**5.7%**
Arthritis	26.6%	34.1%	32.0%	26.1%	18.7%	56.7%	47.0%	46.0%	**30.5%**
Kidney Disease	2.6%	3.3%	3.0%	2.3%	N/A	6.5%	5.5%	5.9%	**2.9%**
Diabetes	11.6%	10.7%	11.0%	12.4%	12.2%	22.8%	17.0%	16.3%	**11.1%**
Prediabetes	8.4%	7.9%	8.2%	8.1%	N/A	11.8%	7.9%	10.5%	**8.1%**
Chronic Obstructive Pulmonary Disease (COPD)	8.6%	8.8%	8.9%	8.2%	N/A	14.5%	22.8%	20.4%	**8.7%**
Depression	12.1%	22.4%	17.5%	15.4%	N/A	10.9%	29.1%	39.8%	**17.4%**
Current Smoking	24.7%	20.5%	22.4%	23.5%	22.3%	10.6%	43.0%	42.3%	**22.5%**
Binge Drinking	23.5%	12.8%	18.4%	13.4%	N/A	4.5%	18.8%	20.8%	**17.9%**
Seat Belt Use	88.0%	94.4%	91.7%	89.9%	84.4%	94.2%	84.6%	89.0%	**91.3%**
Any Exercise	76.9%	71.4%	74.9%	67.0%	74.1%	62.7%	53.2%	59.3%	**74.1%**
Meeting Physical Activity Guidelines	22.1%	16.0%	18.5%	22.5%	19.7%	15.7%	11.7%	14.4%	**18.9%**
Overweight	39.8%	29.7%	35.4%	35.6%	25.0%	38.4%	30.3%	32.4%	**34.8%**
Obesity	30.9%	32.1%	30.8%	35.8%	37.9%	29.7%	35.6%	38.6%	**31.5%**
Disability	14.7%	16.9%	16.0%	15.8%	N/A	20.2%	27.0%	37.7%	**15.9%**
Access to Dental Care	63.7%	71.8%	69.0%	62.8%	65.0%	66.0%	46.8%	51.4%	**67.9%**
Access to Healthcare Coverage	91.1%	95.1%	93.8%	90.2%	89.7%	98.5%	86.5%	90.8%	**93.2%**
Mammogram Testing	N/A	N/A	77.1%	77.9%	N/A	79.6%	67.0%	69.4%	**77.1%**
Pap Testing	N/A	N/A	82.1%	82.5%	N/A	N/A	67.1%	73.4%	**81.9%**
Colorectal Cancer Screening	64.4%	69.2%	67.3%	61.3%	68.9%	76.5%	60.8%	57.2%	**66.9%**
Having a Flu Shot	34.4%	42.4%	39.2%	36.6%	32.7%	57.3%	32.8%	33.0%	**38.6%**
Poor Mental Health	9.8%	15.8%	12.5%	14.3%	N/A	6.2%	24.4%	29.6%	**12.9%**
Marijuana Use	8.8%	5.8%	6.4%	11.7%	N/A	1.2%	9.9%	16.1%	**7.2%**
HIV Testing	33.4%	34.2%	30.0%	57.0%	42.3%	10.2%	34.1%	51.0%	**33.8%**

Source: Ohio Department of Health, 2018.

Description

The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) gathers data through a telephone survey regarding health risk behaviors, healthcare access, and preventive health measures. Data are collected for the entire United States. Analysis of BRFSS data can identify localized health issues, trends, and health disparities, and can enable county, state, or nation-wide comparisons.

Exhibit 106 depicts BRFSS data for Ohio demographic cohorts and compared to the averages for Ohio.

Observations

- Overall, residents with less than a high school diploma and making less than $15,000 annually compared worse to Ohio averages and other demographic cohorts.

APPENDIX F – UNITED STATES SECONDARY DATA ASSESSMENT

This section presents certain secondary data for the United States.

Healthy People 2020 – Leading Health Indicators

Healthy People 2020 tracks health in the United States through more than 1,200 objectives that span 42 topic areas. The *Leading Health Indicators* provide measures for 26 Healthy People 2020 objectives associated with high-priority health issues and challenges.[41]

The Leading Health Indicators were measured at midcourse and sorted into four categories:

1. Target met or exceeded (eight indicators)
2. Improving (eight indicators)
3. Little or no detectable change (seven indicators)
4. Getting worse (three indicators)

The following indicators have met or exceeded the 2020 target:

- Air Quality Index
- Children exposed to secondhand smoke
- Homicides
- All infant deaths
- Total preterm live births
- Adults meeting aerobic physical activity and muscle-strengthening objectives
- Adolescents (12-17 years) using alcohol or illicit drugs in past 30 days
- Adolescent cigarette smoking in past 30 days

The following indicators are "improving":

- Persons with medical insurance
- Adults receiving colorectal cancer screening
- Adults with hypertension whose blood pressure is under control
- Children receiving the recommended doses of DTaP, polio, MMR, Hib, HepB, varicella, and PCV vaccines by age 19–35 months
- Injury deaths
- Knowledge of serostatus among HIV-positive persons (13+ years)
- Students awarded a high school diploma 4 years after starting 9th grade
- Adult cigarette smoking

The following indicators have "little or no detectable change":

[41] National Center for Health Statistics. Chapter IV: Leading Health Indicators. Healthy People 2020 Midcourse Review. Hyattsville, MD. 2016.

- Persons with a usual primary care provider
- Adults with diagnosed diabetes whose A1c value is greater than nine percent
- Obesity among adults
- Obesity among children and adolescents
- Mean daily intake of total vegetables
- Sexually active females receiving reproductive health services (15–44 years)
- Binge drinking in past 30 days (adults)

The following indicators are "getting worse":

- Suicides
- Adolescents with a major depressive episode in the past 12 months (12-17 years old)
- Children, adolescents, and adults who visited the dentist in the past year

Health, United States, 2017 – With Special Feature on Mortality

Health, United States, 2017 is the 41st report on the health status of the United States and is compiled by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS). The report presents an annual overview of trends in health statistics.[42]

The following are key takeaways from the report regarding recent trends in mortality.

- Despite an overall increase in overall life expectancy from 2006 to 2016, life expectancy at birth decreased in recent years for the first time since 1993. Between 2014 and 2015, life expectancy at birth decreased 0.2 years. Between 2015 and 2016, life expectancy at birth decreased another 0.1 years.
    - In 2016, life expectancy at birth was 76.1 years for males and 81.1 years for females, a five-year difference.
    - Life expectancy at birth was highest for Hispanic persons at 81.8 years, compared to 78.5 years for non-Hispanic white persons and 74.8 years for non-Hispanic black persons.

- In 2016, the leading causes of death were as follows:
    - Heart disease
    - Cancer
    - Unintentional injuries
    - Chronic lower respiratory diseases
    - Stroke
    - Alzheimer's disease
    - Diabetes
    - Influenza and pneumonia
    - Kidney disease

[42] National Center for Health Statistics. Health, United States, 2017: With special feature on mortality. Hyattsville, MD. 2018.

    - Suicide

- Between 2005 and 2015, the infant mortality rate decreased 14 percent, from 6.86 to 5.90 deaths per 1,000 live births; however, differences by race and ethnicity remained.
    - In 2015, the infant mortality rate was 2.8 times as high among infants of non-Hispanic black mothers (11.25 deaths per 1,000 live births) as among infants of non-Hispanic Asian or Pacific Islander mothers (4.08 deaths per 1,000 live births)

- During 2006–2016, heart disease and cancer (malignant neoplasms) were the top two causes of death. The age adjusted heart disease death rate declined 19 percent, from 205.5 to 165.5 deaths per 100,000 resident population, over this period. The age-adjusted cancer death rate declined 14 percent, from 181.8 to 155.8 deaths per 100,000 resident population.

- In 2016, there were 63,632 deaths from drug overdoses— two-thirds (66.4 percent percent) of which involved an opioid.
    - Between 2006 and 2016, the age-adjusted death rate for drug overdose increased from 11.5 to 19.8 deaths per 100,000.
    - Drug overdose death rates were higher among males than females, and the trend varied by sex and age.
    - The recent increases in drug overdose death rates were especially pronounced among men aged 25–34 and women aged 15–24.

- Between 2006 and 2016, the age-adjusted suicide death rate increased 23 percent, from 11.0 to 13.5 deaths per 100,000 resident population.
    - In 2016, suicide rates differed by sex and age. Men aged 75 and over had the highest suicide rate among males (39.2 deaths per 100,000), while women aged 45–64 had the highest suicide rate among females (9.9 deaths per 100,000).

- During 2006–2016, death rates for chronic liver disease and cirrhosis were higher among men than among women.
    - In 2016, among men, those aged 55–64 had the highest chronic liver disease and cirrhosis death rate (45.9 deaths per 100,000), while among women, those aged 75 and over had the highest death rate (23.8 deaths per 100,000).

APPENDIX G – FINDINGS OF OTHER ASSESSMENTS

Findings of Other Assessments

In recent years, the Ohio Department of Health and local health departments throughout Northeast Ohio conducted Community Health Assessments and developed Health Improvement Plans. This section identifies significant community health needs found in that work. These findings have been integrated into this CHNA.

Local Neighborhoods Community Assessments

Cuyahoga County Community Health Assessment 2018

A Community Health Assessment ("CHA") for Cuyahoga County was developed through a collaboration between Case Western Reserve University School of Medicine, the Cleveland Department of Public Health, the Cuyahoga County Board of Health, the Health Improvement Partnership- Cuyahoga, the Center for Health Affairs, and University Hospitals. Data sources that informed the 2018 Cuyahoga County CHA include interviews from community stakeholders, existing community perceptions gathered by other organizations, and secondary data from national, state and local sources.

Thirteen "Top Health Needs" were identified in the Cuyahoga County CHA, as follows:

Quality of Life
1. Poverty
2. Food insecurity

Chronic Disease
3. Lead poisoning
4. Cardiovascular disease
5. Childhood asthma
6. Diabetes

Health Behaviors
7. Flu vaccination rates
8. Tobacco use/COPD
9. Lack of physical activity

Mental Health and Addiction
10. Suicide/mental health
11. Homicide/violence/safety
12. Opioids/substance use disorders

Maternal/Child Health

13. Infant mortality

7-County Community Assessments

Geauga County Community Health Improvement Plan

Over the years, several Community Health Status Assessments ("CHSA") for Geauga County have been developed by the Partnership for a Healthy Geauga. Informed by those assessments, the Partnership developed a 2015-2017 Community Health Improvement Plan ("CHIP").

The CHIP established three "Priority Health Issues" for Geauga County, and several "Target Impact Areas" for each:

- Increase access and awareness of mental health issues.
    - Increase the number of health care providers who screen for depression during office visits.
    - Increase early identification of mental health needs among youth.
    - Increase community awareness and education of mental health issues and services.
    - Increase the number of mental health care providers in Geauga County.

- Increase access and awareness and treatment options for substance abuse [including drugs, tobacco and alcohol].
    - Increase awareness of available substance abuse programs and services.
    - Increase awareness of risky behaviors and substance abuse trends for parents, guardians and community members.
    - Implement evidence-based prevention programs in elementary, middle and high schools.
    - Increase the number of health care providers' screenings for alcohol and drug abuse.
    - Decrease exposure to second hand smoke.
    - Implement a community based comprehensive program to reduce alcohol abuse.

- Increase access to healthcare.
    - Increase public transportation.
    - Increase community education on health insurance opportunities and utilization.
    - Increase patient success at home.

Lake County Drug-Related Overdose Deaths: 2013 to 2017

The Lake County General Health District assessed drug overdose deaths and vital statistics data to identify populations most at risk and to inform development of community-based overdose prevention initiatives.

The study found that those most at risk include:

- Males and those 25 to 54 years of age.
- Individuals who are single, never married, or divorced.
- Those working in labor, maintenance, and trade occupations.

The study also found that:

- The vast majority (and a growing proportion) of substances contributing to overdose deaths were either illicit, or a combination of illicit and prescription substances.
- Deaths attributed to prescription-only substances have declined.
- The shift towards increased illicit and illicit/prescription combinations warrants increased concern because potency, impacts of drug combinations, and substance awareness are variable.

Lorain County Community Health Improvement Plan, 2014-2019

A Community Health Improvement Plan ("CHIP") was commissioned by Lorain County Public Health (LCPH), formerly the Lorain County General Health District. The CHIP process included community engagement session with stakeholders and community members. The CHIP identified five target areas, as follows:

1. Improve access to care;
2. Expand coordinated education and prevention services;
3. Improve weight issues and obesity among adults and children;
4. Reduce alcohol, tobacco, and drug abuse among adults and children; and
5. Improve mental health of seniors, adults, and children.

Medina County Community Health Improvement Plan, 2018-2020

A Community Health Improvement Plan ("CHIP") for Medina County was developed by Living Well Medina County, a collaboration of healthcare, government, education, business, nonprofit,

and faith communities in Medina County, including the Medina County Health Department. Priority areas identified in the CHIP are as follows:

1. Mental health and addiction (including tobacco use); and
2. Chronic Disease (adult heart disease, adult diabetes, and obesity).

Portage County Community Health Improvement Plan 2016-2019

Beginning in 2014 and continuing throughout 2015, Portage County Community Health Partners conducted community health assessments and also developed the Portage County Community Health Improvement Plan. The CHIP prioritized five health issues for the 2016-2019 time period.

1. Decrease Obesity
2. Increase Mental Health Services
3. Decrease Substance Abuse
4. Increase Access to Healthcare
5. Increase Injury Prevention

The CHIP, originally published in August 2016 and updated in December 2017, specified ten action steps for decreasing obesity, six for increasing mental health services, seven for decreasing substance abuse, four for increasing access to healthcare, and seven for increasing injury prevention.

Summit County Community Health Improvement Plan 2017

Summit County Public Health and its community partners released Summit County's first Community Health Improvement Plan in 2011. According to the 2017 CHIP, the county continues to face evolving public health risks, including high infant mortality rates, significant chronic disease burden and the growing opiate epidemic.

Five priority areas were identified for the county in the 2017 CHIP:

1. Adolescent Health
2. Aging Population
3. Chronic Disease
4. Maternal and Infant Health
5. Mental Health and Addiction

The 2017 CHIP also identifies addressing social determinants of health (neighborhood, occupation, education, race/ethnicity, culture, socioeconomic status & income) as a major, cross-cutting priority.

The CHIP identifies a number of strategies designed to achieve improvements in the identified priority areas.

21-County Community Assessments

Ashland County Community Health Improvement Plan, 2018

A Community Health Assessment was produced by the Hospital Council of Northwest Ohio (HCNO) in coalition with the Ashland County Health Department. Priority health areas identified in the 2018 CHA are as follows:

1. Suicide prevention;
2. Childhood and adult obesity prevention;
3. Chronic disease prevention; and
4. Opiate overdose prevention.

Ashtabula County Community Health Improvement Plan, 2017-2020

A Community Health Improvement Plan ("CHIP") was produced by the Summit County Community Health Needs Assessment Advisory Committee, a collaboration of numerous agencies of Ashtabula County and City, local hospitals, and community organizations. Priority health areas identified in the 2017-2020 CHIP are as follows:

1. Suicide prevention;
2. Childhood obesity;
3. Adult obesity;
4. Chronic disease; and
5. Opiate overdose.

Carroll County Community Health Improvement Plan, 2017

A Community Health Improvement Plan ("CHIP") was produced by the Carroll County General Health District in collaboration with numerous agencies that formed the Carroll County Community Health Improvement Advisory Committee. Priority health areas identified in the 2017 CHIP are as follows:

1. Mental health and addiction;
2. Maternal and child health (reducing risky behaviors); and
3. Access to care.

Columbiana County Community Health Improvement Plan, 2016

A Community Health Improvement Plan ("CHIP") was produced by the Columbiana County Health Partners. To facilitate the Community Health Improvement Process, the Columbiana County General Health District along with the local hospitals, invited key community leaders to participate in an organized process of strategic planning to improve the health of residents of the county. Priority health areas identified in the 2016 CHIP are as follows:

1. Obesity;
2. Mental health and substance abuse; and
3. Tobacco use and cancer prevention.

Crawford County Community Health Assessment, 2019

A Community Health Assessment was produced by the Crawford County Health Partners. Avita Health System collaborated with the Crawford County Health Department, the Galion City Health Department, and other partners to create the 2018/19 Crawford County CHA. No priority areas were included in the CHA; however, a Community Health Improvement Plan is expected to be produced by 2020 that will establish such priorities.

Erie County Community Health Improvement Plan, 2017-2020

A Community Health Improvement Plan ("CHIP") was produced by the Erie County Health Department with input from key communities from local organizations. The 2017-2020 CHIP identified four priority areas for the 2017-2020 CHIP, as follows:

1. Adult overweight/obesity;
2. Youth overweight/obesity;
3. Adult mental health; and
4. Adult tobacco use.

Holmes County Community Health Improvement Plan, 2017

In 2017, the Holmes County General Health District, Pomerene Hospital, and other local community partners and agencies joined forces to create a collaborative group called The

Partners for a Healthier Holmes County (The Partners). In 2017, surveys were administered to a to assess the health of our community and identify the health issues of greatest concern and generate a Community Health Assessment report. Based on the data from the 2017 Community Health Assessment, The Partners for a Healthier Holmes County have identified three (3) priority areas to focus on to improve the health of Holmes County. The priority areas are:

1. Improving chronic disease outcomes;
2. Improving mental health and addiction outcomes; and
3. Improving access to preventative care.

Huron County Community Health Improvement Plan, 2015

In 2014, the Huron County Health Partners collaborated on producing a Community Health Assessment and following Community Health Improvement Plan. While a CHA was again produced in 2018, a CHIP is still in development. The priority areas established by the previous 2015 CHIP were:

1. Substance abuse;
2. Mental health;
3. Access to care;
4. Personal wellness; and
5. Public health infrastructure.

Mahoning County Community Health Improvement Plan, 2017

During 2014, the Mahoning County CHIP Team conducted an analysis of the 2011 CHIP implementation, analyzed community health indicator data and published a 2014 Mahoning County Community Health Improvement Plan (2014 CHIP). The CHIP was revised in 2017 to include new plans and strategies, as well as add a fifth priority area. The priority areas of the 2017 CHIP are:

1. Health eating and active living;
2. Infant mortality and birth outcome inequity;
3. Chronic disease;
4. Substance use disorders; and
5. Health inequities.

Richland County Community Health Improvement Plan, 2017-2020

In 2011, Richland County began conducting community health assessments (CHA) for the purpose of measuring and addressing health status. The most recent 2016 Richland County Community Health Assessment, released in 2017, was cross-sectional in nature and included a written survey of adults, including an oversample of Shelby City adults and African Americans; adolescents; and parents within Richland County. The Richland County CHA has been utilized as a vital tool for creating the Richland County Community Health Improvement Plan (CHIP), which established the following priority areas:

1. Chronic disease; and
2. Mental health and addiction.

Stark County Community Health Improvement Plan, 2017-2019

In 2016, Stark County held a Health Improvement Summit with community partners to narrow down priority health areas identified within the 2015 CHNA and to create a framework for Stark County's 2017-2019 CHIP. The three priority areas that were established were:

1. Access to health care;
2. Mental health; and
3. Infant mortality.

Trumbull County Community Health Improvement Plan, 2014-2018

In 2013, Trumbull County developed a Community Health Assessment and a resulting Community Health Improvement Plan. The county's CHIP covered a variety of topic areas and strategies for improvement through 2018. A new health improvement plan may be developed in the future to cover the current year.

Tuscarawas County Community Health Improvement Plan, 2016-2019

A Community Health Improvement Plan ("CHIP") for Tuscarawas County was developed after *Healthy Tusc* conducted a Community Health Assessment in 2015. To facilitate the Community Health Improvement Process, the local health departments along with the hospitals, invited key community leaders to participate in an organized process of strategic planning to improve the health of residents of the county using the MAPP process. Priority areas identified in the CHIP are as follows:

1. Adult and youth obesity
2. Adult and youth mental health and bullying

3. Youth substance abuse; and

4. Access to dental care.

Wayne County Community Health Improvement Plan, 2017-2019

A Community Health Improvement Plan ("CHIP") for Medina County was prepared by the Wayne County Health Department with input from local hospitals and community organizations. Priority areas identified in the CHIP are as follows:

1. Physical health;

2. Mental health; and

3. Substance use disorders.

Local Health Department Assessments Summary

The following table summarizes the most common priority areas identified by Community Health Assessments and Community Health Improvement Plans in the 21 counties of Northeast Ohio in recent years.

Exhibit 107: Summary of Prioritized Needs from Local Assessments

Priority Area	Total
Addiction and substance use disorders (including opioids)	18
Mental health	17
Obesity	9
Chronic disease	8
Access to care	7
Tobacco use	6
Childhood obesity	5
Maternal and child health	4
Suicide	4
Infant mortality	3
Cardiovascular disease	2
Diabetes	2
Lack of physical activity	2
Alcohol abuse	2

Source: Verité Analysis, 2019.

Ohio Assessment

State Health Improvement Plan, 2017-2019

The Ohio Department of Health prepared a 2017-2019 State Health Improvement Plan (SHIP), informed by its State Health Assessment. The SHIP established two overall health outcomes (improving health status and reducing premature death) and ten priority outcomes organized into three "topics," as follows:

1. Mental Health and Addiction
    - Depression
    - Suicide
    - Drug dependency/abuse
    - Drug overdose deaths

2. Chronic Disease
    - Heart disease
    - Diabetes
    - Child asthma

3. Maternal and infant health
    - Preterm births
    - Low birth weight
    - Infant mortality

For each outcome, the plan calls for achieving equity for "priority populations" specified throughout the report, including low-income adults, Black (non-Hispanic males), and other specific groups.

The plan also addresses the outcomes through strategies focused on "cross-cutting factors," namely:

1. Social Determinants of Health, e.g.,
    - Increase third grade reading proficiency,
    - Reduce school absenteeism,
    - Address high housing cost burden, and
    - Reduce secondhand smoke exposure for children.

2. Public Health System, prevention and health behaviors, e.g.,
    - Consume healthy food,
    - Reduce physical inactivity,
    - Reduce adult smoking, and
    - Reduce youth all-tobacco use.

3. Healthcare system and access, e.g.,
    - Reduce percent of adults who are uninsured,
    - Reduce percent of adults unable to see a doctor due to cost, and

- Reduce primary care health professional shortage areas.

4. Equity strategies likely to decrease disparities for priority populations.

APPENDIX H – COMMUNITY INPUT PARTICIPANTS

Individuals from a wide variety of organizations and communities participated in the interview process (**Exhibit 108**).

Exhibit 108: Interviewee Organizational Affiliations

Organization	
Alcohol and Drug Addiction Services Board of Lorain County	Lake County Department of Health
American Heart Association	Lorain County Board of Mental Health
Benjamin Rose Institute on Aging	Lorain County Dept Health
Boys & Girls Clubs of Cleveland	Lorain County Free Clinic
Carmella Rose Health Foundation	Medina County ADAMH
Center for Community Solutions	Medina County Department of Health
Center for Health Affairs	NAMI
City of Cleveland	Ohio Department of Health
City of Cleveland - Department of Public Health	Summit County ADAMS
Cleveland Foundation	Summit County Department of Health
Cuyahoga County Board of Health	The Catholic Health Association
Cuyahoga Metropolitan Housing Authority	The Centers (for families and children)
El Centro	The Gathering Place
Esperanza	The LCADA Way
Fairhill Partners	United Cerebral Palsy
Greater Cleveland Food Bank	United Way of Greater Cleveland
Health Policy Institute of Ohio	United Way of Greater Lorain County
Kent State School of Public Health	United Way of Lake County
Lake County ADAMS	Western Reserve Area Agency on Aging

APPENDIX I – IMPACT EVALUATION

Impact of Actions Taken Since the Last CHNA – Main Campus

Cleveland Clinic Main Campus 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 action items in our 2016 CHNA Implementation Strategy are described below with representative impacts.

1. **Identified Need: Access to Affordable Care**

   a. **Financial Assistance**

   Actions:

   Cleveland Clinic Main Campus 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 Main Campus has a financial assistance policy that is among the most generous in the region that covers both hospital services and physician services provided by physicians employed by the Cleveland Clinic.

   Highlighted Impact:

   In 2016 – 2018, Cleveland Clinic health system provided over $286 million in financial assistance to its communities in Ohio, Florida, and Nevada.

   b. **Access to Care and Appointments**

   Action:

   Cleveland Clinic continues to provide telephone and internet access to patients seeking to make appointments for primary, specialty and diagnostic services. Representatives are available 24/7 and can assist patients in identifying the next available or closest location for an appointment at all facilities within the Cleveland Clinic health system.

   Highlighted Impacts:

   In 2018, Cleveland Clinic health system provided 43,125 virtual visits to patients seeking care, a 75% increase from 2017.

   Cleveland Clinic opened a downtown Express Care Clinic in 2016 to provide increased access for people living and working in Cleveland.

Cleveland Clinic provided transportation assistance based on financial and medical need. Cleveland Clinic provided transportation on a space available basis to existing patients who were within 5 miles of the following facilities: Stephanie Tubbs Jones Health Center and Marymount, Euclid, Lutheran, and South Pointe Hospitals. Space available transportation was also offered for radiation oncology treatment up to 25 miles of the Cleveland Clinic Main Campus, Hillcrest, and Fairview Hospitals.

2. Identified Need: Chronic Disease and Health Conditions

a. Cancer

Action:

Cleveland Clinic's Taussig Cancer Institute is Ranked No. 1 in Ohio and No. 5 in the U.S. by U.S. News & World Report 2018-19, and continues to provide a range of services to patients including clinical trials and internationally-recognized cancer research efforts. The Taussig Cancer Institute's outpatient care is housed in a new facility on the Cleveland Clinic's main campus that opened in March 2017.

Services for cancer patients are clustered in the building so they do not unnecessarily have to visit other portions of the Main Campus. This includes chemotherapy services, radiation therapy, outpatient services, a patient resources center, art and music therapy and a wig store.

The Taussig Cancer Institute works to prevent late state cancer presentation in our communities through a variety of educational, screening, and outreach efforts.

Highlighted Impacts:

Taussig Cancer Center provided patient navigators for patients, families, and community members to increase the availability of screening and improve treatment outcomes.

Taussig Cancer Center provided monthly screening, education, and navigation services through *Pink and Beyond*, a collaboration between THE WORD Church that provides women with resources and information to increase awareness about breast health.

The Cleveland Clinic Taussig Cancer Institute provided free mammograms to uninsured women in a program with the National Breast Cancer Foundation.

The Cleveland Clinic offered a women's health clinic several times a month at the Langston Hughes Community Health and Education Center. Clinical health screenings were available to uninsured or underinsured women who have not had a PAP screen in the last three years and who do not have a regular primary care doctor or gynecologist.

Taussig Cancer collaborated with local congregations to address cancer disparities in Cuyahoga County in a program called Stopping Cancer in its Tracks. Twenty-five churches continue to meet monthly to develop education and screening events for their congregations.

Taussig Cancer Institute collaborated with the National Cancer Institute in a program called Screen to Save on screenings for colorectal cancers offered to residents of high-need communities.

Main Campus provided health fair cancer screenings and community education classes for over 2,900 community residents from 2016 through 2018.

b. Chemical Dependency

Action:

Cleveland Clinic continues to address rising drug abuse in our communities, especially related to community needs in the heroin and opioid epidemic by developing internal programs, educational modules, and treatment plans. We continue to collaborate with external partners on strategies and policies that will positively impact this drug epidemic.

Cleveland Clinic continues to support the Northeast Ohio Heroin Task Force with regional strategies. Our internal Opiate Task Force continues to provide an enterprise-wide, comprehensive model focused on prevention and treatment of opioid addiction in each of the communities we serve in Northeast Ohio.

Based at Lutheran Hospital, Cleveland Clinic's Alcohol and Drug Recovery Center (ADRC) continues to offers high quality evaluation and treatment for people with alcohol and/or drug dependency problems. Our interdisciplinary team of board-certified psychiatrists, specially trained and licensed registered nurses, and certified professional counselors all specialize in chemical dependency.

Highlighted Impacts:

In 2018, Cleveland Clinic hosted an Opioid Summit, titled "Opioids: A Crisis Still Facing Our Community," for 300 community leaders, with the U.S. Attorney's Office.

An 8 week Integrative Recovery Shared Medical Appointment program was developed jointly by the Cleveland Clinic Wellness Institute and the Alcohol and Drug Recovery Center in 2018. The new program is open to adults with 3 months to 4 years of sobriety and active within a 12-step recovery program.

In May 2017, Cleveland Clinic announced Naloxone would be available without a prescription at all Cleveland Clinic pharmacies in NE Ohio.

Community town halls with local health districts, police departments, and fire departments discussed the "triple threat," of the epidemic: opiates, heroin, and

fentanyl in Cleveland Clinic communities particularly hard-hit by the opiate epidemic. There were a total of 13 programs in 2017 and 2018, reaching over 865 attendees.

c. Diabetes

Action:

Cleveland Clinic's Endocrinology & Metabolism Institute continues to provide healthcare for patients with diabetes, endocrine and metabolic disorders, and obesity. Cleveland Clinic Main Campus continues to treat acute diabetic conditions on an inpatient basis, offers outpatient care and provides dieticians to inpatients seeking diabetes care. Outpatient services were also provided at various family health centers.

Highlighted Impact:

Patients were seen in the outpatient Chronic Disease Center by nurses and dieticians to assist with compliance with diet and medications.

Diabetes education programs were provided at various community locations and local schools reaching community members from 2016 - 2018.

Healthy cooking classes, nutrition education, a farmers market, and support groups were provided at Stephanie Tubbs Jones Health Centers serving residents in East Cleveland, an area with high Diabetes incidence.

d. Heart Disease

Action:

Cleveland Clinic has been ranked America's number one center for cardiac care for 24 years by U.S. News and World Report, 2018-19. The Miller Family Heart & Vascular Institute at Cleveland Clinic is the largest in the United States providing cardiovascular medicine, cardiovascular and thoracic surgery, and related services.

Cleveland Clinic Heart Health Program at the Langston Hughes Community Health and Education Center in Fairfax is a monthly series of free programs aimed at educating and improving heart health for residents, especially those in Fairfax, Hough, Glenville, Central, and surrounding communities.

Highlighted Impacts:

Community educational programs on heart related topics, including Protect Your Heart: Know Your Numbers, Hypertension 101, and Stroke 101, were provided to 1,400 community members from 2016 through 2018.

e. Obesity

Action:

Cleveland Clinic's Bariatric & Metabolic Institute evaluates patients with a thorough physical exam and collaborates with physicians in a variety of

specialties to take into account the patient's other medical issues when determining an appropriate weight loss plan. For patients who choose not to undergo surgery, or for those who are ineligible, Cleveland Clinic offers medical management for weight loss with access to dieticians, psychologists, and exercise physiologists.

Highlighted Impact:
Cleveland Clinic Community Outreach Healthy Community Initiatives, such as *Come Cook With Us* nutrition education classes, and fitness challenges in the community included over 3,500 community residents from 2016 through 2018.

f. Poor Birth Outcomes

Actions:
Cleveland Clinic providers (at both its affiliated hospitals and family health centers) continue to focus on prenatal screening efforts with their patients and on the management of patients at risk for preterm birth, substance abuse, and post-partum depression. In addition, Cleveland Clinic continues to develop our Centering Pregnancy program offerings. Cleveland Clinic's hospital birthing centers have implemented safe sleep screening and promotion, and encourage new mothers to consider exclusive breastfeeding.

Our community educational efforts were focused on school-based sexuality and reproductive health for teens, and on the importance of breastfeeding for the first 6 months and safe sleep for new parents. Cleveland Clinic's outreach teams hosted Community Baby Showers in high-need neighborhoods.

Cleveland Clinic Main Campus continues to work collaboratively with Fairview and Hillcrest Hospitals and the Akron General Medical Center, the Cleveland Clinic health system hospitals that provide the full spectrum of birthing services.

Highlighted Impacts:
Cleveland Clinic created an Infant Mortality Task Force with the goal of impacting the rate of infant mortality in our communities. Cleveland Clinic expanded its educational programming to strengthen and foster collaborative opportunities with other organizations in an effort to improve birth outcomes.

In 2016 Cleveland Clinic's Infant Mortality Task Force became a founding partner of First Year Cleveland in Cuyahoga County and focused on priority areas of Racial Disparities, Prematurity, and Safe Sleep. Akron General participated in the Ohio Institute for Better Birth Outcomes: Summit County Task Force and was an inaugural member of the city's Full Term First Birthday Akron, a collaborative in greater Akron.

Cleveland Clinic Centering Pregnancy programming, group pre-natal care for women, was started in four high-risk neighborhoods in 2017 and 2018, and provides Cleveland Clinic services for NE Ohio residents. Cleveland Clinic

Centering locations include: Stephanie Tubbs Jones Health Center, Lakewood Family Health Center, Columbia Medical Office, and South Pointe Hospital.

Cleveland Clinic hospitals offered Safe Sleep education to all expectant families (2016 through 2018) in an effort to decrease incidence of infant mortality.

Cleveland Clinic's Outreach team hosted Community Baby Showers in high need neighborhoods to introduce resources and programs available to over 2,500 high-risk patients and families in 2016 through 2018.

g. Poor Mental Health Status

Action:

Cleveland Clinic's Center for Behavioral Health continues to provide comprehensive services to address mental, emotional, and psychosocial difficulties that impair everyday functioning. Outpatient psychology and psychiatry services are available on the Main Campus, at Euclid, Lutheran, and Marymount hospitals, and at certain family health centers.

Highlighted Impact:

Cleveland Clinic's Center for Behavioral Health provided comprehensive mental health services program designed for Hispanic and Latino individuals and their families. It offered psychiatric evaluation, psychotherapy, psychosocial interventions, family education, and pharmacotherapy to patients 18 years of age and older.

Cleveland Clinic Center for Behavioral Health added the Intensive Outpatient Program (IOP) at Lutheran and Marymount hospitals.

Euclid provided geriatric inpatient behavioral health services, psychiatric evaluation, and management.

Lutheran Hospital offered comprehensive behavioral health services and programs for patients of all ages including the Adult Behavioral Medicine Center, a Mood Disorder clinic, a special geriatric psychiatry unit, and acute behavioral health services.

Lutheran and Fairview hospitals provided services to pediatric patients and their families with behavioral medicine needs through the Fairview Hospital Child and Adolescent psychiatry unit offering an intensive outpatient program for adolescent patients.

h. Respiratory Diseases

Action:

Cleveland Clinic's Main Campus Hospital continues to offer acute inpatient care, outpatient care and preventive education to patients having variety of respiratory

conditions including asthma, COPD, lung cancer, lung transplantation, pulmonary hypertension, and smoking cessation.

Highlighted Impacts:
The Respiratory Institute implemented care paths for inpatients who have COPD in an effort to improve outcomes and decrease the patient's time in the hospital.

Cleveland Clinic's Asthma Center offered advanced diagnostic testing and innovative treatments for adults and children with asthma.

Community health education programs are offered on COPD, asthma, and tobacco cessation.

Tobacco cessation programs were provided to community residents from 2016 through 2018.

3. Health Professions Education and Medical Research

a. Health Professions Education

Actions:
Cleveland Clinic operates one of the largest graduate medical education programs in the Midwest and one of the largest programs in the country. Cleveland Clinic sponsors a wide range of high quality medical education training through its Education Institute, including accredited training programs for nurses and allied health professionals. Cleveland Clinic's Education Institute oversees 247 residency and fellowship programs across the Cleveland Clinic Health System.

Cleveland Clinic Main Campus continues to offer residency-training programs in such areas as internal medicine, pediatrics, psychiatry, and in general, thoracic, and vascular surgeries.

The hospital continues to provide a wide variety of allied health internships including: Anesthesiologist Assistant, Biomedical Engineering, Cardiac Ultrasound, CT/MRI, Echocardiography, Health Information Management, Histotechnology, Mammography Technologist, Nuclear Medicine Technologist, Occupational Therapy, Pharmacy, Phlebotomists, Physical Therapy, Physician Assistant, Respiratory Therapy, Social Work, Sonography, Speech-Language Pathology, and Surgical Technologist.

Cleveland Clinic's Outreach Initiatives continues to provide healthcare education and workforce development for K-12 students through internships and primary education programs.

Highlighted Impacts:
In 2018, Cleveland Clinic trained 1,517 residents and fellows, and 403 researchers as well as provided over 2,600 student rotations in 61 allied health education programs.

Cleveland Clinic Main Campus Hospital provided nursing clinical rotations to students in collaboration with several area nursing colleges.

The Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (CCLCM) provided a unique 5-year medical school dedicated to training physician-investigators through innovative approaches to the integration of basic science, research, and clinical medicine.

The new Health Education Campus opens in 2019 and will house the CCLCM and the medical, nursing and dental schools of Case Western Reserve University.

The Ohio University Heritage College of Osteopathic Medicine on the Cleveland Clinic South Pointe Campus addresses the need for more primary care physicians in northeast Ohio and the rest of the country. Experts predict a national shortage of more than 45,000 primary care physicians within the next decade. The first graduates from the Heritage College, Cleveland, will receive their medical degrees in 2019.

Cleveland Clinic created a partnership with Ohio University Heritage College of Osteopathic Medicine to build diversity among providers caring for diverse populations through the Physician Diversity Scholars Program.

Cleveland Clinic's K-12 connected learning programs, Worldwide Classroom and Adventures in Health Science and Medicine, leveraged technology to promote health and wellness, academic achievement, and career preparedness. The programs engaged 13,335 students from Ohio and 5 other states from 2016 through 2018.

Cleveland Clinic's eXpressions educational initiative reached 5,125 high school students from 77 schools from 2016 through 2018 with its programming in the exploration of science and medicine.

Cleveland Clinic provided workforce development opportunities to over 589 of NE Ohio middle and high school students in 2016 through 2018 through its Summer Internship Programs.

b. Research

Actions:

Clinical trials and other clinical research activities continue to occur throughout the Cleveland Clinic health system, including the Main Campus and regional hospitals. Physicians and scientists in the Lerner Research Institute (LRI) engaged in laboratory-based, translational and clinical research. Basic science researchers at LRI collaborated with physicians to facilitate bench-to-bedside science and accelerate discoveries that have a direct impact on patient and community care.

Highlighted Impacts:

Approximately 1,500 people work in 175 laboratories in 10 departments at Lerner Research Institute (LRI). In addition to basic discovery and translational research,

Cleveland Clinic researchers and physicians had nearly 4,000 active projects involving human participants in 2017. At LRI, commercialization efforts led to 53 invention disclosures, 20 new licenses, and 98 patents with the goal of accelerating advances in patient care.

Cleveland Clinic health system conducted clinical research activities throughout the system, including regional hospitals. Research in heart related diseases, cancer, obesity, diabetes, respiratory diseases, aging, poor birth outcomes, and children's issues continued throughout the Cleveland Clinic health system.

In 2018, Cleveland Clinic scientists conducted more than 2,500 clinical trials.

The Cleveland Clinic Center for Populations Health Research was established in 2017 to help physicians and investigators leverage Cleveland Clinic's patient population to generate insights about why certain groups of people or communities are more or less likely to be healthy, and how this can be transformed into community interventions that improve health outcomes at the population level.

4. Identified Need: Healthcare for the Elderly

Actions:

Cleveland Clinic joined the Medicare Shared Savings Program in 2015 to form an Accountable Care Organization (ACO) which serves a population of Medicare fee-for-service beneficiaries in Northeast Ohio.

Cleveland Clinic's Center for Geriatric Medicine assists elderly patients and their primary care physicians in the unique medical needs of aging patients. Geriatric services are designed to help preserve independence, maintain quality of life, and coordinate care among a multidisciplinary team of doctors, nurses, therapists, technicians, social workers, and other medical professionals to improve outcomes for older patients.

Cleveland Clinic's Center for Connected Care provides clinical programs designed to help patients with their post-hospital needs, including home care, hospice, mobile primary care physician services, home infusion pharmacy, and home respiratory therapy.

Highlighted Impacts:

Over the past three years our ACO managed 95,000 Medicare patients across Northeast Ohio and Florida.

Cleveland Clinic's Medical Care at Home program provided primary care services to patients in their homes and assisted living facilities.

5. Identified Need: Wellness

Action:

Cleveland Clinic Main Campus continues to offer outreach programs and community health talks focused on educating the community on healthy behavior choices, including exercise, healthcare navigation, stress management, nutrition, and smoking cessation to promote health and wellness, increase access to healthcare resources, and reduce disease burden.

Cleveland Clinic Main Campus continues to provide screenings, chronic disease management classes, farmers markets, neighborhood cooking classes and walking programs throughout its community and at its Main Campus and family health centers.

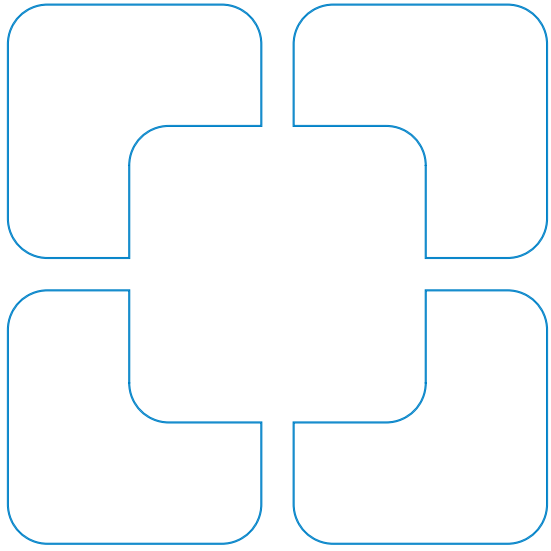
Highlighted Impact:

In the Main Campus local community, programs were held at Stephanie Tubbs Jones Health Center in East Cleveland and Langston Hughes Community Health and Education Center in Cleveland's Fairfax neighborhood.

The Langston Hughes Center provided free physicals, flu shots, exercise classes, health talks, cooking demonstrations, tobacco cessation counselling, and health education.

Monthly health education classes sponsored by Cleveland Clinic focused on chronic disease management, early detection, and prevention on such topics as stroke education, heart disease, healthy cooking, and tobacco cessation.

The Cleveland Clinic provided an annual Minority Men's Fair which offered free seminars and information on topics including prostate and colorectal cancer, kidney function, hypertension, stroke prevention, smoking cessation, health and nutrition, exercise and wellness, organ donation, sports health, reproductive health, and pain management. Attendance reached over 1,200 community members per year.



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18-CCC-5586

Cleveland Clinic

Implementation Strategy Report

2019

The Cleveland Clinic Foundation
9500 Euclid Avenue
Cleveland, Ohio 44195

2019 Community Health Needs Assessment Implementation Strategy for Years 2020 - 2022 As required by Internal Revenue Code § 501(r)(3)

Name and EIN of Hospital Organization Operating Hospital Facility:	The Cleveland Clinic Foundation # 34-0714585
Date Approved by Authorized Governing Body:	April 9, 2020
Contact:	Cleveland Clinic chna@ccf.org

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The Cleveland Clinic Foundation
2019 IMPLEMENTATION STRATEGY

I. INTRODUCTION AND PURPOSE

This written plan is intended to satisfy the requirements set forth in Internal Revenue Code Section 501(r)(3) regarding community health needs assessments and implementation strategies. The overall purpose of the implementation strategy process is to align the hospital's limited resources, program services, and activities with the findings of the community health needs assessment ("CHNA").

A. Description of Hospital

The Cleveland Clinic Main Campus is a non-profit multi-specialty academic medical center integrating outpatient clinical and hospital care with research and education. It is in a unique position to assess the health needs of both its communities and the public at large and to serve as a health resource for national and international patients.

The Main Campus is located in the City of Cleveland and is the tertiary care hospital that is the flagship of the Cleveland Clinic health system, which includes an academic medical center near downtown Cleveland, eleven regional hospitals in northeast Ohio, a children's hospital, a children's rehabilitation hospital, five southeast Florida hospitals, and a number of other facilities and services across Ohio, Florida, and Nevada. The Main Campus is the location of a medical school; a research institute; an outpatient clinic; 26 specialty institutes, including for heart care, digestive disease, cancer, and eye care; and supporting labs and facilities on a 162-acre campus. Additional information about Cleveland Clinic is available at https://my.clevelandclinic.org/.

Each Cleveland Clinic hospital is dedicated to the communities it serves. Each Cleveland Clinic hospital conducts a Community Health Needs Assessment (CHNA) in order to understand and plan for the current and future health needs of residents and patients in the communities it serves. The CHNAs inform the development of strategies (Implementation Strategy Reports) designed to improve community health, including initiatives designed to address social determinants of health. This Implementation Strategy Report was prepared for the Main Campus tertiary care hospital. A separate Implementation Strategy Report has been prepared for the children's hospital located on campus.

Patient Care

Cleveland Clinic's services are provided via patient-oriented institutes, which are structured on the basis of organ system or disease. The institutes facilitate a multidisciplinary approach and are designed to enhance convenience for patients and the exchange of knowledge, research

and educational collaboration for better patient outcomes. Some of the Institutes include Cole Eye, Digestive Disease, Endocrinology & Metabolism, Glickman Urological & Kidney, Head & Neck, Miller Family Heart, Vascular & Thoracic, Neurological, Obstetrics/Gynecology & Women's Health, Orthopedic & Rheumatology, Pediatric & Children's Hospital, Respiratory, Taussig Cancer and Wellness.

Research

Cleveland Clinic's mission includes conducting research to advance biomedical science, improve patient care provided locally and across the world, to prevent disease and to find cures for medical issues that impact us all.

Cleveland Clinic's Lerner Research Institute (LRI) is home to a complete spectrum of laboratory-, translational-, and clinical-based research. LRI is one of the leading NIH-funded research institutes in the United States, and it pursues a wide range of biomedical questions at LRI, including those related to cardiovascular, cancer, neurological, musculoskeletal, and metabolic diseases, to improve the health status of patients and residents of Cleveland Clinic's communities and the public at large.

The Cleveland Clinic's research activities are intended to improve patient care, and the health of the public at large, by providing the latest advances in medicine directly to patients and by refining the practice of medicine through the development and promulgation of new techniques, devices, and treatment protocols.

Education

The Cleveland Clinic model of medicine, as developed by its founders, is one that integrates research and education in medical services provided to patients. Thus, Cleveland Clinic physicians have medical residents following them throughout their care, teaching them during patient appointments and at the bedside. Cleveland Clinic operates one of the largest graduate medical education programs in the Midwest and one of the largest programs in the country.

The Cleveland Clinic operates a medical school and related research institute. The primary focus of Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (CCLCM) is the teaching and training of medical students who have a particular interest in research.

B. Hospital Mission

The Cleveland Clinic was established in 1921 with the same mission that continues today:
To provide better care for the sick, investigation of their problems and education of those who serve.

II. COMMUNITY DEFINITION

Cleveland Clinic provides a wide range of services from traditional primary care to highly specialized care to patients in its local communities, across the nation, and around the world. Cleveland Clinic treats some of the most diverse and clinically complex cases providing care in more than 120 medical specialties and subspecialties. 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 communities the Main Campus services in its United States patient care activities are: (1) Local[1] neighborhoods; (2) a 7-County Region; (3) a 21-County Region; (4) the state; and (5) the nation.

III. HOW IMPLEMENTATION STRATEGY WAS DEVELOPED

This Implementation Strategy was developed by members of senior leadership at the Cleveland Clinic representing several departments of the organization, including clinical administration, medical operations, nursing, finance, population health, and community relations. This team incorporated input from the hospital's community and local non-profit organizations to prioritize selected strategies and determine possible collaborations. Alignment with county Community Health Assessments (CHA) and Ohio's State Health Assessment (SHA) was also considered. Each year, senior leadership at the Cleveland Clinic will review this Implementation Strategy to determine whether changes should be made to better address the health needs of its communities.

IV. SUMMARY OF THE COMMUNITY HEALTH NEEDS IDENTIFIED

Cleveland Clinic Main Campus's significant community health needs as determined by analyses of quantitative and qualitative data include:

Community Health Initiatives

- Addiction and Mental Health
- Chronic Disease Prevention and Management
- Infant Mortality
- Socioeconomic Concerns

Other Identified Needs

- Access to Affordable Health Care
- Medical Research and Health Professions Education

See the 2019 Cleveland Clinic Main Campus CHNA for more information:
www.clevelandclinic.org/CHNAReports

[1] The local community is comprised of 18 ZIP codes surrounding the Main Campus.

V. NEEDS HOSPITAL WILL ADDRESS

A. Cleveland Clinic Community Health Initiatives

Each Cleveland Clinic hospital provides numerous services and programs in efforts to address the health needs of the community. Implementation of our services focuses on addressing structural factors important for community health, strengthening trust with residents and stakeholders, ensuring community voice in developing strategies, and evaluating our strategies and programs.

Strategies within the ISRs are included according to the prioritized list of needs developed during the 2019 CHNA. These hospital's community health initiatives combine Cleveland Clinic and local non-profit organizations' resources in unified efforts to improve health and health equity for our community members, especially low-income, underserved, and vulnerable populations. Cleveland Clinic is currently undertaking a five-year community health strategy plan which may modify the initiatives in this report.

B. Main Campus Implementation Strategy 2020-2022

The Implementation Strategy Report includes the priority community health needs identified during the 2019 Main Campus CHNA and hospital-specific strategies to address those needs from 2020 through 2022.

Addiction and Mental Health

Main Campus's 2019 CHNA identified substance use disorders, mental health issues, and intimate partner violence as needs in the community. The 2020 - 2022 priority strategy will focus on the hospital's efforts to decrease the abuse of and overdose from opioids. Initiatives include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	In addition to direct patient care, through Cleveland Clinic's Opioid Awareness Center, provide intervention and treatment for substance abuse disorders to Cleveland Clinic caregivers and their family members	Increase the number of individuals with opioid addiction and dependence who seek treatment
B	Through the Opioid Awareness Center, participation in the Northeast Ohio Hospital Opioid Consortium and Cuyahoga County Opiate Task Force, and community-based classes and presentations, Cleveland Clinic will provide preventative education and share evidence-based practices	Reduce the number of individuals with opioid addiction and dependence
C	Collect unused medications through community-based drop boxes and a collection service	Reduce the availability of unused prescription opioids within the community
D	Provide education, assistance, and resources to Cleveland Clinic caregivers, patients, and their families in order to prevent violence and help individuals heal from trauma	Reduce violent crime and domestic violence, minimize the impact of trauma and violence on overall health and wellbeing
E	Cleveland Clinic will develop suicide and self-harm policies procedures and screening tools for patients in a variety of care settings	Reduce suicide rates

Chronic Disease Prevention and Management

Main Campus's 2019 CHNA identified chronic disease and other health conditions as prevalent in the community (ex. heart disease, cancer, diabetes, respiratory diseases, obesity). Prevention and management of chronic disease were selected with the goal to increase healthy behaviors in nutrition, physical activity, and tobacco cessation. Initiatives include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Improve management of chronic conditions through Chronic Care Clinics employing a specialized model of care	Improve quality of life, decrease rates of complication, and improve treatment adherence for chronic disease patients
B	Promote early cancer detection through community outreach and education, screening promotion, and patient navigation. Relevant programs include: *Pink and Beyond*, a collaboration between THE WORD Church and Cleveland Clinic; a partnership between the National Breast Cancer Foundation and Taussig Cancer Institute; and *Stopping Cancer in its Tracks,* a Cuyahoga County collaborative of 25 churches	Increase cancer screening rates, improve screening follow-up rates, and reduce the number of patients who present with late-stage cancers
C	Provide free cancer screenings through events such as the annual Minority Men's Fair	Increase cancer screening rates
D	Implement health promotion messaging, health education, and outreach programs related to reducing behavioral risk factors	Decrease smoking, improve physical activity, improve nutrition, decrease stress levels, increase the number of individuals with a regular source of care, increase the number of individuals who receive a regular well-check
E	Through the Healthy Communities Initiative (HCI), partner to fund programs designed to improve health outcomes in four core areas: physical activity, nutrition, smoking, and lifestyle management	Decrease smoking, improve physical activity, improve nutrition
F	Provide free physical exams, flu shots, exercise courses, health education, cooking classes, and tobacco cessation programs for the surrounding communities at the Cleveland Clinic Langston Hughes Community Health and Education Center in Fairfax	Decrease smoking, improve physical activity, improve nutrition, improve self-efficacy associated with healthy eating, increase the number of individuals who receive a regular well-check, improve vaccination rates

Infant Mortality

Main Campus's 2019 CHNA identified that the infant mortality rate in Cuyahoga County was well above the Ohio and U.S. averages. Infant mortality rates at the local, state, and national levels have been particularly high for Black infants. Addressing the causes of infant mortality and decreasing infant mortality rates were selected as priority strategies. In order to address infant mortality, Cleveland Clinic Main Campus will continue to work collaboratively with Fairview and Hillcrest Hospitals and the Akron General Medical Center, which also provide the full spectrum of birthing services. Initiatives include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Provide expanded evidence-based health education to expecting mothers and families	Improve the number of mothers who receive adequate prenatal care, improve breastfeeding rates
B	Participate in *First Year Cleveland*, the Cuyahoga County Infant Mortality Task Force to gather data, align programs, and coordinate a systemic approach to improving infant mortality	Reduce infant mortality inequity, improve the preterm birth rate, decrease sleep-related infant deaths
C	Expand capacity to offer the *Centering Pregnancy* group prenatal care model to expecting mothers and market the program to community members	Improve the preterm birth rate, increase pregnancy spacing, reduce preterm birth inequity
D	Outreach events like Community Baby Showers provide health information to families in specific high-risk geographical areas and encourage enrollment in supportive evidence-based programs	Improve the number of mothers who receive adequate prenatal care
E	Partner with the Cleveland Metropolitan Housing Authority to offer an Infant Mortality Awareness and Prevention Program	Reduce infant mortality inequity

Socioeconomic Concerns

Main Campus's 2019 CHNA demonstrated that health needs are multifaceted, involving medical as well as socioeconomic concerns. The assessment identified poverty, health equity, trauma, and other social determinants of health as significant concerns. Poverty has substantial implications for health, including the ability for households to access health services, afford basic needs, and benefit from prevention initiatives. Problems with housing, educational achievement, and access to workforce training opportunities also contribute to poor health. The Centers for Disease Control and Prevention define social determinants of health as the "circumstances in which people are born, grow up, live, work and age that affect their health outcome."

Cleveland Clinic is committed to promoting health equity and healthy behaviors in our communities. The hospital addresses socioeconomic concerns through a variety of services and initiatives including cross-sector health and economic improvement collaborations, local hiring for hospital workforce, local supplies sourcing, mentoring of community residents, in-kind donation of time and sponsorships, anchor institution commitment, and caregiver training for inclusion and diversity. The socioeconomic initiatives highlighted for 2020 – 2022 include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Implement a system-wide social determinants screening tool for patients to identify needs such as alcohol abuse, depression, financial strain, food insecurity, intimate partner violence, and stress	Connect patients with substance abuse treatment, mental health treatment, and assistance with basic needs; reduce trauma and harm associated with violence
B	Explore a common community referral data platform to coordinate services and ensure optimal communication	Improve active referrals to community-based organizations, non-profits, and other healthcare facilities; track referral outcomes
C	Pilot patient navigation programming within a partnership pathway HUB model using community health workers and/or the co-location of community organizations with hospital facilities	Ensure connection to medical, social, and behavioral services; improve health equity
D	Participate in the Robert Wood Johnson Foundation (RWJF) *Cross-Sector Innovation Initiative Project* in Cuyahoga County which aims to impact structural racism across various sectors	Improve health equity, improve trust in providers

Socioeconomic Concerns (continued)

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
E	Through a partnership with HIP Cuyahoga, improve community voice within healthcare and social service programming	Improve trust in providers, improve health literacy, improve program reach
F	Sponsor and participate in *Say Yes to Education Cleveland*, a consortium focused on increasing education levels, fostering population growth, improving college access and spurring economic growth	Increase the number of individuals with a living wage, increase the number of individuals with employer-sponsored health insurance
G	Provide workforce development and training opportunities for youth K-12 in clinical and non-clinical areas, empowering Northeast Ohio's next generation of leaders	Increase diversity within the healthcare workforce, improve trust in providers, improve local provider shortages
H	Provide transportation on a space-available basis to 1) patients within 5 miles of the Stephanie Tubbs Jones Health Center and Marymount, Euclid, Lutheran, and South Pointe Hospitals and 2) radiation oncology patients within 25 miles of Cleveland Clinic Main Campus, Hillcrest, and Fairview Hospitals	Prevent missed appointments, increase preventative and well-visit attendance, improve treatment adherence

V. OTHER IDENTIFIED NEEDS

In addition to the community health needs identified in the CHNA, the hospital's 2019 CHNA also identified the needs of Access to Affordable Healthcare and Medical Research and Professions Education.

Access to Affordable Health Care

Access to affordable health care is challenging for some residents, particularly access to primary care, mental health, dental care, and addiction treatment services. Access barriers are many and include cost, health insurance, geographical barriers, scheduling difficulties, a lack of awareness regarding available services, and an undersupply of providers. Cleveland Clinic continues to evaluate methods to improve patient access to care.

All Cleveland Clinic hospitals will continue to provide medically necessary services to all patients regardless of race, color, creed, gender, country of national origin, or ability to pay. Cleveland Clinic Financial Assistance. Initiatives include:

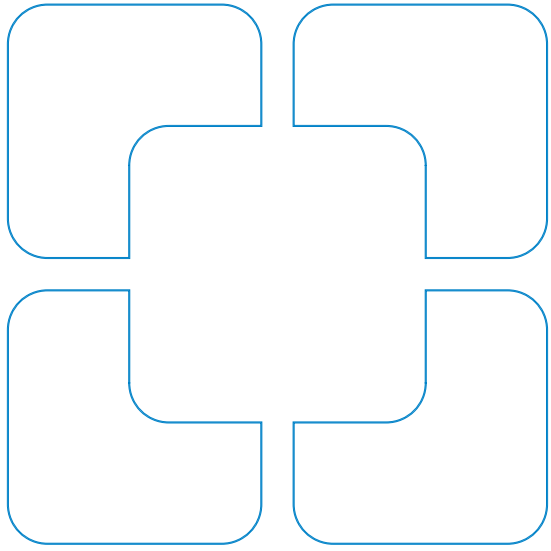
	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Patient Financial Advocates assist patients in evaluating eligibility for financial assistance or public health insurance programs	Increase the proportion of eligible individuals who are enrolled in various assistance programs
B	Provide parking vouchers to Emergency Department patients on campuses where parking fees are assessed	Reduce patient costs associated with emergency care
C	Provide walk-in care at Express Care Clinics and offer evening and weekend hours	Improve the number of patients who receive the right level of care
D	Utilizing medically secure online and mobile platforms, connect patients with Cleveland Clinic providers for telehealth and virtual visits	Overcome geographical and transportation barriers, improve access to specialized care

Medical Research and Health Professions Education

Cleveland Clinic cares for our communities by discovering tomorrow's treatments and educating future caregivers. Cures for disease and the provision of quality health care are part of Cleveland Clinic's mission. Cleveland Clinic has been named among America's best employers for diversity by *Forbes* magazine for three years running. The diversity of our caregivers is a key strength that helps us better serve patients, each other, and our communities. We are committed to enhancing the diversity of our teams to deepen these connections. Initiatives include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Through medical research at the Lerner Research Institute, advance clinical techniques, devices and treatment protocols in the areas of cancer, heart disease, diabetes, and others	Improve treatment efficacy, reduced morbidity and mortality
B	Through the Center for Populations Health Research, inform clinical interventions, healthcare policy, and community partnerships	Inform health policy at the local, state, and national levels, improve clinical protocols, create cost-savings, improve population health outcomes
C	Sponsor high-quality medical education training programs for physicians, nurses, and allied health professionals via Graduate Medical Education programs and the Education Institute	Reduce provider shortages
D	In partnership with Case Western Reserve University, provide over 2,200 students with interdisciplinary skills at the Health Education Campus	Improve patient-centered care
E	Train future primary care physicians in partnership with the Ohio University Heritage College of Osteopathic Medicine at the Cleveland Clinic South Pointe Campus	Reduce primary care provider shortages
F	Through the *Physician Diversity Scholars Program*, build a diverse healthcare workforce in partnership with the Ohio University Heritage College of Osteopathic Medicine	Increase diversity within the healthcare workforce

For more information regarding Cleveland Clinic Community Health Needs Assessments and Implementations Strategy Reports, please visit www.clevelandclinic.org/CHNAReports or contact CHNA@ccf.org .



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