



Community Health Needs Assessment

2016



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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 multiple regional hospitals, two children’s hospitals a rehabilitation hospital, a Florida hospital and a number of other facilities and services across Northeast Ohio and Florida. 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. Cleveland Clinic hospitals verify the health needs of communities by performing periodic health needs assessments. These formal assessments are analyzed using widely accepted criteria to determine and measure the health needs of a specific community.

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

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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 is ranked 2nd among the nation's nearly 5,000 hospitals.¹ Cleveland Clinic has been recognized for its quality of care and was ranked America's number one center for cardiac care for the 22nd year in a row, and its gastroenterology, kidney disorders, and urology programs were ranked second in the nation. Thirteen specialties earned top 10 rankings.

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 2015, 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 2015, Cleveland Clinic spent \$67million 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

¹ *U.S. News & World Report's Best Hospitals 2016.*

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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.

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 (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 hosting close to 1,770 CME activities to 309,000 participants from around the world in 2015.

Cleveland Clinic is also committed to educating the general public on medical conditions and their treatment, prevention and wellness programs. Cleveland Clinic’s Education Institute has programs for patients and their families. It provides health information to patients, visitors, and employees through its Patient and Family Health and Education Center, health talks, and the Cleveland Clinic website, which provides nearly 5,000 articles, videos, and resources on various health and health management topics.

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Community Definition

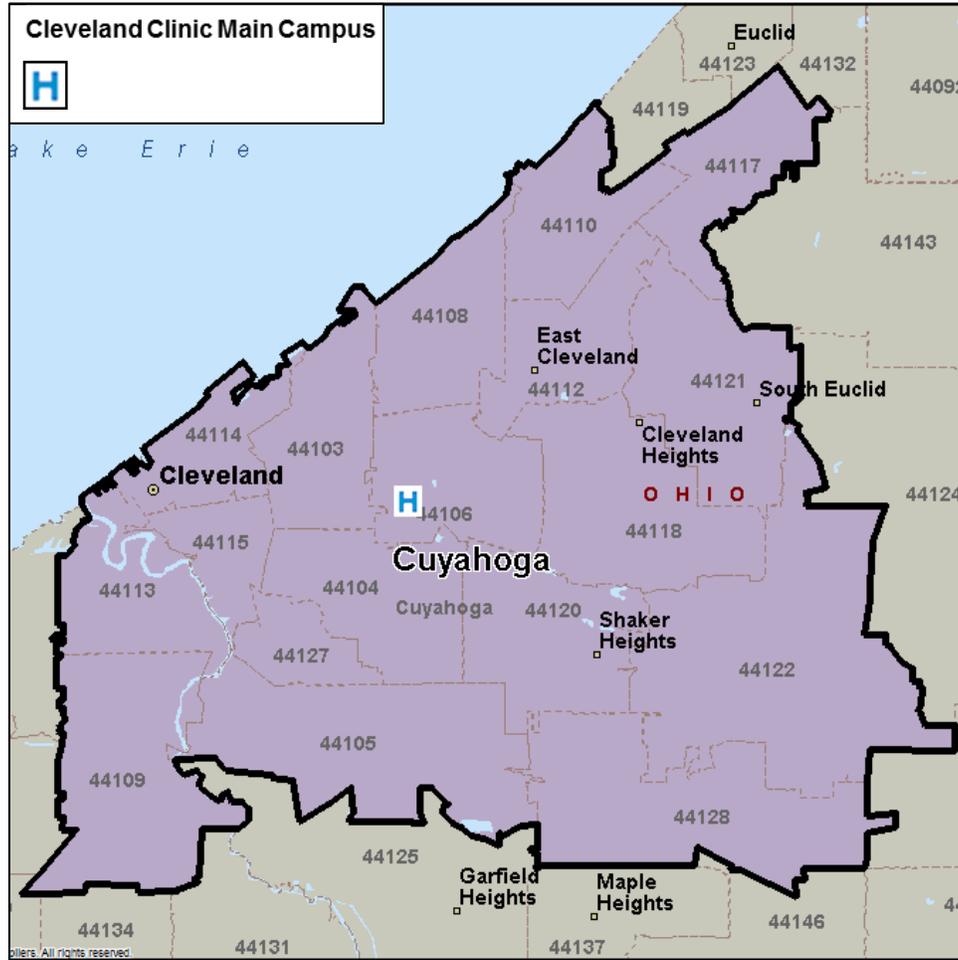
Cleveland Clinic provides a wide range of services from traditional, primary care to highly specialized care to patients in its local communities, across the nation, and around the world. Cleveland Clinic treats some of the most diverse and clinically complex cases providing care in more than 120 medical 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) Local² neighborhoods; (2) the 7-County Region; (3) the Northeast Ohio (21-County) Region; (4) the state; and (5) the nation.

² The local community is comprised of 18 ZIP codes surrounding the Main Campus.

EXECUTIVE SUMMARY

The following map portrays the Local neighborhoods community. See p. 13-14 for the maps of the 7-County and 21-County regions.



Significant Community Health Needs

Six significant community health needs were identified through this assessment:

1. Access to Affordable Healthcare
2. Chronic Diseases and Other Health Conditions
3. Economic Development and Community Conditions
4. Health Professions Education and Research
5. Healthcare for the Elderly
6. Wellness

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

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Access to Affordable Health Care

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

Chronic Diseases and Other Health Conditions

- Chronic diseases and other health conditions including, in alphabetical order: cancer, chemical dependency, communicable diseases (including sexually transmitted infections), diabetes, heart disease, hypertension, obesity, poor birth outcomes, poor mental health status, and respiratory diseases were identified as prevalent in Main Campus communities.

Economic Development and Community Conditions

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

Health Professions Education and Research

- 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. There is a need for more research to address these and other community health needs.

Healthcare for the Elderly

- Elderly populations across Northeast Ohio are expected to grow and meeting the health and social service needs of aging populations is a significant issue.

Wellness

- Programs and activities that target behavioral health change were identified as needed in Main Campus communities. Education and opportunities for residents regarding exercise, nutrition, and smoking cessation specifically were noted.

OBJECTIVES AND METHODOLOGY

Regulatory Requirements

Federal law requires that tax-exempt hospital facilities conduct a CHNA every three years and adopt an Implementation Strategy that addresses significant community health needs.³ Each tax-exempt hospital facility must conduct a CHNA that identifies the most significant health needs in the hospital's community.

The regulations require that each hospital:

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

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

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

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

Community benefit activities and programs also seek to achieve objectives, including:

- improving access to health services,
- enhancing public health,
- advancing increased general knowledge, and
- relief of a government burden to improve health.⁴

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

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

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

³ Internal Revenue Code, Section 501(r).

⁴ Instructions for IRS form 990 Schedule H, 2015.

OBJECTIVES AND METHODOLOGY

- *Why* are these problems present?

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

Methodology

Federal regulations that govern the CHNA process allow hospital facilities to define the community they serve based on “all of the relevant facts and circumstances,” including the “geographic location” served by the hospital facility, “target populations served” (e.g., children, women, or the aged), and/or the hospital facility’s principal functions (e.g., focus on a particular specialty area or targeted disease).⁵ The Local neighborhoods community defined by Main Campus accounts for over 23 percent of the hospital’s 2014 inpatient discharges. Main Campus’ 7-County community accounts for nearly 67 percent of discharges and the 21-County community accounts for approximately 89 percent of inpatient discharges.

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

Secondary data from multiple sources were gathered and assessed. *See* Appendices B-F. Considering a wide array of information is important when assessing community health needs to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively

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

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

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

Collaborating Organizations

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

⁵ 501(r) Final Rule, 2014.

OBJECTIVES AND METHODOLOGY

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 116 persons were taken into account through key informant interviews. Of these 116 persons, 88 represented the broad interest of the Local neighborhoods and 7-County communities and 28 represented the other communities of Main Campus (including Local neighborhoods, 7-County, 21-County, Ohio, and national). Interviewees included: individuals with special knowledge of or expertise in public health; local public health departments; agencies with current data or information about the health and social needs of the community; representatives of social service organizations; and leaders, representatives, and members of medically underserved, low-income, and minority populations.

Information Gaps

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

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

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

DATA AND ANALYSIS

Definition of Community Assessed

This section identifies the communities that were assessed by Main Campus. The communities were defined by considering the geographic origins of the hospital’s 2014 inpatient discharges and its mission.

On these bases, Main Campus’ Local neighborhoods community is comprised of 18 ZIP codes in Cuyahoga County (**Exhibit 1**) which in 2014 accounted for just over 23 percent of its inpatient discharges. Main Campus’ 7-County community accounts for nearly 67 percent of its inpatient discharges and is comprised of the 7 counties surrounding the hospital.⁶ Main Campus’ 21-County community is comprised of counties in Northeast Ohio and accounts for over 89 percent of the hospital’s inpatient discharges. Main Campus also serves the State of Ohio and the nation.

Exhibit 1: Main Campus Inpatient Discharges, 2014

City	ZIP Code	Inpatient Discharges 2014	Percent of Total
Shaker Heights	44120	1,077	2.4%
University Circle	44106	1,032	2.3%
Hough-Fairfax	44103	990	2.2%
Cleveland	44105	798	1.8%
Bratenahl	44108	775	1.7%
Cleveland Heights	44118	763	1.7%
Buckeye-Woodland Hills	44104	720	1.6%
East Cleveland	44112	711	1.6%
Beachwood	44122	662	1.5%
Cleveland	44121	626	1.4%
Cleveland	44128	536	1.2%
Cleveland	44110	464	1.0%
Cleveland	44109	343	0.8%
Euclid	44117	237	0.5%
Cleveland	44113	167	0.4%
Downtown Cleveland	44115	148	0.3%
Downtown Cleveland	44114	146	0.3%
Slavic Village	44127	100	0.2%
Local Community Subtotal		10,295	23.1%
7-County Subtotal		29,798	66.9%
21-County Subtotal		39,785	89.3%
Other Areas		4,745	10.7%
Total Discharges		44,530	100.0%

Source: Analysis of OHA Discharge Data, 2014.

⁶ The 7-County community consists of Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, and Summit counties.

DATA AND ANALYSIS SUMMARY

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

Exhibit 2: Community Population, 2015

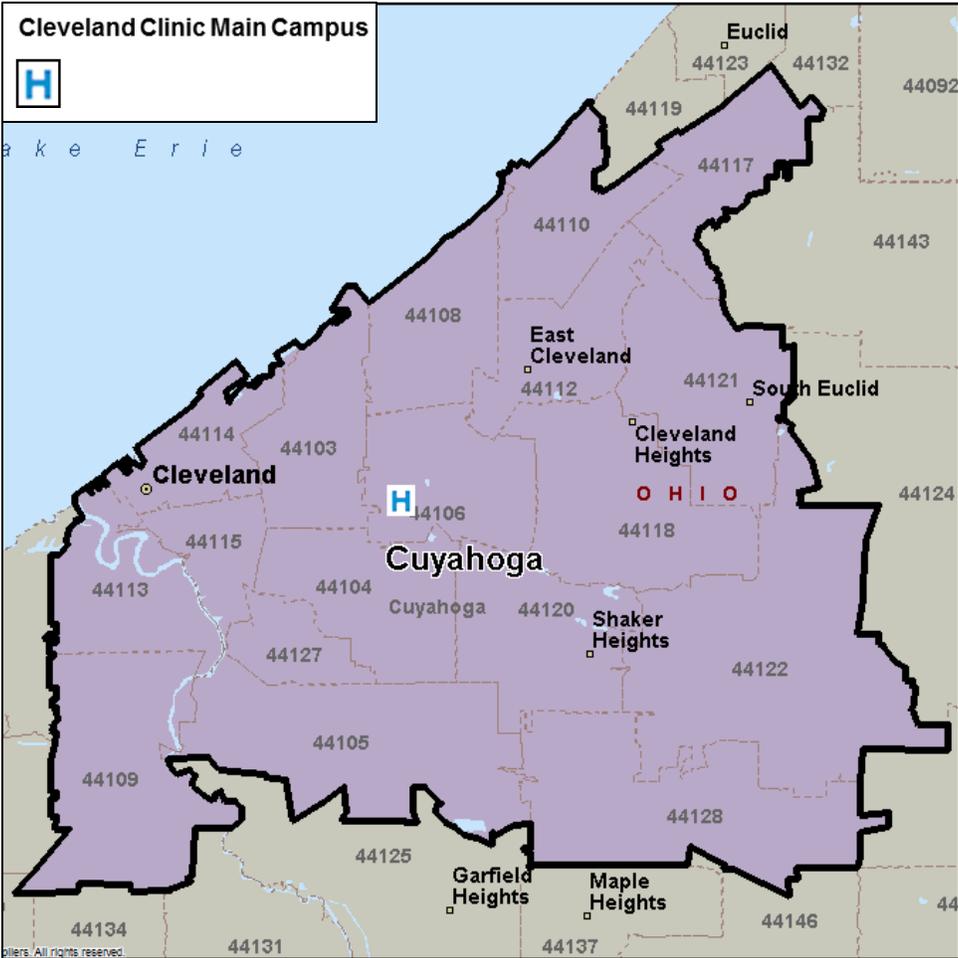
City	ZIP Code	Total Population 2015	Percent of Total Population 2015
Beachwood	44122	33,661	7.9%
Bratenahl	44108	23,919	5.6%
Buckeye-Woodland Hills	44104	22,327	5.2%
Cleveland	44105	37,633	8.8%
Cleveland	44109	39,023	9.1%
Cleveland	44110	18,719	4.4%
Cleveland	44113	19,659	4.6%
Cleveland	44121	32,122	7.5%
Cleveland	44128	28,303	6.6%
Cleveland Heights	44118	39,612	9.3%
Downtown Cleveland	44114	6,256	1.5%
Downtown Cleveland	44115	8,962	2.1%
East Cleveland	44112	22,151	5.2%
Euclid	44117	10,075	2.4%
Hough-Fairfax	44103	16,978	4.0%
Shaker Heights	44120	35,932	8.4%
Slavic Village	44127	5,215	1.2%
University Circle	44106	26,278	6.2%
Community Total		426,825	100.0%

Source: Truven Market Expert, 2015.

The hospital is located in Cleveland, Ohio (ZIP code 44195). The maps and charts in **Exhibit 3** portray the communities assessed by Main Campus.

DATA AND ANALYSIS SUMMARY

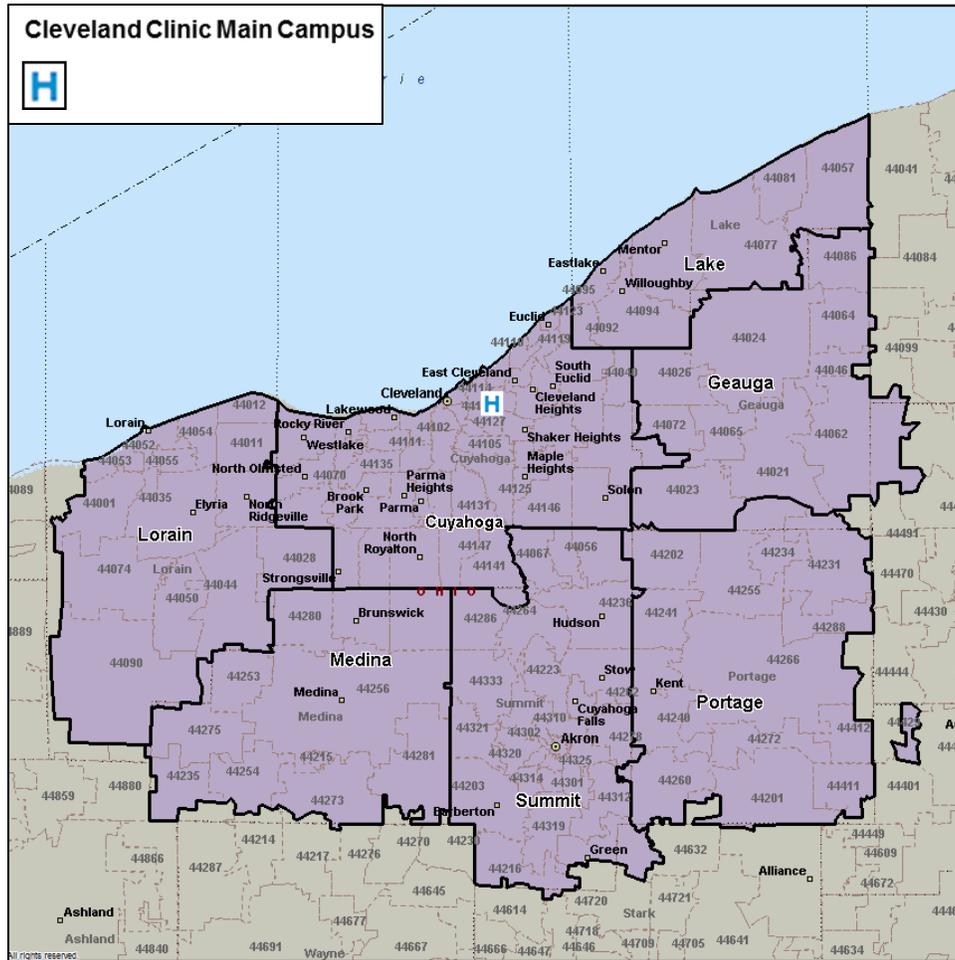
Exhibit 3A: Main Campus Local Neighborhood Community



Source: Microsoft MapPoint and Cleveland Clinic, 2015.

DATA AND ANALYSIS SUMMARY

Exhibit 3B: Main Campus 7-County Community



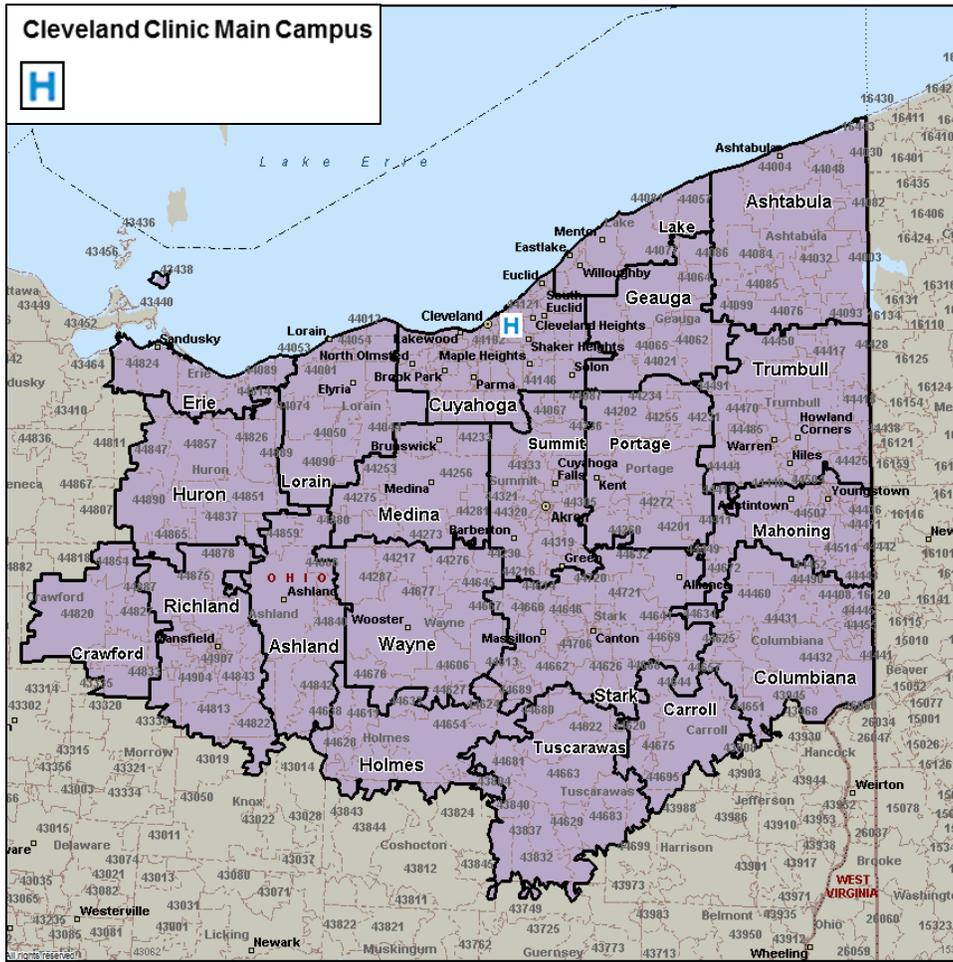
Source: Microsoft MapPoint and Cleveland Clinic, 2015.

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

County	Estimated Population 2015
Cuyahoga County	1,262,784
Geauga County	89,153
Lake County	229,715
Lorain County	295,253
Medina County	174,882
Portage County	171,141
Summit County	547,778

DATA AND ANALYSIS SUMMARY

Exhibit 3C: Main Campus 21-County Community



Source: Microsoft MapPoint and Cleveland Clinic, 2015.

In 2015, approximately 4.4 million persons lived in the 21 counties in Northeast Ohio. Main Campus also served Ohio (11.6 million persons) and the United States (321.4 million persons).⁷

County	Estimated Population 2015	County	Estimated Population 2015	County	Estimated Population 2015
Ashland County	52,874	Geauga County	89,153	Portage County	171,141
Ashtabula County	98,976	Holmes County	44,226	Richland County	120,595
Carroll County	27,882	Huron County	58,428	Stark County	375,715
Columbiana County	104,953	Lake County	229,715	Summit County	547,778
Crawford County	42,480	Lorain County	295,253	Trumbull County	204,715
Cuyahoga County	1,262,784	Mahoning County	231,477	Tuscarawas County	92,859
Erie County	75,553	Medina County	174,882	Wayne County	115,307

⁷ Ohio and United States population data are from U.S. Census ACS 1-Year Estimates, 2015.

DATA AND ANALYSIS SUMMARY

Secondary Data Summary

The following section summarizes principal findings from the secondary data analysis. Appendices B-F 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 Main Campus Local neighborhoods community is expected to decrease 2.3 percent from 2015 to 2020. Between 2015 and 2020, 15 of the 18 ZIP codes in the Local neighborhoods community are projected to lose population. The populations in two Cleveland ZIP codes (44105 and 44110) are expected to decrease by approximately five percent.

While the total population in the Local neighborhoods community is expected to decrease, the number of persons aged 65 years and older are projected to increase by 10.6 percent between 2015 and 2020. 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.

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

7-County Community

The total population in the 7-County community is projected to remain virtually unchanged between 2015 and 2020, however the population in Cuyahoga County is projected to decrease by 1.1 percent. During this time period, the 65 and older population in the 7-County community is projected to increase by 14.2 percent.

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

Cuyahoga County had a higher percentage of residents aged 25 years and older without a high school diploma than Ohio and United States averages. Compared to Ohio, Cuyahoga, Geauga, and Lake counties had a higher proportion of the population that is linguistically isolated.⁸

⁸ Linguistic isolation is defined as residents who speak a language other than English and speak English less than "very well."

DATA AND ANALYSIS SUMMARY

21-County Community

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

While the overall population is projected to decrease, the number of persons aged 65 and older is projected to increase by 13 percent between 2015 and 2020. In 2015, Cuyahoga and Summit counties had the greatest proportion of Black residents.

Compared to Ohio, twelve counties in the 21-County community had a higher percentage of residents aged 25 years and older without a high school diploma and eight counties had a higher proportion of the population that was linguistically isolated.

Economic Indicators

Local Neighborhoods

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. At 31.1 percent, the average poverty rate in the Local neighborhoods community was significantly higher than the state average. Low income census tracts are prevalent throughout the Local neighborhoods community.

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

7-County Community

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

2014 crime rates in Cuyahoga and Summit counties were well above Ohio averages.

Between 2010 and 2015, unemployment rates have decreased in each county in the 7-County community. Uninsured rates are also projected to decrease. In 2015, approximately 6.1 percent of residents in the 7-County community were uninsured. By 2020, it is projected that this percentage will decrease to 4.1 percent.

DATA AND ANALYSIS SUMMARY

21-County Community

Poverty rates have been comparatively high across the 21-County community. Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Portage, Stark, and Trumbull counties also had higher poverty rates than Ohio in 2014. Across the 21-County community, poverty rates have been comparatively high for Black and Hispanic (or Latino) residents. Low income census tracts are also prevalent throughout this region.

Crime rates have been particularly problematic in Cuyahoga, Mahoning, and Summit counties.

Unemployment rates have been improving in the 21-County community, however in 2015, fourteen of the 21 counties in this region had higher unemployment rates than the state average. Between 2015 and 2020, it is projected that uninsured rates will drop by approximately 1.9 percent, from 6.0 to 4.1 percent.

Health Status and Access Indicators

Local Neighborhoods

In the 2016 *County Health Rankings*, Cuyahoga County ranked in the bottom one-half of Ohio counties for 17 of the 27 indicators assessed. For five issue areas, the county ranked in the bottom quartile including: Quality of Life, Sexually Transmitted Infections, Social and Economic Factors, Inadequate Social Support, and Severe Housing Problems. The county's ranking fell between 2013 and 2016, particularly for various social and economic factors, social determinants of health, Excessive Drinking, and Teen Births. The following indicators underlying the rankings are comparatively unfavorable:

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

In the 2015 *Community Health Status Indicators*, which compares community health indicators for each county with those for peers across the United States, the following needs appear to be most significant in Cuyahoga County:⁹

⁹ Cuyahoga peer counties include: Alexandria (VA), Allegheny (PA), Alameda (CA), Bexar (TX), Clark (NV), Dallas (TX), Davidson (TN), Denver (CO), Duval (FL), Erie (NY), Franklin (OH), Fulton (GA), Hamilton (OH), Harris (TX), Hartford (CT), Hennepin (MN), Hillsborough (FL), Jackson (MO), Jefferson (AL), Jefferson (KY), King (WA), Maricopa (AZ), Marion (IN), Mecklenburg (NC), Monroe (NY), Multnomah (OR), Oklahoma (OK), Orange (CA), Orange (FL), Pinellas (FL), Ramsey (MN), Richmond (NY), Riverside (CA), Sacramento (CA), Salt Lake (UT), San Diego (CA), San Francisco (CA), Santa Clara (CA), Tarrant (TX), Travis (TX), and Virginia Beach (VA). Additional information about peer counties is available at <http://wwwn.cdc.gov/CommunityHealth/>.

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- Annual average particulate matter concentration
- Morbidity associated with Alzheimer's disease, gonorrhea, adult asthma, and preterm births
- Mortality rates for cancer and coronary heart disease
- Rates of preventable hospitalizations for older adults
- The number of children living in single-parent households

According to the Ohio Department of Health, age-adjusted mortality rates for heart disease, homicide, HIV, and pedestrians killed in traffic collisions were all significantly higher in Cuyahoga County than the Ohio averages. Overall age-adjusted mortality and incidence rates for cancer have been slightly above average; prostate and uterine cancer mortality and incidence rates have been particularly problematic.

Ohio Department of Health data also indicate that:

- The incidence of several communicable diseases has been particularly high in Cuyahoga County, including chlamydia, HIV, gonorrhea, and viral meningitis.
- Virtually all maternal and child health indicators (infant mortality rates, low birth weights, preterm births, and teen pregnancies) are comparatively problematic in Cuyahoga County.

Data from the Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) indicate comparatively high rates of smoking, high blood pressure, adult asthma, obesity, and chronic obstructive pulmonary disease in several ZIP codes across the Local neighborhoods community.

7-County Community

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

- Air pollution
- Binge and heavy drinking
- Diabetic screening
- Percent of driving deaths with alcohol involvement
- Percent of households with severe housing problems
- Percent of the population unemployed
- Percent of the workforce that drives to work alone
- Percent of workers with a long commute who drive alone
- Ratio of primary care physicians, dentists, and mental health providers
- Social associations rate

Community Health Status Indicators data indicate that chronic lower respiratory disease and coronary heart disease mortality rates and morbidity associated with Alzheimer's disease,

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gonorrhea, adult asthma, adult depression, and preterm births were comparatively high in the 7-County community in 2015. Indicators for older adult preventable hospitalizations, female routine pap tests, and air quality also benchmark unfavorably.

According to the Ohio Department of Health, age-adjusted mortality rates for heart disease, influenza and pneumonia, suicide, homicide, aortic aneurysm, and pedestrians killed in traffic collisions were higher than the Ohio averages in at least two of the seven counties in the community. Age-adjusted cancer mortality rates have also been high in the 7-County community. The stomach cancer mortality rate in Cuyahoga County and oral cavity and pharynx cancer mortality rate in Portage County were more than fifty percent higher than the Ohio averages.

Data from the Ohio Department of Health also indicate that the 7-County community has high rates of communicable diseases and poor birth outcomes. Rates of chlamydia, HIV, and gonorrhea in Cuyahoga County and viral meningitis in Summit County were significantly higher than the Ohio averages. Maternal and child health indicators in Cuyahoga and Summit counties were also particularly problematic.

BRFSS data show that compared to the averages of the twenty one counties in Northeast Ohio, residents of Cuyahoga County had higher rates of high blood pressure and smoking, residents of Lake County had higher rates of high cholesterol, residents of Lorain County had higher rates of back pain, depression, high blood pressure, and high cholesterol, residents of Portage County had higher rates of back pain, and residents of Summit County had higher rates of back pain, asthma, and depression. Geauga and Medina counties had lower rates of each chronic condition compared to the twenty one county averages.

21-County Community

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

Community Health Status Indicators data indicate that at least one third of the counties in the 21-County community compared unfavorably to peer counties for coronary heart disease and diabetes deaths, morbidity related to Alzheimer's disease/dementia and older adult depression, older adult preventable hospitalizations, primary care provider access, adult female routine pap tests, adult smoking, and air pollution.

Age-adjusted mortality rates for heart disease, influenza and pneumonia, suicide, motor vehicle collisions (including those with alcohol involvement), aortic aneurysms, and pedestrians killed in traffic collisions have also been problematic throughout the 21-County community.

Ohio Department of Health data also indicate that:

- Overall cancer incidence rates in eleven of the 21 counties in the community were higher than the Ohio average.

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- Ten of the 21 counties in the community had varicella incidence rates that were higher than the Ohio average.
- More than half of the counties in the 21-County community had unfavorable rates of infant, neonatal, and/or post-neonatal mortality.

Data from the Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) indicate that rates of obesity, back pain, diabetes, depression, high blood pressure, high cholesterol, chronic obstructive pulmonary disease, and smoking have been high throughout the 21-County community.

Ohio

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

- Air pollution
- All outcomes
- Behaviors
- Binge drinking
- Cancer deaths
- Cardiovascular deaths
- Diabetes
- Drug deaths
- Heart attacks
- Immunizations Tdap
- Infant mortality
- Insufficient sleep
- Obesity
- Overall
- Poor mental health days
- Premature deaths
- Preventable hospitalizations
- Public health funding
- Smoking
- Stroke
- Vegetable consumption

Data from the Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) indicate that within Ohio several populations experienced a greater risk of poor health outcomes. Compared to the Ohio averages, 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 risk behaviors and negative health outcomes including:

- Asthma
- COPD

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- Coronary heart disease
- Diabetes
- Frequent bad mental health
- Heart attack
- Lack of health insurance
- Physical inactivity
- Smoking
- Stroke

National

The Healthy People 2020 *Leading Health Indicators (LHIs)* are a select subset of 26 Healthy People 2020 objectives chosen to communicate high-priority health issues in the United States. Based on the most recently available data, 21 of the 26 health indicators are not meeting their HP 2020 targets. Topics with particularly unfavorable rates include:

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

Health, United States is published annually by the Centers for Disease Control. It indicates that the leading causes of death in the United States are: heart disease, cancer, chronic lower respiratory diseases, unintentional injuries, stroke, Alzheimer's disease, diabetes, influenza/pneumonia, nephritis, and suicide. Chronic disease rates have increased since 2000, particularly rates of obesity, heart disease, diabetes, and cancer.

Reviewing national health statistics, the Centers for Disease Control and Prevention identified the following, in alphabetical order, as the nation's Public Health Priorities in 2015:

- Healthcare-associated infections
- HIV
- Motor vehicle injuries
- Nutrition, physical activity, and obesity
- Teen pregnancy
- Tobacco use

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

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intervention can prevent complications or more severe disease.”¹⁰ 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

ACSC rates in the Local neighborhoods community have exceeded the Ohio averages for all but one condition (perforated appendix). Rates for hypertension, chronic obstructive pulmonary disease, diabetes long-term complications, and uncontrolled diabetes were more than twice as high as the Ohio averages.

7-County Community

The rates of admissions for ACSC in the 7-County community exceeded Ohio averages for all conditions except perforated appendix, bacterial pneumonia, and urinary tract infection. The ACSC rate for chronic obstructive pulmonary disease in Cuyahoga County was more than fifty percent higher than the Ohio average.

21-County Community

In the 21-County community, the average rates for dehydration, congestive heart failure, diabetes, and chronic obstructive pulmonary disease were more than 10 percent higher than the Ohio averages. ACSC rates for chronic obstructive pulmonary disease in Cuyahoga County, congestive heart failure, dehydration, and uncontrolled diabetes in Mahoning and Trumbull counties, and adult asthma in Carroll, Columbiana, Mahoning, and Trumbull counties were at least 50 percent higher than the Ohio averages.

Ohio

In Ohio, ACSC rates for dehydration, congestive heart failure, diabetes long-term complications, chronic obstructive pulmonary disease, urinary tract infection, and bacterial pneumonia were greater than 100 per 100,000 population.

Community Need Index

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

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

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

¹⁰Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

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Local Neighborhoods

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

7-County Community

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

21-County Community

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

Food Deserts

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

Local Neighborhoods

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

7-County Community

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

21-County Community

Food deserts are located in seventeen of the 21 counties in the community including: Ashland, Ashtabula, Columbiana, Crawford, Cuyahoga, Erie, Huron, Lake, Lorain, Mahoning, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

Medically Underserved Areas and Populations

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

Local Neighborhoods

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

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7-County Community

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

21-County Community

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

Health Professional Shortage Areas

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

Local Neighborhoods

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

7-County Community

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

21-County Community

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

Relevant Findings of Other CHNAs

The following community health needs were most frequently found to be significant in other, recently conducted health needs assessments for communities served by Main Campus:

- Obesity
- Mental/Behavioral health
- Access to basic/primary health care
- Diabetes
- Cardiovascular/heart disease
- Tobacco use/smoking
- Drug/substance abuse
- Alcohol abuse and excessive drinking
- Elderly care/aging population
- Cancer
- Infant mortality (disparities)
- Access to dental care
- Access/lack of health insurance coverage

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- Cost of care
- Poverty
- Transportation

The assessment prepared by the Cuyahoga County Health Improvement Partnership (2015) also highlighted issues with violence and health disparities/equality.

Primary Data Summary

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

Social Determinants of Health. Interviewees indicated that health issues related to the social determinants of health are problematic in communities served by Main Campus. Despite the presence of several tertiary care centers, poverty in areas proximate to Main Campus remains a significant concern – and contributes to obesity and lack of healthy food options, poor housing, and exposure to lead, asthma, and other problems. Limited access to preventive and behavioral health services affects rates of smoking, chemical dependency, and reliance on hospital emergency rooms. Crime, violence, and gang activity are problematic particularly in Cuyahoga County. Cleveland’s low income Black residents were identified as the most likely population to experience health problems directly related to the social determinants of health.

Chronic Diseases and Unhealthy Lifestyles. Increasing prevalence of chronic diseases frequently was cited as a top health concern. High rates of obesity, diabetes, heart disease, and hypertension were attributed to the unhealthy diets and lack of physical activity for many community members. Interviewees indicated that a lack of awareness about the importance of proper nutrition, the presence of food deserts, and cost associated with accessing healthy food (particularly in low income neighborhoods) are contributing factors. Additional health screenings and collaborative interventions in schools and local neighborhoods were viewed by interviewees as important.

Access Issues. Interviewees cited the inability to access available health and social services barriers to improving community health outcomes. Lack of knowledge of available services, gaps in health insurance coverage (e.g., high deductibles and lack of dental benefits), transportation, and providers not accepting Medicaid are examples of access barriers. Many indicated that social determinants of health also present significant access barriers and disproportionately affect the community’s low socio-economic status groups, immigrant populations, those with language barriers, minority populations, elderly adults, and adolescents. Adolescents were mentioned frequently as a group in need, given comparatively high teen pregnancy rates and a lack of mental health resources (beds and psychiatrists).

Dental care, primary care, post-acute transitional and social services, adolescent mental health, and specialty care in rural areas were the most frequently mentioned services associated with access challenges.

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Conditions and Care of the Elderly. The needs of a growing elderly population were mentioned by many interviewees as a significant community health issue. Seniors with multiple chronic conditions, at risk for falls, with Alzheimer’s disease and dementia, experiencing social isolation, with gaps in pharmaceutical coverage, in areas where providers are reluctant to accept Medicare, and in areas with limited transportation options were identified as most at risk.

Mental Health and Access to Behavioral Health Services. A large majority of those interviewed identified poor mental health and inadequate mental health resources as a significant need across communities served by Main Campus. Populations experiencing the greatest challenges include children and adolescents, the homeless, and incarcerated individuals. Additional beds, more trained psychiatrists and social workers, enhanced training and services for law enforcement, better integration of mental health into physical health services, better training of primary care physicians in addressing mental health issues, and more mental health advocates who could help patients access services all were cited as important needs.

Infant and Maternal Health. Interviewees identified improving infant and maternal health care as an important priority. Infant mortality rates are well above national averages, particularly for low-income Blacks. Interviewees mentioned the following as contributing factors to this health disparity: poverty, poor housing options, smoking rates, opioid use, lack of time between pregnancies, and a lack of access to and awareness of prenatal care services. Community collaboration and assuring that interventions are evidenced-based were mentioned as important.

Substance Abuse. A large majority of those interviewed identified the abuse of opiates including heroin and fentanyl as a significant health concern. Abuse was cited as a widespread and growing issue, affecting individuals in every age and socioeconomic class. The over-prescription of pain medications by physicians and drug availability contribute to the epidemic. Interviewees also stated that accessing drug rehabilitation facilities is challenging. Additional substance abuse treatment resources are needed to help connect emergency room patients with appropriate follow-up services.

HIV/AIDS. Interviewees indicated that HIV is a significant health concern in communities served by Main Campus. Cleveland was cited as one of the few cities in the United States with an increasing HIV infection rate. While the sharing of needles during intravenous drug use was mentioned as a mode of transmission, interviewees perceived unsafe sex practices, particularly by Black youth, as a primary cause of the increased incidence rate.

Transportation. Several interviewees identified a lack of transportation as a serious concern in Cuyahoga County and in other areas of Northeast Ohio, particularly for seniors and low-income individuals seeking access to needed services.

Smoking. Interviewees stated that while smoking rates have declined in recent years, they remain high and may be “leveling off” across communities served by Main Campus – particularly for lower-income populations. Comparatively high rates expose children to second-hand smoke, negatively affect birth outcomes and contribute to higher cancer and respiratory diseases and other problems. Public smoking cessation programs have been curtailed, so

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additional privately-sponsored services as well as new or enhanced public policies would be helpful.

SIGNIFICANT COMMUNITY HEALTH NEEDS

Prioritization Process

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

Access to Affordable Health Care

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

- Federally-designated Medically Underserved Areas (MUAs) and Primary Care Health Professional Shortage Areas (HPSAs) are present in the communities served by Main Campus (**Exhibits 33, 34, 63, 64, 90, and 91**).
- Rates for ambulatory care sensitive conditions within the Main Campus communities were significantly higher than the Ohio averages (**Exhibits 28, 29, 58, 59, 86, and 87**). Disproportionately high rates indicate potential problems with the availability or accessibility of ambulatory care and preventive services and can suggest areas for improvement in the health care system and ways to improve outcomes.
- In Community Health Status Indicators (CHSI), Cuyahoga County and seven other counties in the 21-County community rank poorly compared to peer counties for Older Adult Preventable Hospitalizations (**Exhibits 21, 51, and 81**).
- Access to basic medical care was identified by nearly all interviewees as problematic. It was often cited that segments of the population rely excessively on emergency departments for primary care.

Chronic Diseases and Other Health Conditions

Chronic diseases and other health conditions including, in alphabetical order: cancer, chemical dependency, communicable diseases (including sexually transmitted infections), diabetes, heart disease, hypertension, obesity, poor birth outcomes, poor mental health status, and respiratory diseases were identified as prevalent in Main Campus communities.

SIGNIFICANT COMMUNITY HEALTH NEEDS

- **Cancer**
 - Age-adjusted cancer incidence and mortality rates throughout the 21-County community have been higher than the state averages (**Exhibits 53, 54, and 83**). In Cuyahoga County, the stomach cancer mortality rate was more than 50 percent higher than the Ohio average (**Exhibit 23**).
 - In Community Health Status Indicators, five of the counties in the 21-County community compared unfavorably to peer counties for Cancer Deaths, including Cuyahoga and Portage counties (**Exhibits 80 and 81**).
- **Chemical Dependency**
 - In County Health Rankings, Cuyahoga County ranked 52nd out of 88 Ohio counties for Drug Overdose Deaths and 64th for Excessive Drinking (**Exhibit 19**). In the 7-County community, Lake and Lorain counties also ranked in the bottom half of Ohio counties for Drug Overdose Deaths (**Exhibit 49**).
 - According to the 2014 Ohio Department of Health Drug Overdose Report, fentanyl drug seizures in the United States increased by 300 percent between 2013 and 2014. In 2014, fentanyl-related overdoses accounted for 19.9 percent of accidental overdoses, a significant rise from 4.0 percent in 2013. Additionally, the rate of heroin poisoning in Cuyahoga County was significantly higher than the Ohio average.
 - Abuse of opiates across all ages and socioeconomic classes was cited as a significant health concern by a large majority of interviewees. More than half of the recent health assessments analyzed in this report identified chemical dependency as a significant health need.
- **Communicable Diseases**
 - In County Health Rankings, Cuyahoga County ranked 87th out of the 88 counties in Ohio for Sexually Transmitted Infections (**Exhibit 19**). Within the 7-County community, Lorain County ranked 71st and Summit County ranked 80th out of the 88 counties for Sexually Transmitted Infections (**Exhibit 49**).
 - According to the Ohio Department of Health, the age-adjusted mortality rate for HIV in Cuyahoga County was more than twice as high as the state average. Incidence rates for chlamydia, HIV, gonorrhea, and viral meningitis in Cuyahoga County were all significantly higher than the Ohio averages (**Exhibits 22 and 25**). The HIV mortality rate was also similar to the state average in Ashtabula and Mahoning counties (**Exhibit 82**).
 - Several interviewees identified the incidence rate for HIV/AIDS as a significant health concern within the community. Cleveland was cited as one of only a few major cities in America with an increasing HIV incidence rate.
- **Diabetes, Heart Disease, and Hypertension**
 - The age-adjusted mortality rate for Heart Disease in Cuyahoga County and ten other counties in the 21-County community were significantly higher than the Ohio average (**Exhibits 22, 52, and 82**).
 - ACSC rates for Congestive Heart Failure, Hypertension, Angina without Procedure, and Uncontrolled Diabetes in the Local neighborhoods community were all significantly higher than the average ACSC rates in Ohio (**Exhibit 29**). ACSC rates for Congestive Heart Failure and Diabetes Long-Term

SIGNIFICANT COMMUNITY HEALTH NEEDS

Complications in the 7-County and 21-County communities were also problematic (**Exhibits 59 and 87**).

- **Obesity**
 - Federally-designated Food Deserts are present in the communities served by Main Campus (**Exhibits 32, 62, and 89**). Lack of access to affordable healthy food options and high concentrations of fast food restaurants, may lead individuals (particularly those in lower socio-economic classes) to consume calorie dense, nutrient poor foods that lead to obesity. Chronic conditions such as hypertension and diabetes are much more prevalent among individuals who are obese.
 - Interviewees identified obesity as a significant concern and attributed this need to a lack of awareness about the importance of proper nutrition, the presence of food deserts, and the cost of accessing healthy food.
- **Poor Birth Outcomes**
 - In County Health Rankings, Cuyahoga County ranked 51st out of the 88 counties in Ohio for teen births (**Exhibit 19**), and had a significantly higher percentage of low birth weight births compared to both the Ohio and national averages (**Exhibit 20**).
 - Data from the Ohio Department of Health indicate that rates of infant mortality, low birth weights, and preterm births in Cuyahoga County have been significantly higher than the Ohio averages (**Exhibit 26**). Indicators of maternal and infant health have been unfavorable throughout the 7-County and 21-County communities; more than half of the counties in the 21-County community had unfavorable rates of infant, neonatal, and/or post-neonatal mortality (**Exhibits 56 and 84**).
 - ACSC rates for Low Birth Weight were significantly higher than the Ohio average in the Main Campus Local neighborhoods community (**Exhibit 28**). ACSC rates for Low Birth Weight in eight of the counties in the 21-County community and in the 21-County community overall were higher than the Ohio average (**Exhibit 86**).
 - Interviewees identified infant mortality as a significant need in the community, stating that issue was particularly problematic for those in poverty and Black populations.
- **Poor Mental Health Status**
 - Behavioral Risk Factor Surveillance System data show that many of the ZIP codes and counties in the Main Campus communities have comparatively high rates for depression compared to the twenty one counties in Northeast Ohio (**Exhibits 27 and 85**).
 - Many interviewees identified mental illness and a lack of mental health services as a significant concern for all age groups within the area served by Main Campus. Several interviewees cited the connection between poor mental health and negative outcomes for physical health.
 - A large majority of other, recent health assessments in the region identified mental health as a significant need.

SIGNIFICANT COMMUNITY HEALTH NEEDS

- **Respiratory Diseases**
 - ACSC rates in the Local neighborhoods community for Adult Asthma and Chronic Obstructive Pulmonary Disease were significantly higher than the average ACSC rates in Ohio (**Exhibit 29**). ACSC rates for Adult Asthma in Carroll, Columbiana, Mahoning, and Trumbull counties were more than 50 percent higher than the Ohio average (**Exhibit 86**).
 - Other, recent health assessments identified respiratory diseases as a significant concern in Cuyahoga County.

Economic Development and Community Conditions

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

- Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Portage, Stark, and Trumbull counties have higher poverty rates than both the Ohio and national averages (**Exhibit 73**).
 - Poverty rates among Black and Hispanic (or Latino) populations in Cuyahoga County are more than twice as high as the poverty rate of White residents (**Exhibit 12**).
 - Federally-designated Low Income Areas are present in the communities served by Main Campus (**Exhibits 14, 45, and 75**).
 - In County Health Rankings, Cuyahoga County ranked 79th out of the 88 counties in Ohio for Social and Economic Factors, 59th for Unemployment, and 78th for Inadequate Social Support (**Exhibit 19**). Ten other counties in the 21-County community also ranked in the bottom half of Ohio counties for Social and Economic Factors (**Exhibit 79**).
 - According to the Community Need Index, 15 out of the 18 ZIP codes in Main Campus' Local neighborhoods community scored in the "highest need category" (**Exhibit 30**).
 - A majority of interviewees identified economic and healthcare disparities among minority residents as significant community health issues.
- Crime rates in Cuyahoga County have been well above Ohio averages (**Exhibit 18**) and recent homicide rates have been nearly twice as high as the Ohio average (**Exhibit 22**). Homicide rates have also been problematic in Mahoning, Summit, and Trumbull counties (**Exhibit 82**).
- In County Health Rankings, Cuyahoga County ranked 61st out of 88 counties, in Physical Environment, 63rd in Air Pollution, and 87th in Severe Housing Problems (**Exhibit 19**). Seventeen additional counties in the 21-County community also ranked in the bottom half of Ohio counties for Physical Environment (**Exhibit 79**).
- Other health assessments also identified transportation and environmental concerns as priorities.
- Interviewees identified a lack of transportation options as a significant barrier to good health in the community. This was especially true for low-income, elderly, and disabled residents.

SIGNIFICANT COMMUNITY HEALTH NEEDS

Health Professions Education and Research

There is a need for more research to address these and other community health needs. 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.

- Federally-designated Medically Underserved Areas and Primary Care and Dental Health Professional Shortage Areas are present in the communities served by Main Campus (**Exhibits 33, 34, 63, 64, 90, and 91**).
- A report conducted by the Robert Graham Center indicates that Ohio will need an additional 681 primary care physicians by 2030 (an eight percent increase) to maintain current levels of primary care access. Physicians nearing retirement age and increases in demand associated with increases in insurance coverage are expected to exacerbate this need.¹¹
- Through research, Cleveland Clinic has advanced knowledge and impacted community health for all its communities, from local to national, and across the world. Cleveland Clinic is involved in both basic research and clinical studies and seeks to translate those studies into advanced treatments and cures for a variety of human diseases and conditions. Cleveland Clinic's tripartite mission of patient care, research and education helps facilitate bringing new therapies and treatments to the patient's bedside or their doctor's office, because its physicians provide quality clinical care closely integrated with the latest research and educational developments of the enterprise.

Healthcare for the Elderly

The elderly populations in the Main Campus communities are expected to increase in the next five years and meeting the health and social service needs of the aging population is a significant issue.

- While the population in Main Campus' Local neighborhoods community is projected to decrease by 2.3 percent between 2015 and 2020, the number of persons 65 years of age and older in the community is projected to increase by 10.6 percent over this period (**Exhibit 7**). The 65 and older populations in the 7-County and 21-County communities are projected to increase by 14.2 and 13 percent, respectively, between 2015 and 2020 (**Exhibit 68**).
- In Community Health Status Indicators (CHSI), Cuyahoga County and seven other counties in the 21-County community rank poorly compared to peer counties for Older Adult Preventable Hospitalizations (**Exhibits 21, and 81**).
- Interviewees identified care of the elderly as a challenge in the community, including the need for additional in-home health care and day care services. Concerns were also raised

¹¹ Petterson, Stephen M; Cai, Angela; Moore, Miranda; Bazemore, Andrew. State-level projections of primary care workforce, 2010-2030. September 2013, Robert Graham Center, Washington, D.C.

SIGNIFICANT COMMUNITY HEALTH NEEDS

about the inability of seniors to find affordable housing options, seniors with multiple chronic conditions, Alzheimer's disease, and those who live alone.

Wellness

Programs and activities that target behavioral health change were identified as needed in the Main Campus communities. Education and opportunities for residents regarding exercise, nutrition, and smoking cessation specifically were noted.

- Behavioral Risk Factor Surveillance System data show that 17 of the 18 ZIP codes in the Main Campus Local neighborhoods community and 15 of the 21 counties in the Main Campus 21-County community have significant percentages of residents who smoke compared to the average percent of the twenty one counties in Northeast Ohio (**Exhibits 27 and 85**).
- Federally-designated Food Deserts are present in the communities served by Main Campus (**Exhibit 32, 62, and 89**). Lack of access to affordable healthy food options and high concentrations of fast food restaurants, may lead individuals (particularly those in lower socio-economic classes) to consume nutrient poor foods.
- Interviewees indicated concerns about smoking rates, the lack of access to healthy food, and a lack of nutrition-based education negatively affecting wellness in the communities served by Main Campus.

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

This section identifies other facilities and resources available in the 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 16 FQHC sites operating in the Main Campus Local neighborhoods community (**Exhibit 4**).

Exhibit 4: Federally Qualified Health Centers

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

Source: Health Resources and Services Administration, 2016.

There are a total of 63 FQHC sites operating in the Main Campus 21-County community, including 30 in the 7-County community.

Hospitals

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

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

Exhibit 5: Hospitals

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

Source: Ohio Hospital Association, 2016.

A total of 99 hospitals operate across the 21 counties in Northeast Ohio, including 16 in the Main Campus Local neighborhoods community and 42 in the 7-County community.

Other Community Resources

A wide range of agencies, coalitions, and organizations that provide health and social services is available in the region served by 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 – CONSULTANT QUALIFICATIONS

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

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
ASSESSMENT

**APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY
SECONDARY DATA ASSESSMENT**

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

Community Assessed

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

Demographics

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

Exhibit 6: Percent Change in Community Population by ZIP Code

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

Source: Truven Market Expert, 2015.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
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Between 2015 and 2020, 15 of the 18 ZIP codes in the community are projected to decrease in population size. The populations in Cleveland ZIP codes 44105 and 44110 are expected to decrease by approximately five percent.

Exhibit 7 shows the Local neighborhoods community’s population for certain age and sex cohorts in 2015, with projections to 2020.

Exhibit 7: Percent Change in Population by Age/Sex Cohort, 2015-2020

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

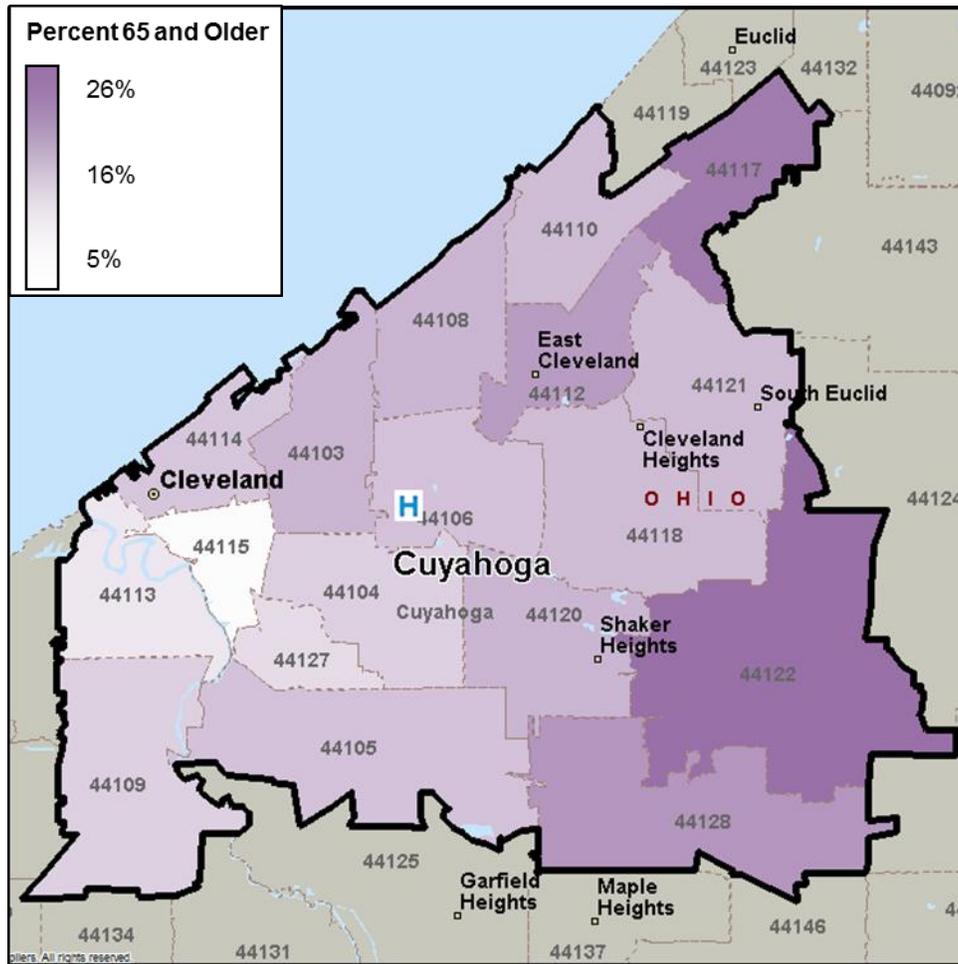
Source: Truven Market Expert, 2015.

The number of persons aged 65 years and older is projected to increase by 10.6 percent between 2015 and 2020. All other age groups are expected to decrease in population. 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 8 illustrates the percent of the population 65 years of age and older in the community by ZIP code.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 8: Percent of Population Aged 65+ by ZIP Code, 2015



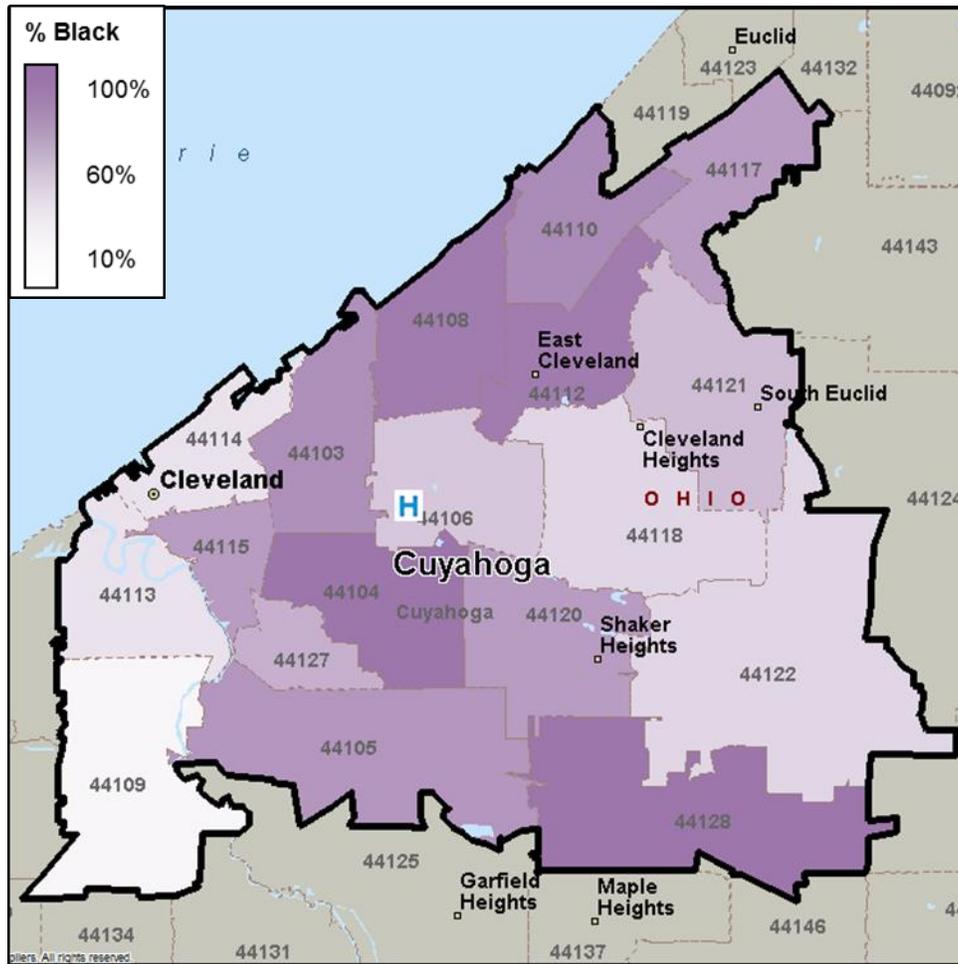
Source: Truven Market Expert, 2015.

In the Local neighborhoods community, ZIP codes 44117, and 44122 had the highest proportions of residents 65 years of age and older. ZIP code 44115 had the lowest.

Exhibits 9 and 10 show locations in the community where the percentages of the population that are Black and Hispanic (or Latino) were highest in 2015.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 9: Percent of Population - Black, 2015



Source: Truven Market Expert, 2015.

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Data regarding residents without a high school diploma, with a disability, and who are linguistically isolated are presented in **Exhibit 11** for Cuyahoga County, Ohio, and the United States.

Exhibit 11: Other Socioeconomic Indicators, 2014

Measure	Cuyahoga County	Ohio	United States
Population 25+ without High School Diploma	12.1%	11.2%	13.6%
Population with a Disability	14.3%	13.5%	12.3%
Population Linguistically Isolated	4.1%	2.4%	8.6%

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

Exhibit 11 indicates that:

- Cuyahoga County had a higher percentage of residents aged 25 years and older without a high school diploma than the Ohio average.
- Cuyahoga County had a higher percentage of the population with a disability compared to Ohio and United States averages.
- Compared to Ohio, Cuyahoga County 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

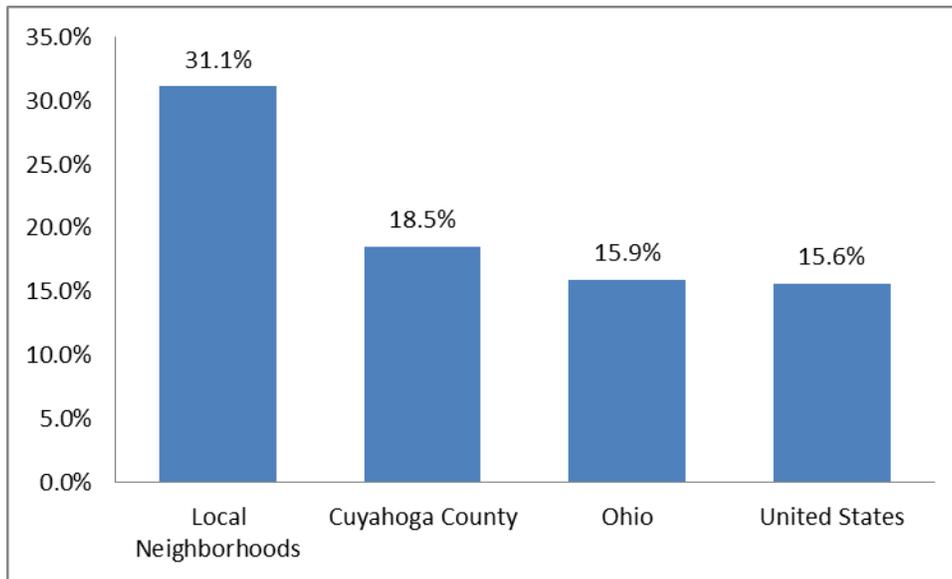
The following categories of economic indicators with implications for health were assessed: (1) people in poverty; (2) unemployment rate; (3) insurance status; and (4) crime.

People in Poverty

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
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Exhibit 12: Percent of People in Poverty, 2014

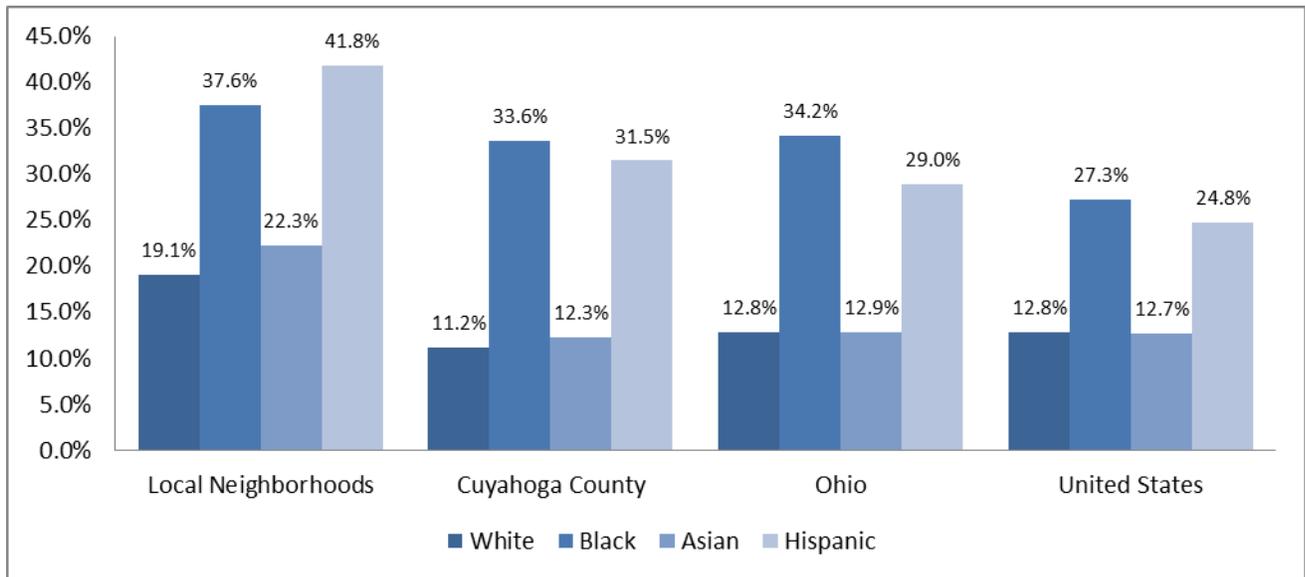


Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

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

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Exhibit 13: Poverty Rates by Race and Ethnicity, 2014



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

Poverty rates in the Local neighborhoods, Cuyahoga County and Ohio have been comparatively high for Black and Hispanic (or Latino) residents. The poverty rate for each race in the Local neighborhoods community was higher than the state and national averages.

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

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Exhibit 14: Low Income Census Tracts



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

Low income census tracts have been prevalent throughout Main Campus' Local neighborhoods community.

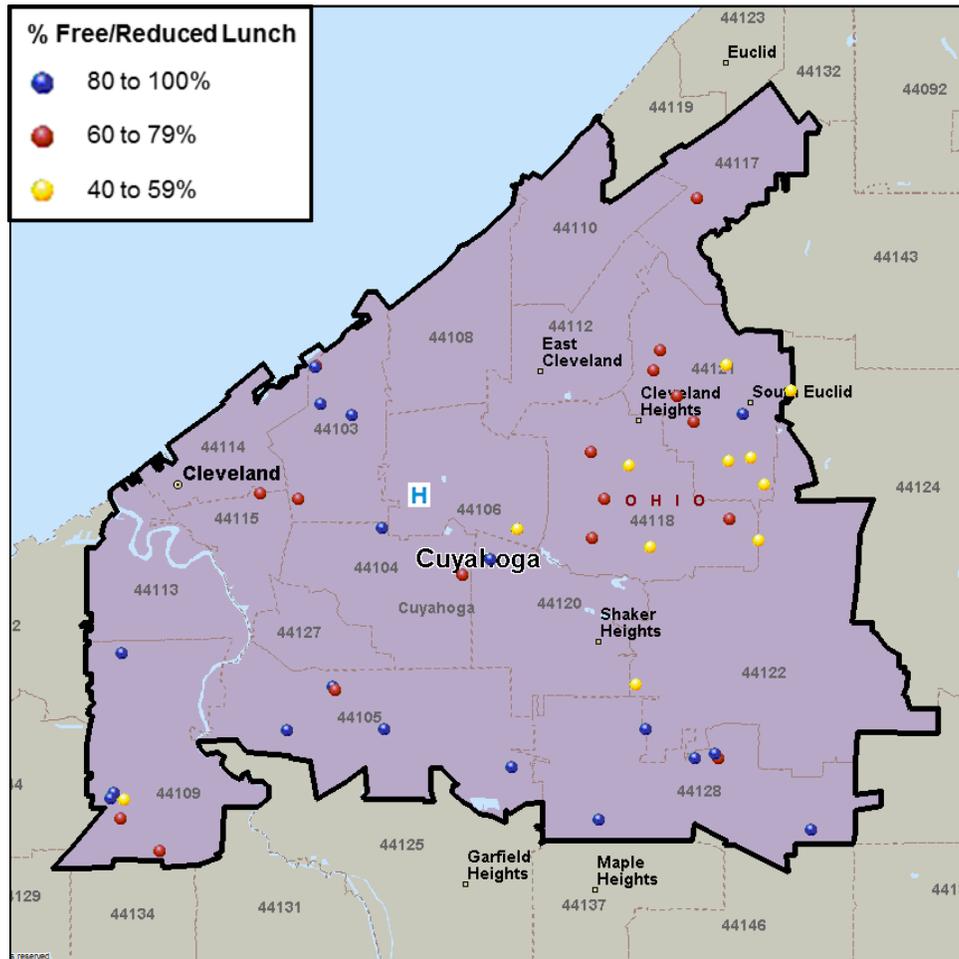
Eligibility for the National School Lunch Program

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

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

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



Source: Ohio Department of Education, 2014.

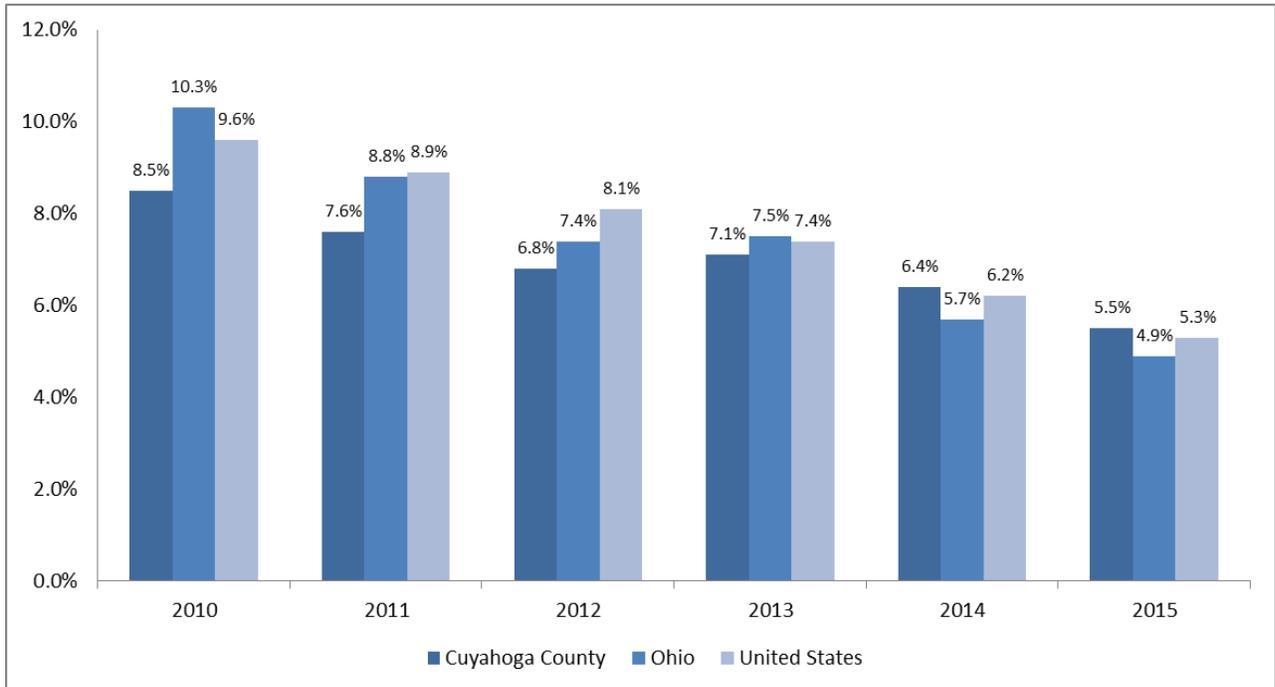
There are 46 schools within the Main Campus community where at least 40 percent of students are eligible for free or reduced price lunches.

Unemployment

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

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Exhibit 16: Unemployment Rates, 2010-2015



Source: Bureau of Labor Statistics, 2010-2014.

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

Insurance Status

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
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Exhibit 17: Percent of the Population without Health Insurance, 2015-2020

City	ZIP Code	Total Population 2015	% Uninsured 2015	Total Population 2020	% Uninsured 2020
Beachwood	44122	33,661	5.0%	33,514	3.5%
Bratenahl	44108	23,919	11.5%	22,783	7.9%
Buckeye-Woodland Hills	44104	22,327	14.6%	22,180	10.1%
Cleveland	44105	37,633	10.9%	35,694	7.4%
Cleveland	44109	39,023	10.0%	38,011	6.5%
Cleveland	44110	18,719	12.5%	17,730	8.4%
Cleveland	44113	19,659	11.1%	20,035	7.1%
Cleveland	44121	32,122	6.4%	31,551	4.3%
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Hough-Fairfax	44103	16,978	13.0%	16,437	8.7%
Shaker Heights	44120	35,932	10.3%	34,539	7.0%
Slavic Village	44127	5,215	13.1%	4,957	8.6%
University Circle	44106	26,278	12.1%	25,721	8.2%

Source: Truven Market Expert, 2015.

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

Ohio Medicaid Expansion

Subsequent to the ACA’s passage, a June 2012 Supreme Court ruling provided states with discretion regarding whether or not to expand Medicaid eligibility. Ohio was one of the states that expanded Medicaid. Medicaid expansion accounted for over 76 percent of Ohio’s ACA enrollment and plans purchased through the federal healthcare.gov exchange accounted for about 24 percent.¹²

In Ohio, Medicaid primarily is available for low-income individuals, pregnant women, children, low-income elderly persons, and individuals with disabilities.¹³ With a network of more than 83,000 providers, the Ohio Department of Medicaid covers over 2.9 million Ohio residents.

¹² <http://watchdog.org/237980/75percent-ohio-obamacare/>

¹³ <http://medicaid.ohio.gov/FOROHIOANS/WhoQualifies.aspx>

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Across the United States, uninsured rates have fallen most in states that decided to expand Medicaid.¹⁴

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

Crime

Exhibit 18 provides certain crime statistics for Cuyahoga County and Ohio.

Exhibit 18: Crime Rates by Type, Per 100,000, 2014
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

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

Source: FBI, 2014.

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

Health Status and Access Indicators

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

Throughout this section, data and cells are highlighted if indicators are unfavorable – because they exceed benchmarks (typically, Ohio averages). Where confidence interval data are available (ranges of values that are likely to include the actual value), cells are highlighted only if variances are unfavorable and statistically significant.

¹⁴ See: <http://hrms.urban.org/briefs/Increase-in-Medicaid-under-the-ACA-reduces-uninsurance.html>

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

County Health Rankings

County Health Rankings, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of “health factors” and “health outcomes.” These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,¹⁵ social and economic factors, and physical environment.¹⁶ *County Health Rankings* is updated annually. *County Health Rankings 2016* relies on data from 2006 to 2015, with most data from 2010 to 2013.

Exhibit 19 presents 2013 and 2016 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in the Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. The table also indicates if rankings fell between 2013 and 2016.

¹⁵A 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.

¹⁶A composite measure that examines Environmental Quality, which measures the number of air pollution-particulate matter days and air pollution-ozone days, and Built Environment, which measures access to healthy foods and recreational facilities and the percent of restaurants that are fast food.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
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Exhibit 19: County Health Rankings, 2013 and 2016

(Light grey shading notes indicator in bottom half of Ohio counties; Dark grey shading notes in bottom quartile of Ohio counties)

	Cuyahoga County		
	2013	2016	Rank Change
Health Outcomes	67	64	
Health Factors	45	53	↓
Length of Life	58	54	
Quality of Life	76	73	
Frequent Physical Distress	N/A	63	
Frequent Mental Distress	N/A	54	
Drug Overdose Deaths	N/A	52	
Health Behaviors	15	39	↓
Adult Smoking	16	18	↓
Adult Obesity	7	9	↓
Excessive Drinking	51	64	↓
Sexually Transmitted Infections	55	87	↓
Teen Births	3	51	↓
Clinical Care	7	5	
Primary Care Physicians	1	2	↓
Dentists	56	1	
Mental Health Providers	3	1	
Preventable Hospital Stays	36	34	
Diabetic Screening	69	62	
Social & Economic Factors	76	79	↓
Some College	10	9	
Unemployment	15	59	↓
Inadequate Social Support	39	78	↓
Injury Deaths	1	30	↓
Physical Environment	36	61	↓
Air Pollution	66	63	
Severe Housing Problems	N/A	87	

Source: County Health Rankings, 2016.

In 2016, Cuyahoga County ranked in the bottom 50th percentile among Ohio counties for 17 of the 27 indicators assessed. Of those 17 indicators ranking in the bottom 50th percentile, five of them ranked in the bottom quartile, including Quality of Life, Sexually Transmitted Infections, Social and Economic Factors, Inadequate Social Support, and Severe Housing Problems. Between 2013 and 2016, rankings for 13 indicators fell in Cuyahoga County.

Exhibit 20 provides data for each underlying indicator of the composite categories in the County Health Rankings.¹⁷ The exhibit also includes national averages.

¹⁷ 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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 20: County Health Rankings Data Compared to Ohio and U.S. Averages, 2016
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Indicator Category	Data	Cuyahoga County	Ohio	U.S.
Health Outcomes				
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,907.7	7,533.6	7,700.0
Quality of Life	Percent of adults reporting fair or poor health	16.5	16.0	16.0
	Average number of physically unhealthy days reported in past 30 days	3.9	3.8	3.7
	Average number of mentally unhealthy days reported in past 30 days	4.0	4.0	3.7
	Percent of live births with low birthweight (<2500 grams)	10.5	8.6	8.0
Health Factors				
Health Behaviors				
Adult Smoking	Percent of adults that report smoking >= 100 cigarettes and currently smoking	18.3	19.2	18.0
Adult Obesity	Percent of adults that report a BMI >= 30	28.6	30.5	31.0
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	6.6	6.9	7.2
Physical Inactivity	Percent of adults aged 20 and over reporting no leisure-time physical activity	25.6	26.3	28.0
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	95.6	83.2	62.0
Alcohol Impaired Driving Deaths	Percent of driving deaths with alcohol involvement	45.3	35.3	30.0
Excessive Drinking	Binge plus heavy drinking	18.2	17.9	17.0
Sexually Transmitted Infections	Chlamydia rate per 100,000 population	792.4	460.2	287.7
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	37.7	34.4	40.0
Clinical Care				
Uninsured	Percent of population under age 65 without health insurance	13.3	13.0	17.0
Primary Care Physicians	Ratio of population to primary care physicians	879:1	1296:1	1990:1
Dentists	Ratio of population to dentists	1028:1	1713:1	2590:1
Mental Health Providers	Ratio of population to mental health providers	402:1	642:1	1060:1
Preventable Hospital Stays	Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	64.7	64.9	60.0
Diabetic Screening	Percent of diabetic Medicare enrollees that receive HbA1c monitoring	83.9	84.9	85.0
Mammography Screening	Percent of female Medicare enrollees, ages 67-69, that receive mammography screening	65.0	60.0	61.0

Source: County Health Rankings, 2016.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 20: County Health Rankings Data Compared to Ohio and U.S. Averages, 2016 (continued)
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Indicator Category	Data	Cuyahoga County	Ohio	U.S.
Health Factors				
Social & Economic Factors				
High School Graduation	Percent of ninth-grade cohort that graduates in four years	75.8	82.7	86.0
Some College	Percent of adults aged 25-44 years with some post-secondary education	68.4	63.4	56.0
Unemployment	Percent of population age 16+ unemployed but seeking work	6.4	5.7	6.0
Children in poverty	Percent of children under age 18 in poverty	30.0	22.7	23.0
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	5.6	4.8	4.4
Children in single-parent households	Percent of children that live in a household headed by single parent	44.9	35.4	32.0
Social Associations	Number of associations per 10,000 population	9.2	11.4	13.0
Violent Crime	Number of reported violent crime offenses per 100,000 population	559.8	307.2	199.0
Injury Deaths	Injury mortality per 100,000	59.1	62.7	74.0
Physical Environment				
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	13.6	13.5	11.9
Severe Housing Problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	18.9	15.2	14.0
Drive Alone to Work	Percent of the workforce that drives alone to work	80.1	83.5	80.0
Long Commute- Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	31.9	29.4	29.0

Source: County Health Rankings, 2016

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 20 highlights the following comparatively unfavorable indicators:

- Years of potential life lost
- Percent of adults reporting fair or poor health
- Average number of physically unhealthy days
- Percent of live births with low birth weight
- Percent of driving deaths with alcohol involvement
- Binge and heavy drinking
- Chlamydia rate
- Teen birth rate
- Percent of the population without health insurance
- Percent of the population unemployed
- Percent of children in poverty
- Income inequality rate
- Percent of children living in a household headed by a single parent
- Social associations rate
- Violent crime rate
- Air pollution
- Percent of households with severe housing problems
- Percent of workers with a long commute who drive alone

Community Health Status Indicators

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

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

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

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Exhibit 21: Community Health Status Indicators, 2015
(Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Cuyahoga County
Mortality	Alzheimer's Disease Deaths	
	Cancer Deaths	
	Chronic Kidney Disease Deaths	
	Chronic Lower Respiratory Disease (CLRD) Deaths	
	Coronary Heart Disease Deaths	
	Diabetes Deaths	
	Female Life Expectancy	
	Male Life Expectancy	
	Motor Vehicle Deaths	
	Stroke Deaths	
	Unintentional Injury (including motor vehicle)	
	Morbidity	Adult Diabetes
Adult Obesity		
Adult Overall Health Status		
Alzheimer's Disease/Dementia		
Cancer		
Gonorrhea		
HIV		
Older Adult Asthma		
Older Adult Depression		
Preterm Births		
Syphilis		
Health Care Access and Quality		Cost Barrier to Care
	Older Adult Preventable Hospitalizations	
	Primary Care Provider Access	
	Uninsured	
Health Behaviors	Adult Binge Drinking	
	Adult Female Routine Pap Tests	
	Adult Physical Inactivity	
	Adult Smoking	
	Teen Births	
Social Factors	Children in Single-Parent Households	
	High Housing Costs	
	Inadequate Social Support	
	On Time High School Graduation	
	Poverty	
	Unemployment	
Physical Environment	Access to Parks	
	Annual Average PM2.5 Concentration	
	Drinking Water Violations	
	Housing Stress	
	Limited Access to Healthy Food	
	Living Near Highways	

Source: Community Health Status Indicators, 2015.

The CHSI data indicate that cancer and coronary heart disease mortality rates and morbidity associated with Alzheimer's disease, gonorrhea, adult asthma, and preterm births are comparatively high, as are older adult preventable hospitalizations. Indicators for children in single-parent households and air quality also benchmark unfavorably.

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Ohio Department of Health

The Ohio Department of Health maintains a data warehouse that includes county-level indicators regarding mortality rates (**Exhibits 22 and 23**), cancer incidence (**Exhibit 24**), communicable disease incidence (**Exhibit 25**), and maternal and child health indicators (**Exhibit 26**).

Exhibit 22 provides age-adjusted mortality rates for selected causes of death in 2012.

Exhibit 22: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2012
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Measure	Cuyahoga County	Ohio	Healthy People 2020
Heart Disease	213.9	191.4	-
Diabetes	23.3	26.1	-
Influenza and Pneomonia	12.0	15.4	-
Suicide	9.9	12.0	10.2
Motor Vehicle Collisions	3.4	9.0	12.4
Homicide	9.2	5.4	-
Motor Vehicle Collisions (Alcohol)	1.4	3.8	-
Aortic Aneurysm	3.8	3.7	-
HIV	2.7	1.3	-
Pedestrians Killed in Traffic Collisions	0.6	0.5	1.4

Source: Ohio Department of Health, 2012.

In Cuyahoga County, age-adjusted mortality rates for heart disease, homicide, aortic aneurysm, HIV, and pedestrians killed in traffic collisions were all higher than the Ohio averages.

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Exhibit 23: Age-Adjusted Cancer Mortality Rates per 100,000 Population, 2008-2012
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Cancer Site/Type	Cuyahoga County	Ohio Rate	U.S. Rate
All Sites/Types	189.9	186.6	171.2
Lung and Bronchus	52.3	55.3	47.2
Breast (Female)	24.9	23.6	21.9
Prostate	27.4	22.0	21.4
Colon and Rectum	15.6	17.0	15.5
Pancreas	12.8	11.5	10.9
Ovary	7.4	7.9	7.7
Leukemia	7.0	7.3	7.0
Non-Hodgkin Lymphoma	6.4	6.9	6.2
Liver and Intrahepatic Bile Duct	6.4	5.3	6.0
Bladder	5.0	5.0	4.4
Esophagus	4.9	5.0	4.2
Uterus	6.5	4.9	4.4
Brain and Other CNS	4.0	4.5	4.3
Kidney and Renal Pelvis	4.1	4.3	3.9
Multiple Myeloma	3.7	3.5	3.3
Melanoma of Skin	2.1	3.0	2.7
Stomach	4.4	2.9	3.4
Cervix	3.0	2.6	2.3
Oral Cavity and Pharynx	3.1	2.5	2.5
Larynx	1.5	1.3	1.1
Thyroid	0.5	0.5	0.5
Hodgkin Lymphoma	0.4	0.4	0.4
Testis	0.4	0.3	0.3

Source: Ohio Department of Health, 2015.

The age-adjusted stomach cancer mortality rate in Cuyahoga County was significantly higher than the Ohio average. Cancer mortality rates for breast, prostate, pancreas, uterus, liver and intrahepatic bile duct, multiple myeloma, oral cavity and pharynx, cervix, larynx, and testis cancer were also higher than the state averages.

Exhibit 24 presents age-adjusted cancer incidence rates in the community.

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Exhibit 24: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2013
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Site/Type	Cuyahoga County	Ohio
Total	477.9	452.5
Prostate	116.3	101.7
Breast	71.4	67.6
Lung and Bronchus	64.3	67.4
Colon and Rectum	41.0	40.6
Other Sites/Types	37.9	35.8
Uterus	35.4	28.8
Bladder	19.9	22.1
Melanoma of Skin	17.0	19.5
Non-Hodgkins Lymphoma	21.0	18.6
Kidney and Renal Pelvis	19.0	16.9
Thyroid	15.9	15.2
Pancreas	12.9	12.3
Leukemia	14.4	11.9
Oral Cavity and Pharynx	11.2	11.7
Ovary	14.5	11.3
Brain and Other CNS	7.7	7.4
Cervix	7.4	7.4
Stomach	8.4	6.8
Liver and Intrahepatic Bile Duct	8.3	6.6
Multiple Myeloma	8.3	5.9
Testis	6.3	5.2
Esophagus	5.8	5.0
Larynx	4.8	4.3
Hodgkins Lymphoma	3.1	2.6

Source: Ohio Department of Health, 2013.

The incidence rates for prostate, breast, colon and rectum, uterus, Non-Hodgkin’s Lymphoma, kidney and renal pelvis, thyroid, pancreas, leukemia, ovary, brain and other CNS, stomach, liver and intrahepatic bile duct, multiple myeloma, testis, esophagus, larynx, and Hodgkin’s Lymphoma in Cuyahoga County were higher than the Ohio averages.

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Exhibit 25: Communicable Disease Incidence Rates per 100,000 Population, 2012
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Measure	Cuyahoga County	Ohio
Chlamydia	801.1	462.0
HIV	295.8	154.3
Gonorrhea	290.3	143.5
Syphilis	9.8	9.9
Varicella	4.3	7.0
Viral Meningitis	7.2	6.1
Hepatitis A, B, and C	0.8	1.9

Source: Ohio Department of Health, 2012.

Cuyahoga County has had comparatively high incidence rates of chlamydia, HIV, gonorrhea, and viral meningitis.

Exhibit 26: Maternal and Child Health Indicators, 2012
(Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

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

Source: Ohio Department of Health, 2012.

Exhibit 26 indicates that infant mortality rates, low birth weights, and preterm births are comparatively problematic in Cuyahoga County.

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Behavioral Risk Factor Surveillance System

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.

BRFSS data were assessed for each ZIP code in the Main Campus Local community and compared to the averages for the twenty one counties in Northeast Ohio.

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Exhibit 27: Behavioral Risk Factor Surveillance System, Chronic Conditions, 2015

(Light grey shading indicates indicator worse than the 21-County average; Dark grey shading indicates more than 50 percent worse than the 21-County average)

City	ZIP Code	Total Population 18+ 2015	% Obese	% Back Pain	% Diabetes	% Asthma	% Depression	% High Blood Pressure	% High Cholesterol	% COPD	% Smoking
Beachwood	44122	27,001	25.9%	21.8%	11.8%	11.3%	10.4%	32.0%	25.0%	3.6%	21.0%
Bratenahl	44108	17,618	34.8%	23.8%	12.4%	8.8%	11.9%	34.8%	19.3%	5.2%	33.0%
Buckeye-Woodland Hills	44104	14,366	35.2%	26.9%	11.9%	10.9%	13.0%	29.6%	20.7%	4.7%	36.8%
Cleveland	44105	28,794	35.7%	23.2%	13.3%	10.1%	13.6%	34.3%	19.1%	4.8%	34.1%
Cleveland	44109	29,237	34.7%	20.3%	14.6%	10.0%	11.7%	28.7%	19.6%	4.5%	34.5%
Cleveland	44110	13,577	35.2%	24.4%	14.2%	9.8%	12.7%	31.2%	21.2%	5.1%	34.9%
Cleveland	44113	16,246	26.9%	23.3%	10.6%	12.9%	17.1%	22.3%	17.2%	3.6%	31.1%
Cleveland	44121	25,585	31.7%	25.7%	12.5%	10.5%	12.2%	32.0%	21.2%	4.9%	28.0%
Cleveland	44128	21,247	34.1%	22.5%	16.0%	15.2%	19.7%	41.2%	22.3%	5.5%	31.6%
Cleveland Heights	44118	29,018	29.7%	22.1%	11.1%	11.2%	12.2%	27.7%	19.7%	4.7%	28.4%
Downtown Cleveland	44114	4,603	26.3%	15.5%	12.6%	22.1%	30.6%	21.8%	13.6%	8.3%	32.8%
Downtown Cleveland	44115	6,302	27.4%	21.1%	9.1%	14.6%	18.1%	17.6%	13.7%	4.3%	33.6%
East Cleveland	44112	16,504	35.0%	22.8%	14.3%	9.5%	12.7%	35.3%	20.2%	6.4%	33.5%
Euclid	44117	9,099	34.0%	26.8%	20.2%	17.4%	20.8%	42.4%	29.0%	5.7%	32.6%
Hough-Fairfax	44103	14,572	34.6%	23.4%	13.4%	11.4%	14.3%	31.9%	21.0%	6.5%	35.0%
Shaker Heights	44120	28,358	32.7%	21.4%	12.0%	11.8%	15.0%	31.6%	19.8%	6.3%	32.4%
Slavic Village	44127	3,809	33.6%	21.7%	13.2%	11.5%	14.1%	25.3%	19.2%	4.6%	35.5%
University Circle	44106	22,612	26.9%	15.2%	11.4%	18.8%	23.7%	21.7%	14.1%	7.0%	32.4%
Community Total		328,548	32.0%	22.4%	12.9%	12.0%	14.7%	30.9%	20.1%	5.2%	31.6%
21-County Average		3,454,621	31.7%	25.6%	14.0%	11.6%	15.1%	30.6%	24.1%	4.7%	27.5%

Source: Truven Market Expert/Behavioral Risk Factor Surveillance System, 2015.

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Compared to the 21-County averages, 17 ZIP codes in the Main Campus Local neighborhoods community had significantly higher rates of smoking, 11 ZIP codes had higher rates of obesity, and 10 ZIP codes had higher rates of high blood pressure. Rates for adult asthma, depression, and chronic obstructive pulmonary disease in Cleveland ZIP code 44114 were nearly twice as high as averages in Northeast Ohio.

Ambulatory Care Sensitive Conditions

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

ACSCs are 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.”¹⁸ 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.

Exhibit 28 provides 2014 PQI rates (per 100,000 persons) for ZIP codes in the Main Campus Local neighborhoods community – with comparisons to Ohio averages.

¹⁸Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

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Exhibit 28: PQI (ACSC) Rates per 100,000, 2014

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

City	ZIP Code	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure	Low Birth Weight
Beachwood	44122	97	48	127	621	56	626	50
Bratenahl	44108	211	21	317	1,429	211	873	114
Buckeye-Woodland Hills	44104	314	21	320	1,801	229	876	79
Cleveland	44105	244	18	405	1,961	140	954	119
Cleveland	44109	215	44	277	1,298	82	629	88
Cleveland	44110	283	51	269	1,890	127	885	124
Cleveland	44113	73	42	141	1,331	43	386	68
Cleveland	44121	92	31	132	711	76	409	78
Cleveland	44128	263	38	295	1,076	154	966	105
Cleveland Heights	44118	126	39	96	602	73	407	66
Downtown Cleveland	44114	109	-	91	1,009	145	472	123
Downtown Cleveland	44115	323	31	371	1,941	113	565	187
East Cleveland	44112	203	-	348	1,644	237	898	124
Euclid	44117	132	21	144	1,422	252	1,007	83
Hough-Fairfax	44103	205	42	425	2,143	167	1,048	111
Shaker Heights	44120	193	36	214	1,264	124	691	79
Slavic Village	44127	213	42	720	2,940	107	880	125
University Circle	44106	150	61	259	1,327	132	604	78
Main Campus Totals		187	34	253	1,323	128	712	92
Ohio Totals		95	37	119	609	53	424	61

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

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Exhibit 28: PQI (ACSC) Rates per 100,000, 2014 (continued)

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

City	ZIP Code	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Angina without Procedure	Uncontrolled Diabetes	Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Beachwood	44122	88	124	161	11	15	28	15
Bratenahl	44108	244	206	142	28	56	61	17
Buckeye-Woodland Hills	44104	320	204	179	20	33	91	13
Cleveland	44105	176	217	155	14	14	56	22
Cleveland	44109	156	147	101	34	27	52	10
Cleveland	44110	108	345	153	42	42	98	14
Cleveland	44113	72	131	132	31	-	24	12
Cleveland	44121	108	133	157	12	24	54	8
Cleveland	44128	207	212	178	18	41	82	23
Cleveland Heights	44118	157	123	110	10	20	40	10
Downtown Cleveland	44114	123	177	71	-	-	71	36
Downtown Cleveland	44115	218	189	158	-	16	78	16
East Cleveland	44112	206	248	216	-	35	69	29
Euclid	44117	81	374	282	24	36	96	24
Hough-Fairfax	44103	282	296	238	15	23	105	30
Shaker Heights	44120	86	184	143	18	33	41	7
Slavic Village	44127	495	312	366	-	27	122	-
University Circle	44106	177	186	231	14	32	33	14
Main Campus Totals		166	192	162	18	27	58	15
Ohio Totals		107	196	131	12	13	36	9

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

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The rates of admissions for ACSC in the Main Campus Local neighborhoods community exceeded Ohio averages for all conditions except perforated appendix and bacterial pneumonia. Within the community, Cleveland ZIP codes 44103 and 44109 had significantly higher PQI rates for every condition, compared to the Ohio averages.

Exhibit 29 provides the ratio of PQI rates in the Main Campus Local neighborhoods community compared to the Ohio averages. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

Exhibit 29: Ratio of PQI Rates for Main Campus Local Neighborhoods Community and Ohio, 2014

Indicator	Main Campus	Ohio	Ratio: Main Campus/ Ohio
Hypertension	127.6	52.6	2.4
Chronic Obstructive Pulmonary Disease	1,323.4	608.8	2.2
Diabetes Long-Term Complications	252.5	118.8	2.1
Uncontrolled Diabetes	26.9	13.2	2.0
Diabetes Short-Term Complications	187.2	94.7	2.0
Lower-Extremity Amputation Among Patients with Diabetes	15.4	8.9	1.7
Congestive Heart Failure	711.8	423.8	1.7
Adult Asthma	58.2	36.0	1.6
Dehydration	166.0	107.2	1.5
Angina without Procedure	17.7	11.7	1.5
Low Birth Weight	92.1	61.4	1.5
Urinary Tract Infection	161.8	131.5	1.2
Bacterial Pneumonia	192.0	196.2	1.0
Perforated Appendix	34.4	36.9	0.9

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

In the Main Campus Local neighborhoods community, ACSC rates for hypertension, chronic obstructive pulmonary disease, and diabetes were more than twice as high as the Ohio averages.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

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

- The percentage of elders, children, and single parents living in poverty;
- The percentage of adults over the age of 25 with limited English proficiency, and the percentage of the population that is non-White;

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- The percentage of the population without a high school diploma;
- The percentage of uninsured and unemployed residents; and
- The percentage of the population renting houses.

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

Exhibit 30 presents the *Community Need Index*TM (CNI) score of each ZIP code in the Main Campus Local neighborhoods community.

Exhibit 30: Community Need IndexTM Score by ZIP Code, 2015

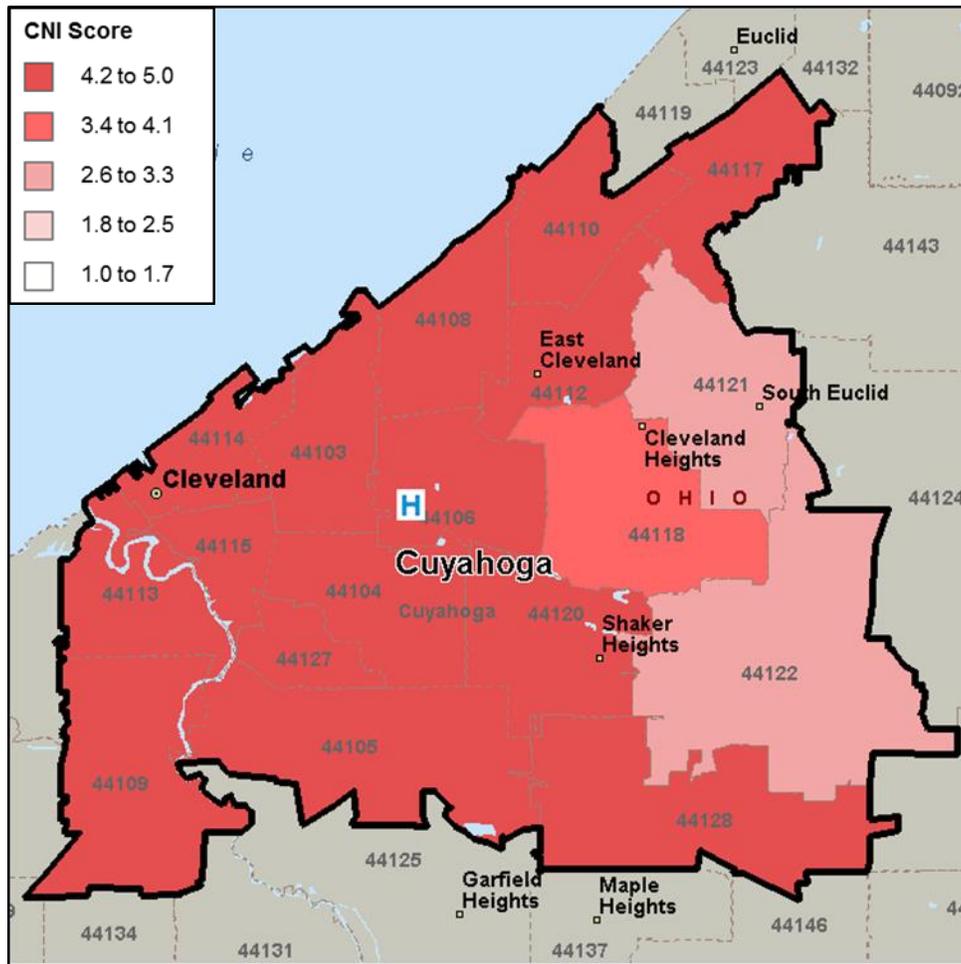
City	ZIP Code	CNI Score
Hough-Fairfax	44103	5.0
Buckeye-Woodland Hills	44104	5.0
Cleveland	44105	5.0
Bratenahl	44108	5.0
Cleveland	44110	5.0
Downtown Cleveland	44115	5.0
Slavic Village	44127	5.0
University Circle	44106	4.8
Cleveland	44109	4.8
East Cleveland	44112	4.8
Cleveland	44113	4.8
Downtown Cleveland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

Source: Dignity Health, 2015.

Exhibit 31 presents these data in a community map format.

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Exhibit 31: Community Need Index, 2015



Source: Microsoft MapPoint and Dignity Health, 2015.

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

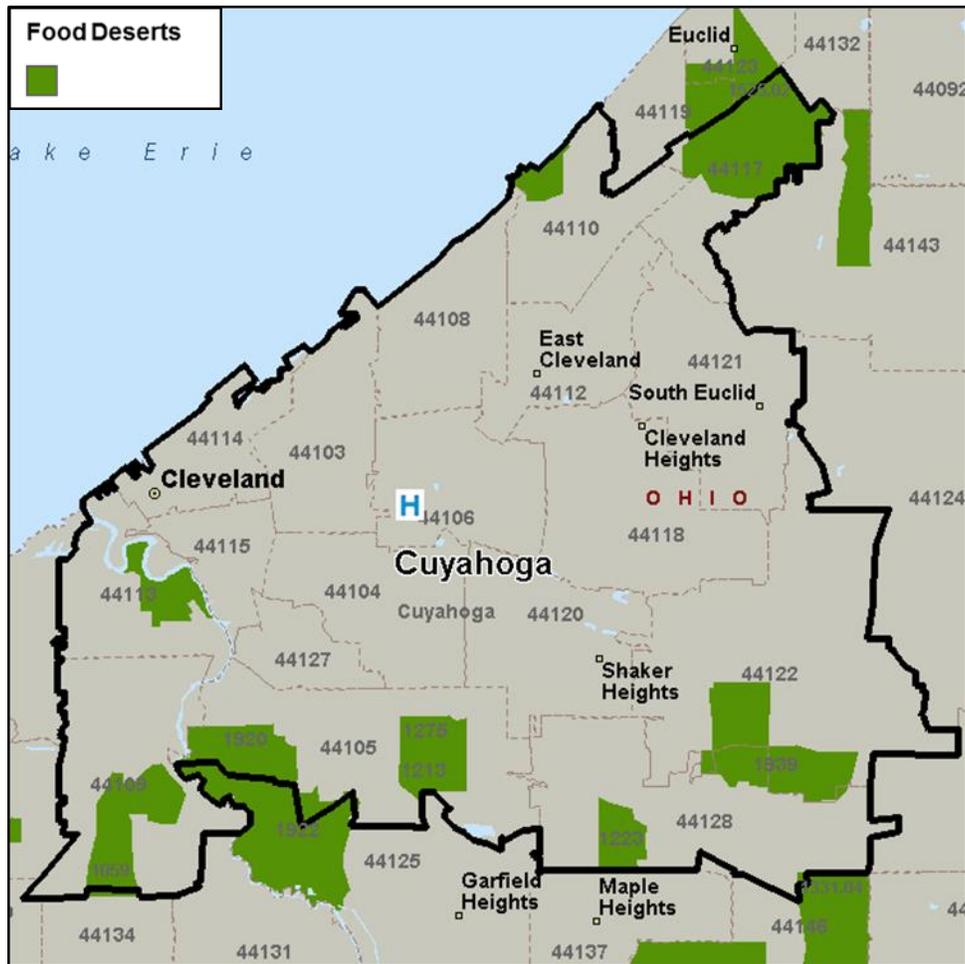
Food Deserts

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

Exhibit 32 illustrates the location of food deserts in the Local neighborhoods community.

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Exhibit 32: Food Deserts



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

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

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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.¹⁹ Areas with a score of 62 or less are considered “medically underserved.”

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if “unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides.”²⁰

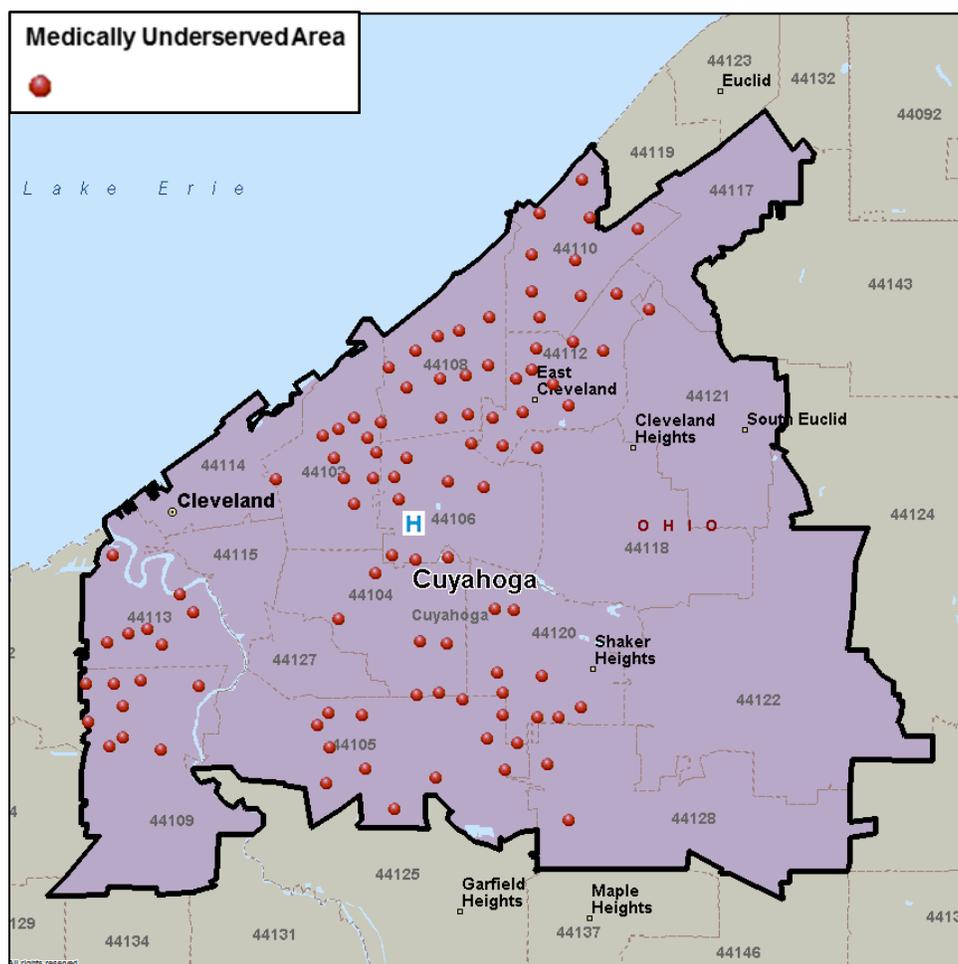
There are approximately 98 census tracts within the hospital’s Local neighborhoods community that have been designated as areas where Medically Underserved Areas are present (**Exhibit 33**).

¹⁹ Health Resources and Services Administration. See <http://www.hrsa.gov/shortage/mua/index.html>

²⁰*Ibid.*

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Exhibit 33: Medically Underserved Areas



Source: Microsoft MapPoint and HRSA, 2015.

Health Professional Shortage Areas

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

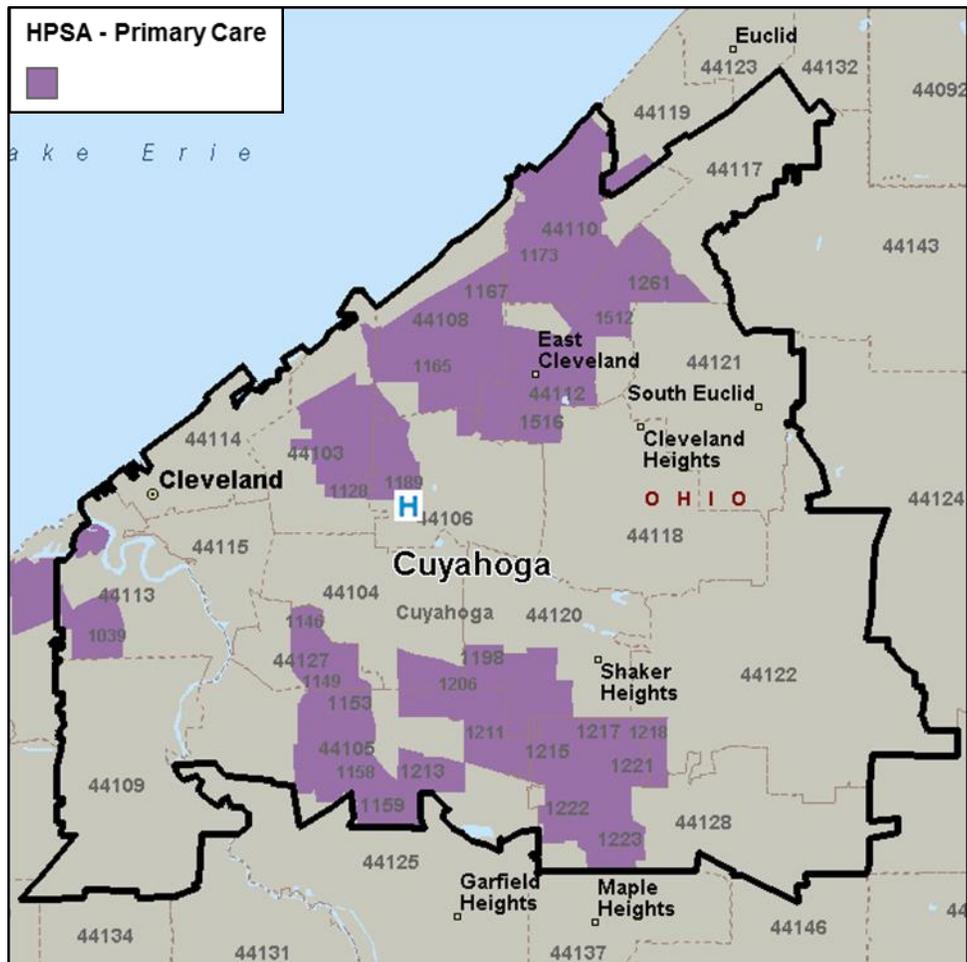
HPSAs can be: “(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility.”²¹

²¹U.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 B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 34 illustrates the locations of the federally-designated HPSAs.

Exhibit 34A: Primary Care Health Professional Shortage Areas

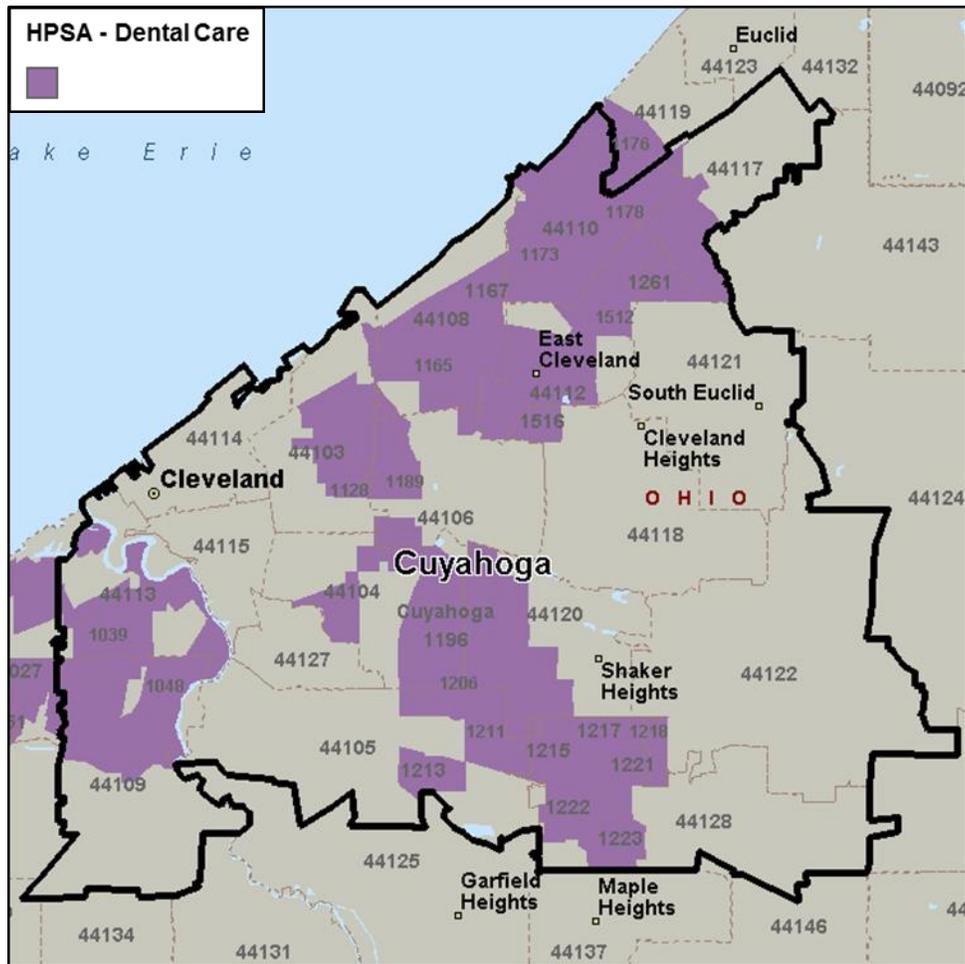


Source: Health Resources and Services Administration, 2015.

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 34B: Dental Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

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

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
ASSESSMENT

Findings of Other Community Health Needs Assessments

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

Other Community Assessments
Health Improvement Partnership- Cuyahoga CHSA 2015
Southwest General Health Center 2012
St. Vincent Charity Medical Center Implementation Plan 2013
UH Ahuja Medical Center CHNA 2015
UH Bedford Medical Center CHNA 2015
UH Case Medical Center CHNA 2015
UH Geauga Medical Center CHNA 2015
UH Parma Medical Center CHNA 2015
UH Rainbow Babies & Children's Hospital CHNA 2015
UH Rehabilitation Hospital CHNA 2015
UH Richmond Medical Center CHNA 2015
UH St. John Medical Center CHNA 2015

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

The significant needs identified by these reports are presented in **Exhibit 35**.

APPENDIX B – LOCAL NEIGHBORHOODS COMMUNITY SECONDARY DATA
ASSESSMENT

Exhibit 35: Significant Needs Identified in Other CHNAs

Significant Need	Frequency
Obesity	11
Mental/Behavioral health	9
Diabetes	9
Access to basic/primary health care	9
Tobacco use/ smoking	9
Poverty	9
Drug/ substance abuse	8
Cardiovascular/ heart disease	8
Elderly care/ aging population	8
Infant mortality (disparities)	8
Cost of care	8
Unemployment	8
Alcohol abuse and excessive drinking	7
Transportation	7
Respiratory diseases	7
Cancer	6
Alzheimer's disease	6
Violence	5
Access to mental health services	4
Health disparities/ equity	3
Access/lack of health insurance coverage	2
Access to dental care	2
Asthma/childhood asthma	2
Drug/ substance abuse (youth)	2
Access to prescription drugs/cost	2
Pre-term births	2
Digestive diseases	2
Gonorrhea	2
Kidney Disease	2

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

APPENDIX C – 7 COUNTY SECONDARY DATA ASSESSMENT

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

Community Assessed

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

Demographics

The total population in the 7-County community was approximately 2,771,000 persons. Nearly half of this population is located in Cuyahoga County (**Exhibit 36**).

Exhibit 36: Community Population, 2015

County	Total Population 2015	Percent of Total Population 2015
Cuyahoga County	1,262,784	45.6%
Gauga County	89,153	3.2%
Lake County	229,715	8.3%
Lorain County	295,253	10.7%
Medina County	174,882	6.3%
Portage County	171,141	6.2%
Summit County	547,778	19.8%
7-County Community Total	2,770,706	100.0%

Source: Truven Market Expert, 2015.

Population characteristics and changes directly influence community health needs. The total population in the Main Campus 7-County community is expected to remain virtually unchanged from 2015 to 2020 (**Exhibit 37**).

Exhibit 37: Percent Change in Community Population by County

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

Source: Truven Market Expert, 2015.

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

Exhibit 38 shows the 7-County community's population for certain age and sex cohorts in 2015, with projections to 2020.

Exhibit 38: Percent Change in Population by Age/Sex Cohort, 2015-2020

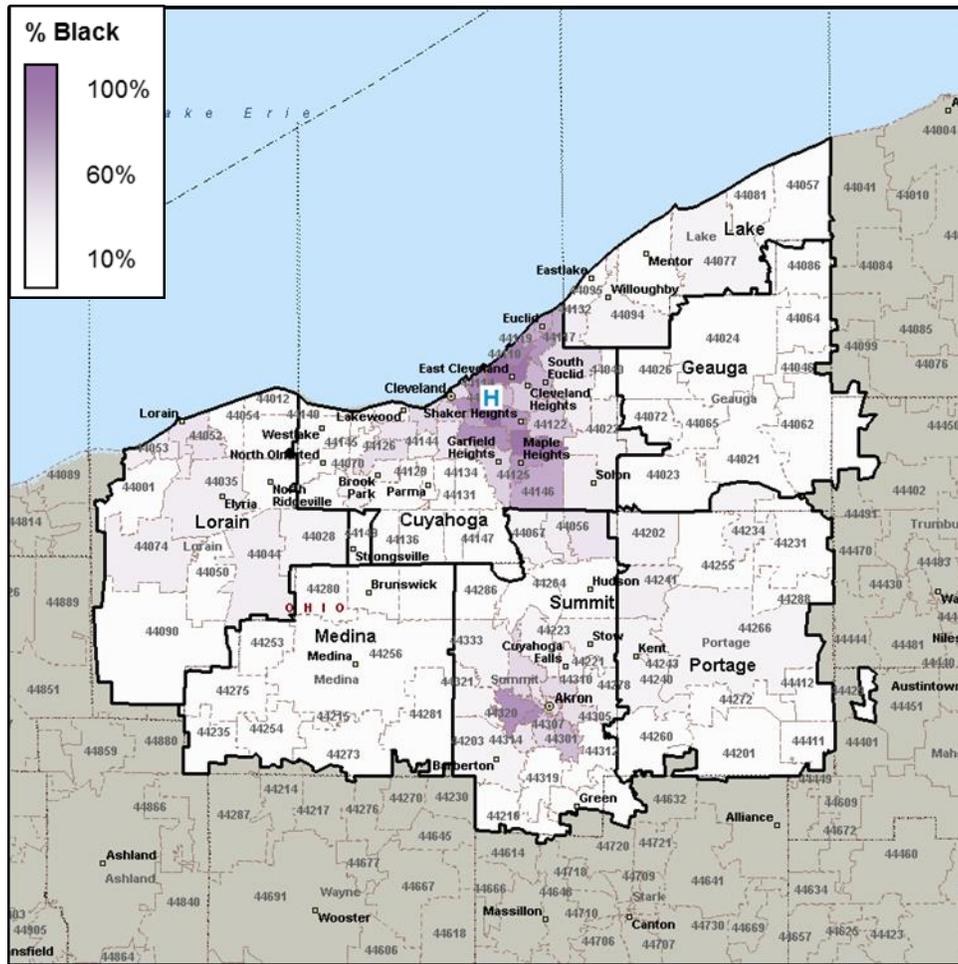
Age/Sex Cohort	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
0-17	599,532	571,294	-4.7%
Female 18-44	463,888	460,341	-0.8%
Male 18-44	455,003	458,468	0.8%
45-64	788,812	750,473	-4.9%
65+	463,471	529,109	14.2%
7-County Community Total	2,770,706	2,769,685	0.0%

Source: Truven Market Expert, 2015.

The number of persons aged 65 years and older is projected to increase by 14.2 percent between 2015 and 2020. The 0-17, Female 18-44, and 45-64 age groups are expected to decrease in population. 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 39 illustrates the percent of the population 65 years of age and older in the community by ZIP code.

Exhibit 40: Percent of Population - Black, 2015

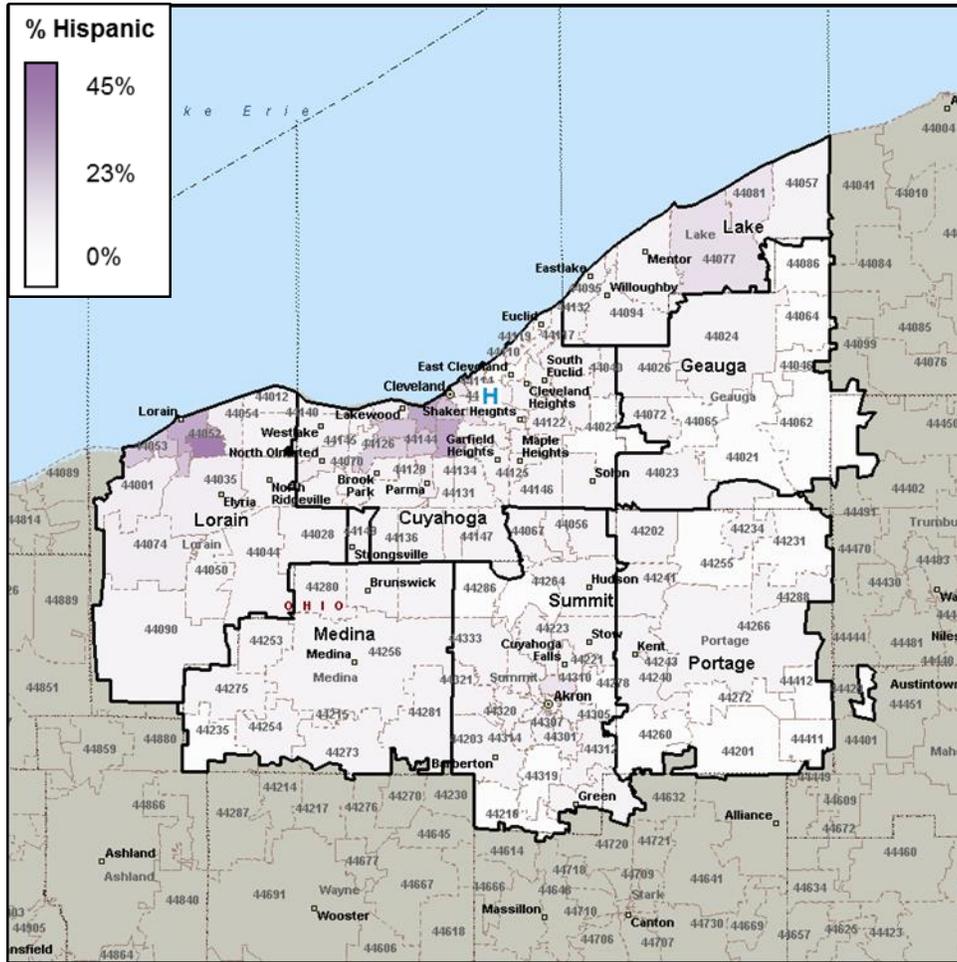


Source: Truven Market Expert, 2015.

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

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Exhibit 41: Percent of Population – Hispanic (or Latino), (2015)



Source: Truven Market Expert, 2015.

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

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Data regarding residents without a high school diploma, with a disability, and who are linguistically isolated are presented in **Exhibit 42** for the 7-County community, Ohio, and the United States.

Exhibit 42: Other Socioeconomic Indicators, 2014

Measure	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	United States
Population 25+ without High School Diploma	12.1%	8.9%	8.7%	10.8%	6.6%	8.9%	9.3%	11.2%	13.6%
Population with a Disability	14.3%	9.7%	11.3%	14.1%	9.6%	11.9%	12.5%	13.5%	12.3%
Population Linguistically Isolated	4.1%	4.0%	2.7%	2.6%	1.3%	1.6%	2.1%	2.4%	8.6%

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

Exhibit 42 indicates that:

- Cuyahoga County had a higher percentage of residents aged 25 years and older without a high school diploma than the Ohio average.
- Cuyahoga and Lorain counties each had a higher percentage of the population with a disability compared to Ohio and United States averages.
- Compared to Ohio, 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.”

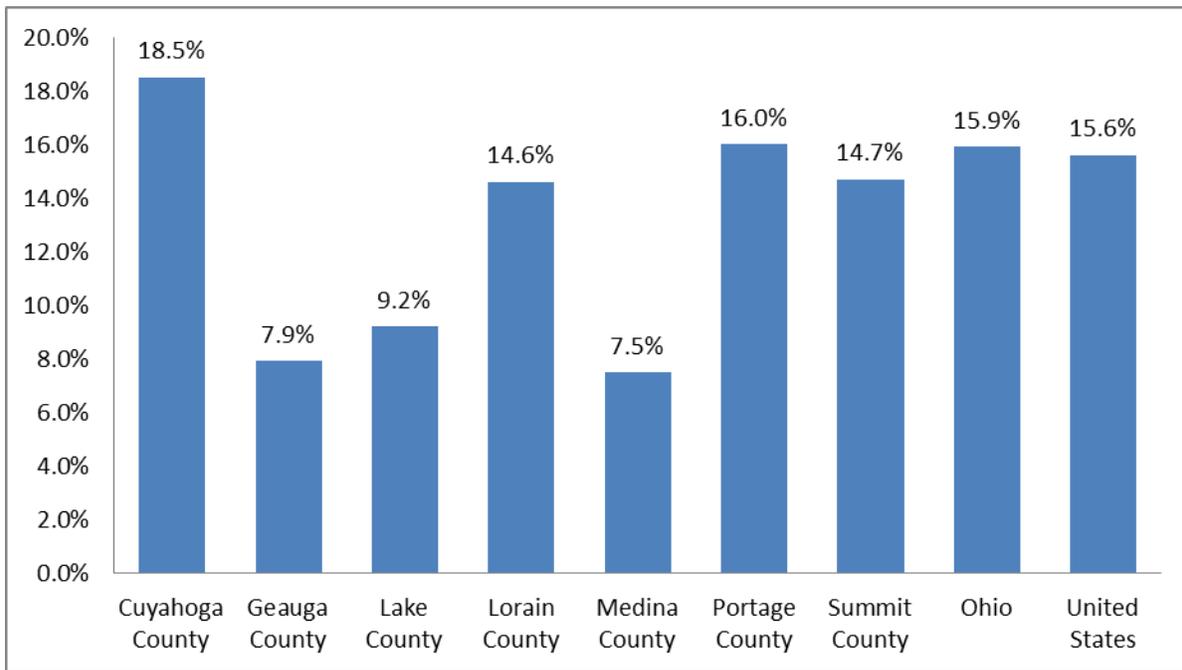
Economic indicators

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

People in Poverty

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. Cuyahoga and Portage counties poverty rates were higher than Ohio’s poverty rate during that year (**Exhibit 43**).

Exhibit 43: Percent of People in Poverty, 2014

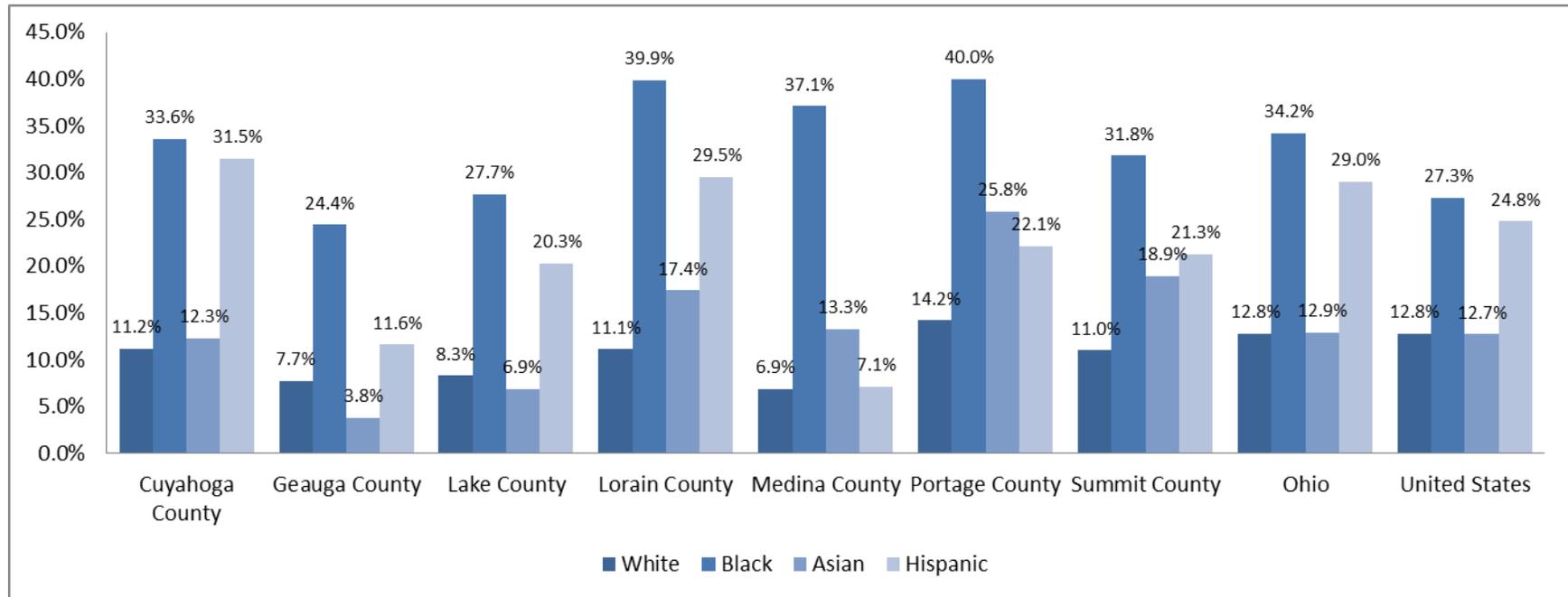


Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

Considerable variation in poverty rates is present across racial and ethnic categories, in the 7-County community and Ohio (**Exhibit 44**).

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Exhibit 44: Poverty Rates by Race and Ethnicity, 2014

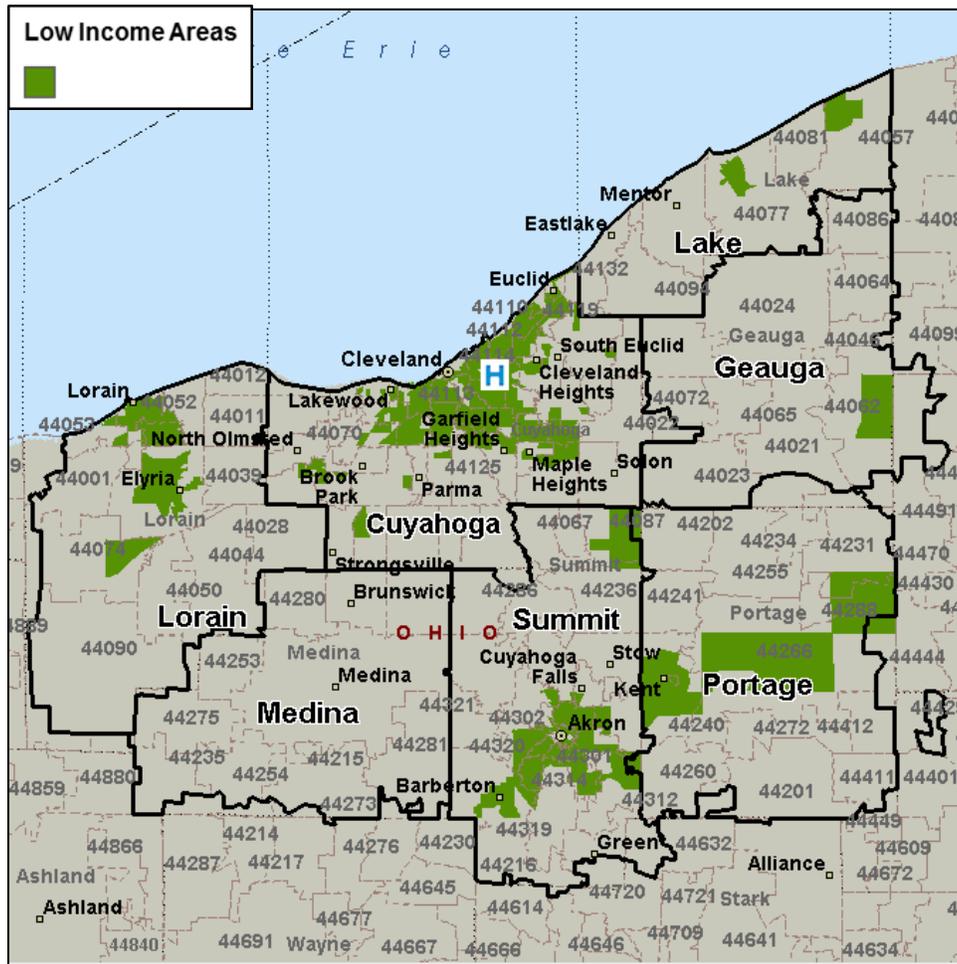


Source: U.S. Census, ACS 5-Year Estimates, 2010-2014.

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

Exhibit 45 portrays (in green shading) the locations of low income census tracts in the community. The U.S. Department of Agriculture defines “low income census tracts” as areas where poverty rates are 20 percent or higher or where median family incomes are 80 percent or lower than within the metropolitan area.

Exhibit 45: Low Income Census Tracts



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

Low income census tracts have been prevalent throughout Main Campus’ 7-County community, with a particular concentration in central Cuyahoga County.

Unemployment

Unemployment is problematic because many residents receive health insurance coverage through their (or a family member’s) employer. If unemployment rises, access to employer-based health insurance can decrease. **Exhibit 46** shows unemployment rates for 2010 through 2015 for the 7-County community, with Ohio and national rates for comparison.

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Exhibit 46: Unemployment Rates, 2010-2015

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

Source: Bureau of Labor Statistics, 2010-2014.

Between 2010 and 2015, unemployment rates at local (7-County community), state, and national level decreased significantly. In 2015, the unemployment rates in Cuyahoga and Lorain counties were higher than both the state and national rates.

Insurance Status

Exhibit 47 presents the estimated percent of populations in the 7-County community without health insurance (uninsured).

Exhibit 47: Percent of the Population without Health Insurance, 2015-2020

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

Source: Truven Market Expert, 2015.

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

Crime

Exhibit 48 provides certain crime statistics for Cuyahoga County and Ohio.

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Exhibit 48: Crime Rates by Type and County, Per 100,000, 2014

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

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

Source: FBI, 2014.

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

Health Status and Access Indicators

This section assesses health status and access indicators for the Main Campus 7-County community. Data sources include: (1) County Health Rankings, (2) the Centers for Disease Control’s (CDC) Community Health Status Indicators, (3) the Ohio Department of Health, and (4) the CDC’s Behavioral Risk Factor Surveillance System.

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

County Health Rankings

County Health Rankings, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of “health factors” and “health outcomes.” These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,²² social and economic factors, and physical environment.²³ *County Health Rankings* is updated annually.

²²A 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.

²³A composite measure that examines Environmental Quality, which measures the number of air pollution-particulate matter days and air pollution-ozone days, and Built Environment, which measures access to healthy foods and recreational facilities and the percent of restaurants that are fast food.

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

County Health Rankings 2016 relies on data from 2006 to 2015, with most data from 2010 to 2013.

Exhibit 49 presents 2013 and 2016 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in the Ohio, with 1 indicating the most favorable rankings and 88 the least favorable. The table also indicates if rankings fell between 2013 and 2016.

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Exhibit 49: County Health Rankings, 2016

(Light grey shading indicates indicator in bottom half of Ohio counties; Dark grey shading indicates in bottom quartile of Ohio counties)

	Cuyahoga County			Geauga County			Lake County			Lorain County			Medina County			Portage County			Summit County		
	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change	2013	2016	Rank Change
Health Outcomes	67	64		1	2		17	15		29	30	↓	4	5	↓	20	22	↓	41	52	↓
Health Factors	45	53	↓	3	6	↓	12	13	↓	42	41		4	5	↓	26	26		29	46	↓
Length of Life	58	54	↓	1	3	↓	12	17	↓	24	30	↓	3	4	↓	18	21	↓	44	40	
Quality of Life	76	73		4	4		20	13		30	33	↓	6	5		27	32	↓	47	60	↓
Frequent Physical Distress	N/A	63		N/A	5		N/A	5		N/A	31		N/A	3		N/A	33		N/A	44	
Frequent Mental Distress	N/A	54		N/A	5		N/A	6		N/A	31		N/A	3		N/A	27		N/A	31	
Drug Overdose Deaths	N/A	52		N/A	13		N/A	54		N/A	63		N/A	9		N/A	29		N/A	44	
Health Behaviors	15	39	↓	2	2		18	6		38	20		3	5	↓	37	15		13	40	↓
Adult Smoking	16	18	↓	12	4		47	10		27	15		6	2		60	45		19	49	↓
Adult Obesity	7	9	↓	1	4	↓	9	1		54	21		5	14	↓	16	7		11	16	↓
Excessive Drinking	51	64	↓	61	68	↓	72	88	↓	55	39		37	85	↓	39	81	↓	52	18	
Sexually Transmitted Infections	55	87	↓	1	2	↓	9	60	↓	31	71	↓	7	9	↓	6	33	↓	28	80	↓
Teen Births	3	51	↓	18	1		55	11		28	29	↓	26	7		66	4		22	24	↓
Clinical Care	7	5		8	12	↓	18	16		22	29	↓	5	6	↓	54	39		13	22	↓
Primary Care Physicians	1	2	↓	27	21		8	49	↓	24	26	↓	15	24	↓	52	58	↓	6	6	
Dentists	56	1		10	32	↓	18	9		9	28	↓	4	21	↓	34	37	↓	10	13	↓
Mental Health Providers	3	1		6	17	↓	26	24		25	36	↓	16	28	↓	11	19	↓	5	11	↓
Preventable Hospital Stays	36	34		15	10		38	27		50	62	↓	37	30		45	35		39	42	↓
Diabetic Screening	69	62		31	39	↓	58	48		61	38		38	57	↓	68	55		52	67	↓
Social & Economic Factors	76	79	↓	5	10	↓	10	22	↓	46	52	↓	3	7	↓	15	29	↓	47	48	↓
Some College	10	9		12	19	↓	9	13	↓	19	24	↓	4	6	↓	25	22		55	12	
Unemployment	15	59	↓	4	19	↓	6	39	↓	15	65	↓	5	20	↓	19	45	↓	8	44	↓
Inadequate Social Support	39	78	↓	20	75	↓	18	80	↓	30	70	↓	18	76	↓	5	83	↓	52	60	↓
Injury Deaths	1	30	↓	11	13	↓	2	19	↓	6	15	↓	10	3		16	7		5	29	↓
Physical Environment	36	61	↓	17	59	↓	51	49		83	77		34	79	↓	70	73	↓	78	84	↓
Air Pollution	66	63		75	70		70	65		59	57		70	67		82	79		79	75	
Severe Housing Problems	N/A	87		N/A	62		N/A	41		N/A	74		N/A	24		N/A	80		N/A	71	

Source: County Health Rankings, 2016.

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

Exhibit 50 provides data for each underlying indicator of the composite categories in the County Health Rankings.²⁴ The exhibit also includes national averages.

²⁴ 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

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

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

Indicator Category	Data	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	U.S.
Health Outcomes										
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,907.7	4,847.6	6,289.3	7,011.6	5,102.9	6,442.9	7,252.8	7,533.6	7,700.0
Quality of Life	Percent of adults reporting fair or poor health	16.5	12.9	13.4	14.8	11.9	15.1	16.5	16.0	16.0
	Average number of physically unhealthy days reported in past 30 days	3.9	3.3	3.3	3.6	3.2	3.6	3.8	3.8	3.7
	Average number of mentally unhealthy days reported in past 30 days	4.0	3.7	3.7	3.9	3.6	3.9	4.0	4.0	3.7
	Percent of live births with low birthweight (<2500 grams)	10.5	5.9	7.6	7.6	6.9	7.5	9.0	8.6	8.0
Health Factors										
Health Behaviors										
Adult Smoking	Percent of adults that report smoking >= 100 cigarettes and currently smoking	18.3	16.1	17.6	18.2	15.9	19.9	20.1	19.2	18.0
Adult Obesity	Percent of adults that report a BMI >= 30	28.6	27.6	26.4	29.9	28.9	28.5	29.2	30.5	31.0
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	6.6	8.3	7.5	7.2	8.1	7.2	6.6	6.9	7.2
Physical Inactivity	Percent of adults aged 20 and over reporting no leisure-time physical activity	25.6	26.6	25.4	22.5	24.1	23.9	24.0	26.3	28.0
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	95.6	90.0	89.4	88.7	94.3	78.0	95.7	83.2	62.0
Alcohol Impaired Driving Deaths	Percent of driving deaths with alcohol involvement	45.3	31.8	35.5	49.5	41.9	21.5	53.5	35.3	30.0
Excessive Drinking	Binge plus heavy drinking	18.2	18.4	19.8	17.1	19.5	19.1	16.3	17.9	17.0
STDs	Chlamydia rate per 100,000 population	792.4	121.7	292.3	346.0	157.2	221.1	441.2	460.2	287.7
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	37.7	9.2	21.0	32.9	15.6	14.7	31.3	34.4	40.0
Clinical Care										
Uninsured	Percent of population under age 65 without health insurance	13.3	13.4	11.5	12.2	9.9	12.0	12.6	13.0	17.0
Primary Care Physicians	Ratio of population to primary care physicians	879:1	1516:1	2148:1	1692:1	1576:1	2410:1	1002:1	1296:1	1990:1
Dentists	Ratio of population to dentists	1028:1	2300:1	1559:1	2173:1	2047:1	2490:1	1715:1	1713:1	2590:1
Mental Health Providers	Ratio of population to mental health providers	402:1	650:1	780:1	1004:1	894:1	710:1	529:1	642:1	1060:1
Preventable Hospital Stays	Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	64.7	49.8	63.3	74.0	63.9	64.8	67.1	64.9	60.0
Diabetic Screening	Percent of diabetic Medicare enrollees that receive HbA1c monitoring	83.9	85.7	85.1	85.8	84.6	84.7	83.3	84.9	85.0
Mammography Screening	Percent of female Medicare enrollees, ages 67-69, that receive mammography screening	65.0	64.0	65.0	66.0	67.0	58.0	59.0	60.0	61.0

Source: County Health Rankings, 2016.

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

Indicator Category	Data	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	U.S.
Health Factors										
Social & Economic Factors										
High School Graduation	Percent of ninth-grade cohort that graduates in four years	75.8	92.9	90.0	85.8	95.1	92.4	83.9	82.7	86.0
Some College	Percent of adults aged 25-44 years with some post-secondary education	68.4	63.7	66.2	62.8	70.5	63.1	67.1	63.4	56.0
Unemployment	Percent of population age 16+ unemployed but seeking work	6.4	5.1	5.6	6.6	5.2	5.8	5.8	5.7	6.0
Children in poverty	Percent of children under age 18 in poverty	30.0	11.5	13.4	21.7	9.6	18.2	20.3	22.7	23.0
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	5.6	4.1	4.0	4.4	3.7	4.4	4.8	4.8	4.4
Children in single-parent households	Percent of children that live in a household headed by single parent	44.9	16.7	28.5	37.2	22.0	31.0	36.2	35.4	32.0
Social Associations	Number of associations per 10,000 population	9.2	9.5	9.1	10.1	9.3	8.8	11.4	11.4	13.0
Violent Crime	Number of reported violent crime offenses per 100,000 population	559.8	38.4	203.0	225.6	95.1	84.5	405.5	307.2	199.0
Injury Deaths	Injury mortality per 100,000	59.1	53.9	56.4	55.2	42.2	45.9	58.5	62.7	74.0
Physical Environment										
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	13.6	13.7	13.6	13.6	13.7	13.9	13.8	13.5	11.9
Severe Housing Problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	18.9	14.6	13.0	15.6	11.6	16.6	15.5	15.2	14.0
Drive Alone to Work	Percent of the workforce that drives alone to work	80.1	81.5	88.0	84.9	87.3	83.7	87.1	83.5	80.0
Long Commute- Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	31.9	45.5	31.9	34.5	44.5	37.9	27.2	29.4	29.0

Source: County Health Rankings, 2016

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Exhibit 50 highlights the following comparatively unfavorable indicators in which three or more of the counties ranked worse than Ohio averages:

- Percent of driving deaths with alcohol involvement
- Binge and heavy drinking
- Diabetic screening
- Ratio of primary care physicians, dentists, and mental health providers
- Percent of the population unemployed
- Social associations rate
- Air pollution
- Percent of households with severe housing problems
- Percent of the workforce that drives to work alone
- Percent of workers with a long commute who drive alone

Community Health Status Indicators

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

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

Exhibit 51 compares Cuyahoga County to its respective peer counties and highlights community health issues found to rank in the bottom quartile of the counties included in the analysis.

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Exhibit 51: Community Health Status Indicators, 2015
 (Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County
Mortality	Alzheimer's Disease Deaths							
	Cancer Deaths							
	Chronic Kidney Disease Deaths							
	Chronic Lower Respiratory Disease (CLRD) Deaths							
	Coronary Heart Disease Deaths							
	Diabetes Deaths							
	Female Life Expectancy							
	Male Life Expectancy							
	Motor Vehicle Deaths							
	Stroke Deaths							
Unintentional Injury (including motor vehicle)								
Morbidity	Adult Diabetes							
	Adult Obesity							
	Adult Overall Health Status							
	Alzheimer's Disease/Dementia							
	Cancer							
	Gonorrhea							
	HIV							
	Older Adult Asthma							
	Older Adult Depression							
	Preterm Births							
Syphilis								
Health Care Access and Quality	Cost Barrier to Care							
	Older Adult Preventable Hospitalizations							
	Primary Care Provider Access							
	Uninsured							
Health Behaviors	Adult Binge Drinking							
	Adult Female Routine Pap Tests							
	Adult Physical Inactivity							
	Adult Smoking							
	Teen Births							
Social Factors	Children in Single-Parent Households							
	High Housing Costs							
	Inadequate Social Support							
	On Time High School Graduation							
	Poverty							
	Unemployment							
Physical Environment	Violent Crime							
	Access to Parks							
	Annual Average PM2.5 Concentration							
	Drinking Water Violations							
	Housing Stress							
	Limited Access to Healthy Food							
Living Near Highways								

Source: Community Health Status Indicators, 2015.

The CHSI data indicate that chronic lower respiratory disease and coronary heart disease mortality rates and morbidity associated with Alzheimer's disease, gonorrhea, adult asthma, adult depression, and preterm births are comparatively high, as are older adult preventable hospitalizations. Indicators for female routine pap tests and air quality also benchmark unfavorably.

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Ohio Department of Health

The Ohio Department of Health maintains a data warehouse that includes county-level indicators regarding mortality rates (**Exhibits 52 and 53**), cancer incidence (**Exhibit 54**), communicable disease incidence (**Exhibit 55**), and maternal and child health indicators (**Exhibit 56**).

Exhibit 52 provides age-adjusted mortality rates for selected causes of death in 2012.

Exhibit 52: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2012
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Measure	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio	Healthy People 2020
Heart Disease	213.9	133.4	184.6	175.1	172.8	195.8	178.4	191.4	-
Diabetes	23.3	16.6	23.0	26.4	20.2	21.6	24.5	26.1	-
Influenza and Pneumonia	12.0	6.7	10.7	12.1	13.6	16.9	19.0	15.4	-
Suicide	9.9	9.7	12.7	11.9	9.3	12.7	11.6	12.0	10.2
Motor Vehicle Collisions	3.4	4.4	4.4	9.1	6.0	8.6	5.2	9.0	12.4
Homicide	9.2	0.8	1.8	2.9	0.5	1.6	5.7	5.4	-
Motor Vehicle Collisions (Alcohol)	1.4	1.1	2.6	5.6	3.3	2.6	2.2	3.8	-
Aortic Aneurysm	3.8	2.4	3.6	3.3	2.8	4.1	3.8	3.7	-
HIV	2.7	N/A	0.3	0.5	N/A	0.5	1.3	1.3	-
Pedestrians Killed in Traffic Collisions	0.6	0.0	0.9	0.0	0.6	0.6	0.9	0.5	1.4

Source: Ohio Department of Health, 2012.

In Cuyahoga County, age-adjusted mortality rates for heart disease, homicide, aortic aneurysm, HIV, and pedestrians killed in traffic collisions were all higher than the Ohio averages. In Lake County, rates for pedestrians killed in traffic collisions were higher than the state average. In Lorain County, mortality rates for diabetes and motor vehicle collisions, including those involving alcohol, were higher than the Ohio average. In Medina County, the rate of pedestrians killed in traffic collisions was higher than the state average. In Portage County, rates of aortic aneurysm and pedestrians killed in traffic collisions were higher than Ohio averages. In Summit County, age-adjusted mortality rates for influenza and pneumonia, homicide, aortic aneurysm, and pedestrians killed in traffic collisions were also higher than the Ohio averages.

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Exhibit 53: Age-Adjusted Cancer Mortality Rates per 100,000 Population, 2008-2012
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates 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 Rate	U.S. Rate
All Sites/Types	189.9	156.0	183.2	184.5	170.9	187.0	182.0	186.6	171.2
Lung and Bronchus	52.3	38.6	55.6	55.9	48.9	58.5	54.5	55.3	47.2
Breast (Female)	24.9	22.0	25.4	23.8	22.4	20.8	24.3	23.6	21.9
Prostate	27.4	18.4	20.7	18.6	24.1	16.0	23.4	22.0	21.4
Colon and Rectum	15.6	12.2	17.2	16.7	13.3	14.5	16.6	17.0	15.5
Pancreas	12.8	12.1	12.4	12.1	13.0	12.0	11.1	11.5	10.9
Ovary	7.4	6.2	7.9	7.7	8.1	9.7	7.0	7.9	7.7
Leukemia	7.0	6.5	6.6	6.7	8.4	7.0	7.1	7.3	7.0
Non-Hodgkin Lymphoma	6.4	6.5	6.9	7.1	7.8	6.4	6.7	6.9	6.2
Liver and Intrahepatic Bile Duct	6.4	3.5	4.7	4.2	3.6	7.0	4.9	5.3	6.0
Bladder	5.0	5.0	4.7	4.5	5.2	7.0	4.8	5.0	4.4
Esophagus	4.9	4.0	4.5	4.7	4.9	4.4	4.6	5.0	4.2
Uterus	6.5	4.0	4.6	6.8	5.9	4.7	4.4	4.9	4.4
Brain and Other CNS	4.0	4.9	5.1	5.2	4.3	6.0	5.0	4.5	4.3
Kidney and Renal Pelvis	4.1	3.5	4.4	4.3	3.6	3.6	3.2	4.3	3.9
Multiple Myeloma	3.7	4.6	3.4	3.5	4.0	4.1	3.5	3.5	3.3
Melanoma of Skin	2.1	3.4	3.0	2.9	1.6	2.4	3.0	3.0	2.7
Stomach	4.4	2.8	2.9	3.2	3.0	1.9	3.5	2.9	3.4
Cervix	3.0	1.9	1.8	3.1	-	1.6	1.9	2.6	2.3
Oral Cavity and Pharynx	3.1	1.8	2.5	1.7	1.5	3.9	2.8	2.5	2.5
Larynx	1.5	1.6	0.9	1.1	1.0	1.4	1.2	1.3	1.1
Thyroid	0.5	-	0.7	0.6	-	0.7	0.5	0.5	0.5
Hodgkin Lymphoma	0.4	-	-	0.4	-	-	0.3	0.4	0.4
Testis	0.4	-	-	-	-	-	-	0.3	0.3

Source: Ohio Department of Health, 2015.

Age-adjusted cancer mortality rates in Cuyahoga County were significantly higher than the Ohio averages for stomach cancer and significantly higher in Portage County for oral cavity and pharynx cancer. Cancer mortality rates for breast (female), prostate, pancreas, uterus, brain and other CNS, multiple myeloma, stomach, oral cavity and pharynx, and larynx were higher than Ohio averages in at least three of the community's counties.

Exhibit 54 presents age-adjusted cancer incidence rates in the community.

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Exhibit 54: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2013
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Site/Type	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Total	477.9	409.4	462	451.6	466.1	453.6	440.8	452.5
Prostate	116.3	103.8	87.1	102.2	119.1	114.9	96.2	101.7
Breast	71.4	71.4	72.6	67.0	61.9	63.4	64.5	67.6
Lung and Bronchus	64.3	39.7	58.5	68.3	60.5	68.7	61.9	67.4
Colon and Rectum	41.0	33.5	38.8	41.2	38.1	33.3	33.6	40.6
Other Sites/Types	37.9	29.0	42.2	34.9	30.6	42.1	39.2	35.8
Uterus	35.4	38.3	31.4	20.4	35.0	25.7	28.6	28.8
Bladder	19.9	12.4	30.4	21.8	27.2	22.5	20.5	22.1
Melanoma of Skin	17.0	23.2	21.5	20.5	28.9	21.8	22.5	19.5
Non-Hodgkins Lymphoma	21.0	25.3	21.1	18.2	21.2	18.6	21.1	18.6
Kidney and Renal Pelvis	19.0	7.6	19.8	19.8	18.0	10.0	14.9	16.9
Thyroid	15.9	18.0	18.2	15.0	14.7	15.1	14.1	15.2
Pancreas	12.9	10.3	13.1	13.8	12.7	15.0	13.6	12.3
Leukemia	14.4	8.1	13.2	11.4	16.8	15.0	11.6	11.9
Oral Cavity and Pharynx	11.2	16.5	10.5	12.8	12.6	10.2	11.0	11.7
Ovary	14.5	11.1	14.0	7.1	11.7	16.3	10.3	11.3
Brain and Other CNS	7.7	5.9	7.1	5.9	7.0	9.8	7.5	7.4
Cervix	7.4	-	-	9.8	4.8	-	10.5	7.4
Stomach	8.4	-	6.3	7.7	8.2	6.8	6.6	6.8
Liver and Intrahepatic Bile Duct	8.3	5.6	8.1	6.6	7.3	3.1	6.2	6.6
Multiple Myeloma	8.3	4.6	3.9	5.0	4.3	6.2	6.2	5.9
Testis	6.3	-	7.7	5.7	-	-	7.0	5.2
Esophagus	5.8	6.8	2.8	4.8	4.0	6.5	5.1	5.0
Larynx	4.8	-	2.0	4.7	4.8	3.2	4.7	4.3
Hodgkins Lymphoma	3.1	7.0	3.0	2.6	-	-	2.3	2.6

Source: Ohio Department of Health, 2013.

The incidence rates for all cancers, prostate, breast, other sites/types, uterus, bladder, melanoma of skin, Non-Hodgkin’s Lymphoma, kidney and renal pelvis, thyroid, pancreas, leukemia, ovary, brain and other CNS, stomach, liver and intrahepatic bile duct, multiple myeloma, testis, esophagus, larynx, and Hodgkin’s Lymphoma are higher in at least three of Main Campus community’s counties than Ohio averages. Hodgkin’s Lymphoma is significantly higher than the Ohio average in Geauga County.

Exhibit 55: Communicable Disease Incidence Rates per 100,000 Population, 2012
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Measure	Cuyahoga County	Geauga County	Lake County	Lorain County	Medina County	Portage County	Summit County	Ohio
Chlamydia	801.1	115.6	263.0	365.7	178.1	280.0	488.4	462.0
HIV	295.8	25.6	55.8	83.6	25.9	53.9	130.2	154.3
Gonorrhea	290.3	15.0	62.2	98.9	23.8	37.2	173.3	143.5
Syphilis	9.8	1.1	1.7	3.0	0.0	0.0	4.8	9.9
Varicella	4.3	1.1	6.5	6.3	4.6	5.0	2.4	7.0
Viral Meningitis	7.2	2.1	2.6	1.3	0.6	6.8	10.5	6.1
Hepatitis A, B, and C	0.8	0.0	0.9	0.3	2.3	0.6	2.0	1.9

Source: Ohio Department of Health, 2012.

Cuyahoga County has had comparatively high incidence rates of chlamydia, HIV, gonorrhea, and viral meningitis. Summit County also had comparatively high incidence rates of chlamydia,

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gonorrhoea, viral meningitis, and hepatitis A, B, and C. Portage County has a comparatively high incidence rate of viral meningitis and Medina County has high rates of Hepatitis A, B, and C.

Exhibit 56: Maternal and Child Health Indicators, 2012

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

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

Source: Ohio Department of Health, 2012.

Exhibit 56 indicates that infant mortality rates, low birth weights, and preterm births are comparatively problematic in Cuyahoga County.

Behavioral Risk Factor Surveillance System

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.

BRFSS data were assessed for each county in the Main Campus 7-County community and compared to the averages for the twenty one counties in Northeast Ohio.

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Exhibit 57: Behavioral Risk Factor Surveillance System, Chronic Conditions, 2015

(Light grey shading indicates indicator worse than the 21-County average; Dark grey shading indicates more than 50 percent worse than the 21-County average)

County	Total Population 18+ 2015	% Obese	% Back Pain	% Diabetes	% Asthma	% Depression	% High Blood Pressure	% High Cholesterol	% COPD	% Smoking
Cuyahoga County	990,489	30.8%	23.0%	13.3%	11.4%	13.8%	30.6%	22.0%	4.5%	27.7%
Geauga County	69,971	29.5%	19.2%	11.4%	10.6%	12.5%	25.8%	22.2%	3.7%	23.9%
Lake County	182,325	30.9%	25.3%	13.3%	11.2%	13.5%	30.2%	24.6%	4.5%	25.3%
Lorain County	230,221	31.7%	26.2%	13.9%	11.6%	15.4%	30.8%	24.5%	4.7%	26.9%
Medina County	135,503	30.2%	20.6%	11.4%	10.1%	12.3%	26.2%	21.8%	3.8%	24.0%
Portage County	132,699	30.6%	28.0%	13.5%	10.2%	14.8%	28.8%	21.9%	4.1%	26.7%
Summit County	405,251	30.2%	26.1%	13.5%	12.5%	16.0%	29.4%	23.8%	4.4%	25.9%
7- County Total	2,146,459	30.7%	24.1%	13.3%	11.4%	14.3%	29.8%	22.8%	4.4%	26.7%
21-County Average	3,454,621	31.7%	25.6%	14.0%	11.6%	15.1%	30.6%	24.1%	4.7%	27.5%

Source: Truven Market Expert/Behavioral Risk Factor Surveillance System, 2015.

Compared to the 21-County averages, residents of Cuyahoga County had higher rates of high blood pressure and smoking, residents of Lake County had higher rates of high cholesterol, residents of Lorain County had higher rates of back pain, depression, high blood pressure, and high cholesterol, residents of Portage County had higher rates of back pain, and residents of Summit County had higher rates of back pain, asthma, and depression.

Ambulatory Care Sensitive Conditions

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

ACSCs are 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.”²⁵ 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.

Exhibit 58 provides 2014 PQI rates (per 100,000 persons) for the 7 counties in the Main Campus community – with comparisons to Ohio averages.

²⁵Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

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Exhibit 58: PQI (ACSC) Rates per 100,000, 2014

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

County	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure	Low Birth Weight
Cuyahoga County	118	37	175	927	76	559	78
Geauga County	25	30	67	373	29	362	31
Lake County	85	21	108	428	31	496	46
Lorain County	74	36	136	766	49	432	65
Medina County	61	39	77	324	25	298	57
Portage County	60	41	86	451	26	348	57
Summit County	105	34	128	589	42	422	51
7- County Totals	97	35	142	729	56	484	67
Ohio Totals	95	37	119	609	53	424	61

Source: Cleveland Clinic, 2014.

Note: Rates are not age-sex adjusted.

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Exhibit 58: PQI (ACSC) Rates per 100,000, 2014 (continued)

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

County	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Angina without Procedure	Uncontrolled Diabetes	Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Cuyahoga County	131	179	142	13	19	43	12
Geauga County	134	177	118	6	4	25	6
Lake County	109	125	104	11	14	35	10
Lorain County	107	174	120	14	14	39	11
Medina County	88	154	99	15	4	23	7
Portage County	113	148	87	8	6	21	6
Summit County	157	195	124	9	11	32	6
7- County Totals	124	171	126	12	14	37	10
Ohio Totals	107	196	131	12	13	36	9

Source: Cleveland Clinic, 2014.

Note: Rates are not age-sex adjusted.

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The rates of admissions for ACSC in the Main Campus 7-County community exceeded Ohio averages for all conditions except perforated appendix, bacterial pneumonia, and urinary tract infection.

Exhibit 59 provides the ratio of PQI rates in the Main Campus 7-County community compared to the Ohio averages. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

Exhibit 59: Ratio of PQI Rates for Main Campus and Ohio, 2014

Indicator	7-County	Ohio Totals	Ratio: 7-County/Ohio
Chronic Obstructive Pulmonary Disease	728.9	608.8	1.2
Diabetes Long-Term Complications	142.2	118.8	1.2
Dehydration	124.4	107.2	1.2
Congestive Heart Failure	483.7	423.8	1.1
Lower-Extremity Amputation Among Patients with Diabetes	10.1	8.9	1.1
Uncontrolled Diabetes	14.4	13.2	1.1
Low Birth Weight	67.0	61.4	1.1
Hypertension	56.0	52.6	1.1
Adult Asthma	37.0	36.0	1.0
Diabetes Short-Term Complications	97.3	94.7	1.0
Angina without Procedure	11.9	11.7	1.0
Urinary Tract Infection	126.4	131.5	1.0
Perforated Appendix	35.1	36.9	0.9
Bacterial Pneumonia	170.8	196.2	0.9

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

In the Main Campus 7-County community, ACSC rates for chronic obstructive pulmonary disease, diabetes, and dehydration were slightly above the Ohio averages.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

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

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

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

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

Exhibit 60 presents the *Community Need Index*TM (CNI) score of each county in the Main Campus 7-County community.

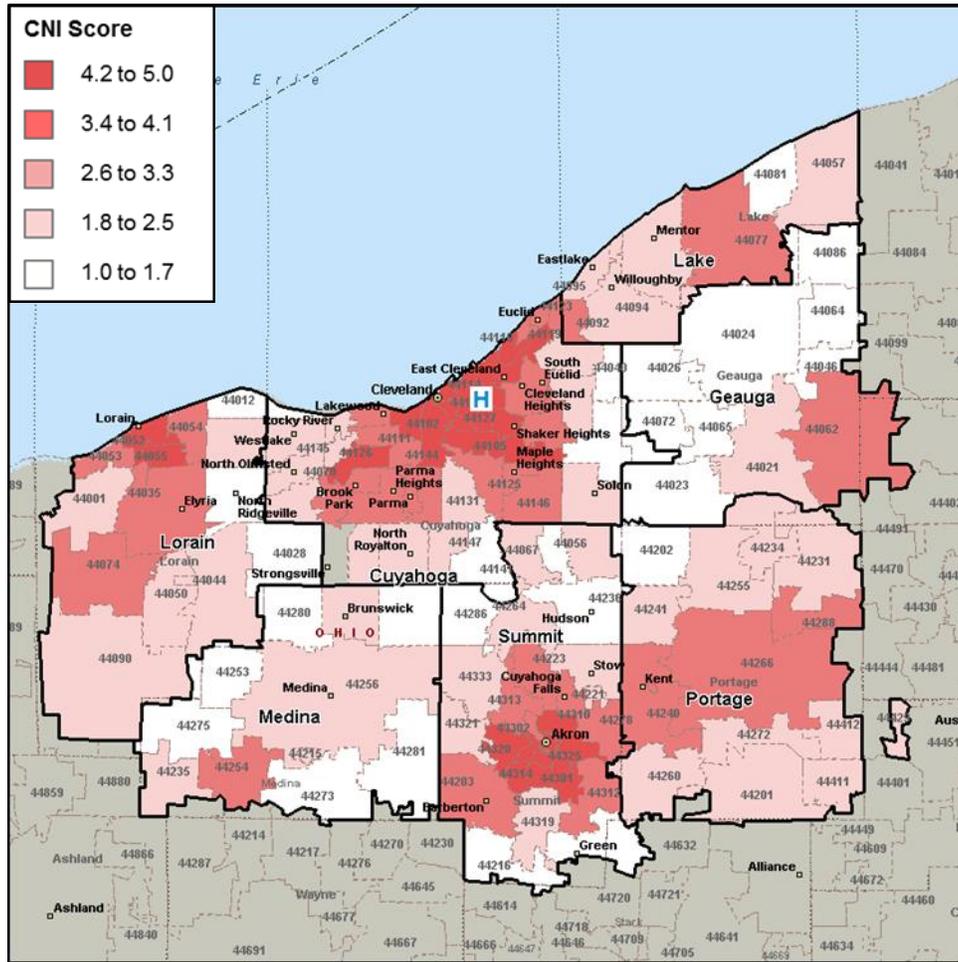
Exhibit 60: Community Need IndexTM Score by County, 2015

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

Source: Dignity Health, 2015.

Exhibit 61 presents these data in a community map format.

Exhibit 61: Community Need Index, 2015



Source: Microsoft MapPoint and Dignity Health, 2015.

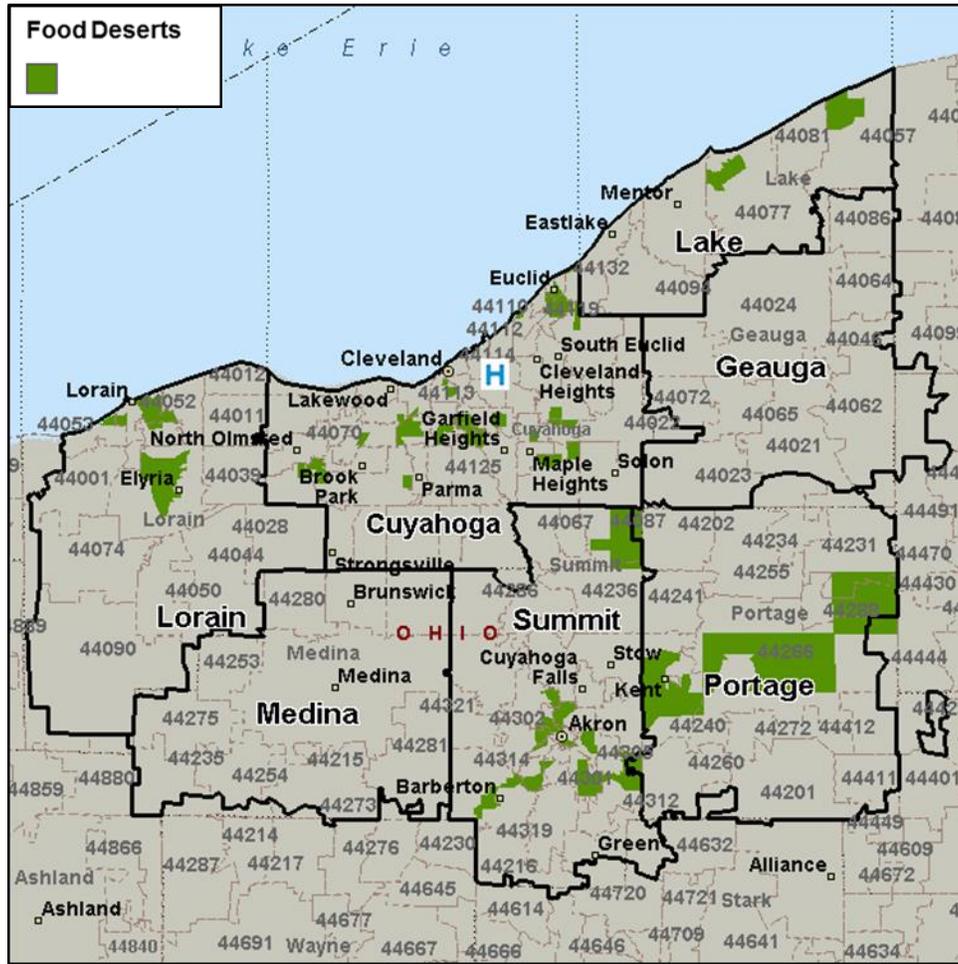
In the Main Campus 7-County community, the average CNI score was 3.0. The average CNI score in Cuyahoga County was 3.4, indicating that the county is a high need area.

Food Deserts

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

Exhibit 62 illustrates the location of food deserts in the community.

Exhibit 62: Food Deserts



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

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

Medically Underserved Areas and Populations

Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an “Index of Medical Underservice.” The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.²⁶ Areas with a score of 62 or less are considered “medically underserved.”

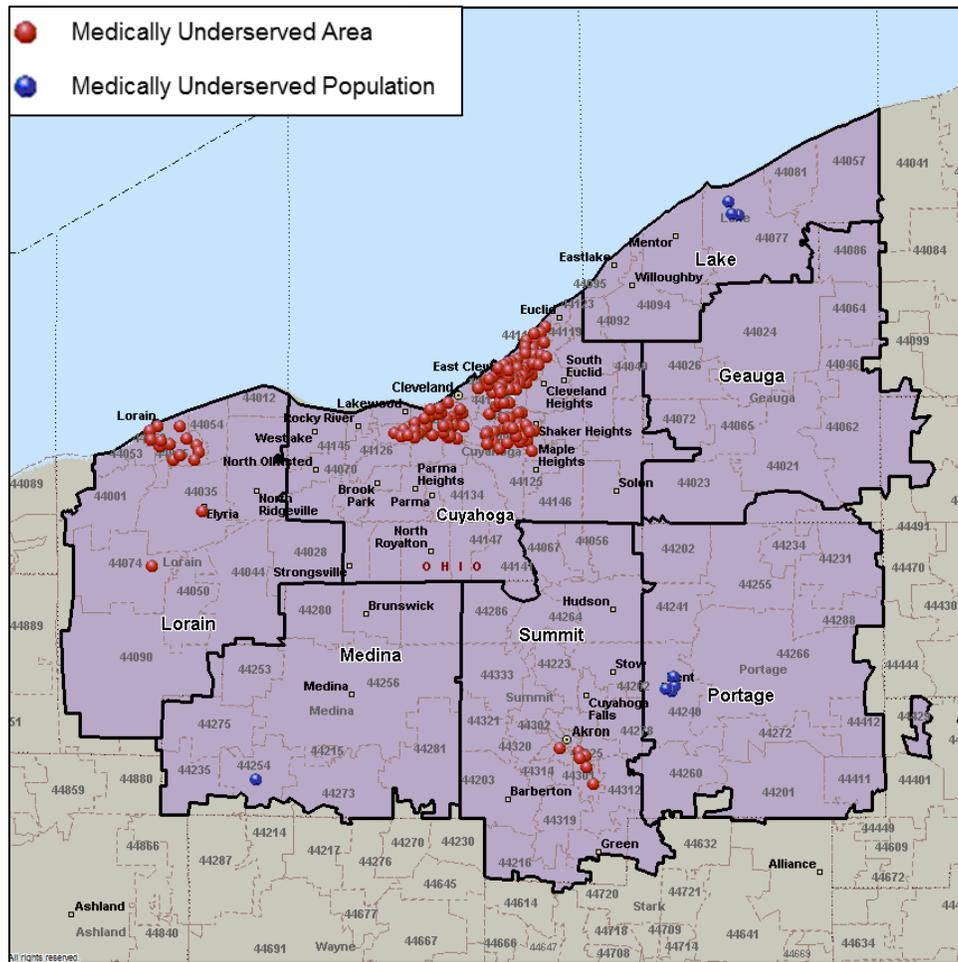
Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if “unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides.”²⁷

Medically Underserved Areas are present in Cuyahoga, Lorain, and Summit counties. Medically Underserved Populations are present in Lake, Medina, and Portage counties (**Exhibit 63**).

²⁶ Health Resources and Services Administration. See <http://www.hrsa.gov/shortage/mua/index.html>

²⁷*Ibid.*

Exhibit 63: Medically Underserved Areas



Source: Microsoft MapPoint and HRSA, 2015.

Health Professional Shortage Areas

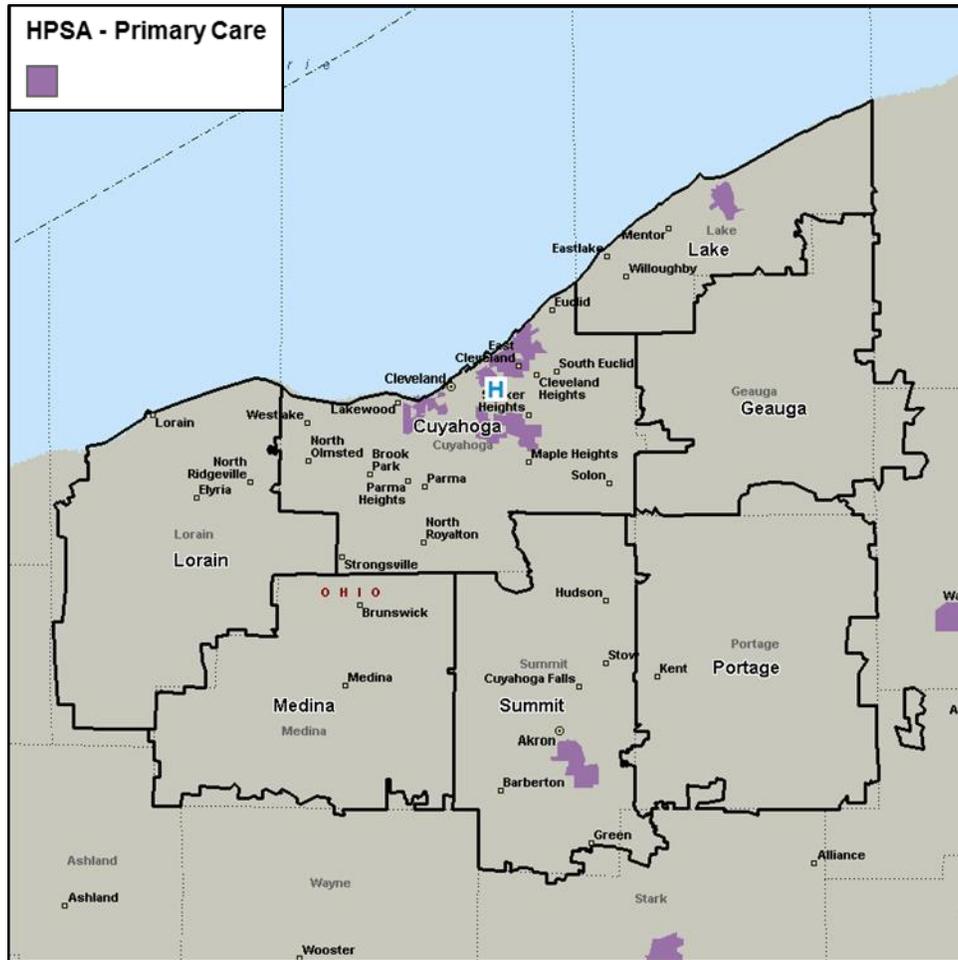
A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can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

HPSAs can be: “(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility.”²⁸

²⁸ U.S. Health Resources and Services Administration, Bureau of Health Professionals. (n.d.). *Health Professional Shortage Area Designation Criteria*. Retrieved 2012, from <http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/index.html>

Exhibit 64 illustrates the locations of the federally-designated HPSAs.

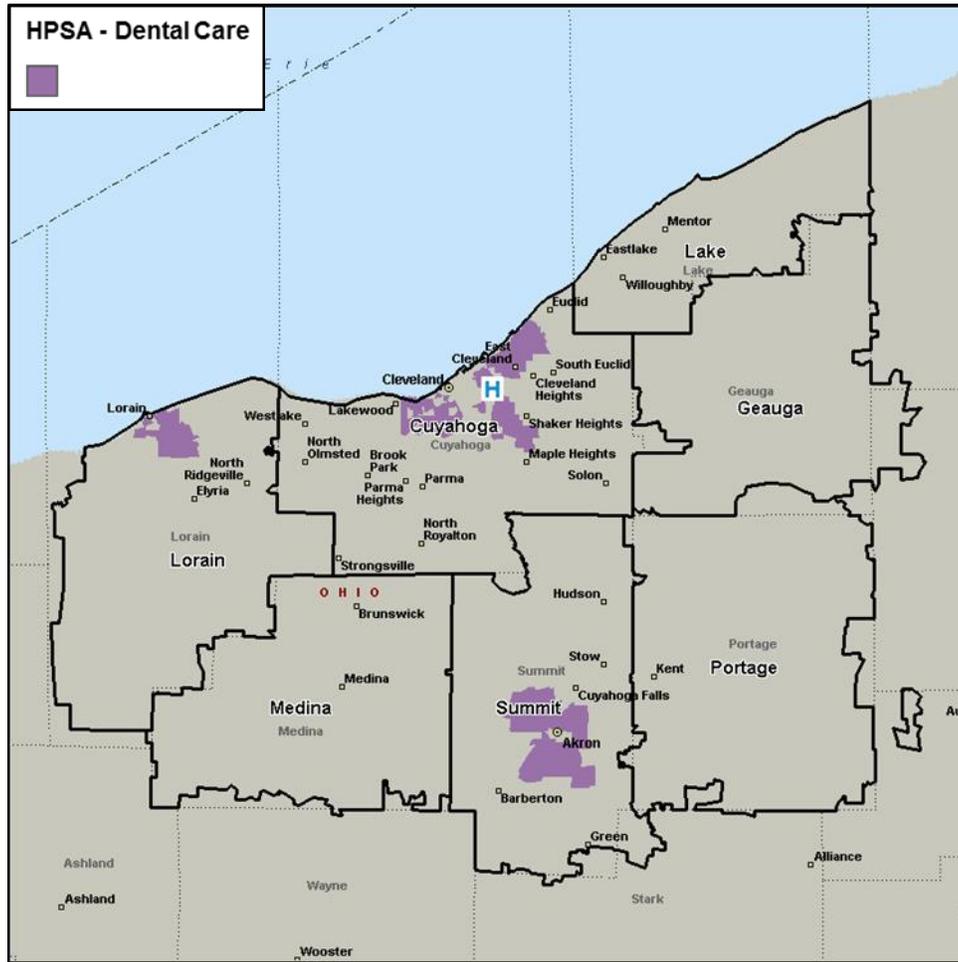
Exhibit 64A: Primary Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

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

Exhibit 64B: Dental Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

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

Findings of Other Community Health Needs Assessments

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

Other Community Assessments
Akron Children's Hospital CHNA 2013
Akron General Medical Center CHNA 2013
Geauga County CHA 2011
Health Improvement Partnership- Cuyahoga CHSA 2015
Lake County Community Health Assessment 2015
Lake Health CHNA 2013
Lorain County Health CNA 2015
Medina County CHIP 2013
Mercy Allen Hospital CHNA 2013
Mercy Medical Center CHNA 2013
Mercy Regional Medical Center CHNA 2013
Portage County CHNA 2015
Southwest General Health Center 2012
St. Vincent Charity Medical Center Implementation Plan 2013
Summa Health System CHNA 2013
Summit County CHIP 2015
UH Ahuja Medical Center CHNA 2015
UH Bedford Medical Center CHNA 2015
UH Case Medical Center CHNA 2015
UH Elyria Medical Center CHNA 2015
UH Geauga Medical Center CHNA 2015
UH Geneva Medical Center CHNA 2015
UH Parma Medical Center CHNA 2015
UH Rainbow Babies & Children's Hospital CHNA 2015
UH Rehabilitation Hospital CHNA 2015
UH Richmond Medical Center CHNA 2015
UH St. John Medical Center CHNA 2015

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

The significant needs identified by these reports are presented in **Exhibit 65**.

APPENDIX C – 7-COUNTY SECONDARY DATA ASSESSMENT

Exhibit 65: Significant Needs Identified in Other CHNAs

Significant Need	Frequency
Obesity	23
Mental/Behavioral health	22
Access to basic/primary health care	20
Cardiovascular/ heart disease	19
Diabetes	19
Drug/ substance abuse	18
Tobacco use/ smoking	18
Alcohol abuse and excessive drinking	15
Elderly care/ aging population	15
Cancer	14
Infant mortality (disparities)	14
Cost of care	11
Access to dental care	10
Access/lack of health insurance coverage	10
Poverty	10
Transportation	10
Unemployment	10
Asthma/childhood asthma	9
Respiratory diseases	9
Access to mental health services	8
Nutrition/ access to healthy food	7
Physical inactivity/lack of exercise	7
Alzheimer's disease	6
Drug/ substance abuse (youth)	6
Violence	6
Tobacco use during pregnancy	5
Access to prescription drugs/cost	4
Drug abuse- opioids/heroin	4
Drug abuse- prescriptions	4
Health disparities/ equity	4
Hypertension	4
Preventive care (immunizations, screenings, etc.)	4
Teenage pregnancy/ births	4
Access to substance abuse care	3
Low birth weight	3
Premature births	3
Pre-term births	3
Uninsured and underinsured populations	3
Violence (youth)	3

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

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

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

Community Assessed

As mentioned previously, Main Campus' 21-County community is comprised of the 21 counties in Northeast Ohio.

Demographics

The total population in the 21-County community was approximately 4,400,000 persons. Nearly a third of the population is located in Cuyahoga County (**Exhibit 66**).

Exhibit 66: Community Population, 2015

County	Total Population 2015	Percent of Total Population 2015
Ashland County	52,874	1.2%
Ashtabula County	98,976	2.2%
Carroll County	27,882	0.6%
Columbiana County	104,953	2.4%
Crawford County	42,480	1.0%
Cuyahoga County	1,262,784	28.6%
Erie County	75,553	1.7%
Geauga County	89,153	2.0%
Holmes County	44,226	1.0%
Huron County	58,428	1.3%
Lake County	229,715	5.2%
Lorain County	295,253	6.7%
Mahoning County	231,477	5.2%
Medina County	174,882	4.0%
Portage County	171,141	3.9%
Richland County	120,595	2.7%
Stark County	375,715	8.5%
Summit County	547,778	12.4%
Trumbull County	204,715	4.6%
Tuscarawas County	92,859	2.1%
Wayne County	115,307	2.6%
Northeast Ohio Total	4,416,746	100.0%

Source: Truven Market Expert, 2015.

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

Population characteristics and changes directly influence community health needs. The total population in the Main Campus 21-County community is expected to decrease by approximately 0.4 percent from 2015 to 2020 (**Exhibit 67**).

Exhibit 67: Percent Change in Community Population by County

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

Source: Truven Market Expert, 2015.

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

Exhibit 68 shows the 21-County community’s population for certain age and sex cohorts in 2015, with projections to 2020.

Exhibit 68: Percent Change in Population by Age/Sex Cohort, 2015-2020

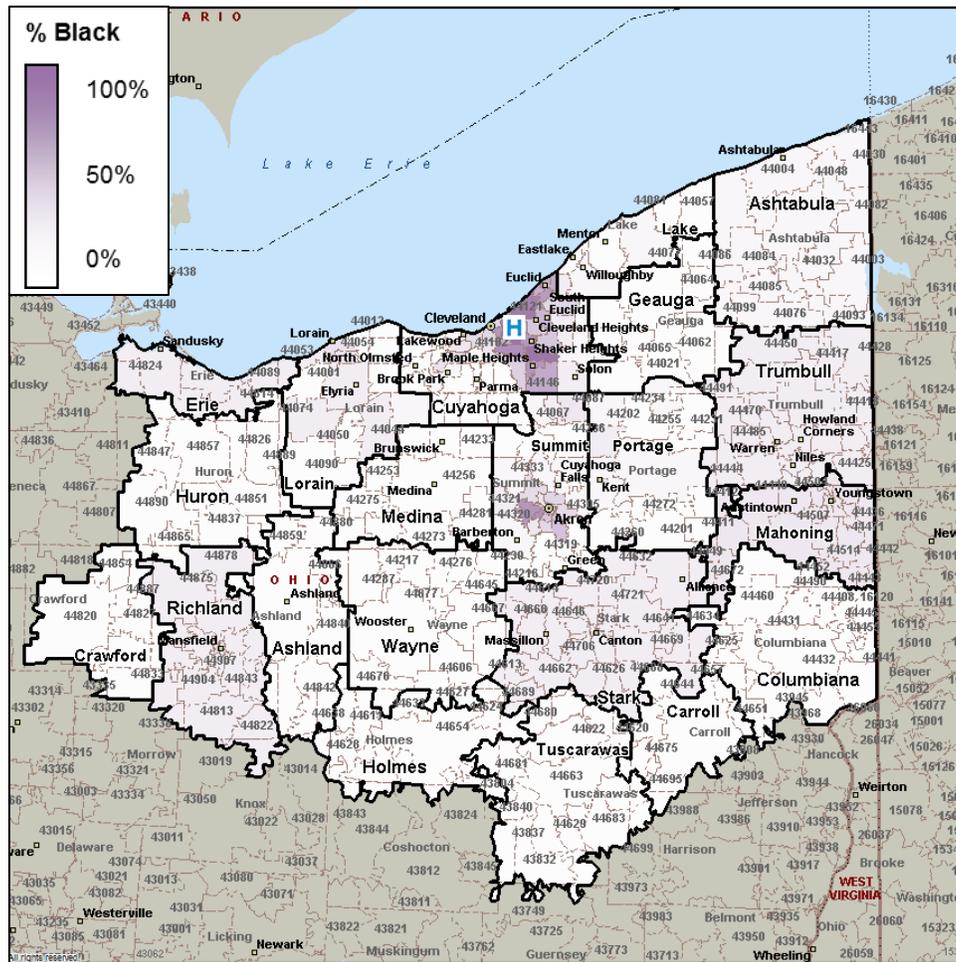
Age/Sex Cohort	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
0-17	960,943	915,034	-4.8%
Female 18-44	719,264	714,073	-0.7%
Male 18-44	719,790	724,131	0.6%
45-64	1,252,811	1,184,324	-5.5%
65+	763,938	863,628	13.0%
Northeast Ohio Total	4,416,746	4,401,190	-0.4%

Source: Truven Market Expert, 2015.

The number of persons aged 65 years and older is projected to increase by 13 percent between 2015 and 2020. The 0-17, Female 18-44, and 45-64 age groups are expected to decrease in population. 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 69 illustrates the percent of the population 65 years of age and older in the 21-County community.

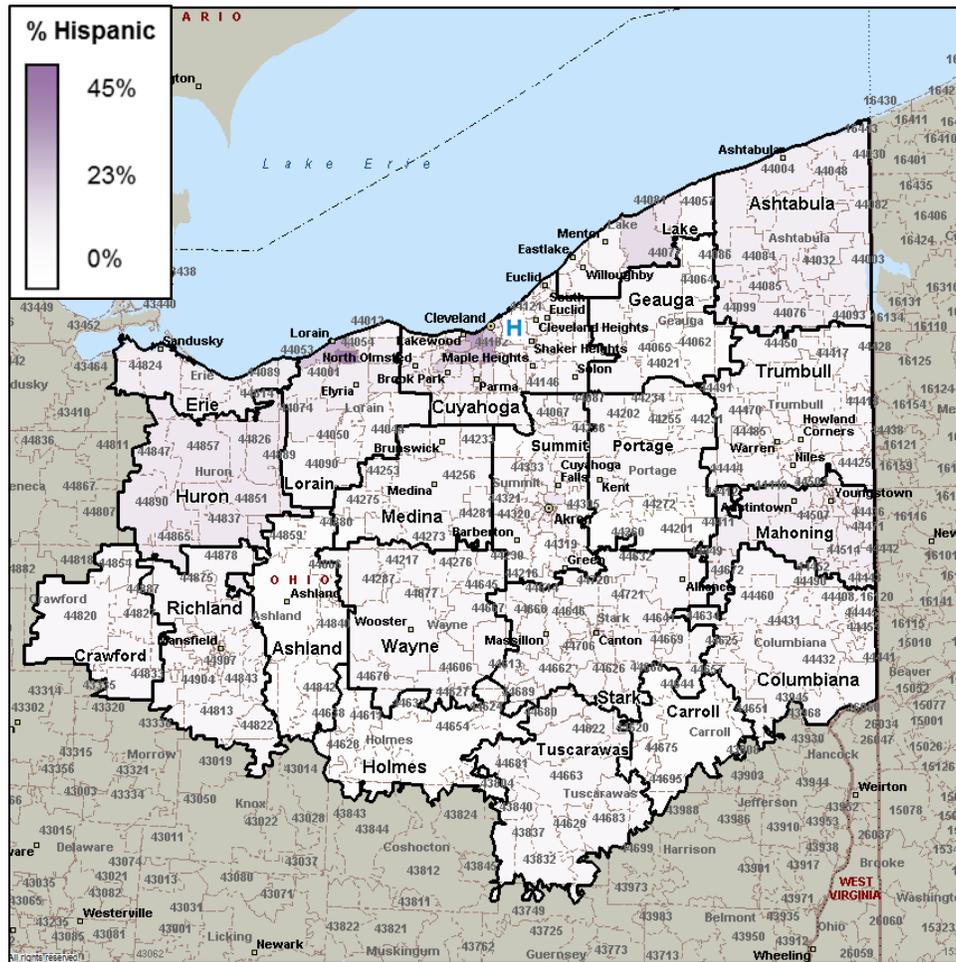
Exhibit 70: Percent of Population - Black, 2015



Source: Truven Market Expert, 2015.

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

Exhibit 71: Percent of Population – Hispanic (or Latino), (2015)



Source: Truven Market Expert, 2015.

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

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

Data regarding residents without a high school diploma, with a disability, and who are linguistically isolated are presented in **Exhibit 72** for the counties in the 21-County community, Ohio, and the United States.

Exhibit 72: Other Socioeconomic Indicators, 2014

Measure	Population 25+ without High School Diploma	Population with a Disability	Population Linguistically Isolated
Ashland County	12.8%	13.6%	4.3%
Ashtabula County	14.4%	15.0%	1.6%
Carroll County	13.4%	13.8%	1.1%
Columbiana County	12.8%	16.5%	0.9%
Crawford County	12.6%	15.7%	0.4%
Cuyahoga County	12.2%	14.3%	4.1%
Erie County	10.1%	14.5%	0.9%
Geauga County	9.0%	9.7%	4.0%
Holmes County	44.2%	8.6%	18.9%
Huron County	12.0%	13.6%	2.7%
Lake County	8.7%	11.3%	2.7%
Lorain County	10.9%	14.1%	2.6%
Mahoning County	10.8%	15.8%	2.3%
Medina County	6.5%	9.6%	1.3%
Portage County	9.0%	11.9%	1.6%
Richland County	13.3%	14.0%	0.8%
Stark County	10.3%	13.4%	1.0%
Summit County	9.3%	12.5%	2.1%
Trumbull County	11.7%	14.7%	1.3%
Tuscarawas County	13.4%	13.1%	2.1%
Wayne County	14.8%	11.6%	4.6%
Ohio	11.2%	13.5%	2.4%
United States	13.7%	12.3%	8.6%

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

Exhibit 72 indicates that:

- Twelve counties in the 21-County community had a higher percentage of residents aged 25 years and older without a high school diploma than the Ohio average.
- Eleven counties had a higher percentage of the population with a disability compared to Ohio and United States averages.
- Compared to Ohio, eight counties in the 21-County community 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.”

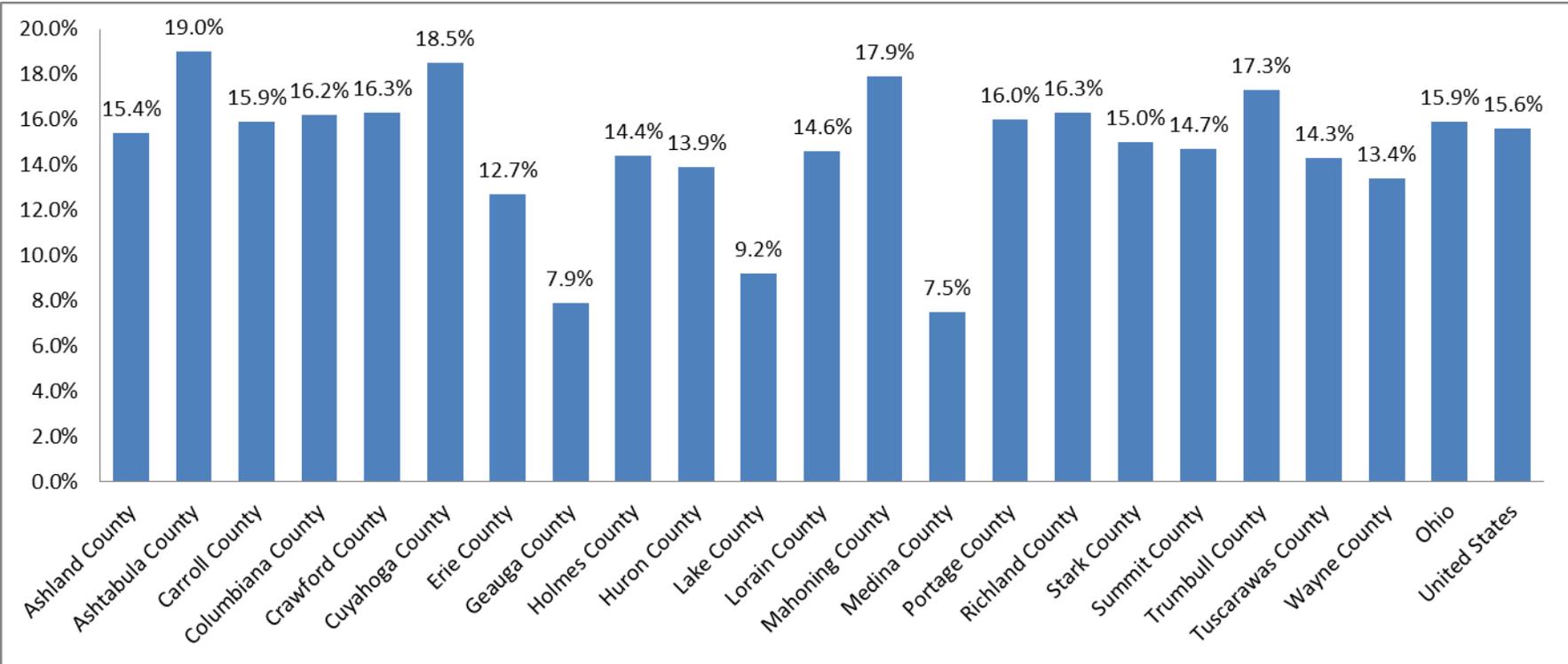
Economic indicators

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

People in Poverty

Many health needs have been associated with poverty. According to the U.S. Census, in 2014 approximately 15.9 percent of people in Ohio were living in poverty. Ashtabula, Columbiana, Crawford, Cuyahoga, Mahoning, Portage, Stark, and Trumbull counties poverty rates were higher than Ohio's poverty rate during that year (**Exhibit 73**).

Exhibit 73: Percent of People in Poverty, 2014



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

Considerable variation in poverty rates is present across racial and ethnic categories, in the 21-County community, the state, nation (**Exhibit 74**).

Exhibit 74: Poverty Rates by Race and Ethnicity, 2014

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

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

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

Exhibit 75 portrays (in green shading) the locations of low income census tracts in the community. The U.S. Department of Agriculture defines “low income census tracts” as areas where poverty rates are 20 percent or higher or where median family incomes are 80 percent or lower than within the metropolitan area.

Exhibit 75: Low Income Census Tracts



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

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

Unemployment

Unemployment is problematic because many residents receive health insurance coverage through their (or a family member’s) employer. If unemployment rises, access to employer based health insurance can decrease. **Exhibit 76** shows unemployment rates for 2010 through 2015 for the counties in Northeast Ohio, with state and national rates for comparison.

Exhibit 76: Unemployment Rates, 2010-2015

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

Source: Bureau of Labor Statistics, 2010-2014.

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

Insurance Status

Exhibit 77 presents the estimated percent of populations in the 21-County community without health insurance (uninsured).

Exhibit 77: Percent of the Population without Health Insurance, 2015-2020

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

Source: Truven Market Expert, 2015.

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

Crime

Exhibit 78 provides certain crime statistics for the twenty one counties in Northeast Ohio with state comparisons.

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 78: Crime Rates by Type and County, Per 100,000, 2014

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

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

Source: FBI, 2014.

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

Health Status and Access Indicators

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

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

County Health Rankings

County Health Rankings, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of “health factors” and “health outcomes.” These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,²⁹ social and economic factors, and physical environment.³⁰ *County Health Rankings* is updated annually. *County Health Rankings 2016* relies on data from 2006 to 2015, with most data from 2010 to 2013.

Exhibit 79 presents 2016 rankings for each available indicator category. Rankings indicate how the county ranked in relation to all 88 counties in the Ohio, with 1 indicating the most favorable rankings and 88 the least favorable.

²⁹A 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.

³⁰A 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.

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Exhibit 79: County Health Rankings, 2016

(Light grey shading indicates indicator in bottom half of Ohio counties; Dark grey shading indicates in bottom quartile of Ohio counties)

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

Source: County Health Rankings, 2016.

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

Community Health Status Indicators

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

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

Exhibit 80 compares each county in the 21-County community to its respective peer counties and cities and highlights community health issues found to rank in the bottom quartile of the counties included in the analysis.

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Exhibit 80: Community Health Status Indicators, 2015
 (Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Ashland County	Ashtabula County	Carroll County	Columbiana County	Crawford County	Cuyahoga County	Erie County
Mortality	Alzheimer's Disease Deaths							
	Cancer Deaths							
	Chronic Kidney Disease Deaths							
	Chronic Lower Respiratory Disease (CLRD) Deaths							
	Coronary Heart Disease Deaths							
	Diabetes Deaths							
	Female Life Expectancy							
	Male Life Expectancy							
	Motor Vehicle Deaths							
	Stroke Deaths							
Unintentional Injury (including motor vehicle)								
Morbidity	Adult Diabetes							
	Adult Obesity							
	Adult Overall Health Status							
	Alzheimer's Disease/Dementia							
	Cancer							
	Gonorrhea							
	HIV							
	Older Adult Asthma							
	Older Adult Depression							
	Preterm Births							
Syphilis								
Health Care Access and Quality	Cost Barrier to Care							
	Older Adult Preventable Hospitalizations							
	Primary Care Provider Access							
	Uninsured							
Health Behaviors	Adult Binge Drinking							
	Adult Female Routine Pap Tests							
	Adult Physical Inactivity							
	Adult Smoking							
	Teen Births							
Social Factors	Children in Single-Parent Households							
	High Housing Costs							
	Inadequate Social Support							
	On Time High School Graduation							
	Poverty							
	Unemployment							
	Violent Crime							
Physical Environment	Access to Parks							
	Annual Average PM2.5 Concentration							
	Drinking Water Violations							
	Housing Stress							
	Limited Access to Healthy Food							
	Living Near Highways							

Source: Community Health Status Indicators, 2015.

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Exhibit 80: Community Health Status Indicators, 2015, (continued)
 (Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Geauga County	Holmes County	Huron County	Lake County	Lorain County	Mahoning County	Medina County
Mortality	Alzheimer's Disease Deaths							
	Cancer Deaths							
	Chronic Kidney Disease Deaths							
	Chronic Lower Respiratory Disease (CLRD) Deaths							
	Coronary Heart Disease Deaths							
	Diabetes Deaths							
	Female Life Expectancy							
	Male Life Expectancy							
	Motor Vehicle Deaths							
	Stroke Deaths							
Unintentional Injury (including motor vehicle)								
Morbidity	Adult Diabetes							
	Adult Obesity							
	Adult Overall Health Status							
	Alzheimer's Disease/Dementia							
	Cancer							
	Gonorrhea							
	HIV							
	Older Adult Asthma							
	Older Adult Depression							
	Preterm Births							
Syphilis								
Health Care Access and Quality	Cost Barrier to Care							
	Older Adult Preventable Hospitalizations							
	Primary Care Provider Access							
	Uninsured							
Health Behaviors	Adult Binge Drinking							
	Adult Female Routine Pap Tests							
	Adult Physical Inactivity							
	Adult Smoking							
	Teen Births							
Social Factors	Children in Single-Parent Households							
	High Housing Costs							
	Inadequate Social Support							
	On Time High School Graduation							
	Poverty							
	Unemployment							
Physical Environment	Violent Crime							
	Access to Parks							
	Annual Average PM2.5 Concentration							
	Drinking Water Violations							
	Housing Stress							
	Limited Access to Healthy Food							
Living Near Highways								

Source: Community Health Status Indicators, 2015.

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Exhibit 80: Community Health Status Indicators, 2015, (continued)
 (Shading indicates indicator in bottom quartile compared to peer counties)

Category	Indicator	Portage County	Richland County	Stark County	Summit County	Trumbull County	Tuscarawas County	Wayne County
Mortality	Alzheimer's Disease Deaths							
	Cancer Deaths							
	Chronic Kidney Disease Deaths							
	Chronic Lower Respiratory Disease (CLRD) Deaths							
	Coronary Heart Disease Deaths							
	Diabetes Deaths							
	Female Life Expectancy							
	Male Life Expectancy							
	Motor Vehicle Deaths							
	Stroke Deaths							
Unintentional Injury (including motor vehicle)								
Morbidity	Adult Diabetes							
	Adult Obesity							
	Adult Overall Health Status							
	Alzheimer's Disease/Dementia							
	Cancer							
	Gonorrhea							
	HIV							
	Older Adult Asthma							
	Older Adult Depression							
	Preterm Births							
Syphilis								
Health Care Access and Quality	Cost Barrier to Care							
	Older Adult Preventable Hospitalizations							
	Primary Care Provider Access							
	Uninsured							
Health Behaviors	Adult Binge Drinking							
	Adult Female Routine Pap Tests							
	Adult Physical Inactivity							
	Adult Smoking							
	Teen Births							
Social Factors	Children in Single-Parent Households							
	High Housing Costs							
	Inadequate Social Support							
	On Time High School Graduation							
	Poverty							
	Unemployment							
Physical Environment	Violent Crime							
	Access to Parks							
	Annual Average PM2.5 Concentration							
	Drinking Water Violations							
	Housing Stress							
Limited Access to Healthy Food								
Living Near Highways								

Source: Community Health Status Indicators, 2015.

Exhibit 81 displays the frequency of unfavorable health indicators in the 21-County community.

Exhibit 81: Community Health Status Indicators Frequency, 2015

Category	Indicator	Frequency
Mortality	Alzheimer's Disease Deaths	6
	Cancer Deaths	5
	Chronic Kidney Disease Deaths	0
	Chronic Lower Respiratory Disease (CLRD) Deaths	5
	Coronary Heart Disease Deaths	9
	Diabetes Deaths	8
	Female Life Expectancy	4
	Male Life Expectancy	2
	Motor Vehicle Deaths	0
	Stroke Deaths	3
	Unintentional Injury (including motor vehicle)	0
Morbidity	Adult Diabetes	4
	Adult Obesity	6
	Adult Overall Health Status	3
	Alzheimer's Disease/Dementia	7
	Cancer	0
	Gonorrhea	6
	HIV	1
	Older Adult Asthma	9
	Older Adult Depression	10
	Preterm Births	5
	Syphilis	3
Health Care Access and Quality	Cost Barrier to Care	2
	Older Adult Preventable Hospitalizations	8
	Primary Care Provider Access	7
	Uninsured	3
Health Behaviors	Adult Binge Drinking	6
	Adult Female Routine Pap Tests	7
	Adult Physical Inactivity	5
	Adult Smoking	8
	Teen Births	1
Social Factors	Children in Single-Parent Households	5
	High Housing Costs	3
	Inadequate Social Support	5
	On Time High School Graduation	0
	Poverty	6
	Unemployment	5
	Violent Crime	0
Physical Environment	Access to Parks	4
	Annual Average PM2.5 Concentration	16
	Drinking Water Violations	0
	Housing Stress	3
	Limited Access to Healthy Food	3
	Living Near Highways	4

Source: Community Health Status Indicators, 2015.

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The CHSI data indicate that at least one third of the counties in the 21-County community compared unfavorably to peer counties for coronary heart disease and diabetes deaths, morbidity related to Alzheimer’s disease/dementia and older adult depression, older adult preventable hospitalizations, primary care provider access, adult female routine pap tests, adult smoking, and air pollution.

Ohio Department of Health

The Ohio Department of Health maintains a data warehouse that includes county-level indicators regarding mortality rates (**Exhibits 82**), cancer incidence (**Exhibit 83**), communicable disease incidence (**Exhibit 84**), and maternal and child health indicators (**Exhibit 85**).

Exhibit 82 provides age-adjusted mortality rates for selected causes of death in 2012.

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Exhibit 82: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2012
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

County	Heart Disease	Diabetes	Influenza and Pneumonia	Suicide	Motor Vehicle Collisions	Homicide	Motor Vehicle Collisions (Alcohol)	Aortic Aneurysm	HIV	Pedestrians Killed in Traffic Collisions
Ashland County	195.0	30.9	4.9	10.7	19.0	1.4	7.6	2.6	-	0.0
Ashtabula County	223.8	25.7	15.3	14.3	16.6	3.6	10.7	4.3	1.5	2.0
Carroll County	224.1	22.0	17.4	13.7	10.4	-	0.0	0.9	-	0.0
Columbiana County	200.6	21.3	22.1	15.8	12.5	3.1	5.4	4.6	0.7	0.0
Crawford County	190.8	21.8	14.6	12.2	8.5	0.9	2.1	3.3	-	0.0
Cuyahoga County	213.9	23.3	12.0	9.9	3.4	9.2	1.4	3.8	2.7	0.6
Erie County	165.2	26.1	14.4	9.4	12.6	2.5	2.5	3.1	0.9	0.0
Geauga County	133.4	16.6	6.7	9.7	4.4	0.8	1.1	2.4	-	0.0
Holmes County	202.8	21.1	19.3	4.9	18.0	2.4	7.7	1.0	-	0.0
Huron County	193.1	28.7	14.9	13.8	10.1	1.6	5.0	4.1	0.9	1.7
Lake County	184.6	23.0	10.7	12.7	4.4	1.8	2.6	3.6	0.3	0.9
Lorain County	175.1	26.4	12.1	11.9	9.1	2.9	5.6	3.3	0.5	0.0
Mahoning County	217.4	23.2	18.3	11.5	8.2	10.6	3.5	3.0	1.9	0.8
Medina County	172.8	20.2	13.6	9.3	6.0	0.5	3.3	2.8	-	0.6
Portage County	195.8	21.6	16.9	12.7	8.6	1.6	2.6	4.1	0.5	0.6
Richland County	190.2	26.7	16.8	12.6	8.5	3.2	2.3	3.6	1.3	0.0
Stark County	173.2	26.0	15.4	12.9	8.2	4.8	4.0	3.4	1.0	0.8
Summit County	178.4	24.5	19.0	11.6	5.2	5.7	2.2	3.8	1.3	0.9
Trumbull County	215.6	26.0	20.8	16.1	12.9	6.8	6.2	3.9	0.3	1.9
Tuscarawas County	219.7	28.4	19.1	13.6	11.0	1.8	4.4	2.1	-	1.1
Wayne County	190.4	28.4	-	-	11.7	-	2.7	-	0.3	1.8
Ohio	191.4	26.1	15.4	12.0	9.0	5.4	3.8	3.7	1.3	0.5
Healthy People 2020	-	-	-	10.2	12.4	-	-	-	-	1.4

Source: Ohio Department of Health, 2012.

Age-adjusted mortality rates for heart disease, influenza and pneumonia, suicide, motor vehicle collisions (including those with alcohol involvement), aortic aneurysms, and pedestrians killed in traffic collisions were problematic throughout the 21-County community.

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Exhibit 83: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2013

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

Cancer Type	Ashland County	Ashtabula County	Carroll County	Columbiana County	Crawford County	Cuyahoga County	Erie County	Ohio
Total	534.5	476.7	463.7	408.0	416.1	477.9	499.1	452.5
Prostate	91.8	84.3	98.9	86.9	88.8	116.3	99.1	101.7
Breast	75.8	65.0	46.8	50.3	69.4	71.4	88.1	67.6
Lung and Bronchus	55.1	80.2	81.6	62.1	58.3	64.3	71.9	67.4
Colon and Rectum	66.2	49.9	51.1	35.6	36.5	41.0	56.2	40.6
Other Sites/Types	51.6	33.7	25.5	40.1	39.7	37.9	50.1	35.8
Uterus	36.8	33.4	29.1	20.2	50.2	35.4	29.6	28.8
Bladder	21.1	28.8	34.2	18.5	22.8	19.9	26.7	22.1
Melanoma of Skin	39.7	19.7	20.0	16.3	11.5	17.0	24.3	19.5
Non-Hodgkins Lymphoma	19.2	21.7	22.7	15.6	17.7	21.0	17.2	18.6
Kidney and Renal Pelvis	30.6	17.3	23.0	14.7	12.1	19.0	9.5	16.9
Thyroid	25.3	15.8	12.4	14.7	14.4	15.9	17.4	15.2
Pancreas	17.1	14.6	15.5	14.2	10.1	12.9	13.4	12.3
Leukemia	8.5	8.5	-	13.8	-	14.4	11.1	11.9
Oral Cavity and Pharynx	8.7	12.1	-	9.6	8.0	11.2	13.3	11.7
Ovary	-	-	-	12.2	15.3	14.5	-	11.3
Brain and Other CNS	12.9	6.0	-	3.8	-	7.7	5.0	7.4
Cervix	-	-	-	12.6	-	7.4	-	7.4
Stomach	-	9.5	-	4.9	-	8.4	5.1	6.8
Liver and Intrahepatic Bile Duct	-	11.6	-	6.7	-	8.3	5.2	6.6
Multiple Myeloma	-	3.9	-	-	7.7	8.3	7.3	5.9
Testis	-	11.3	-	-	-	6.3	-	5.2
Esophagus	-	5.5	-	-	7.8	5.8	-	5.0
Larynx	-	3.7	-	6.5	-	4.8	4.1	4.3
Hodgkins Lymphoma	-	-	-	7.3	-	3.1	-	2.6

Source: Ohio Department of Health, 2013.

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Exhibit 83: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2013, (continued)
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Cancer Type	Geauga County	Holmes County	Huron County	Lake County	Lorain County	Mahoning County	Medina County	Ohio
Total	409.4	352.5	490.5	462.0	451.6	414.9	466.1	452.5
Prostate	103.8	76.4	92.1	87.1	102.2	85.9	119.1	101.7
Breast	71.4	24.5	76.3	72.6	67.0	61.2	61.9	67.6
Lung and Bronchus	39.7	32.5	73.1	58.5	68.3	65.4	60.5	67.4
Colon and Rectum	33.5	56.4	36.1	38.8	41.2	47.9	38.1	40.6
Other Sites/Types	29.0	36.9	37.5	42.2	34.9	30.2	30.6	35.8
Uterus	38.3	33.4	23.4	31.4	20.4	30.2	35.0	28.8
Bladder	12.4	15.1	17.2	30.4	21.8	26.0	27.2	22.1
Melanoma of Skin	23.2	-	30.8	21.5	20.5	11.8	28.9	19.5
Non-Hodgkins Lymphoma	25.3	24.6	13.3	21.1	18.2	15.0	21.2	18.6
Kidney and Renal Pelvis	7.6	17.2	19.0	19.8	19.8	15.3	18.0	16.9
Thyroid	18.0	16.9	30.5	18.2	15.0	9.1	14.7	15.2
Pancreas	10.3	12.0	15.3	13.1	13.8	8.6	12.7	12.3
Leukemia	8.1	15.2	20.9	13.2	11.4	6.6	16.8	11.9
Oral Cavity and Pharynx	16.5	-	13.7	10.5	12.8	9.7	12.6	11.7
Ovary	11.1	-	-	14.0	7.1	12.1	11.7	11.3
Brain and Other CNS	5.9	9.4	7.9	7.1	5.9	6.0	7.0	7.4
Cervix	-	-	15.4	-	9.8	6.7	4.8	7.4
Stomach	-	-	7.5	6.3	7.7	10.4	8.2	6.8
Liver and Intrahepatic Bile Duct	5.6	-	-	8.1	6.6	7.8	7.3	6.6
Multiple Myeloma	4.6	-	-	3.9	5.0	3.6	4.3	5.9
Testis	-	-	-	7.7	5.7	6.7	-	5.2
Esophagus	6.8	-	-	2.8	4.8	5.0	4.0	5.0
Larynx	-	-	-	2.0	4.7	3.6	4.8	4.3
Hodgkins Lymphoma	7.0	-	-	3.0	2.6	3.3	-	2.6

Source: Ohio Department of Health, 2013.

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Exhibit 83: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2013 (continued)
 (Light grey shading indicates indicator worse than Ohio average; Dark grey shading indicates more than 50 percent worse than Ohio average)

Cancer Type	Portage County	Richland County	Stark County	Summit County	Trumbull County	Tuscarawas County	Wayne County	Ohio
Total	453.6	439.3	453.1	440.8	458.0	416.4	440.2	452.5
Prostate	114.9	90.2	118.7	96.2	103.5	112.4	79.7	101.7
Breast	63.4	61.9	68.9	64.5	58.5	61.2	73.5	67.6
Lung and Bronchus	68.7	65.5	67.5	61.9	77.4	46.2	57.8	67.4
Colon and Rectum	33.3	42.9	32.6	33.6	49.3	30.1	37.8	40.6
Other Sites/Types	42.1	43.5	38.8	39.2	30.5	32.0	35.1	35.8
Uterus	25.7	25.0	23.8	28.6	25.3	29.2	34.2	28.8
Bladder	22.5	22.3	28.2	20.5	27.2	34.5	23.6	22.1
Melanoma of Skin	21.8	17.6	18.7	22.5	17.2	15.5	20.8	19.5
Non-Hodgkins Lymphoma	18.6	26.4	16.2	21.1	20.0	22.0	18.7	18.6
Kidney and Renal Pelvis	10.0	16.2	14.1	14.9	17.3	8.2	19.0	16.9
Thyroid	15.1	10.4	16.9	14.1	17.4	8.6	17.5	15.2
Pancreas	15.0	8.5	11.8	13.6	11.7	10.8	12.9	12.3
Leukemia	15.0	10.0	11.8	11.6	9.7	11.6	12.5	11.9
Oral Cavity and Pharynx	10.2	11.4	15.4	11.0	13.2	14.8	11.2	11.7
Ovary	16.3	17.6	11.4	10.3	6.9	20.1	10.7	11.3
Brain and Other CNS	9.8	4.0	7.2	7.5	7.1	4.4	8.7	7.4
Cervix	-	12.7	3.3	10.5	6.8	12.4	-	7.4
Stomach	6.8	3.9	7.8	6.6	9.2	5.4	5.0	6.8
Liver and Intrahepatic Bile Duct	3.1	4.2	3.3	6.2	4.5	5.4	-	6.6
Multiple Myeloma	6.2	6.4	4.6	6.2	5.1	6.3	7.4	5.9
Testis	-	10.2	5.6	7.0	7.5	-	-	5.2
Esophagus	6.5	4.7	6.3	5.1	3.2	-	5.0	5.0
Larynx	3.2	3.8	3.9	4.7	4.7	-	4.4	4.3
Hodgkins Lymphoma	-	-	2.1	2.3	2.4	-	-	2.6

Source: Ohio Department of Health, 2013.

The age-adjusted cancer incidence rate for total cancer was above the Ohio average in eleven of the counties in the 21-County community.

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 84: Communicable Disease Incidence Rates per 100,000 Population, 2012

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

County	Chlamydia	HIV	Gonorrhea	Syphilis	Varicella	Viral Meningitis	Hepatitis A, B, and C
Ashland County	141.1	28.3	13.2	1.9	20.8	0.0	0.0
Ashtabula County	223.7	55.8	51.2	1.0	15.9	0.0	3.0
Carroll County	260.1	31.5	48.6	0.0	3.5	7.0	0.0
Columbiana County	275.4	44.1	62.1	1.9	2.8	3.8	0.0
Crawford County	344.9	39.7	38.8	0.0	23.3	0.0	0.0
Cuyahoga County	801.1	295.8	290.3	9.8	4.3	7.2	0.8
Erie County	503.4	78.5	89.5	1.3	9.2	2.6	0.0
Geauga County	115.6	25.6	15.0	1.1	1.1	2.1	0.0
Holmes County	70.8	18.6	9.4	2.4	18.6	0.0	0.0
Huron County	263.3	37.1	18.4	0.0	16.9	1.7	0.0
Lake County	263.0	55.8	62.2	1.7	6.5	2.6	0.9
Lorain County	365.7	83.6	98.9	3.0	6.3	1.3	0.3
Mahoning County	411.2	146.7	131.5	2.9	3.4	2.6	0.4
Medina County	178.1	25.9	23.8	0.0	4.6	0.6	2.3
Portage County	280.0	53.9	37.2	0.0	5.0	6.8	0.6
Richland County	412.9	62.8	132.6	2.4	12.2	6.5	1.6
Stark County	404.2	91.0	169.3	2.9	8.5	8.8	1.9
Summit County	488.4	130.2	173.3	4.8	2.4	10.5	2.0
Trumbull County	402.7	65.6	84.2	5.2	9.2	3.9	4.3
Tuscarawas County	247.3	16.2	29.2	3.2	5.4	1.1	0.0
Wayne County	239.3	48.8	62.0	1.7	12.2	10.4	0.9
Ohio	462.0	154.3	143.5	9.9	7.0	6.1	1.9

Source: Ohio Department of Health, 2012.

Cuyahoga County has had comparatively high incidence rates of chlamydia, HIV, gonorrhea, and viral meningitis. Summit County also had comparatively high incidence rates of chlamydia, gonorrhea, viral meningitis, and hepatitis A, B, and C. Ten of the counties in the 21-County community had varicella incidence rates above the Ohio average.

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

Exhibit 84: Maternal and Child Health Indicators, 2012

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

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

Source: Ohio Department of Health, 2012.

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

Behavioral Risk Factor Surveillance System

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.

BRFSS data were assessed for each county in the 21-County community and compared to the averages for the twenty one counties in Northeast Ohio.

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Exhibit 85: Behavioral Risk Factor Surveillance System, Chronic Conditions, 2015

(Light grey shading indicates indicator worse than the 21-County average; Dark grey shading indicates more than 50 percent worse than the 21-County average)

County	Total Population 18+ 2015	% Obese	% Back Pain	% Diabetes	% Asthma	% Depression	% High Blood Pressure	% High Cholesterol	% COPD	% Smoking
Ashland County	40,542	33.6%	28.6%	14.7%	12.6%	16.3%	31.1%	25.0%	4.9%	29.8%
Ashtabula County	76,954	36.3%	29.2%	16.4%	12.1%	18.4%	34.0%	26.8%	5.6%	31.8%
Carroll County	17,163	36.4%	32.4%	17.2%	15.2%	20.1%	34.9%	27.8%	6.3%	31.1%
Columbiana County	32,639	35.4%	30.1%	18.2%	10.7%	15.9%	34.5%	28.1%	5.3%	30.7%
Crawford County	88,322	34.2%	28.7%	14.3%	9.8%	15.5%	31.5%	25.1%	5.2%	28.4%
Cuyahoga County	990,489	30.8%	23.0%	13.3%	11.4%	13.8%	30.6%	22.0%	4.5%	27.7%
Erie County	32,639	35.4%	30.1%	18.2%	10.7%	15.9%	34.5%	28.1%	5.3%	30.7%
Geauga County	69,971	29.5%	19.2%	11.4%	10.6%	12.5%	25.8%	22.2%	3.7%	23.9%
Holmes County	24,919	34.3%	21.3%	12.5%	9.4%	15.1%	26.3%	21.3%	4.1%	33.5%
Huron County	42,666	33.6%	25.5%	13.5%	9.5%	14.2%	29.0%	23.1%	4.4%	29.9%
Lake County	182,325	30.9%	25.3%	13.3%	11.2%	13.5%	30.2%	24.6%	4.5%	25.3%
Lorain County	230,221	31.7%	26.2%	13.9%	11.6%	15.4%	30.8%	24.5%	4.7%	26.9%
Mahoning County	179,824	32.3%	30.2%	15.6%	13.0%	17.9%	33.5%	28.0%	5.7%	28.6%
Medina County	135,503	30.2%	20.6%	11.4%	10.1%	12.3%	26.2%	21.8%	3.8%	24.0%
Portage County	132,699	30.6%	28.0%	13.5%	10.2%	14.8%	28.8%	21.9%	4.1%	26.7%
Richland County	94,559	34.6%	28.6%	17.2%	12.7%	17.8%	33.0%	27.9%	5.4%	30.3%
Stark County	318,241	32.7%	27.6%	14.5%	12.0%	16.1%	31.1%	25.5%	4.9%	27.6%
Summit County	405,251	30.2%	26.1%	13.5%	12.5%	16.0%	29.4%	23.8%	4.4%	25.9%
Trumbull County	155,344	33.8%	28.0%	15.6%	12.8%	17.3%	33.8%	27.6%	5.6%	28.9%
Tuscarawas County	72,493	34.0%	27.9%	14.9%	11.6%	15.7%	31.4%	25.5%	5.0%	29.3%
Wayne County	89,239	33.7%	28.1%	14.5%	11.1%	15.6%	29.8%	24.8%	4.7%	29.8%
21-County Average	3,454,621	31.7%	25.6%	14.0%	11.6%	15.1%	30.6%	24.1%	4.7%	27.5%

Source: Truven Market Expert/Behavioral Risk Factor Surveillance System, 2015.

Compared to the 21-County averages, Ashland, Ashtabula, Carroll, Richland, Stark, Trumbull, and Tuscarawas counties had higher rates for each of the nine risk factors.

Ambulatory Care Sensitive Conditions

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

ACSCs are 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.”³¹ 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.

Exhibit 86 provides 2014 PQI rates (per 100,000 persons) for each county in the 21-County community – with comparisons to Ohio averages.

³¹Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

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Exhibit 86: PQI (ACSC) Rates per 100,000, 2014

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

County	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure	Low Birth Weight
Ashland County	70	31	73	470	23	231	45
Ashtabula County	74	32	109	717	44	519	58
Carroll County	93	45	87	410	29	342	27
Columbiana County	114	32	116	816	59	473	54
Crawford County	53	37	120	867	53	239	56
Cuyahoga County	118	37	175	927	76	559	78
Erie County	95	39	152	680	32	550	68
Geauga County	25	30	67	373	29	362	31
Holmes County	59	43	47	378	16	236	38
Huron County	69	44	99	466	34	400	68
Lake County	85	21	108	428	31	496	46
Lorain County	74	36	136	766	49	432	65
Mahoning County	129	37	151	649	75	747	85
Medina County	61	39	77	324	25	298	57
Portage County	60	41	86	451	26	348	57
Richland County	96	37	99	670	26	379	68
Stark County	77	39	98	453	35	405	64
Summit County	105	34	128	589	42	422	51
Trumbull County	99	25	157	727	61	698	69
Tuscarawas County	73	44	93	357	28	455	54
Wayne County	36	39	80	433	29	365	46
21-County Average	95	35	135	692	53	485	66
Ohio Totals	95	37	119	609	53	424	61

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

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Exhibit 86: PQI (ACSC) Rates per 100,000, 2014 (continued)

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

County	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Angina without Procedure	Uncontrolled Diabetes	Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Ashland County	106	206	128	8	10	7	3
Ashtabula County	136	218	165	14	14	20	8
Carroll County	69	277	159	6	17	59	6
Columbiana County	125	261	142	12	7	59	5
Crawford County	69	233	109	12	12	28	12
Cuyahoga County	131	179	142	13	19	43	12
Erie County	136	249	120	11	19	16	10
Geauga County	134	177	118	6	4	25	6
Holmes County	73	127	73	12	20	10	12
Huron County	144	175	176	11	2	27	9
Lake County	109	125	104	11	14	35	10
Lorain County	107	174	120	14	14	39	11
Mahoning County	197	283	138	7	20	57	10
Medina County	88	154	99	15	4	23	7
Portage County	113	148	87	8	6	21	6
Richland County	75	288	182	12	18	24	9
Stark County	100	184	127	7	6	31	7
Summit County	157	195	124	9	11	32	6
Trumbull County	179	294	167	15	23	58	6
Tuscarawas County	92	161	146	4	9	24	8
Wayne County	108	239	145	1	9	24	7
21-County Average	125	187	131	11	14	37	10
Ohio Totals	107	196	131	12	13	36	9

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

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The rates of admissions for ACSC in the Main Campus 21-County community exceeded Ohio averages for all conditions except perforated appendix, bacterial pneumonia, urinary tract infection, and angina without procedure.

Exhibit 87 provides the ratio of PQI rates in the 21-County community compared to the Ohio averages. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

Exhibit 87: Ratio of PQI Rates for Northeast Ohio and Ohio, 2014

County	21-County Community	Ohio	Ratio: 21-County Community/Ohio
Dehydration	125.0	107.2	1.2
Congestive Heart Failure	485.4	423.8	1.1
Diabetes Long-Term Complications	135.1	118.8	1.1
Chronic Obstructive Pulmonary Disease	692.2	608.8	1.1
Low Birth Weight	66.2	61.4	1.1
Lower-Extremity Amputation Among Patients with Diabetes	9.5	8.9	1.1
Uncontrolled Diabetes	14.0	13.2	1.1
Adult Asthma	36.6	36.0	1.0
Hypertension	53.0	52.6	1.0
Diabetes Short-Term Complications	94.7	94.7	1.0
Urinary Tract Infection	130.6	131.5	1.0
Angina without Procedure	11.2	11.7	1.0
Perforated Appendix	35.3	36.9	1.0
Bacterial Pneumonia	186.6	196.2	1.0

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

In the 21-County community, rates of dehydration, congestive heart failure, diabetes, and chronic obstructive pulmonary disease were more than 10 percent higher than the Ohio averages.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

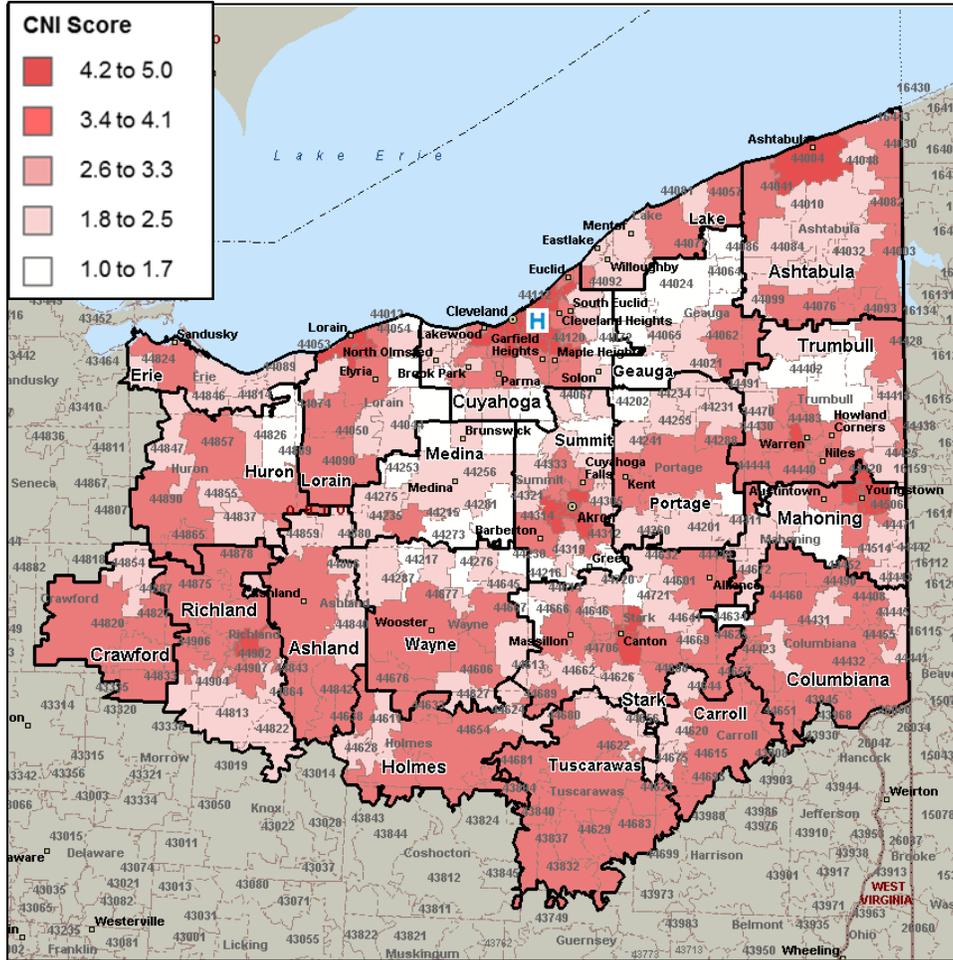
Dignity Health, a California-based hospital system, developed and has made widely available for public use a *Community Need Index*™ that measures barriers to health care access by county/city and ZIP code. The index is based on five social and economic indicators:

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

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

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

Exhibit 88: Community Need Index, 2015



Source: Microsoft MapPoint and Dignity Health, 2015.

The average CNI in the 21-County community was 3.0.

Food Deserts

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

Exhibit 89 illustrates the location of food deserts in the 21-County community.

Exhibit 89: Food Deserts



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

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

Medically Underserved Areas and Populations

Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an “Index of Medical Underservice.” The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.³² Areas with a score of 62 or less are considered “medically underserved.”

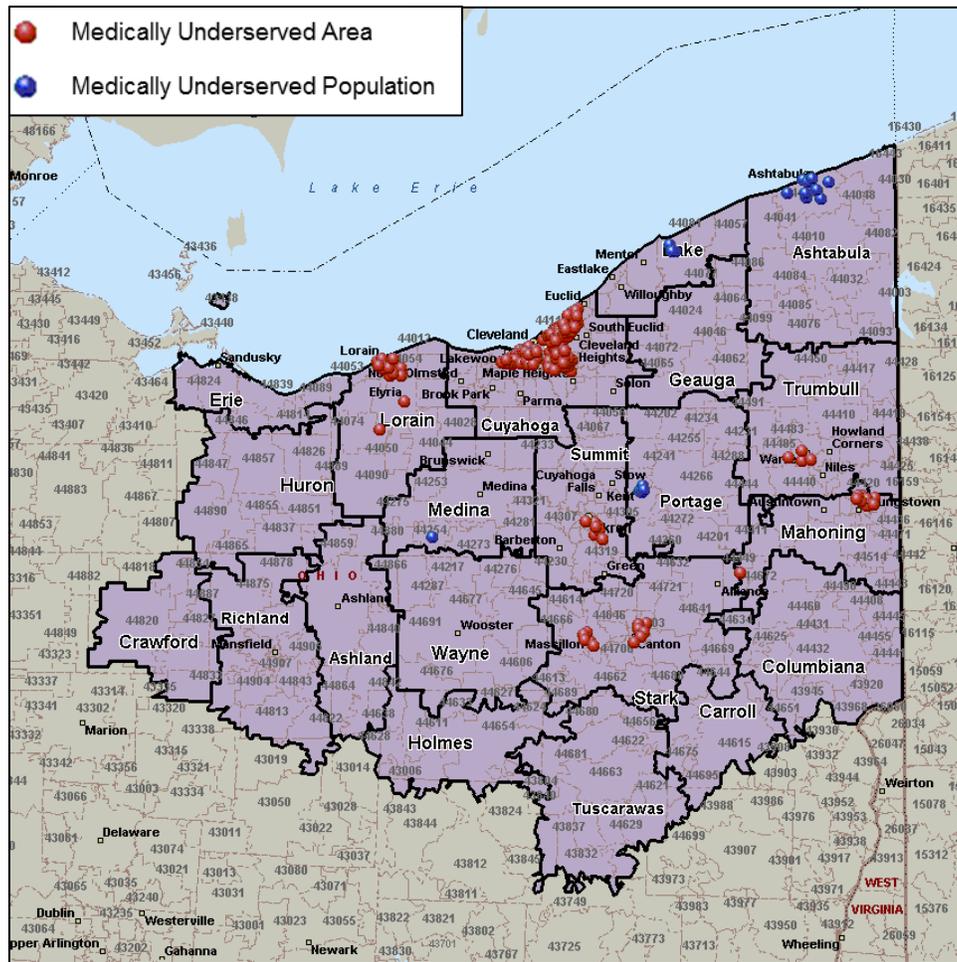
Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if “unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides.”³³

Medically Underserved Areas are present in Cuyahoga, Lorain, Mahoning, Stark, Summit, and Trumbull counties. Medically Underserved Populations are present in Ashtabula, Lake, Medina, and Portage counties (**Exhibit 90**).

³² Health Resources and Services Administration. See <http://www.hrsa.gov/shortage/mua/index.html>

³³ *Ibid.*

Exhibit 90: Medically Underserved Areas



Source: Microsoft MapPoint and HRSA, 2015.

Health Professional Shortage Areas

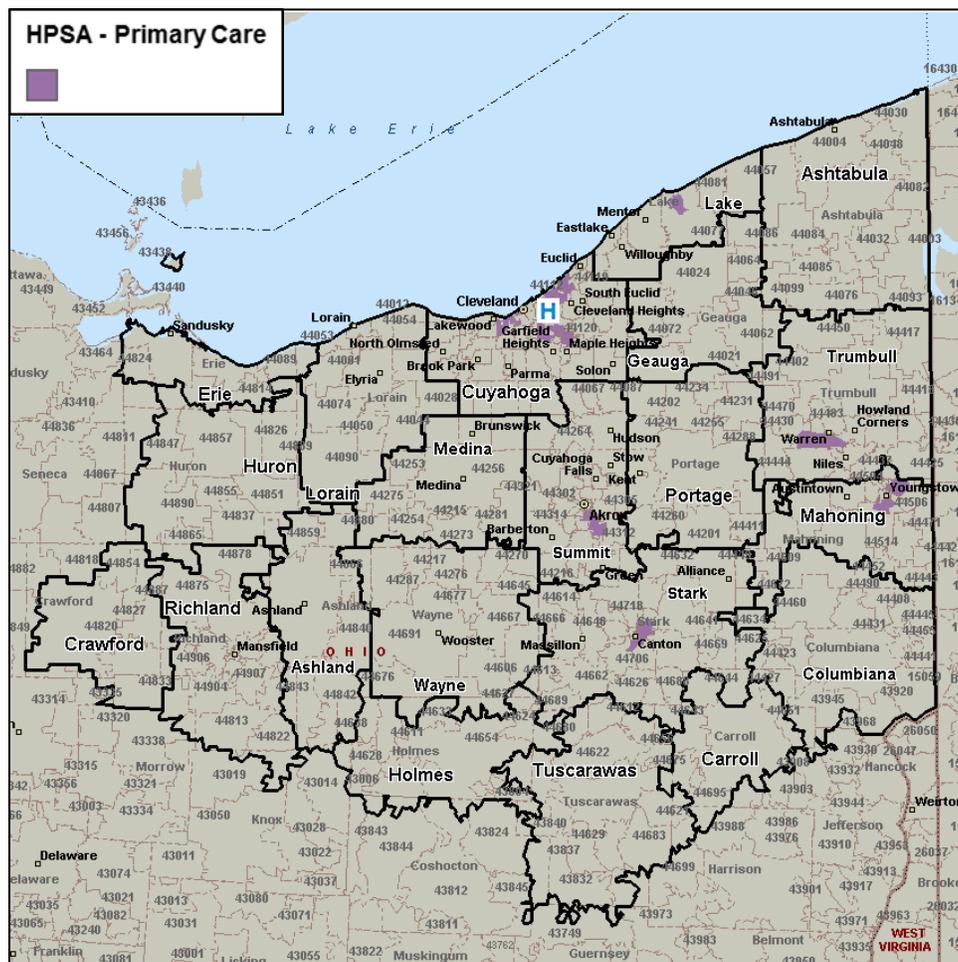
A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can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

HPSAs can be: “(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility.”³⁴

³⁴ U.S. Health Resources and Services Administration, Bureau of Health Professionals. (n.d.). *Health Professional Shortage Area Designation Criteria*. Retrieved 2012, from <http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/index.html>

Exhibit 91 illustrates the locations of the federally-designated HPSAs.

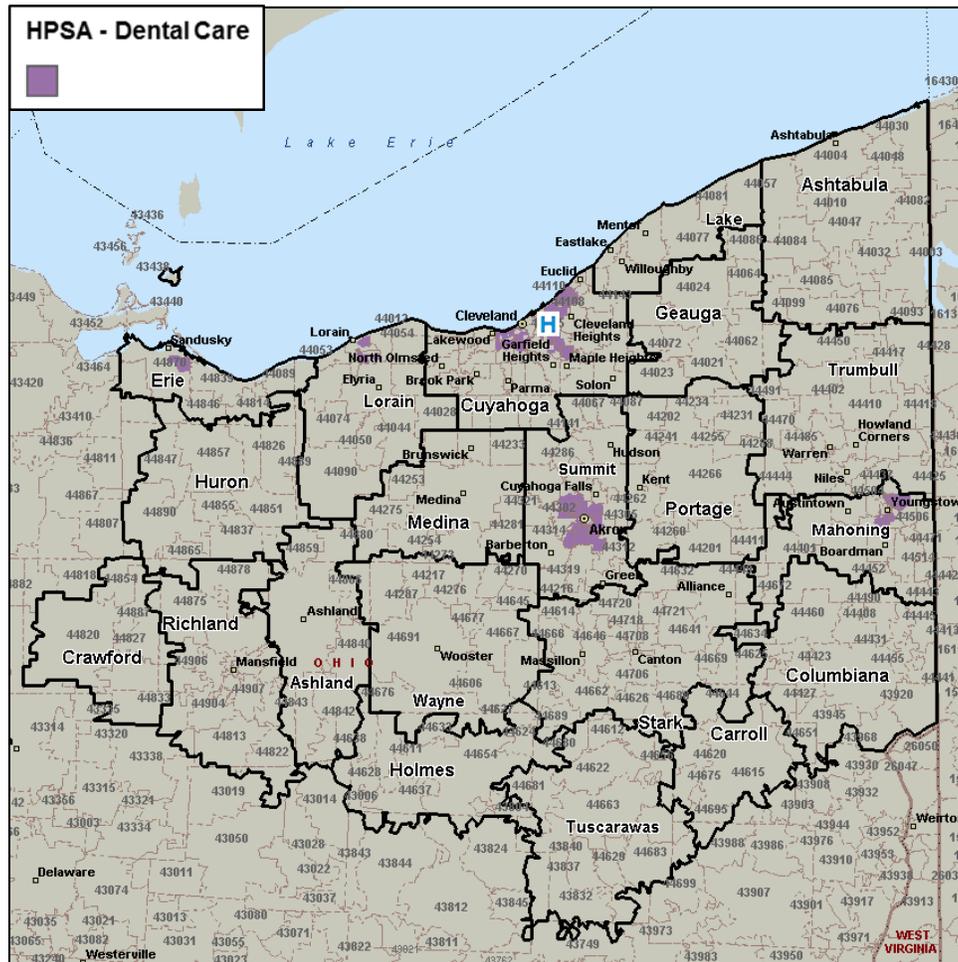
Exhibit 91A: Primary Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

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

Exhibit 91B: Dental Care Health Professional Shortage Areas



Source: Health Resources and Services Administration, 2015.

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

Findings of Other Community Health Needs Assessments

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

Other Community Assessments
Akron Children's Hospital CHNA 2013
Akron General Medical Center CHNA 2013
Alliance Community Hospital CHNA 2013
Ashtabula County CHIP 2014-2018
Aultman Hospital CHNA 2013
Aultman Orrville Hospital CHNA 2013
Fisher-Titus Medical Center Implementation Plan 2014
Geauga County CHA 2011
Health Improvement Partnership- Cuyahoga CHSA 2015
Lake County Community Health Assessment 2015
Lake Health CHNA 2013
Lorain County Health CNA 2015
Medina County CHIP 2013
Mercy Allen Hospital CHNA 2013
Mercy Medical Center CHNA 2013
Mercy Regional Medical Center CHNA 2013
Mercy Willard Hospital CHNA 2013
OhioHealth Mansfield Hospital CHNA 2014
OhioHealth Shelby Hospital CHNA 2014
Portage County CHNA 2015
Southwest General Health Center 2012
St. Vincent Charity Medical Center Implementation Plan 2013
Summa Health System CHNA 2013
Summit County CHIP 2015
UH Ahuja Medical Center CHNA 2015
UH Bedford Medical Center CHNA 2015
UH Case Medical Center CHNA 2015
UH Conneaut Medical Center CHNA 2015
UH Elyria Medical Center CHNA 2015
UH Geauga Medical Center CHNA 2015
UH Geneva Medical Center CHNA 2015
UH Parma Medical Center CHNA 2015
UH Rainbow Babies & Children's Hospital CHNA 2015
UH Rehabilitation Hospital CHNA 2015
UH Richmond Medical Center CHNA 2015
UH St. John Medical Center CHNA 2015
Wooster Community Hospital CHNA 2013

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

APPENDIX D – 21-COUNTY COMMUNITY SECONDARY DATA ASSESSMENT

The significant needs identified by these reports are presented in **Exhibit 92**.

Exhibit 92: Significant Needs Identified in Other CHNAs

Significant Need	Frequency
Obesity	34
Mental/Behavioral health	29
Diabetes	25
Access to basic/primary health care	24
Drug/ substance abuse	24
Cardiovascular/ heart disease	22
Tobacco use/ smoking	22
Cancer	18
Alcohol abuse and excessive drinking	17
Elderly care/ aging population	17
Infant mortality (disparities)	16
Access/lack of health insurance coverage	15
Nutrition/ access to healthy food	15
Access to dental care	14
Access to mental health services	14
Cost of care	13
Physical inactivity/lack of exercise	13
Asthma/childhood asthma	11
Transportation	11
Poverty	10
Unemployment	10
Drug/ substance abuse (youth)	9
Respiratory diseases	9
Health education	7
Violence	7
Alzheimer's disease	6
Preventive care (immunizations, screenings, etc.)	6
Drug abuse- opioids/heroin	5
Drug abuse- prescriptions	5
Health disparities/ equity	5
Teenage pregnancy/ births	5
Tobacco use during pregnancy	5
Violence (youth)	5
Access to prescription drugs/cost	4
Access to substance abuse care	4
Hypertension	4
Chronic stress	3
Food deserts	3
Low birth weight	3
Premature births	3
Pre-term births	3
Uninsured and underinsured populations	3

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

APPENDIX E – OHIO DATA ASSESSMENT

America’s Health Rankings

America’s Health Rankings is an annual report produced by the United Health Foundation, which assesses the health status of each state based on 62 indicators. **Exhibit 93** displays Ohio’s ranking for each indicator compared to the other 49 states.

Exhibit 93: America’s Health Rankings, 2015
 (Light grey shading indicates indicator in bottom half of states; Dark grey shading indicates in bottom quartile of states)

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

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

In 2015, Ohio ranked in the bottom quartile of states for 21 of the 62 health indicators. Between 2012 and 2015 rankings for 26 health indicators in Ohio worsened.

APPENDIX E – OHIO DATA ASSESSMENT

Behavioral Risk Factor Surveillance System

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 94: Ohio BRFSS, 2013

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

Question	Male	Female	White	Black	Hispanic	Aged 65+	Less than H.S. Diploma	<\$15,000	Ohio
Adults aged 18-64 who have any kind of health care coverage	81.4	85.2	85.8	72.9	69.7	N/A	64.7	65.9	83.3
Adults who are current smokers	24.1	22.6	22.8	25.6	24.1	9.7	41.2	37.3	23.4
Adults who are limited in any activities because of physical, mental, or emotional problems	19.8	21.2	20.9	19.2	15.3	26.8	31.6	42.3	20.6
Adults who have ever been told they have asthma	11.8	16.5	13.6	18.5	15.5	10.5	21.4	23.4	14.2
Binge drinkers (males having five or more drinks on one occasion, females having four or more drinks on one occasion)	22.5	12.1	17.3	13.0	28.6	4.0	15.1	14.5	17.1
During the past month, did you participate in any physical activities?	72.8	70.4	72.1	68.0	70.0	63.0	54.1	62.2	71.5
Ever told you had a heart attack (myocardial infarction)?	7.1	3.6	5.4	4.0	N/A	14.6	9.4	8.5	5.3
Ever told you had a stroke?	3.6	3.8	3.6	3.4	N/A	9.2	7.5	6.5	3.7
Ever told you had angina or coronary heart disease?	5.5	3.9	5.0	2.2	N/A	14.5	7.9	6.2	4.7
Frequent (14 or more days) bad mental health in the past month*	10.6	14.6	11.5	19.8	13.9	7.4	23.9	30.4	12.6
Adults who have ever been told they have asthma*	11.5	15.6	13.1	14.3	16.8	10.4	21.4	23.8	13.6
Ever told you have COPD?	7.7	8.9	8.5	7.7	N/A	14.2	16.9	18.3	8.3
Have you ever been told by a doctor that you have diabetes?	10.4	10.3	10.1	11.7	8.1	24.1	15.2	14.6	10.4
Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?	12.3	16.9	13.1	21.4	22.1	4.7	24.7	29.2	14.7

Source: CDC Behavioral Risk Factor Surveillance System, 2013.

* indicates data is from 2011 BRFSS report.

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A State Health Assessment also recently was published by the Ohio Department of Health.³⁵ The State Health Assessment (SHA) is a comprehensive report directed by a steering committee comprised of directors of Ohio's health-related state agencies. The Ohio Department of Health contracted with the Health Policy Institute of Ohio to facilitate preparation of the assessment. The purpose of the SHA is both to provide a template for state agencies and local partners for analysis as well as inform the identification and prioritization of community health needs for the State Health Improvement Plan (SHIP).

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

- The average number of days Ohio residents experienced limited activity due to mental or physical difficulties increased 17 percent between 2013 and 2014.
- Over the same period, adult asthma, child asthma, and diabetes also increased by 10 percent.
- Drug overdose deaths increased 18 percent and were significantly higher in Ohio than the United States (24.7 per 100,000 compared to 14.6).
- Infant mortality also is a significant issue in Ohio, and is particularly problematic for black and Hispanic (or Latino) infants.
- Ohio ranks particularly poorly for the number mothers who smoke during pregnancy. Only 59 percent of black mothers in Ohio receive prenatal care in the first trimester, compared to 70.8 percent in the U.S. overall.
- Per-capita health spending has been higher in Ohio than in other states.
- The percentage of hospital inpatients with opiate-related diagnoses increased substantially from 2012 to 2014 (from 25.2 percent to 37.0).
- Ohio has experienced rates of avoidable emergency department visits for Medicare beneficiaries, admissions for pediatric asthma, and admissions for diabetes long-term complications that exceed United States averages.
- Access to mental health services and drug treatment services is particularly problematic, and a comparatively high percentage of Ohio residents live in areas underserved for dental care.
- Ohio has 9.9 public health agency staff per 100,000, a number substantially below the national average of 30.6.
- Infection rates for a number of communicable diseases exceed national averages, including chlamydia. The state's child immunization and HPV vaccination rates have been below average.
- Based on national comparisons, other concerns with children are also present in Ohio, including: childhood poverty rates, number of children in single-parent households, percent of children with adverse childhood experiences, and children exposed to secondhand smoke.
- There are also significant needs related to the physical environment in Ohio. The average amount of particulate matter and cases of lead poisoning are both higher in Ohio than the

³⁵ Available at: <http://www.healthpolicyohio.org/sha-ship/>

APPENDIX E – OHIO DATA ASSESSMENT

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

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

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

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

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

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

APPENDIX F – NATIONAL DATA ASSESSMENT

National Physician Shortage

Recent projections compiled by the Association of American Medical Colleges (AAMC) suggest that the demand for physicians and medical professionals is growing faster than supply. By 2025, the AAMC projects a national shortage of between 46,100 and 90,400 physicians. From 2013 to 2015, the number of physicians is expected to increase by 9 percent if labor force patterns remain unchanged. However, over the same time period the demand for new physicians is projected to grow between 11 and 17 percent. This national shortage also varies across physician type. While there is an expected shortage in primary care physicians of 12,500 to 31,100, the demand for non-primary care physicians will exceed supply by between 28,200 and 63,700 physicians. The physician shortage is expected to be greatest in surgical specialties with little projected growth in the supply of surgeons and limitations on the ability to bolster this staff with other types of clinicians.³⁶ While the AAMC acknowledges the difficulty of projections, the organization states that the rapid aging of the baby boomer generation and resulting demand on the physician workforce necessitates additional research into the projected shortage.³⁷

In 2014, Ohio had 279.8 active physicians per 100,000 residents, higher than the national rate of 265.5 active physicians per 100,000 residents. For primary care physicians, Ohio had a rate of 93.0 physicians per 100,000 residents compared the 91.1 nationally.³⁸ The Robert Graham Center projects that by 2030; Ohio will need an 8 percent increase in its primary care physician workforce to maintain its current rates of utilization, or 681 additional physicians. This increase is the result of an aging population and an increasingly insured population after the passage of the Affordable Care Act.³⁹

Healthy People 2020 Leading Health Indicators

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

Exhibit 95 displays national averages for each of the 26 Healthy People 2020 objectives.

³⁶ AAMC 2015.

³⁷ Grover et. al. 2016.

³⁸ AAMC, 2015 State Physician Workforce Data Book.

³⁹ Robert Graham Center, 2013.

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Exhibit 95: Healthy People 2020 Leading Indicators
(Cells are shaded if indicator does not meet Healthy People 2020 target)

Leading Health Topic and Indicator	Baseline Data Year	Baseline Data	Most Recent Data Year	Most Recent Data	HP2020 Target
Access to Health Services					
Persons with medical insurance (percent, <65 years)	2008	83.2%	2012	83.1%	100.0%
Persons with a usual primary care provider (percent)	2007	76.3%	2011	77.3%	83.9%
Clinical Preventive Services					
Adults receiving colorectal cancer screening based on most recent guidelines (age adjusted, percent, 50–75 years)	2008	52.1%	2010	59.2%	70.5%
Adults with hypertension whose blood pressure is under control (age adjusted, percent, 18+ years)	2005–08	43.7%	2009–12	48.9%	61.2%
Persons with diagnosed diabetes whose A1c value is >9 percent (age adjusted, percent, 18+ years)	2005–08	17.9%	2009–12	21.0%	16.1%
Children receiving the recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella and PCV vaccines (percent, aged 19–35 months)	2009	44.3%	2011	68.5%	80.0%
Environmental Quality					
Air Quality Index (AQI) exceeding 100 (number of billion person days, weighted by population and Air Quality Index value)	2006–08	2.2	2009–11	1.3	2.0
Children exposed to secondhand smoke (percent; nonsmokers, 3–11 years)	2005–08	52.2%	2009–12	41.3%	47.0%
Injury and Violence					
Injury deaths (age adjusted, per 100,000 population)	2007	59.7	2010	57.1	53.7
Homicides (age adjusted, per 100,000 population)	2007	6.1	2010	5.3	5.5
Maternal, Infant, and Child Health					
Infant deaths (per 1,000 live births, <1 year)	2006	6.7	2010	6.1	6.0
Total preterm live births (percent, <37 weeks gestation)	2007	12.7%	2012	11.5%	11.4%
Mental Health					
Suicide (age adjusted, per 100,000 population)	2007	11.3	2010	12.1	10.2
Adolescents with major depressive episodes (percent, 12–17 years)	2008	8.3%	2012	9.1%	7.5%
Nutrition, Physical Activity, and Obesity					
Adults meeting aerobic physical activity and muscle-strengthening Federal guidelines (age adjusted, percent, 18+ years)	2008	18.2%	2012	20.6%	20.1%
Obesity among adults (age adjusted, percent, 20+ years)	2005–08	33.9%	2009–12	35.3%	30.5%
Obesity among children and adolescents (percent, 2–19 years)	2005–08	16.1%	2009–12	16.9%	14.5%
Mean daily intake of total vegetables (age adjusted, cup equivalents per 1,000 calories, 2+ years)	2001–04	0.8	2007–10	0.8	1.1
Oral Health					
Persons who visited the dentist in the past year (age adjusted, percent, 2+ years)	2007	44.5%	2011	41.8%	49.0%
Reproductive and Sexual Health					
Sexually experienced females receiving reproductive health services in the past 12 months (percent, 15–44 years)	2006–10	78.6%	-	-	86.5%
Knowledge of serostatus among HIV-positive persons (percent, 13+ years)	2006	80.9%	2010	84.2%	90.0%
Social Determinants					
Students awarded a high school diploma 4 years after starting 9th grade (percent)	2007–08	74.9%	2009–10	78.2%	82.4%
Substance Abuse					
Adolescents using alcohol or illicit drugs in past 30 days (percent, 12–17 years)	2008	18.4%	2012	17.4%	16.6%
Binge drinking in past 30 days—Adults (percent, 18+ years)	2008	27.1%	2012	27.1%	24.4%
Tobacco					
Adult cigarette smoking (age adjusted, percent, 18+ years)	2008	20.6%	2012	18.2%	12.0%
Adolescent cigarette smoking in past 30 days (percent, grades 9–12)	2009	19.5%	2011	18.1%	16.0%

Source: Healthy People 2020, 2016.

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

Exhibit 96 displays select national health care access indicators.

Exhibit 96: Health, United States, Select Access Indicators, 2015

	Baseline Data Year	Baseline Data	Most Recent Data Year	Most Recent Data	Trend
Health Care Utilization					
No health care visit in past 12 months, percent					
Under 18 years	2000	12.3	2014	7.9	↓
18–44 years	2000	23.4	2014	23.2	
45–64 years	2000	14.9	2014	15.0	↓
65 years and over	2000	7.4	2014	5.6	
Emergency room visit in past 12 months, percent					
Under 18 years	2000	20.3	2014	16.7	
18–44 years	2000	20.5	2014	18.4	
45–64 years	2000	17.6	2014	17.5	
65 years and over	2000	23.7	2014	21.2	
Dental visit in past year, percent					
2–17 years	2000	74.1	2014	83.0	
18–64 years	2000	65.1	2014	62.0	↓
65 years and over	2000	56.6	2014	62.4	
Hospitalization in past year, percent					
18–44 years	2000	7.0	2014	5.8	
45–64 years	2000	8.4	2014	7.4	
65 years and over	2000	18.2	2014	15.3	
Health Insurance and Access to Care					
Uninsured, percent					
Under 65 years	2000	17.0	2014	13.3	
Under 18 years	2000	12.6	2014	5.4	
18–44 years	2000	22.4	2014	19.7	
45–64 years	2000	12.6	2014	11.8	
Delay or nonreceipt of needed medical care in past 12 months due to cost, percent					
Under 18 years	2000	4.6	2014	2.8	
18–44 years	2000	9.5	2014	10.7	↓
45–64 years	2000	8.8	2014	11.7	↓
65 years and over	2000	4.5	2014	4.3	
Health Care Resources					
Patient care physicians per 10,000 population	2000	22.7	2013	27.6	
Community hospital beds per 1,000 population	2000	2.9	2013	2.5	↓
Health Care Expenditures					
Personal health care expenditures, in dollars					
Total, in trillions	2000	\$1.20	2014	\$2.60	↓
Per capita	2000	\$4,121	2014	\$8,054	↓

Source: Centers for Disease Control and Prevention, 2015.

‘↓’ indicates indicator has worsened.

Since 2000, eight of the 26 select indicators for health care access worsened. Although the uninsured rate has dropped for every age group, the percent of persons aged 18-44 and 45-64 who delayed or did not receive needed medical due to cost has increased. Personal health care

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expenditures have also increased significantly since 2000; per capita health care spending has nearly doubled.

Exhibit 97 displays select national morbidity and mortality rates.

Exhibit 97: Health, United States, Select Morbidity and Mortality Indicators, 2015

	Baseline Data Year	Baseline Data	Most Recent Data Year	Most Recent Data	Trend
Life Expectancy and Mortality					
Life expectancy, in years					
At birth	2000	76.8	2014	78.8	
Infant deaths per 1,000 live births					
All infants	2000	6.9	2014	5.8	
Deaths per 100,000 population, age-adjusted					
All causes	2000	869.0	2014	724.6	
Heart disease	2000	257.6	2014	167.0	
Cancer	2000	199.6	2014	161.2	
Chronic lower respiratory diseases	2000	44.2	2014	40.5	
Unintentional injuries	2000	34.9	2014	40.5	↓
Stroke	2000	60.9	2014	36.5	
Alzheimer's disease	2000	18.1	2014	25.4	↓
Diabetes	2000	25.0	2014	20.9	
Influenza and pneumonia	2000	23.7	2014	15.1	
Nephritis, nephrotic syndrome and nephrosis	2000	13.5	2014	13.2	
Suicide	2000	10.4	2014	13.0	↓
Morbidity and Risk Factors					
Fair or poor health, percent					
All ages	2000	8.9	2014	9.8	↓
65 years and over	2000	26.9	2014	21.7	
Heart disease (ever told), percent					
18 years and over	2000–2001	11.3	2013–2014	11.5	↓
65 years and over	2000–2001	30.9	2013–2014	29.4	
Cancer (ever told), percent					
18 years and over	2000–2001	5.0	2013–2014	6.4	↓
65 years and over	2000–2001	15.2	2013–2014	18.2	↓
Hypertension, percent					
20 years and over	1999–2002	30.2	2011–2014	33.0	↓
Diabetes, percent					
20 years and over	1999–2002	9.8	2011–2014	12.6	↓
Hypercholesterolemia, percent					
20 years and over	1999–2002	25.0	2011–2014	29.8	↓
Obese, percent					
Obese, 20 years and over	1999–2002	30.5	2011–2014	36.5	↓
Obese (BMI at or above sex- and age-specific 95th percentile):					
2–5 years	1999–2002	10.3	2011–2014	8.9	
6–11 years	1999–2002	15.9	2011–2014	17.5	↓
12–19 years	1999–2002	16.0	2011–2014	20.5	↓
Cigarette smoking, percent					
18 years and over	2000	23.2	2014	16.8	
Aerobic activity and muscle strengthening, percent meeting both guidelines					
18 years and over	2000	15.1	2014	20.9	

Source: Centers for Disease Control and Prevention, 2015.

‘↓’ indicates indicator has worsened

Chronic diseases have become increasingly problematic in the United States since 2000. Rates of health disease, cancer, hypertension, diabetes, high cholesterol, and obesity have all increased

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in recent years. Of the nation's top ten leading causes of death, rates of unintentional injuries, Alzheimer's disease, and suicide have increased between 2000 and 2014.

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Reviewing national health statistics, the Centers for Disease Control and Prevention has identified the following as the nation's Public Health Priorities in 2015:

- Healthcare-associated infections
- HIV
- Motor vehicle injuries
- Nutrition, physical activity, and obesity
- Teen pregnancy
- Tobacco use

APPENDIX G – COMMUNITY INPUT PARTICIPANTS

Individuals from a wide variety of organizations and communities participated in the interview process (shown in **Exhibit 98**). Organizations listed in italics indicate that the interviewee has public health expertise.

Exhibit 98: Interview Participants

Organization	Description	Populations Represented
<i>ADAMHSCC</i>	Alcohol, drug addiction, and mental health services	Mentally ill, substance abuse
American Association for Physician Leadership	Organization for physician leadership, education, and certification	General population
American Heart and Stroke Association	National voluntary health agency	General population
Antioch Baptist Church	Faith-based organization	Low-income, minority populations
<i>Better Health Partnership</i>	Multi-stakeholder regional health care improvement collaborative	General population
Boys & Girls Clubs	Nonprofit youth organization	Youth
Center for Community Solutions	Nonpartisan think tank focused on solutions to health, social and economic issues	General population, low-income
<i>Center for Health Affairs</i>	Leading advocate for Northeast Ohio hospitals	General population
<i>Cleveland Foundation</i>	Community foundation	General population
Cleveland Heights/University Heights Schools	School system	Youth, students
Cleveland Metropolitan School District	School system	Youth, students
Cleveland Neighborhood Progress	Local community development intermediary	General population
<i>Cuyahoga County Board of Health</i>	County board of health	General population
Cuyahoga Metropolitan Housing Authority	Metropolitan Housing Authority	Low-income
<i>CWRU Prevention Research Center</i>	Research center at Case Western Reserve Medical School	Low income, disadvantaged populations
Esperanza	Ohio's only nonprofit organization dedicated to the promotion and advancement of Hispanic educational achievement	Minority populations, youth
Gathering Place	Cancer support organization	General population
Greater Cleveland Food Bank	Food bank	Low-income
<i>Greater Cleveland NAMI</i>	Mental health agency	Mentally ill
<i>Kent State School of Public Health and Center for Community Solutions</i>	Ohio university school of public health	General population
<i>Lorain County Department of Health</i>	County health department	General population
Mt Sinai Foundation	Cleveland medical center	Jewish community, urban community, general population
Ohio Hospital Association	Nonprofit state-level hospital association	General population
Ohio Legislature	State government	General population
Ohio University Heritage College of Osteopathic Medicine	Medical school	General population
St. Luke's Foundation	Nonprofit community health organization	Low-income, general population
The Catholic Health Association	Largest group of nonprofit health care providers in the nation	Aging population, minority populations, low-income
The Centers (for families and children)	Social services organization	Low income, youth, mentally ill

APPENDIX H – ACTIONS TAKEN SINCE THE PREVIOUS CHNA

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 related action items from our 2013 CHNA Implementation Strategy are described below with representative impacts.

1. Identified Need: Chronic Diseases and Health Conditions, Heart Related Diseases

Action: Cleveland Clinic has been ranked America's number one center for cardiac care since 1995 by U.S. News and World Report. The Miller Family Heart & Vascular Institute at Cleveland Clinic is the largest in the United States and one of the largest cardiovascular and thoracic specialty groups in the world treating patients with heart, vascular, thoracic, and esophageal conditions.

The Heart and Vascular Institute includes over 200 staff physicians, 110 residents, and 1200 full time nurses dedicated to the treatment of cardiovascular medicine, cardiovascular and thoracic surgery, and related services. In addition to conditions affecting the heart and chest, Miller Family Heart & Vascular Institute at Cleveland Clinic also treats abdominal aortic aneurysms, carotid artery disease, venous disease, among other diseases and conditions.

The Heart and Vascular Institute's Section of Preventive Cardiology and Rehabilitation continues to offer a multidisciplinary approach to preventing the occurrence or progression of cardiovascular disease: nutritional services, prescriptive exercise programs, stress testing, multiple cardiovascular risk reduction programs, peripheral vascular rehabilitation program in collaboration with Vascular Medicine, comprehensive cardiovascular care for women, and educational programs for patients and healthcare providers.

Highlighted Impact:

- Cleveland Clinic was ranked America's number one center for heart care in for 22 years by U.S. News and World Report Honor Roll 2016-17.
- The Cleveland Clinic health system reduced heart failure 30 day readmission rates from 2013 through 2015.
- The Cleveland Clinic's Minority Men's Health Fair (2013 – 2015) provided education and screenings for blood pressure, nutrition, exercise, hypertension, cardiac risk factors, and more, to over 4,000 community members.

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- The Celebrate Sisterhood community education event highlighted Heart and Vascular Institute’s preventative cardiologist and information relative to women and heart disease as key issues in the community. Heart health screenings and education were provided.

2. Identified Need: Chronic Disease and Health Conditions, Diabetes

Action: Cleveland Clinic Endocrinology & Metabolism Institute’s Diabetes Center continues to help diabetic patients treat and manage diabetes and its long term complications, including eye problems, high blood pressure, and poor blood flow. The Diabetes Center was established in 2010 and education visits have steadily increased. In 2013, U.S. News and World Report ranked Cleveland Clinic second in the nation for Diabetes and Endocrinology care for the second year in a row. The Institute’s physicians and scientists continue to research new treatments for diabetes and the effects of bariatric surgery on diabetes.

Highlighted Impact:

- In 2016, U.S. News and World Report ranked Cleveland Clinic third in the nation for Diabetes and Endocrinology care.
- From 2013 through 2015, the Stephanie Tubbs Jones Health Center Lennon Diabetes Center provided education in diabetes self-management and associated chronic diseases to 2,350 community members. In addition, over 18 support groups were provided, reaching 400 residents.

3. Identified Need: Chronic Disease and Health Conditions, Adult Asthma

Action: Cleveland Clinic’s Asthma Center continues to offer advanced diagnostic testing and innovative treatments for adults and children with asthma. The Center brings together physicians from various departments to provide patients with state-of-the-art diagnostic and treatment services and new treatments through medication and clinical trials.

Highlighted Impact:

- Cleveland Clinic sponsored a 2014 Lung Health Day to increase awareness of asthma and lung diseases for Main Campus community members.
- Cleveland Clinic partnered with American Lung Association to provide health education at Boys and Girls Club of Cleveland, Lung Health and Family Wellness Day 2014.
- Cleveland Clinic conducted an assessment of patients presenting in the Main Campus emergency department. The data was used to help inform our Asthma Care Network, the first chronic disease pilot through clinical transformation.

4. Identified Need: Chronic Disease and Health Conditions, Obesity

Action: In 2011, Cleveland Clinic Bariatric & Metabolic Institute marked its seventh anniversary and continued to be accredited as a designated Bariatric Surgery Center of Excellence by the American Society for Metabolic & Bariatric Surgery and the Surgical Review Corporation. It has also been accredited as a Level 1 facility by the Bariatric

APPENDIX H – ACTIONS TAKEN SINCE THE PREVIOUS CHNA

Surgery Center Network (BSCN) Accreditation Program of the American College of Surgeons.

Highlighted Impact:

- Cleveland Clinic Department of Endocrinology, Diabetes, and Metabolism continues to provide treatment strategies to combat obesity: dietary modification, exercise, preventive measures, medication, and surgery
- The Cleveland Clinic Wellness Institute partnered with local schools, grocery stores, and nonprofit organizations to promote the healthy food choices, informing the community of nutritious foods that follow healthy-eating guidelines established by Cleveland Clinic experts.

5. Identified Need: Wellness

Action: Cleveland Clinic continues to offer outreach programs and community health talks to educate the community on a variety of topics 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 offers chronic disease management classes, farmers markets, urban gardens, neighborhood cooking classes, and walking programs throughout its community, at its main campus and family health centers. For example, Langston Hughes Wellness and Education Center in Fairfax offers daily wellness classes from Cleveland Clinic health professionals at no charge to community residents. In addition, Cleveland Clinic collaborates with local schools and businesses to implement programs to decrease childhood and adult obesity and communicates with patients and community residents through newsletters, social media, and healthcare advocacy groups to provide additional tools for health promotion.

Highlighted Impact:

- Cleveland Clinic's Outreach provided over 50 programs to 875 community residents on the issues of exercise, nutrition, and stress management through the six week You Change You education series. Early indicators reveal residents achieving weight loss and tobacco cessation goals.
- The Langston Hughes Wellness and Education Center in Fairfax provided preventive wellness classes, health screenings and physical assessments with attendance totally 6,524 community members from 2013 – 2015.
- In 2015, the Clinic conducted its bi-annual health challenges in Cleveland's Fairfax, Glenville, and Hough communities with 321 number of residents completing six-week health challenges and vying for the neighborhood trophy.

6. Identified Need: Specialty Care and Transfer Services

Action: Cleveland Clinic continues to use Mobile ICU, helicopter and jet services to support critically ill and injured patients throughout the nation and around the world. The units are staffed according to the needs of the patient. The Critical Care Transport team makes over 4500 transports a year on average and has transported patients from over 40 states and 20 countries.

Highlighted Impact:

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- The Critical Care Transport Team provided more than 5,600 transports a year, reaching 46 states and 28 countries.
- The Critical Care Transport team continues to provide clinical lectures and programs to physicians, nurses, EMS personnel, and first responders.

7. Identified Need: Access to Health Services

Action and Highlighted Impact: Access to Medically Necessary Care.

Cleveland Clinic 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 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 Cleveland Clinic.

Highlighted Impact:

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

Cleveland Clinic is continually working to improve its scheduling and support service model to provide consistent experience, improve metrics, and increase efficiency including providing Internet scheduling, accelerating technology implementation, and scheduling training. Cleveland Clinic commenced an ongoing effort to add call support personnel at its Institutes to support the call volume and improve access to care.

Highlighted Impact:

- In 2015, more than 3000 patients accessed providers through a virtual visit on their mobile device or computer.
- Over 4,500 shared medical appointments were provided in 2015, bringing together patients with common conditions.

Cleveland Clinic continually strives to improve patient's access to care by opening family health centers in its regional community (e.g., Stephanie Tubbs Jones Health Center in East Cleveland, Richard E. Jacobs Family Health Center in Avon and Twinsburg Family Health Center opened in 2011).

Cleveland Clinic has created a "Patient-Centered Medical Home" (PCMH) in Internal Medicine and Family Medicine to enhance chronic disease management and prevention and patients' relationship with and access to their physician. PCMP is a model of care, a value-based healthcare concept, where patients have a direct relationship with a provider who coordinates a cooperative team of healthcare, whether a patient is at the doctor's office, hospitalized or recuperating at home, through ongoing preventative care. The physician lead team offers consistent, coordinated care and communication among caregivers and the patient, and arranges for specialty care whenever needed. Caregivers that may be included: Primary Care or Specialty Physicians, Community Based Providers, Nurse Practitioners, Physician Assistants, Medical Assistants, Registered Nurses, Care Coordinators and Pharmacists. PCMH focuses on encouraging healthy behavior, providing a proactive "care pathway" for illnesses and procedures and increasing quality of health.

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Cleveland Clinic continues to use a split-flow model for its main campus Emergency Department shortening the time to physician and overall length of stay and placing patients in areas devoted to their unique needs to improve length of stay, patient satisfaction, and outcomes.

Highlighted Impact:

- Since 2013, the split –flow model in Cleveland Clinic health system Emergency Departments resulted in shortened wait times for patients.

8. Identified Need: Research

Action: Research continues to be conducted throughout Cleveland Clinic and its Main Campus. Physicians and scientists in the Lerner Research Institute (“LRI”) engage in laboratory-based, translational, and clinical research. LRI approves all clinical trials conducted throughout Cleveland Clinic and health system and its goal is to understand the underlying causes of human diseases and to develop new treatments and cures. Basic science researchers at LRI collaborate with physicians to facilitate bench-to-bedside science and accelerate discoveries that have a direct impact on patient care.

Research programs focus on eight types of diseases: cardiovascular, cancer, neurologic, musculoskeletal, allergic, and immunologic, eye, metabolic, and infectious diseases. Genomic medicine and personalized healthcare are newly established areas of expertise that are expected to revolutionize the way we prevent and treat disease. An entire department dedicated to quantitative sciences uses technology to expedite research and improve the health care process.

Approximately 2,000 people work in 13 departments at LRI. In 2012, Cleveland Clinic scientists conducted more than 2,000 clinical trials and generated 83 invention disclosures, 10 new licenses, and 35 patents.

Highlighted Impact:

- Cleveland Clinic health system conducts clinical research activities throughout the system, including regional hospitals. In 2015, Cleveland Clinic scientists conducted more than 2,000 clinical trials and generated 54 invention disclosures, 14 new licenses, and 76 patents.
- Research in heart related diseases, cancer, obesity, diabetes, respiratory diseases, aging, poor birth outcomes, and children’s issues continue throughout the Cleveland Clinic health system.
- Current research examples include: discovery of chemical (TMAO) as a powerful predictor of future heart disease, development of a promising preventive breast cancer vaccine, and identification of a critical regulator in the pathways that lead to obesity –associated inflammatory diseases.

9. Identified Need: Education, Physician Shortage

Action: Cleveland Clinic continues to educate physicians, residents, and medical students throughout Main Campus. For example, the Education Institute hosts continuing medical education classes, grand rounds, and over 60 accredited residency programs. In addition, Cleveland Clinic established Cleveland Clinic Lerner College of Medicine of

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Case Western Reserve University (CCLCM) in partnership with Case Western Reserve University in 2002. CCLCM is a unique 5-year medical school training physicians interested in medical research that sets standards for the training of physician investigators through innovative approaches to the integration of basic science, research, and clinical medicine. CCLCM enrolled its first students in 2004 and accepts 32 students each year. Cleveland Clinic grants full scholarships for all its students.

Cleveland Clinic also educates independent community physicians throughout Northeast Ohio. Cleveland Clinic's Quality Alliance works to integrate the affiliated independent physicians with Cleveland Clinic employed physicians to improve efficiency, safety, clinical quality, clinical processes, and outcomes delivered to patients in Northeast Ohio. The Quality Alliance will continue to refine clinical metrics, measure, and report protocols, and recruit additional physicians.

Highlighted Impact:

- Cleveland Clinic and all regional hospitals provide education of medical professions. In 2015, Cleveland Clinic trained over 1,700 residents and fellows, and provided over 1,800 student rotations in 65 allied health education programs.
- The Ohio University Heritage College of Osteopathic Medicine on Cleveland Clinic South Pointe Campus was completed in May 2015. The college welcomed its first class of 51 students in July 2015.

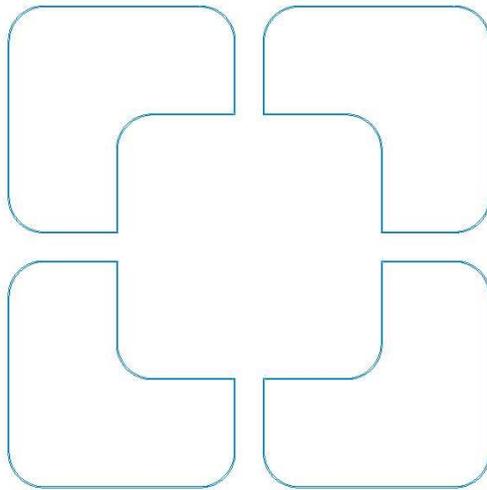
10. Identified Need: Education, Community Education

Action: Through its Global Leadership Academy, Cleveland Clinic continues to offer healthcare leadership development and management training to non-affiliated healthcare executives. Cleveland Clinic Main Campus continues to offer team building activities to healthcare professionals through its Center for Multidisciplinary Simulation.

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

Highlighted Impact:

- Cleveland Clinic's distance learning program for K-12, Worldwide Classroom, leverages technology to promote health and wellness, academic achievement, and career preparedness. The program engaged 4,610 students from Ohio and 5 other states from 2013 through 2015.
- Cleveland Clinic's eXpressions educational initiative reached over 4,021 high school students from 47 schools in 2013- 2015 with its programming in the exploration of science and medicine.
- Cleveland Clinic provided workforce development opportunities to over 445 of NEO Ohio high school students in 2013 through 2015 through its nine-week Summer Internship Program which focuses on health care career mentoring.



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