Cleveland Clinic
Avon Hospital

Community Health
Needs Assessment
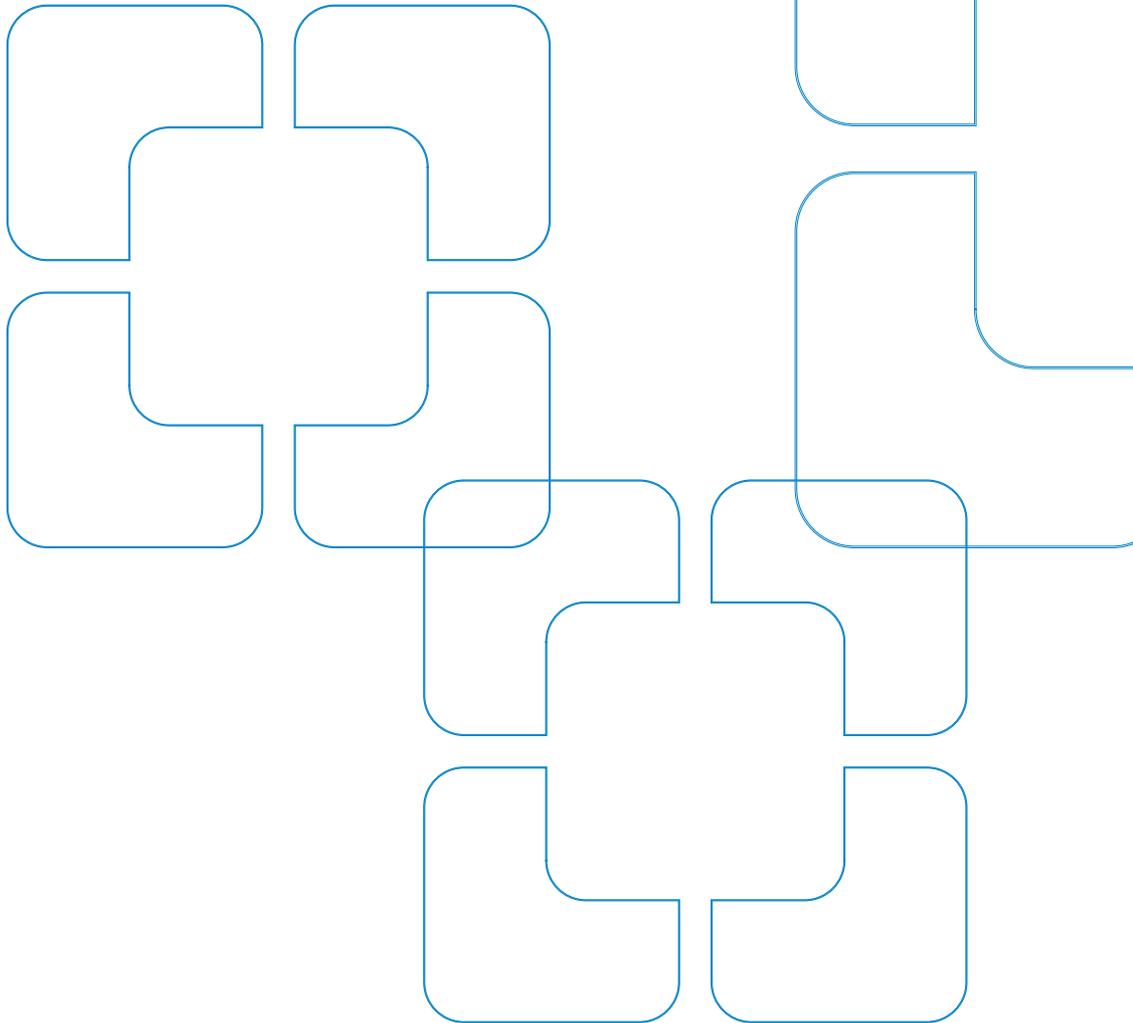
2019

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EXECUTIVE SUMMARY

Introduction

This Community Health Needs Assessment (CHNA) was conducted by Cleveland Clinic Avon Hospital (Avon or "the hospital") to identify significant community health needs and to inform development of an Implementation Strategy to address current needs.

Avon is a newly constructed hospital which opened in November 2016. It operates 126 staffed hospital beds and a 24-hour Emergency Department featuring board-certified, emergency medicine physicians available around-the-clock to provide comprehensive care to adults and children. Avon Hospital provides a spectrum of services, from critical care, to cardiology, orthopaedic surgery and outpatient procedures. Additional information on the hospital and its services is available at: https://my.clevelandclinic.org/locations/avon-hospital/.

The hospital is part of the Cleveland Clinic health system, which includes an academic medical center near downtown Cleveland, eleven regional hospitals in northeast Ohio, a children's hospital, a children's rehabilitation hospital, five southeast Florida hospitals, and a number of other facilities and services across Ohio, Florida, and Nevada. Additional information about Cleveland Clinic is available at: https://my.clevelandclinic.org/.

Each Cleveland Clinic hospital supports a tripartite mission of patient care, research, and education. Research is conducted at and in collaboration with all Cleveland Clinic hospitals. Through research, Cleveland Clinic has advanced knowledge and improved community health for all its communities, from local to national, and across the world. This allows patients to access the latest techniques and to enroll in research trials no matter where they access care in the health system. Through education, Cleveland Clinic helps to train health professionals who are needed and who provide access to health care across Ohio and the United States.

Each Cleveland Clinic hospital also is dedicated to the communities it serves. Each Cleveland Clinic hospital conducts a CHNA in order to understand and plan for the current and future health needs of residents and patients in the communities it serves. The CHNAs inform the development of strategies designed to improve community health, including initiatives designed to address social determinants of health.

These assessments are conducted using widely accepted methodologies to identify the significant health needs of a specific community. The assessments also are conducted to comply with federal and state laws and regulations.

Community Definition

For purposes of this report, Avon's community is defined as 14 ZIP codes in Lorain, Cuyahoga, and Erie counties, Ohio, accounting for over 78 percent of the hospital's recent inpatient volumes. The community was defined by considering the geographic origins of the hospital's

discharges in calendar year 2017. The total population of Avon's community in 2017 was 360,706.

The following map portrays the community served by Avon.
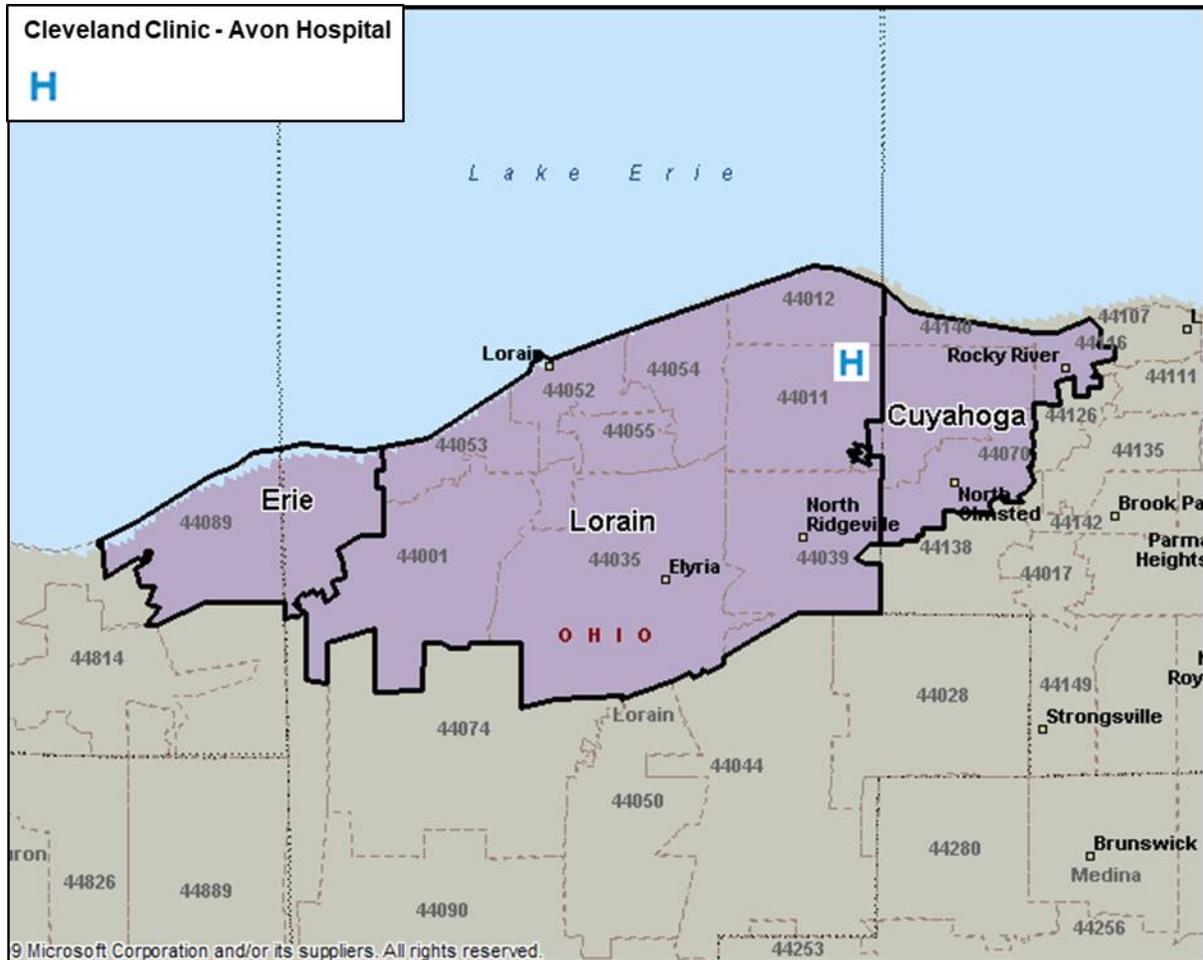
Significant Community Health Needs

Avon Hospital's significant community health needs as determined by analyses of quantitative and qualitative data are:

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

Significant Community Health Needs: Discussion

Access to Affordable Health Care

Access to affordable health care is challenging for some residents, particularly to primary care, mental health, dental care, addiction treatment services, and pain management services. Access barriers include cost, poverty, inadequate transportation, a lack of awareness regarding available services, and an undersupply of providers (mental health professionals, dentists, primary care physicians). The rate of providers in Lorain County is below the Ohio averages for each of these categories.

Two community ZIP codes (home to 48,000 persons) have been identified as comparatively high need by the Dignity Health Community Need Index™. In these ZIP codes, 17 percent of residents are Black, and the poverty rate is 30 percent (over twice the average in Lorain County). Admissions for ambulatory care sensitive conditions in these ZIP codes (and across the community) have been comparatively high.

Federally-designated Medically Underserved Areas (MUAs), Primary Care Health Professional Shortage Areas (HPSAs), and Dental Care HPSAs are present. The Avon community and Ohio as a whole need more health care professionals to meet current and future access needs.[1] The Lorain County CHIP also emphasized the need for expanding the coordination of health education and prevention services (Sources: Exhibits 4, 5, 25, 26, 36, 38, 39, 40, other assessments, key stakeholder interviews).

Addiction and Mental Health

Drug abuse, particularly the abuse of opioids, is a primary concern of many interviewees. Perceived over-prescribing of prescription drugs, poverty, and mental health problems were cited as contributing factors. Deaths due to "accidental poisoning by and exposure to drugs and other biological substances" have been increasing across Ohio, and in Lorain, Cuyahoga, and Erie counties have been above average.

The Ohio SHIP and assessments prepared by the health departments in Cuyahoga and Lorain counties emphasize the need to address the growing opioid epidemic and to reduce drug overdose deaths. (Sources: Exhibits 25, 27, other assessments, key stakeholder interviews).

Lorain and Cuyahoga counties rank poorly for "percent of driving deaths with alcohol involvement," compared to Ohio, national, and peer-county averages.

Ohio's State Health Assessment and local health department assessments identify addressing alcohol abuse as a priority. (Sources: Exhibit 26, other assessments).

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[1] 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.

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

The Ohio SHIP and local health department assessments for Lorain, Cuyahoga, and Erie counties all identified mental health as a priority issue. These assessments cite the need for additional services, early identification of mental health risks, and greater awareness of existing programs. (Sources: Exhibits 4, 25, 26, 27, key stakeholder interviews, other assessments).

Chronic Disease Prevention and Management

Chronic diseases, including heart disease, hypertension, obesity, diabetes, young adult asthma, COPD, and others are prevalent in the Avon community.

Heart disease and hypertension are leading causes of death. Avon's community benchmarks poorly for the incidence of high blood pressure and high cholesterol, and for hospital admissions for hypertension. Higher hypertension rates are observed in lower-income communities. Addressing heart (or cardiovascular) disease was identified as a priority by the Ohio SHIP and the Cuyahoga County Community Health Assessment. (Sources: Exhibits 4, 34, 36, other assessments, key stakeholder interviews).

Key stakeholders also identified obesity as a persistent and growing problem, driven by physical inactivity and poor nutrition. Poor nutrition results from the higher cost of fresh and healthy food, the presence of food deserts, and a lack of time and knowledge about how to prepare healthy meals. Physical inactivity is worsened by a lack of safe places to exercise, time, and education regarding the importance of remaining active.

In Avon's community, per-capita admissions for COPD (an ambulatory care sensitive condition) have been 42 percent higher than the Ohio average. Admissions have been 14 percent higher for congestive heart failure, and seven percent higher diabetes short-term complications (Source: Exhibit 36).

In Lorain, Cuyahoga, and Erie counties, the percent of adults obese (Body Mass Index greater than 30) has been above the national average. The Ohio SHIP and local health department assessments consistently identify obesity and diabetes (and reducing physical inactivity and enhancing nutrition) as priorities. (Sources: Exhibits 25, 36, 37, other assessments).

Key stakeholders emphasized the importance of changing unhealthy behaviors. Exercise, nutrition, and tobacco cessation programs are needed. Health education and literacy programs also are needed.

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

tobacco use. According to the Cuyahoga County Community Health Assessment, health behaviors that need attention include: flu vaccination rates, tobacco use, and physical inactivity. (Sources: Exhibit 26, other assessments, key stakeholder interviews).

Avon's 65+ population is projected to grow much faster than other age groups. Providing an effective continuum of care for seniors will be challenging. Elderly residents are at greater risk for falls, food insecurity, transportation issues, and unsafe or inadequate housing. Social isolation contributes to poor physical and mental health conditions. (Sources: Exhibit 9, key stakeholder interviews).

Infant Mortality

Cuyahoga County compares unfavorably to Ohio averages for most maternal and child health indicators. The infant mortality rates in Cuyahoga and Erie counties have been well above Ohio and U.S. averages. Rates have been particularly high for Black infants; key stakeholders frequently mentioned racial disparities as an important concern.

The Ohio SHIP established ten "priority outcomes," three of which are addressing: preterm births, low birth weight, and infant mortality. The Cuyahoga County Community Health Assessment established "maternal and infant health" and reducing infant mortality as a priority. (Sources: Exhibits 25, 31, 32, other assessments).

Medical Research and Health Professions Education

More trained health professionals are needed locally, regionally and nationally. Research conducted by Cleveland Clinic, has improved health for community members through advancements in new clinical techniques, devices and treatment protocols in such areas as cancer, heart disease and diabetes. There is a need for more research to address these and other community health needs. (Sources: Exhibits 39, 40, key stakeholder interviews).

Socioeconomic Concerns

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

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

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[2] https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/aboutace.html

victim or witness of neighborhood violence, lived with someone was mentally ill or suicidal, domestic violence witness, parent served time in jail, treated or judged unfairly due to race/ethnicity, and death of a parent).[3]

Nearly 50 percent of rented households have been designated as "rent burdened," a level above the Ohio average (47 percent). In two lower-income ZIP codes, over 59 percent of these households devote more than 30 percent of household income to rent. Lorain and Cuyahoga counties also benchmark poorly for "percent of households experiencing severe housing problems" (Source: Exhibits 20, 25, 26).

Cuyahoga County has had a higher poverty rate than Ohio and the U.S. Across each county served by Avon, poverty rates for Black and Hispanic (or Latino) populations have been well above rates for Whites. Substantial variation in poverty rates is present across the community. (Sources: Exhibits 4, 14, 15).

Social determinants of health are particularly problematic in Lorain County (specifically, ZIP codes 44052 and 44055) and Cuyahoga County, including poverty, unemployment, affordable housing, violent crime, and high-school graduation rates. (Sources: Exhibits 4, 14, 15, 17, 19, 20, 25, key stakeholder interviews, other assessments).

The Northeast Ohio Coalition for the Homeless has estimated that "there were about 23,000 people experiencing homelessness in 2018 in Cuyahoga County."[4] In recent years, several Cleveland Clinic hospitals have experienced increases in emergency room encounters by homeless patients.

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

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[3] https://www.americashealthrankings.org/explore/health-of-women-and-children/measure/ACEs/state/OH
[4] https://www.neoch.org/2019-overview-of-the-numbers

DATA AND ANALYSIS

Definition of Community Assessed

This section identifies the community that was assessed by Avon. The community was defined by considering the geographic origins of the hospital's discharges in calendar year 2017. The definition also considered the hospital's mission, target populations, principal functions, and strategies.

On that basis, Avon's community is defined as 14 ZIP codes in Lorain, Cuyahoga, and Erie counties, Ohio. These ZIP codes accounted for nearly 79 percent of the hospital's recent inpatient volumes (**Exhibit 1**).

Exhibit 1: Avon Inpatient Discharges by ZIP Code, 2017

ZIP Code	County	City/Town	Discharges	Percent of Discharges
44012	Lorain	Avon Lake	723	12.1%
44035	Lorain	Elyria	638	10.7%
44011	Lorain	Avon	531	8.9%
44039	Lorain	North Ridgeville	488	8.1%
44145	Cuyahoga	Westlake	366	6.1%
44052	Lorain	Lorain	309	5.2%
44054	Lorain	Sheffield Lake	255	4.3%
44001	Lorain	Amherst	254	4.2%
44140	Cuyahoga	Bay Village	233	3.9%
44053	Lorain	Lorain	224	3.7%
44055	Lorain	Lorain	213	3.6%
44089	Erie	Vermilion	181	3.0%
44070	Cuyahoga	North Olmsted	159	2.7%
44116	Cuyahoga	Rocky River	147	2.5%
Community ZIP Codes			**4,721**	**78.8%**
All Other ZIP Codes			1,268	21.2%
All ZIP Codes			5,989	100.0%

Source: Analysis of Cleveland Clinic Discharge Data, 2018.

The community includes portions of Lorain, Cuyahoga, and Erie counties. The total population of this community in 2017 was approximately 361,000 persons (**Exhibit 2**).

Exhibit 2: Community Population, 2017

ZIP Code	County	City/Town	Total Population 2017	Percent of Total Population 2017
44035	Lorain	Elyria	63,485	17.6%
44039	Lorain	North Ridgeville	33,236	9.2%
44145	Cuyahoga	Westlake	33,048	9.2%
44070	Cuyahoga	North Olmsted	32,080	8.9%
44052	Lorain	Lorain	28,477	7.9%
44012	Lorain	Avon Lake	23,965	6.6%
44011	Lorain	Avon	23,902	6.6%
44001	Lorain	Amherst	20,675	5.7%
44116	Cuyahoga	Rocky River	20,273	5.6%
44055	Lorain	Lorain	19,085	5.3%
44053	Lorain	Lorain	19,020	5.3%
44089	Erie	Vermilion	15,859	4.4%
44140	Cuyahoga	Bay Village	15,120	4.2%
44054	Lorain	Sheffield Lake	12,481	3.5%
Community Total			**360,706**	**100.0%**

Source: Truven Market Expert, 2018.

The hospital is located in Avon, Ohio (ZIP code 44011).

The map in **Exhibit 3** portrays the ZIP codes that comprise the Avon community.

Exhibit 3: Avon Community
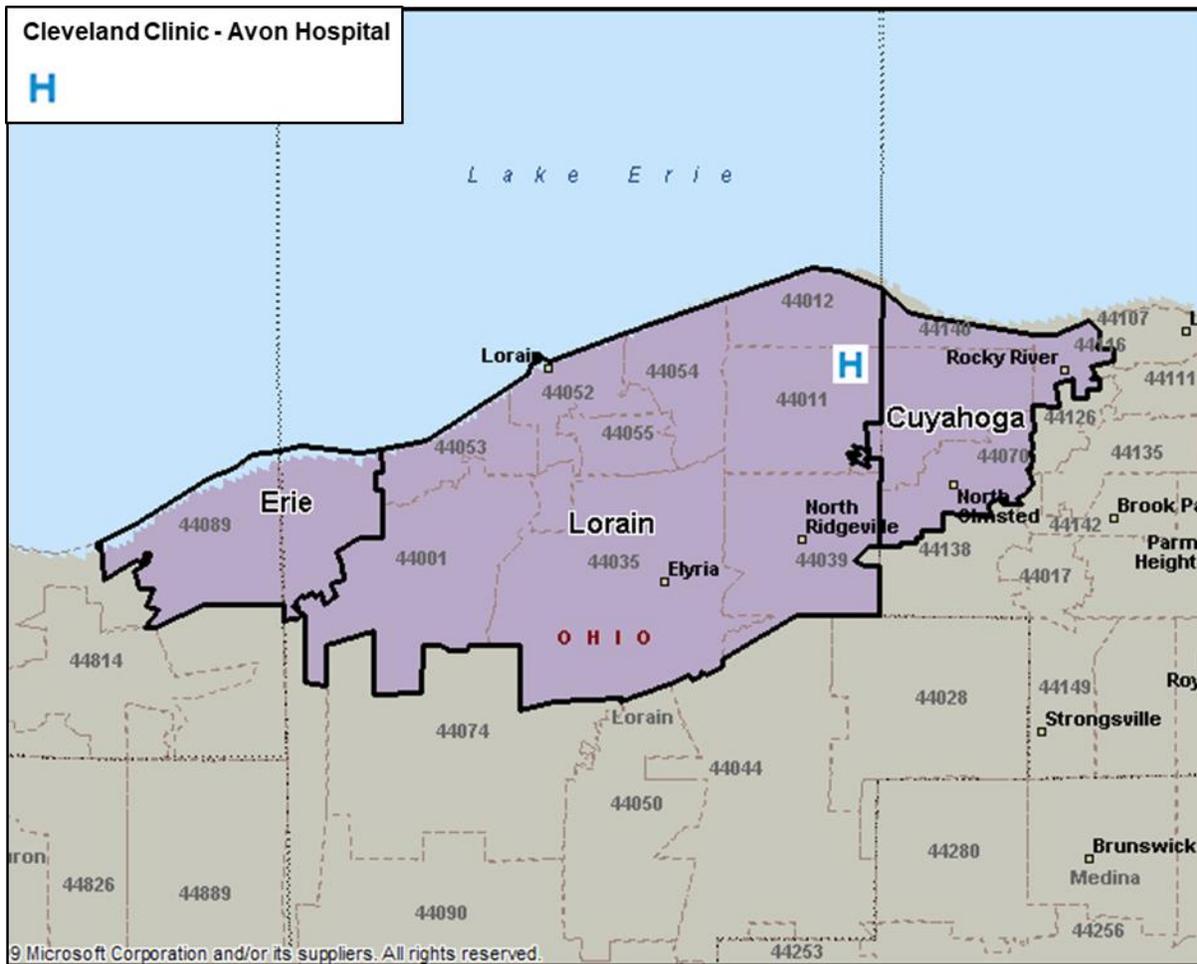
Source: Microsoft MapPoint and Cleveland Clinic, 2018.

Secondary Data Summary

The following section summarizes principal findings from the secondary data analysis. *See Appendix B for more detailed information.*

Demographics

Population characteristics and trends directly influence community health needs. The total population in the Avon community is expected to increase 1.1 percent from 2017 to 2022. However, the population 65 years of age and older is anticipated to grow by 13.6 percent during that time. This development should contribute to growing need for health services, since older individuals typically need and use more services than younger persons.

Avon serves a geographic area that includes 14 ZIP codes and portions of three Ohio counties (Lorain, Cuyahoga, and Erie). Substantial variation in demographic characteristics (e.g., race/ethnicity and income levels) exists across this area.

In 2017, over 10 percent of the population in four ZIP codes was Black. These ZIP codes, located in Lorain County, also are associated with comparatively high poverty rates and comparatively poor health status. In seven ZIP codes, the percent of the population Black was under two percent. Overall, 6.0 percent of community residents were Black.

Economic Indicators

On average, people living in low-income households are less healthy than those living in more prosperous areas. According to the U.S. Census, in the 2012-2016 period, approximately 15.1 percent of people in the U.S. were living in poverty. At 18.5 percent, Cuyahoga County's poverty rate was above average. The poverty rates in Lorain and Erie counties have been below the national average.

Across each of the community's three counties, poverty rates for Black and for Hispanic (or Latino) residents have been higher than rates for Whites. For example, in Lorain County the rate for Black residents was 36.5 percent. For Whites, it was 11.0 percent.

A number of low-income census tracts can be found in Avon's community, particularly in Lorain County ZIP codes in the center of the community. Most of these same areas are where over 50 percent of households are "rent burdened."

After several years of improvement, between 2015 and 2017, unemployment rates in each community county increased. In 2017, rates in all three counties were above national averages.

Notably, crime rates in Cuyahoga County have been above Ohio averages. Crime rates in Lorain and Erie counties have been below Ohio averages for most offenses.

Ohio was among the U.S. states that expanded Medicaid eligibility pursuant to the Patient Protection and Affordable Care Act (ACA, 2010). On average, approximately four percent of those living in the community served by Avon were uninsured in 2017.

Community Need Index™

Dignity Health, a California-based hospital system, developed and published a *Community Need Index™* (CNI) that measures barriers to health care access. The index is based on five social and economic indicators:

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

DATA AND ANALYSIS

A CNI score is calculated for each ZIP code. Scores range from "Lowest Need" (1.0-1.7) to "Highest Need" (4.2-5.0).

Two of the 14 ZIP codes in the Avon community scored in the "highest need" CNI category and two were found to be "lowest need."

As shown in **Exhibit 4**, ZIP codes found to be higher need are associated with higher rates of poverty, a higher proportion of the population Black, more problematic BRFSS indicators (e.g., rates of smoking and high blood pressure), and higher rates of admissions for ACSCs.

Exhibit 4: Statistics Arrayed by CNI Range

Indicators	Highest Need	<== CNI Range ==>			Lowest Need
	4.2-5.0	3.4-4.1	2.6-3.3	1.8-2.5	1.0-1.7
Demographic Characteristics					
ZIP Codes	2	2	1	7	2
Total Persons	47,562	82,505	12,481	179,073	39,085
Poverty Rate	30%	19%	8%	6%	4%
% African American	17%	13%	2%	2%	1%
BRFSS Indicators					
% Arthritis	27.0%	26.3%	26.7%	22.7%	21.2%
% Asthma	14.7%	12.4%	10.7%	10.2%	11.0%
% Depression	22.6%	19.6%	17.4%	16.8%	16.5%
% Diabetes	16.5%	16.2%	13.9%	14.8%	13.4%
% Heart Disease	10.4%	11.5%	9.6%	10.7%	9.1%
% Heart Failure	5.7%	5.3%	3.9%	4.0%	3.0%
PQI Rates					
COPD	1,898	1,488	821	699	489
Congestive Heart Failure	936	827	562	560	514
Diabetes long-term complications	215	143	110	103	93
Bacterial pneumonia	309	392	341	284	180
Dehydration	395	310	371	257	254
Diabetes short-term complications	152	117	80	45	37
Urinary tract infection	226	280	241	260	210
Hypertension	109	75	20	73	33
Low birth weight (per 1,000 births)	9	13	9	7	3
Young adult asthma	89	55	61	31	24
Lower-extremity amputation among patients with diabetes	52	23	40	33	37

Source: Verité Analysis.

Other Local Health Status and Access Indicators

In the 2018 *County Health Rankings* and for overall health outcomes, Lorain County ranked 38th (out of 88 counties), Cuyahoga County ranked 60th, and Erie ranked 58th.

These overall rankings are derived from 42 measures that themselves are grouped into several categories such as "health behaviors," and "social & economic factors."

- In 2018, Lorain County ranked in the bottom 50th percentile among Ohio counties for 19 of the 42 indicators assessed. Of those, five were in the bottom quartile, including alcohol-impaired driving deaths, sexually transmitted infections, children in single-parent households, social associations, and severe housing problems.

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

- In Erie County, 21 indicators ranked in the bottom 50th percentile among Ohio counties. Four were in the bottom quartile, including alcohol-impaired driving deaths, social associations, and percent that drive alone to work.

- All three counties ranked in the bottom quartile for sexually transmitted infections and children in single-parent households.

The 2018 *County Health Rankings* shows that each county has unique community health issues. However, a few are present in across the community counties, including:

- Chlamydia rate
- High school graduation rate
- Injury mortality rate
- Percent of adults who drive alone to work
- Percent of adults who drive alone to work with long commutes
- Percent of children living in single-parent households
- Percent of driving deaths with alcohol involvement
- Physically unhealthy days
- Preventable hospital stays rate
- Ratio of population to primary care physicians
- Social associations rate
- Teen birth rate
- Unemployment
- Years of potential life lost rate

Community Health Status Indicators ("CHSI") compares indicators for each county with those for peer counties across the United States. Each county is compared to 30 to 35 of its peers. Peers are selected based on a number of socioeconomic characteristics, such as population size, population density, percent elderly, and poverty rates.

The counties served by Avon benchmark most poorly for:

- Percent low birth weight births
- Percent of adults who smoke
- Food environment index
- Percent of driving deaths alcohol-impaired
- Chlamydia rate
- Preventable hospitalizations rate
- High school graduation rate
- Percent of children living in single-parent households
- Air pollution (average daily PM2.5)

Mortality statistics published by the Ohio Department of Health show how deaths due to "accidental poisoning by and exposure to drugs and other biological substances" have been increasing across the state. At 52.0 per 100,000, the 2016 mortality rate in Lorain County was well over the Ohio average (36.8 per 100,000); the Cuyahoga County rate of 44.6 and the Erie County rate of 52.8 were above the state rate as well.

In Cuyahoga County, incidence rates for sexually transmitted diseases have been significantly higher than Ohio averages, and rates have been higher in Erie County for gonorrhea, chlamydia, and syphilis.

Lorain, Cuyahoga, and Erie counties each have had higher than average age-adjusted incidence rates for cancer.

Cuyahoga County compares unfavorably to Ohio averages for most maternal and child health indicators. The infant mortality rate in Cuyahoga County has been above Ohio and U.S. averages. As documented by many, rates have been particularly high for Black infants across Ohio.

The Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) provides self-reported data on many health behaviors and conditions. According to BRFSS, high blood pressure and high cholesterol were more prevalent in ZIP codes served by Avon than in other parts of Ohio.

Ambulatory Care Sensitive Conditions

Ambulatory Care Sensitive Conditions ("ACSCs") include thirteen health conditions (also referred to as "PQIs") "for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."[5] Among these conditions are: diabetes, perforated appendixes, chronic obstructive

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

pulmonary disease ("COPD"), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

ACSC rates in Avon community ZIP codes have exceeded Ohio averages for diabetes short-term complications, diabetes long-term complications, COPD, hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infections, uncontrolled diabetes, and young adult asthma.

Food Deserts

The U.S. Department of Agriculture's Economic Research Service identifies census tracts that are considered "food deserts" because they include lower-income persons without supermarkets or large grocery stores nearby. Several community census tracts have been designated as food deserts, particularly in Lorain County.

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." Several census tracts in Lorain County have been designated as medically underserved areas.

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. Several minor civil divisions in Lorain County have been designated as primary care HPSAs, and census tracts in Lorain County have been designated as dental care HPSAs.

Relevant Findings of Other CHNAs

In recent years, the Ohio Department of Health and local health departments in Lorain, Cuyahoga, and Erie counties conducted Community Health Assessments and developed State or Community Health Improvement Plans (SHIP or CHIP). This CHNA also has integrated the findings of that work.

The issues most frequently identified as *significant* in these other assessments are:

- Drug addiction and abuse
- Mental health
- Social determinants of health
- Maternal and child health (including infant mortality)

- Prevalence (and need to manage) chronic diseases
- Obesity and diabetes
- Access to primary care and prevention services
- Health disparities

The Avon CHNA also has identified the above issues as *significant,* in part because this CHNA considered findings from these other assessments as an important factor in the prioritization process. The Avon CHNA places more emphasis on health needs of a growing seniors population and includes more information on preventable hospital admissions.

Significant Indicators

Exhibit 5 presents many of the indicators discussed in the above secondary data summary. An indicator is considered *significant* if was found to vary materially from a benchmark statistic (e.g., an average value for the State of Ohio or for the United States). For example, 46 percent of Lorain County's driving deaths have involved alcohol; the average for Ohio was 34 percent. The last column of the **Exhibit 5** identifies where more information regarding the data sources can be found.

The benchmarks include Ohio averages, national averages, and in some cases averages for "peer counties" from across the United States. In the *Community Health Status Indicators* analysis, community counties' peers were selected because they are similar in terms of population density, household incomes, and related characteristics. Benchmarks were selected based on judgements regarding how best to assess each data source.

Exhibit 5: Significant Indicators

Indicator	Area	Value	Benchmark		Exhibit
			Value	Area	
65+ Population change, 2017-2022	Community ZIP codes	13.6%	1.1%	Total Community Population	9
Poverty rate, 2012-2016	Cuyahoga County	18.5%	15.4%	Ohio	14
Poverty rate, 2012-2016	"Highest Need" ZIP codes	30.1%	3.7%	"Lowest Need" ZIP codes	4
% of Population Black, 2017	"Highest Need" ZIP codes	16.6%	1.0%	"Lowest Need" ZIP codes	4
Poverty rate, Black, 2012-2016	Lorain County	36.5%	14.0%	Lorain County, Total	15
Unemployment rate	Lorain County	6.2%	4.4%	United States	17
Percent ninth-grade cohort graduates	Cuyahoga County	74.8%	83.0%	United States	25
Percent children in poverty	Cuyahoga County	26.4%	20.0%	United States	25
Percent of households with severe housing problems	Cuyahoga County	18.5%	15.0%	Ohio	25
Percent of households rent burdened	Community ZIP codes	49.9%	46.7%	Ohio	20
Violent Crimes per 100,000	Cuyahoga County	695	306	Ohio	19
Years of potential life lost per 100,000	Erie County	8,530	7,734	Ohio	25
Percent live births with low birthweight	Cuyahoga County	10.6%	8.0%	United States	25
Infant mortality rate	Cuyahoga County	9.3	7.4	Ohio	32
Infant mortality rate, Black	Cuyahoga County	16.3	5.2	Cuyahoga County, White	32
Percent driving deaths w/alcohol involvement	Lorain County	46.4%	34.3%	Ohio	25
	Cuyahoga County	44.0%	34.3%	Ohio	25
Mortality rate for accidental poisoning by drugs and other substances per 100,000	Lorain County	52.0	36.8	Ohio	27
Chlamydia rate per 100,000	Cuyahoga County	720	479	United States	25
HIV rate per 100,000	Cuyahoga County	373	200	Ohio	30
Percent of adults that report a BMI >= 30	Lorain County	30.4%	28.0%	United States	25
	Cuyahoga County	29.9%	28.0%	United States	25
	Erie County	35.7%	28.0%	United States	25
Percent of adults that smoke	Cuyahoga County	20.6%	16.2%	Peer Counties	26
	Lorain County	19.9%	19.6%	Peer Counties	26
Cancer incidence rate per 100,000	Lorain County	464	462	Ohio	29
	Cuyahoga County	483	462	Ohio	29
	Erie County	489	462	Ohio	29
Population per primary care physician	Lorain County	1,744	1,320	United States	25
	Erie County	1,374	1,320	United States	25
Population per dentist	Lorain County	2,142	1,480	United States	25
Population per mental health provider	Lorain County	772	470	United States	25
Preventable admissions (for ambulatory care sensitive conditions) per 1,000 Medicare enrollees	Lorain County	65	49	United States	25
	Erie County	62	49	United States	25
PQI: COPD per 100,000	Community ZIP codes	990	696	Ohio	36
PQI: Dehydration per 100,000	Community ZIP codes	289	218	Ohio	36
Average Daily PM 2.5 (Particulate Matter, a measure of air pollution)	Lorain County	11.3	8.7	United States	25
	Cuyahoga County	12.9	8.7	United States	25

Source: Verité Analysis.

Primary Data Summary

Primary data were gathered by conducting interviews with key stakeholders (*See* Appendix C for additional information on those providing input). Twenty-five (25) interviews were conducted with individuals regarding significant community health needs in the community served by Avon and why such needs are present.

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

- **Poverty and other social determinants of health** were identified as significant concerns. Interviewees stated that poverty has significant implications for health, including the ability for households to access health services, afford basic needs, and benefit from prevention initiatives.

    o **Housing** is an issue, with many community residents unable to find housing that is both affordable and safe. Low income and elderly populations were identified as especially vulnerable. Poor housing contributes to lead exposure and falling risks, among other health problems.

    o Problems with **educational achievement** and access to **workforce training** opportunities reduce employment prospects and increase poverty rates. Additionally, problems with **unemployment and access to jobs** were identified.

    o **Health services** are expensive, particularly for lower-income, uninsured individuals.

- **Obesity** (and its contributions to chronic diseases including diabetes and hypertension) was identified as growing problem, driven by ongoing difficulties with physical inactivity and poor nutrition.

    o Many are not eating healthy foods due to the higher costs of fresh and healthy options, food deserts that create access problems, a lack of knowledge about healthy cooking, and a lack of time (particularly for people working several jobs) to prepare meals.

    o Contributors to physical inactivity include a lack of safe places to exercise, a lack of time, and a lack of education regarding the importance of remaining active.

- **Mental health** was identified by many as a significant concern. Depression, suicide, hopelessness, and isolation (particularly among elderly residents and those exposed to traumas early in life) are perceived to be increasing in severity. Access to mental health care is challenging due to cost (and limited benefits) and an undersupply of psychiatrists and other providers.

- **Transportation** was identified as a barrier to maintaining good health. Few public transportation options are available, and many neighborhoods are not serviced at all.

Transportation affects access to health care services, healthy foods, and employment opportunities. Low-income and elderly residents were identified as groups that had the largest unmet transportation needs.

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

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

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

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

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

- Interviewees stated that community needs more **health education** and better understanding of the health care system. Many are unsure about where and how they can access certain services. Questions about insurance coverage and more generally how to achieve a healthy life are prevalent. Prevention initiatives are needed by many. Additionally, the need for **better referral mechanisms and a continuum of care** was discussed by several interviewees.

- A **lack of pain management programs** and an **undersupply of substance abuse treatment programs** were identified as two significant health access issues.

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

This section identifies other facilities and resources available in the community served by Avon 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 five FQHC sites operating in the Avon community (**Exhibit 6**).

Exhibit 6: Federally Qualified Health Centers, 2018

County	ZIP Code	Site Name	City	Address
Lorain	44001	Leavitt Road	Amherst	554 N Leavitt Rd
Lorain	44052	Lorain County Health & Dentistry	Lorain	1205 Broadway
Lorain	44035	Lorain County Health & Dentistry	Elyria	412 E River St
Lorain	44055	Lorain County Health & Dentistry	Lorain	3745 Grove Ave
Lorain	44035	Wilkes Villa Public Housing	Elyria	105 Louden Ct

Source: HRSA, 2018.

Data published by HRSA indicate that in 2017, FQHCs served approximately six percent of uninsured, Avon community residents and 17 percent of the community's Medicaid recipients.[6] In Ohio, FQHCs served about 15 percent of both population groups. Nationally, FQHCs served 22 percent of uninsured individuals and 18 percent of Medicaid recipients. These percentages ranged from 6 percent (Nevada) to 40 percent (Washington State).

Hospitals

Exhibit 7 presents information on hospital facilities located in the Avon community.

Exhibit 7: Hospitals, 2018

ZIP Code	County	City/Town	Hospital Name	Address
44053	Lorain	Lorain	Clear Vista Health & Wellness	3364 Kolbe Road
44011	Lorain	Avon	Cleveland Clinic Avon Hospital	33300 Cleveland Clinic Blvd
44011	Lorain	Avon	Cleveland Clinic Rehabilitation Hospitals LLC	33355 Health Campus Blvd
44001	Lorain	Amherst	Community Specialty Hospital	254 Cleveland Avenue, 2nd Floor
44053	Lorain	Lorain	Mercy Health - Lorain Hospital	3700 Kolbe Road
44145	Cuyahoga	Westlake	St John Medical Center	29000 Center Ridge Road
44035	Lorain	Elyria	University Hospitals - Elyria Medical Center	630 East River Street
44011	Lorain	Avon	University Hospitals Avon Rehabilitation Hospital	37900 Chester Road

Source: Ohio Department of Health, 2019.

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

Other Community Resources

A wide range of agencies, coalitions, and organizations that provide health and social services is available in the region served by Avon. 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/.

IMPACT EVALUATION

Regulations that apply to CHNAs conducted by tax-exempt hospitals require CHNA reports to include "an evaluation of the impact of any actions that were taken, since the hospital facility finished conducting its immediately preceding CHNA, to address the significant health needs identified in the hospital facility's prior CHNA(s)."

The actions being implemented by Avon are described in its Implementation Strategy Report. *See:* https://my.clevelandclinic.org/-/scassets/files/org/about/community-reports/chna/2018/2018-avon-hospital-chna.ashx?la=en

The hospital finished conducting its immediately preceding CHNA in 2018. The hospital's authorized body adopted its most recent Implementation Strategy in November 2018.

That Implementation Strategy indicated that the hospital plans to address the following health needs identified in its 2018 CHNA:

   A. Access to Affordable Healthcare
   B. Chronic Diseases and Other Health Conditions
           1. Diabetes
           2. Heart Disease and Hypertension
           3. Infant Mortality
           4. Mental Health
           5. Obesity
           6. Substance Abuse
   C. Health Professions Education and Research
   D. Healthcare for the Elderly
   E. Wellness

In 2016, the Ohio Department of Health also promulgated new CHNA requirements that require the state, county health departments, and hospitals to prepare CHNA reports in alignment (on the same three year cycle). To comply with the new state requirements and align with the schedule being followed by other Cleveland Clinic hospitals, Avon conducted this subsequent CHNA in 2019.

The initiatives in Avon's November 2018 Implementation Strategy Report have been in place for a year, and it is too early to describe and evaluate their impacts. Most initiatives are likely to be included again in the hospital's next Implementation Strategy Report. Avon looks forward to describing the impact of these and other actions that address community health needs in its 2022 CHNA report.

APPENDIX A – OBJECTIVES AND METHODOLOGY

Regulatory Requirements

Federal law requires that tax-exempt hospital facilities conduct a CHNA every three years and adopt an Implementation Strategy that addresses significant community health needs.[7] In conducting a CHNA, each tax-exempt hospital facility must:

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

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

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

Ohio law[8] requires local health departments (LHDs) and tax-exempt hospitals to submit their Community Health Improvement Plans and Implementation Strategy reports to the Ohio Department of Health (the department). Beginning January 1, 2020, Ohio law also requires LHDs and tax-exempt hospitals to complete assessments and plans "in alignment on a three-year interval established by the department." Specific methods and approaches for achieving "alignment" are evolving.

Methodology

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

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

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[7] Internal Revenue Code, Section 501(r).
[8] ORC 3701.981

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

Federal regulations allow hospital facilities to define the community they serve based on "all of the relevant facts and circumstances," including the "geographic location" served by the hospital facility, "target populations served" (e.g., children, women, or the aged), and/or the hospital facility's principal functions (e.g., focus on a particular specialty area or targeted disease)."[9] Accordingly, the community definition considered the geographic origins of the hospital's patients and also the hospital's mission, target populations, principal functions, and strategies.

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

Data from multiple sources were gathered and assessed, including secondary data[10] published by others and primary data obtained through community input. *See* Appendix B. Input from the community was received through key informant interviews. These informants represented the broad interests of the community and included individuals with special knowledge of or expertise in public health. *See* Appendix C. Considering a wide array of information is important when assessing community health needs to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively.

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

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

Collaborating Organizations

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

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[9] 501(r) Final Rule, 2014.

[10] "Secondary data" refers to data published by others, for example the U.S. Census and the Ohio Department of Health. "Primary data" refers to data observed or collected from first-hand experience, for example by conducting interviews.

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

Data Sources

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

Input from 25 persons representing the broad interests of the community was taken into account through key informant interviews. Interviewees included: individuals with special knowledge of or expertise in public health; local public health departments; agencies with current data or information about the health and social needs of the community; representatives of social service organizations; and leaders, representatives, and members of medically underserved, low-income, and minority populations.

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

Information Gaps

This CHNA relies on multiple data sources and community input gathered between July 2018 and January 2019. A number of data limitations should be recognized when interpreting results. For example, some data (e.g., County Health Rankings, Community Health Status Indicators, and others) exist only at a county-wide level of detail. Those data sources do not allow assessing health needs at a more granular level of detail, such as by ZIP code or census tract.

The community assessed by Avon includes portions of three separate counties (Lorain, Cuyahoga, and Erie counties). County-wide data for each of these counties should be assessed accordingly.

Secondary data upon which this assessment relies measure community health in prior years and may not reflect current conditions. The impacts of recent public policy developments, changes in the economy, and other community developments are not yet reflected in those data sets.

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

Consultant Qualifications

Verité Healthcare Consulting, LLC (Verité) was founded in May 2006 and is located in Arlington, Virginia. The firm serves clients throughout the United States as a resource that helps hospitals conduct Community Health Needs Assessments and develop Implementation Strategies to address significant health needs. Verité has conducted more than 60 needs assessments for hospitals, health systems, and community partnerships nationally since 2010.

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

APPENDIX B – SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the Avon community. Avon's community is comprised of 14 ZIP codes in Lorain, Cuyahoga, and Erie counties, Ohio.

Demographics

Exhibit 8: Percent Change in Community Population by ZIP Code, 2017-2022

County	City/Town	ZIP Code	Estimated Population 2017	Projected Population 2022	Percent Change 2017 - 2022
Lorain	Avon	44011	23,902	25,545	6.9%
Lorain	North Ridgeville	44039	33,236	35,157	5.8%
Lorain	Avon Lake	44012	23,965	24,907	3.9%
Lorain	Lorain	44053	19,020	19,507	2.6%
Lorain	Sheffield Lake	44054	12,481	12,594	0.9%
Lorain	Amherst	44001	20,675	20,829	0.7%
Cuyahoga	Westlake	44145	33,048	33,292	0.7%
Cuyahoga	Rocky River	44116	20,273	20,292	0.1%
Lorain	Elyria	44035	63,485	63,434	-0.1%
Erie	Vermilion	44089	15,859	15,825	-0.2%
Cuyahoga	North Olmsted	44070	32,080	31,697	-1.2%
Lorain	Lorain	44052	28,477	28,057	-1.5%
Lorain	Lorain	44055	19,085	18,801	-1.5%
Cuyahoga	Bay Village	44140	15,120	14,876	-1.6%
Community Total			**360,706**	**364,813**	**1.1%**

Source: Truven Market Expert, 2018.

Description

Exhibit 8 portrays the estimated population by ZIP code in 2017 and projected to 2022.

Observations

- Between 2017 and 2022, eight of 14 ZIP codes are projected to increase in population. In total, the community population is expected to increase by 1.1 percent between 2017 and 2022.

- The population in ZIP code 44011 (where the hospital is located) is expected to increase by 6.9 percent, the highest expected growth of any community ZIP code.

Exhibit 9: Percent Change in Population by Age/Sex Cohort, 2017-2022

Age/Sex Cohort	Estimated Population 2017	Projected Population 2022	Percent Change 2017 - 2022
0 - 17	80,203	77,757	-3.0%
Female 18 - 34	34,499	36,149	4.8%
Male 18 - 34	34,230	36,885	7.8%
35 - 64	144,255	137,319	-4.8%
65+	67,519	76,703	13.6%
Community Total	**360,706**	**364,813**	**1.1%**

Source: Truven Market Expert, 2018.

Description

Exhibit 9 shows the community's population for certain age and sex cohorts in 2017, with projections to 2022.

Observations

- While the total community population is expected to increase modestly between 2017 and 2022, the number of persons aged 65 years and older is projected to increase by 13.6 percent.

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

Exhibit 10: Percent of Population Aged 65+ by ZIP Code, 2017
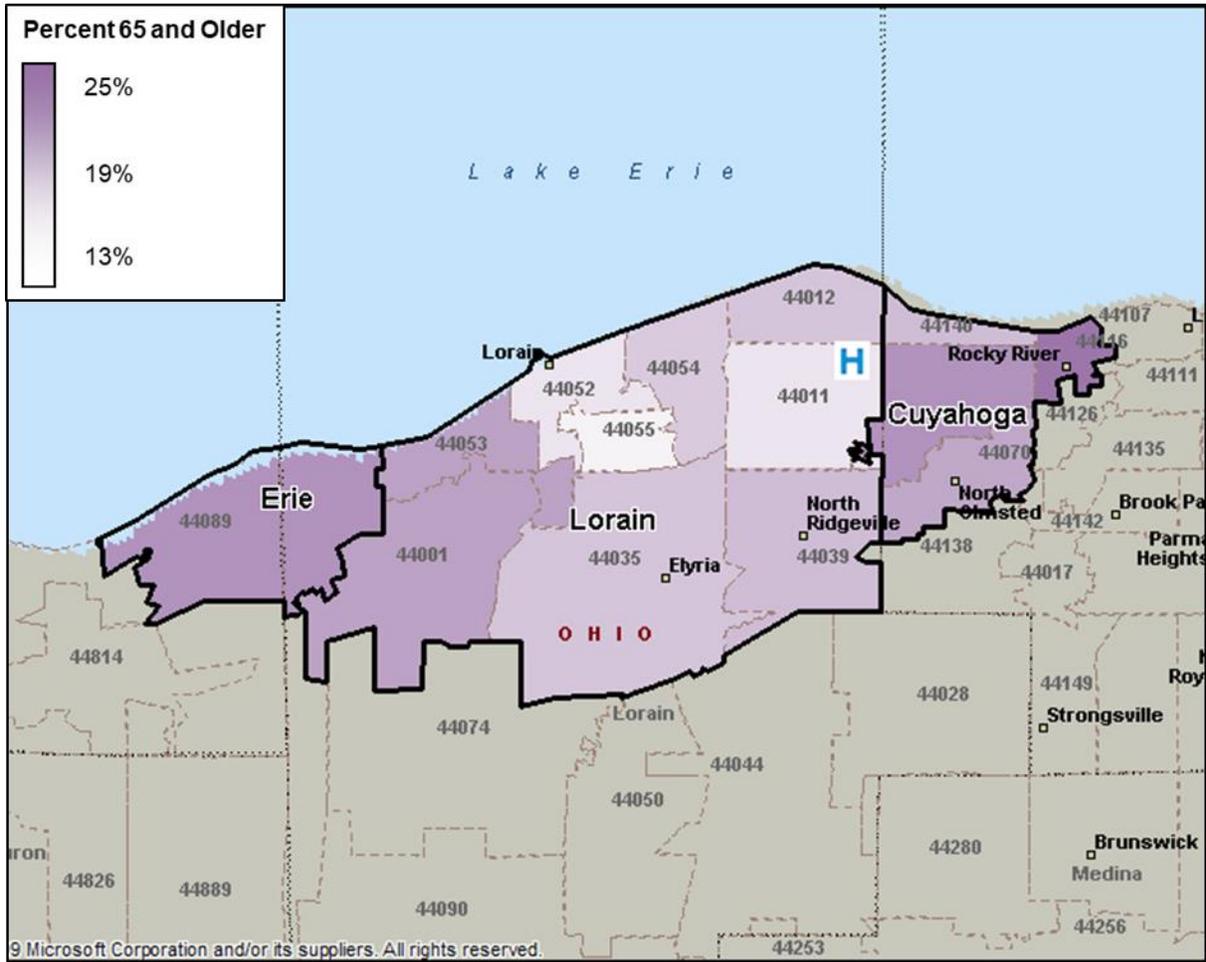
Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 10 portrays the percent of the population 65 years of age and older by ZIP code.

Observations

- Cuyahoga County ZIP codes 44116 and 44145 have the highest proportions of the population 65 years of age and older, each over 22 percent.

Exhibit 11: Percent of Population - Black, 2017
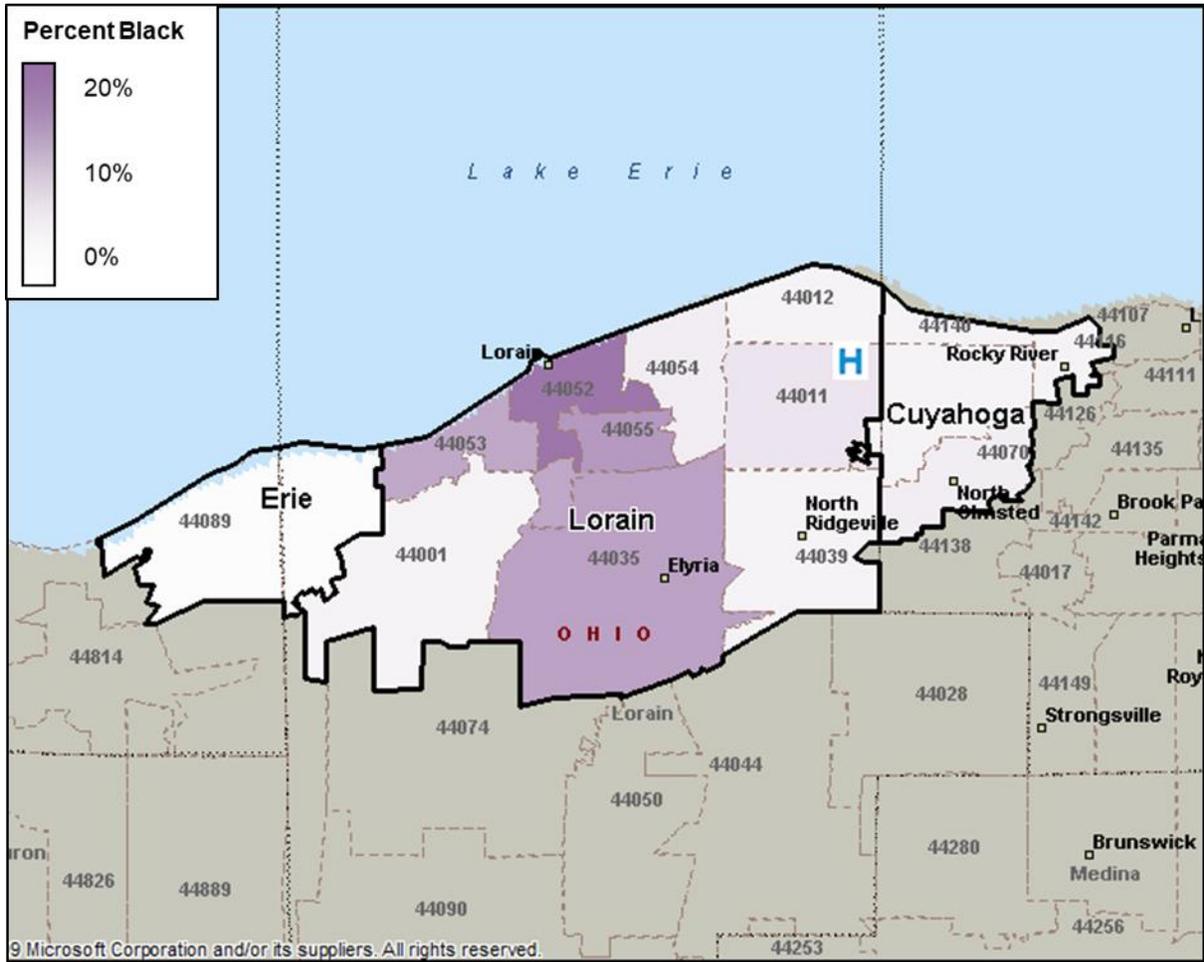
Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 11 portrays locations where the percentages of the population that are Black were highest in 2017.

Observations

- Overall, in 2017 6.0 percent of community residents were Black.

- In four Lorain County ZIP codes, over 10 percent of residents were Black (44052, 44055, 44035, and 44053).

- In 2017, the percentage of residents who are Black was under two percent in seven ZIP codes.

Exhibit 12: Percent of Population – Hispanic (or Latino), 2017
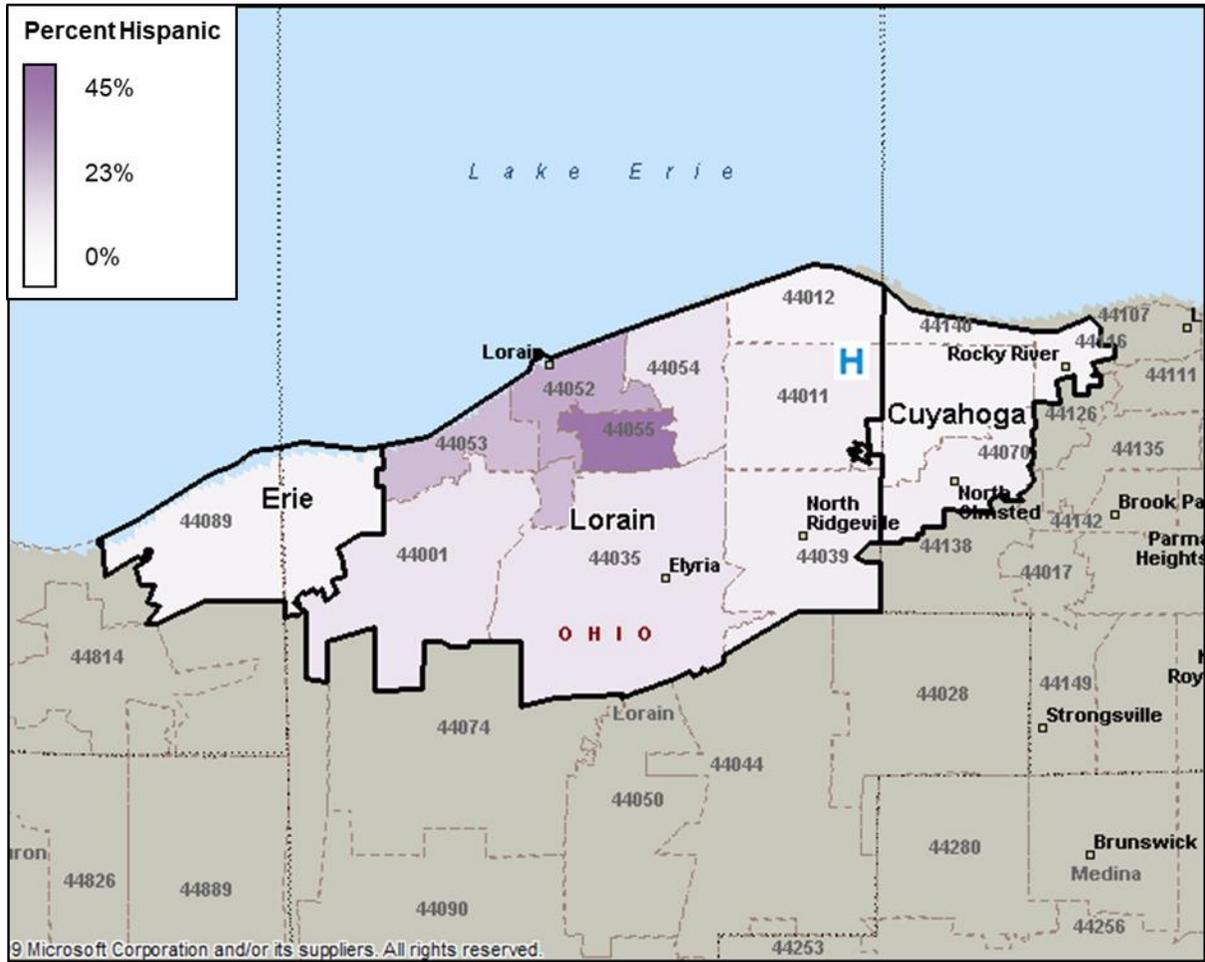
Source: Truven Market Expert, 2018, and Microsoft MapPoint.

Description

Exhibit 12 portrays locations where the percentages of the population that are Hispanic (or Latino) were highest in 2017.

Observations

- Overall, in 2017 8.9 percent of community residents were Hispanic (or Latino).

- The percentage of residents that are Hispanic (or Latino) was highest in Lorain County ZIP codes 44055 (43 percent), 44052 (26 percent), and 44053 (19 percent). No other community ZIP code was over seven percent.

Exhibit 13: Other Socioeconomic Indicators, 2012-2016
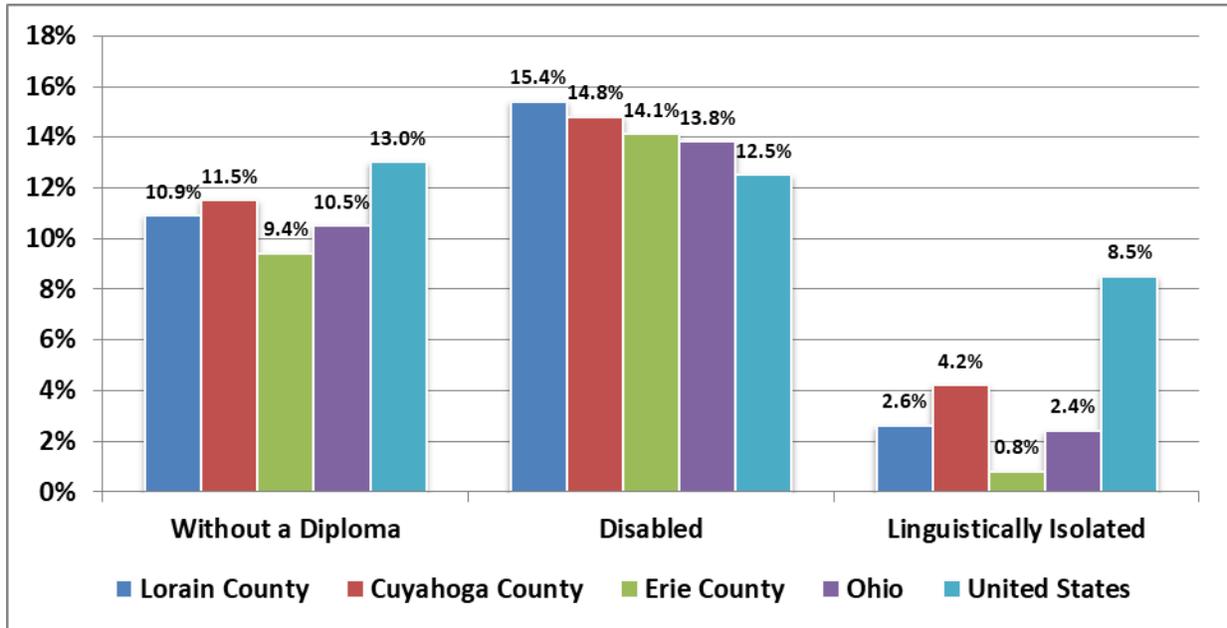
Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 13 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated, by county.

Observations

- The percentage of residents aged 25 years and older without a high school diploma in Lorain and Cuyahoga counties has been higher than the Ohio average.

- Lorain, Cuyahoga, and Erie counties had a higher percentage of the population with a disability compared to Ohio and United States averages.

- Compared to Ohio (but not to the United States), Lorain and Cuyahoga counties had a higher proportion of the population that is linguistically isolated. Linguistic isolation is defined as residents who speak a language other than English and speak English less than "very well."

Economic indicators

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

People in Poverty

Exhibit 14: **Percent of People in Poverty, 2012-2016**
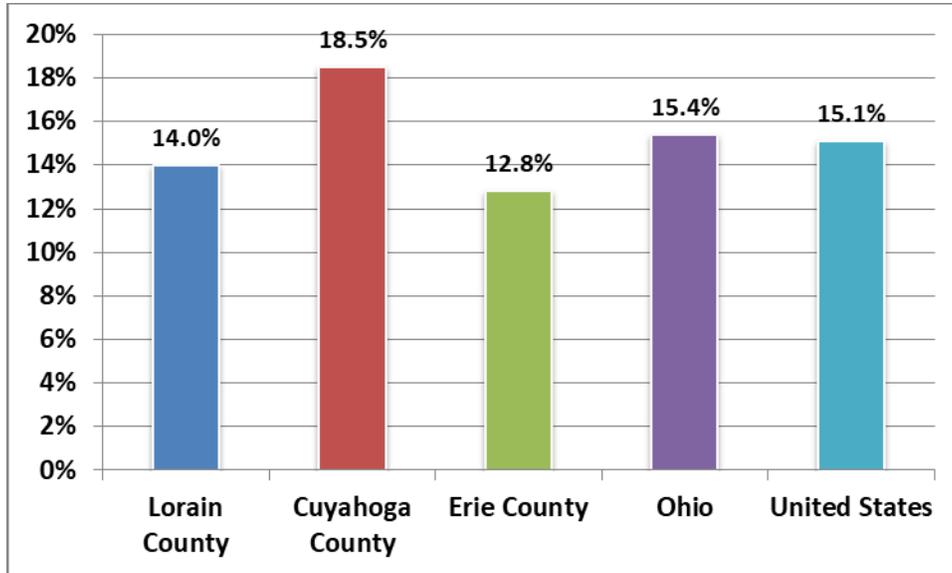
Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 14 portrays poverty rates by county.

Observations

- The poverty rate in Cuyahoga County was higher than Ohio and national averages throughout 2012-2016.

- The rates in Lorain and Erie counties were below Ohio and United States averages.

Exhibit 15: Poverty Rates by Race and Ethnicity, 2012-2016
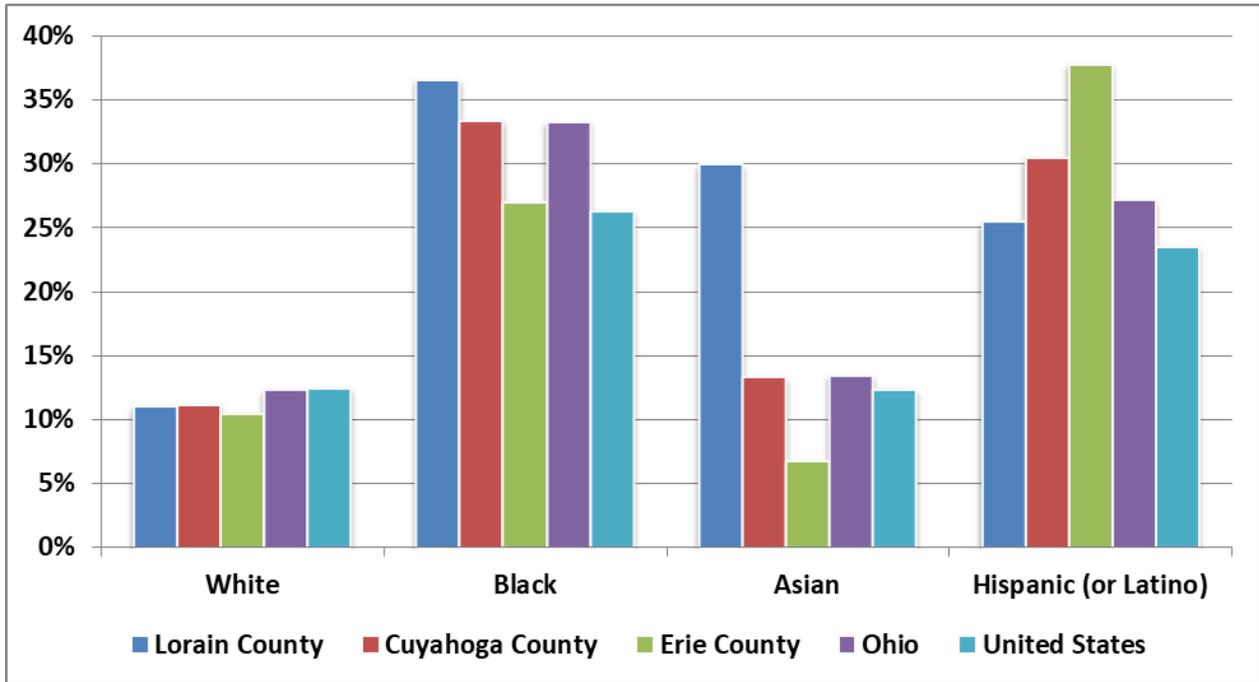
Source: U.S. Census, ACS 5-Year Estimates, 2017.

Description

Exhibit 15 portrays poverty rates by race and ethnicity.

Observations

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

- The poverty rates for Black residents in Lorain County (36.5 percent) and Cuyahoga County (33.3 percent) have been higher than poverty rates for Black individuals across Ohio (33.2 percent) and the United States (26.2 percent).

- At 26.9 percent, the rate for Black residents of Erie County also has been above the national average.

Exhibit 16: Low Income Census Tracts, 2017
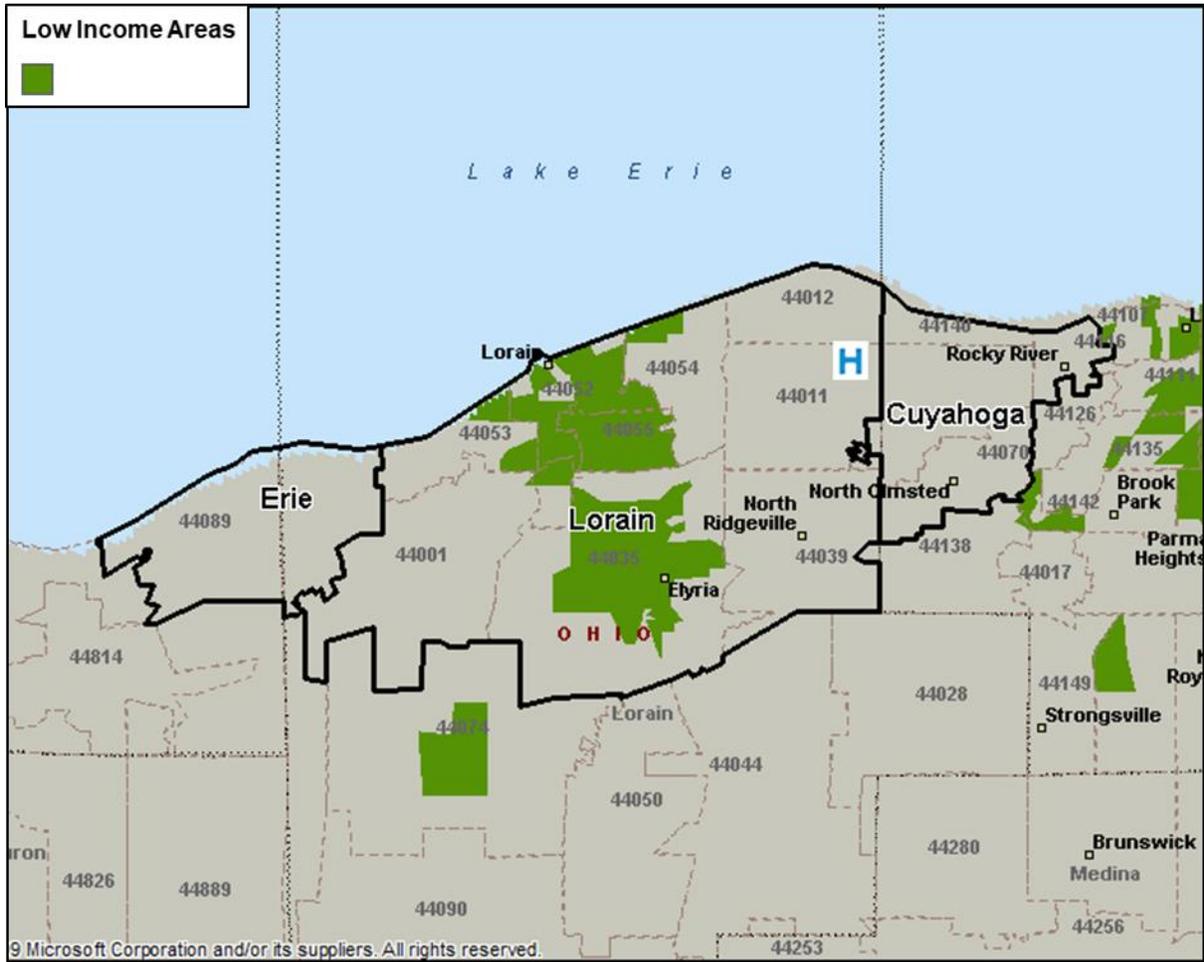
Source: US Department of Agriculture Economic Research Service, ESRI, 2017.

Description

Exhibit 16 portrays the location of federally-designated low income census tracts.

Observations

- Low income census tracts have been present in Lorain County.

Unemployment

Exhibit 17: Unemployment Rates, 2013-2017
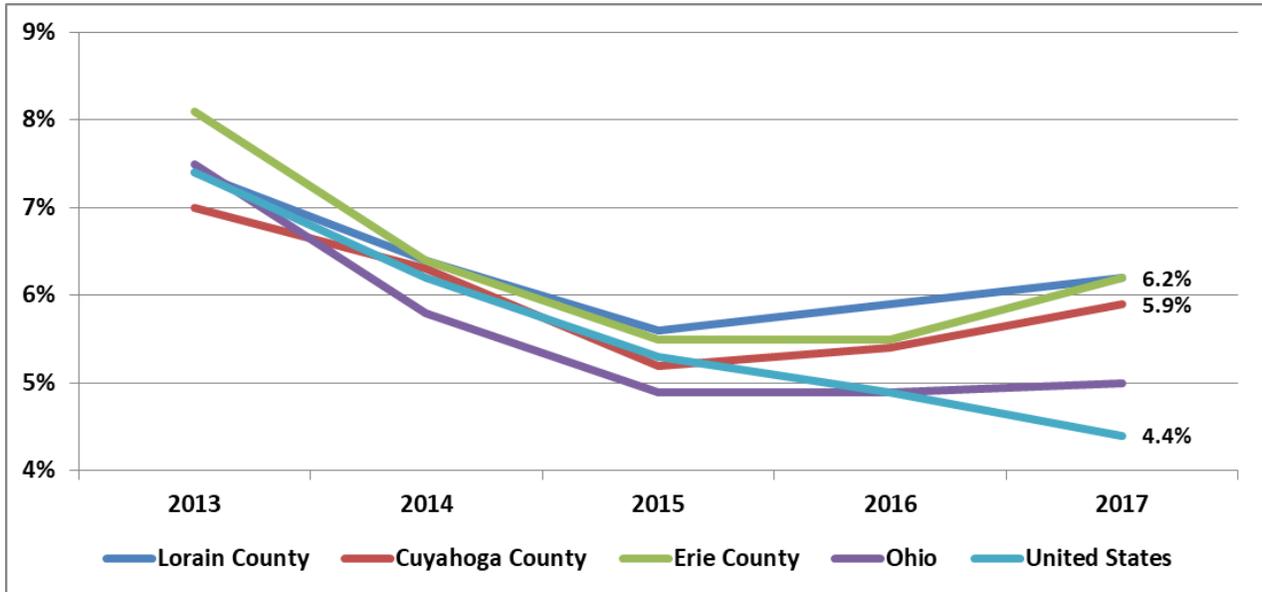
Source: Bureau of Labor Statistics, 2018.

Description

Exhibit 17 shows unemployment rates for 2013 through 2017 by county, with Ohio and national rates for comparison.

Observations

- Between 2012 and 2015, unemployment rates at the local, state, and national levels declined significantly. Between 2015 and 2017, unemployment rates increased slightly in each of the three community counties.

- Rates in Lorain, Cuyahoga, and Erie counties were above Ohio and U.S. averages in 2017.

Insurance Status

Exhibit 18: Percent of the Population without Health Insurance, 2017-2022

County	City/Town	ZIP Code	Total Population 2017	Percent Uninsured 2017	Total Population 2022	Percent Uninsured 2022
Lorain	Lorain	44052	28,477	6.2%	28,057	5.5%
Lorain	Lorain	44055	19,085	6.0%	18,801	5.3%
Lorain	Elyria	44035	63,485	4.7%	63,434	4.1%
Lorain	Lorain	44053	19,020	4.4%	19,507	3.9%
Lorain	Sheffield Lake	44054	12,481	3.2%	12,594	2.7%
Erie	Vermilion	44089	15,859	3.2%	15,825	2.7%
Cuyahoga	Rocky River	44116	20,273	2.8%	20,292	2.5%
Lorain	Avon	44011	23,902	2.8%	25,545	2.7%
Lorain	Amherst	44001	20,675	2.7%	20,829	2.4%
Lorain	Avon Lake	44012	23,965	2.6%	24,907	2.4%
Cuyahoga	Westlake	44145	33,048	2.5%	33,292	2.1%
Cuyahoga	North Olmsted	44070	32,080	2.5%	31,697	2.1%
Cuyahoga	Bay Village	44140	15,120	2.2%	14,876	2.0%
Lorain	North Ridgeville	44039	33,236	1.7%	35,157	1.5%
	Community Total		**360,706**	**3.5%**	**364,813**	**3.0%**

Source: Truven Market Expert, 2018.

Description

Exhibit 18 presents the estimated percent of population in community ZIP codes without health insurance (uninsured) – in 2017 and with projections to 2022.

Observations

- In 2017, the highest "uninsurance rates" were in Lorain County ZIP codes.

- Subsequent to the ACA's passage, a June 2012 Supreme Court ruling provided states with discretion regarding whether or not to expand Medicaid eligibility. Ohio was one of the states that expanded Medicaid. Across the United States, uninsurance rates have fallen most in states that decided to expand Medicaid.[11]

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

Crime Rates

Exhibit 19: Crime Rates by Type and Jurisdiction, Per 100,000, 2016

Crime	Lorain County	Cuyahoga County	Erie County	Ohio
Violent Crime	150.9	694.9	98.3	**305.9**
Property Crime	1,369.6	2,977.7	2,504.3	**2,537.4**
Murder	4.5	15.1	1.5	**5.9**
Rape	33.4	57.6	10.4	**47.4**
Robbery	50.3	327.7	40.2	**111.1**
Aggravated Assault	62.7	294.5	46.2	**141.5**
Burglary	373.4	753.6	446.7	**573.5**
Larceny	930.8	1,742.1	2,001.0	**1,789.7**
Motor Vehicle Theft	65.3	482.0	56.6	**174.2**
Arson	9.0	33.6	4.5	**23.4**

Source: FBI, 2017.

Description

Exhibit 19 provides crime statistics. Light grey shading indicates rates that were higher (worse) than the Ohio average; dark grey shading indicates rates that were more than 50 percent higher than the Ohio average.

Observations

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

- Erie County had a higher rate of larceny than the Ohio average.

Housing Affordability

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

County	City/Town	ZIP Code	Occupied Units Paying Rent	Households Paying >30%	Rent Burden > 30% of Income
Lorain	Lorain	44052	4,933	2,996	60.7%
Lorain	Lorain	44055	3,156	1,879	59.5%
Lorain	Elyria	44035	9,660	5,167	53.5%
Lorain	Lorain	44053	2,479	1,295	52.2%
Lorain	Avon Lake	44012	1,666	843	50.6%
Lorain	North Ridgeville	44039	1,644	765	46.5%
Erie	Vermilion	44089	1,698	759	44.7%
Lorain	Avon	44011	1,394	623	44.7%
Cuyahoga	Bay Village	44140	454	200	44.1%
Cuyahoga	North Olmsted	44070	3,349	1,475	44.0%
Lorain	Sheffield Lake	44054	1,040	446	42.9%
Lorain	Amherst	44001	1,153	471	40.8%
Cuyahoga	Rocky River	44116	2,408	953	39.6%
Cuyahoga	Westlake	44145	3,456	1,329	38.5%
Community Total			38,490	19,201	49.9%
Ohio			1,453,379	678,101	46.7%
United States			39,799,272	20,138,321	50.6%

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

Exhibit 21: Map of Percent of Rented Households Rent Burdened, 2013-2017
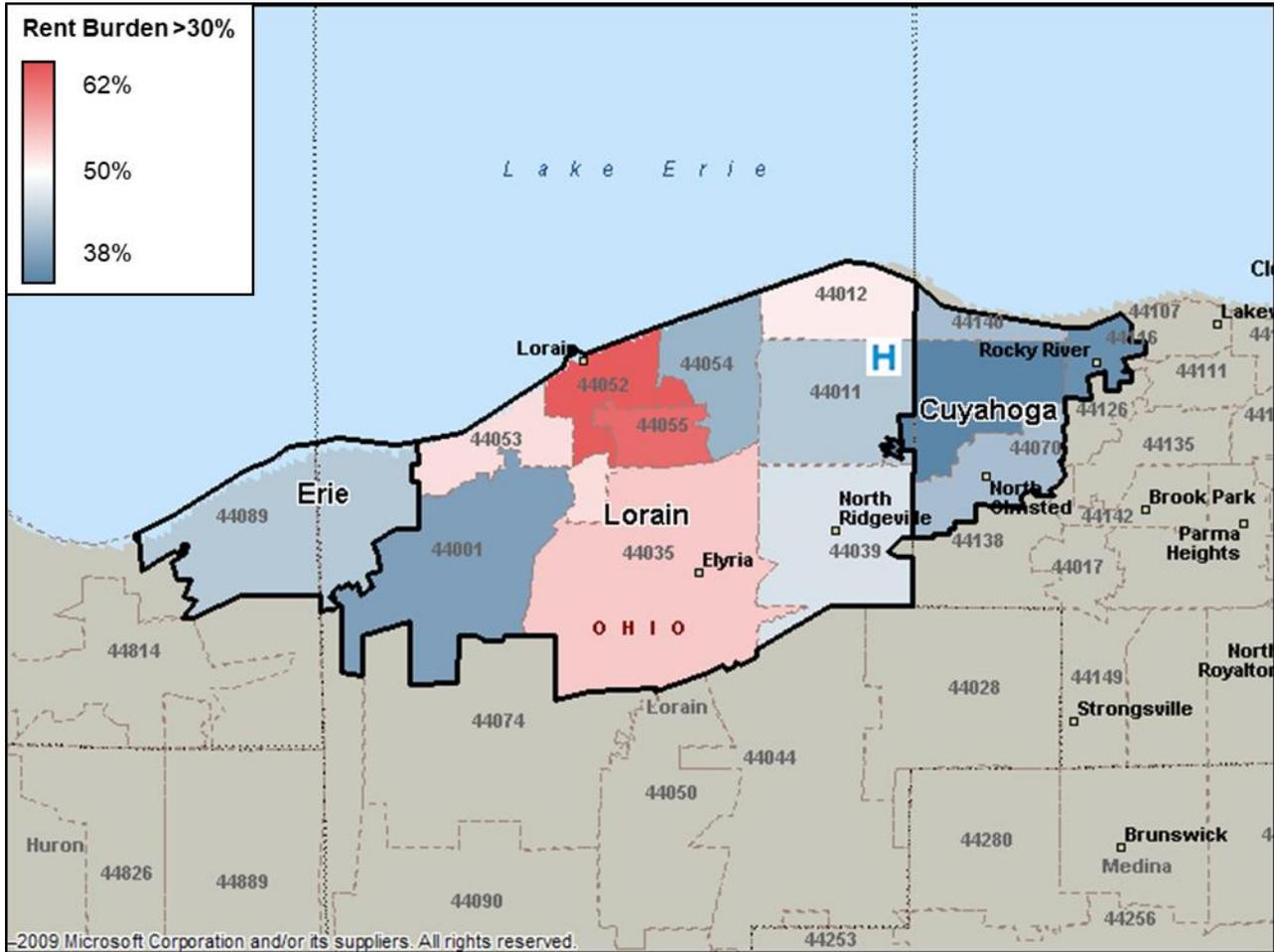
Source: U.S. Census, ACS 5-Year Estimates, 2018.

Description

The U.S. Department of Housing and Urban Development ("HUD") has defined households that are "rent burdened" as those spending more than 30 percent of income on housing.[12] On that basis and based on data from the U.S. Census, Exhibits 20 and 21 portray the percentage of rented households in each ZIP code that are rent burdened.

Observations

As stated by the Federal Reserve, "households that have little income left after paying rent may not be able to afford other necessities, such as food, clothes, health care, and transportation."[13]

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

- Nearly 50 percent of households have been designated as "rent burdened," a level above the Ohio average.

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

Dignity Health Community Need Index

Exhibit 22: Community Need Index™ Score by ZIP Code, 2018

County	City/Town	ZIP Code	CNI Score
Lorain	Lorain	44052	4.8
Lorain	Lorain	44055	4.8
Lorain	Elyria	44035	3.8
Lorain	Lorain	44053	3.8
Lorain	Sheffield Lake	44054	2.6
Erie	Vermilion	44089	2.2
Lorain	Amherst	44001	2.0
Lorain	North Ridgeville	44039	2.0
Cuyahoga	North Olmsted	44070	2.0
Cuyahoga	Westlake	44145	2.0
Lorain	Avon	44011	1.8
Cuyahoga	Rocky River	44116	1.8
Lorain	Avon Lake	44012	1.4
Cuyahoga	Bay Village	44140	1.2
Hospital Community			**2.7**
Lorain County Average			3.0
Cuyahoga County Average			3.3
Erie County Average			2.8

Source: Dignity Health, 2018.

Exhibit 23: Community Need Index, 2018

Source: Microsoft MapPoint and Dignity Health, 2018.

Description

Exhibits 22 and 23 present the *Community Need Index™* (CNI) score for each ZIP code in the Avon community. Higher scores (e.g., 4.2 to 5.0) indicate the highest levels of community need. The index is calibrated such that 3.0 represents a U.S.-wide median score.

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

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

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

Observations

- Two of the 14 ZIP codes in the Avon community (Lorain County ZIP codes 44052 and 44055) scored in the "highest need" category. Two other ZIP codes scored in the "lowest need" category.

- At 2.7, the weighted average CNI score for the Avon community is below the U.S. median of 3.0.

Other Local Health Status and Access Indicators

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

(1) County Health Rankings
(2) Community Health Status Indicators, published by County Health Rankings
(3) Ohio Department of Health
(4) CDC's Behavioral Risk Factor Surveillance System.

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

County Health Rankings

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

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

Source: County Health Rankings, 2018.

Description

Exhibit 24 presents *County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation that incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of "health factors" and "health outcomes." These health factors and outcomes are composite measures based on several variables grouped into the following categories: health behaviors, clinical care,[14] social and economic factors, and physical environment.[15] *County Health Rankings* is updated annually. *County Health Rankings 2018* relies on data from 2006 to 2017, with most data from 2011 to 2016.

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

Observations

- In 2018, Lorain County ranked in the bottom 50th percentile among Ohio counties for 19 of the 42 indicators assessed. Of those, five were in the bottom quartile, including alcohol-impaired driving deaths, sexually transmitted infections, children in single-parent households, social associations, and severe housing problems.

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

- In Erie County, 21 indicators ranked in the bottom 50th percentile among Ohio counties. Four were in the bottom quartile, including alcohol-impaired driving deaths, social associations, and percent that drive alone to work.

- All three counties ranked in the bottom quartile for sexually transmitted infections and children in single-parent households.

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

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

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

Indicator Category	Data	Lorain County	Cuyahoga County	Erie County	Ohio	United States
Health Outcomes						
Length of Life	Years of potential life lost before age 75 per 100,000 population	7,137	8,037	8,530	**7,734**	6,700
Quality of Life	Percent of adults reporting fair or poor health	16.9%	16.4%	16.4%	**17.0%**	16.0%
	Average number of physically unhealthy days reported in past 30 days	4.0	3.7	4.0	**4.0**	3.7
	Average number of mentally unhealthy days reported in past 30 days	4.0	3.7	3.9	**4.3**	3.8
	Percent of live births with low birthweight (<2500 grams)	7.8%	10.6%	8.5%	**8.6%**	8.0%
Health Factors						
Health Behaviors						
Adult Smoking	Percent of adults that report smoking >= 100 cigarettes and currently smoking	19.9%	20.6%	19.7%	**22.5%**	17.0%
Adult Obesity	Percent of adults that report a BMI >= 30	30.4%	29.9%	35.7%	**31.6%**	28.0%
Food Environment Index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	7.6	7.0	7.3	**6.6**	7.7
Physical Inactivity	Percent of adults aged 20 and over reporting no leisure-time physical activity	25.4%	24.3%	29.4%	**25.7%**	23.0%
Access to Exercise Opportunities	Percent of population with adequate access to locations for physical activity	92.2%	96.1%	73.4%	**84.7%**	83.0%
Excessive Drinking	Binge plus heavy drinking	17.3%	16.8%	17.7%	**19.1%**	18.0%
Alcohol-Impaired Driving Deaths	Percent of driving deaths with alcohol involvement	46.4%	44.0%	25.0%	**34.3%**	29.0%
STDs	Chlamydia rate per 100,000 population	378	720	503	**489**	479
Teen Births	Teen birth rate per 1,000 female population, ages 15-19	27.8	30.3	29.5	**27.6**	27.0
Clinical Care						
Uninsured	Percent of population under age 65 without health insurance	6.5%	7.8%	6.6%	**7.7%**	11.0%
Primary Care Physicians	Ratio of population to primary care physicians	1,744:1	898:1	1,374:1	**1,307:1**	1,320:1
Dentists	Ratio of population to dentists	2,142:1	979:1	1,502:1	**1,656:1**	1,480:1
Mental Health Providers	Ratio of population to mental health providers	772:1	356:1	481:1	**561:1**	470:1
Preventable Hospital Stays	Hospitalization rate for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	65	53	62	**57**	49
Diabetes Screening	Percent of diabetic Medicare enrollees that receive HbA1c monitoring	86.0%	83.8%	87.1%	**85.1%**	85.0%
Mammography Screening	Percent of female Medicare enrollees, ages 67-69, that receive mammography screening	67.9%	64.7%	66.2%	**61.2%**	63.0%

Source: County Health Rankings, 2018.

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

Indicator Category	Data	Lorain County	Cuyahoga County	Erie County	Ohio	United States
Health Factors						
Social & Economic Factors						
High School Graduation	Percent of ninth-grade cohort that graduates in four years	86.6%	74.8%	79.2%	**81.2%**	83.0%
Some College	Percent of adults aged 25-44 years with some post-secondary education	64.9%	68.7%	64.5%	**64.5%**	65.0%
Unemployment	Percent of population age 16+ unemployed but seeking work	5.9%	5.4%	5.5%	**4.9%**	4.9%
Children in Poverty	Percent of children under age 18 in poverty	17.9%	26.4%	20.1%	**20.4%**	20.0%
Income Inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	4.5	5.6	4.2	**4.8**	5.0
Children in Single-Parent Households	Percent of children that live in a household headed by single parent	37.4%	45.0%	38.2%	**35.7%**	34.0%
Social Associations	Number of associations per 10,000 population	10.2	9.3	15.1	**11.3**	9.3
Violent Crime	Number of reported violent crime offenses per 100,000 population	180	589	157	**290**	380
Injury Deaths	Injury mortality per 100,000	77.0	76.4	79.7	**75.5**	65.0
Physical Environment						
Air Pollution	The average daily measure of fine particulate matter in micrograms per cubic meter (PM2.5) in a county	11.3	12.9	10.9	**11.3**	8.7
Severe Housing Problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	14.6%	18.5%	11.8%	**15.0%**	19.0%
Driving Alone to Work	Percent of the workforce that drives alone to work	84.1%	79.8%	83.6%	**83.4%**	76.0%
Long Commute – Drive Alone	Among workers who commute in their car alone, the percent that commute more than 30 minutes	35.6%	32.6%	22.3%	**30.0%**	35.0%

Source: County Health Rankings, 2018.

Description

Exhibit 25 provides data that underlie the County Health Rankings.[16] The exhibit also includes Ohio and national averages. Light grey shading highlights indicators found to be worse than the Ohio average; dark grey shading highlights indicators more than 50 percent worse than the Ohio average.

Observations

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

    - Chlamydia rate
    - High school graduation rate
    - Injury mortality rate
    - Percent of adults who drive alone to work
    - Percent of adults who drive alone to work with long commutes
    - Percent of children living in single-parent households
    - Percent of driving deaths with alcohol involvement
    - Physically unhealthy days
    - Preventable hospital stays rate
    - Ratio of population to primary care physicians
    - Social associations rate
    - Teen birth rate
    - Unemployment
    - Years of potential life lost rate

- In Exhibit 25, Cuyahoga County's crime rate is more than 50 percent worse than the Ohio average. The county's chlamydia rate is just under 50 percent above average.

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

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

Community Health Status Indicators

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

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

Source: Community Health Status Indicators, 2017.

Description

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

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

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

Observations

- The CHSI data indicate that both counties served by Avon compared unfavorably to their peers for the following indicators:

    o Percent low birth weight births
    o Percent of adults who smoke
    o Food environment index
    o Percent of driving deaths alcohol-impaired
    o Chlamydia rate
    o Preventable hospitalizations rate
    o High school graduation rate
    o Percent of children living in single-parent households
    o Air pollution (average daily PM2.5)

Ohio Department of Health

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

Specific Causes of Death	Lorain County	Cuyahoga County	Erie County	Ohio
All Causes of Death	790.0	827.3	879.5	**832.3**
All other forms of chronic ischemic heart disease	52.1	52.3	41.2	**53.2**
Other chronic obstructive pulmonary disease	52.6	33.6	52.5	**43.7**
Organic dementia	33.1	46.5	40.3	**38.4**
Alzheimer's disease	31.9	20.5	44.3	**33.4**
Acute myocardial infarction	25.4	24.4	28.1	**32.1**
Accidental poisoning by and exposure to drugs and other biological substances	52.0	44.6	52.8	**36.8**
Diabetes mellitus	17.8	25.9	29.6	**24.6**
Conduction disorders and cardiac dysrhythmias	17.9	21.0	20.5	**20.2**
Congestive heart failure	16.9	17.8	26.8	**19.5**
Stroke, not specified as hemorrhage or infarction	14.3	16.1	17.8	**17.8**
Atherosclerotic cardiovascular disease	16.0	34.5	24.5	**15.4**
Renal failure	12.4	15.3	19.0	**15.1**
Septicemia	13.9	17.1	13.0	**13.7**
Pneumonia	14.5	9.3	10.4	**13.3**
All other diseases of nervous system	10.6	9.6	12.6	**12.3**
Hypertensive heart disease	7.0	15.0	N/A	**11.9**
All other diseases of respiratory system	9.5	8.3	13.5	**11.4**
Other cerebrovascular diseases and their sequelae	7.3	7.7	N/A	**10.4**
Parkinson's disease	10.8	6.9	12.8	**8.7**
Intentional self-harm (suicide) by discharge of firearms	7.6	6.2	14.9	**7.4**
Alcoholic liver disease	6.8	5.8	11.7	**5.1**
Unspecified fall	N/A	0.7	N/A	**4.7**

Source: Ohio Department of Health, 2017.

Description

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

Observations

- The following mortality rates compared particularly unfavorably to Ohio averages:
  - Other chronic obstructive pulmonary disease
  - Organic dementia

APPENDIX B – SECONDARY DATA ASSESSMENT

- o Accidental poisoning by and exposure to drugs and other biological substances
- o Diabetes mellitus
- o Conduction disorders and cardiac dysrhythmias
- o Atherosclerotic cardiovascular disease
- o Renal failure
- o Septicemia
- o Parkinson's disease
- o Intentional self-harm (suicide) by discharge of firearms
- o Alcohol liver disease

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

Cancer Site/Type	Lorain County	Cuyahoga County	Erie County	Ohio
All Cancer Types	172.9	180.0	165.1	**173.8**
Lung and Bronchus	49.4	44.7	40.6	**47.9**
Prostate	18.0	23.2	24.2	**19.8**
Other Sites/Types	19.6	21.5	17.5	**19.6**
Colon & Rectum	16.0	14.5	22.5	**15.5**
Breast	13.9	12.7	9.8	**12.0**
Pancreas	11.2	13.1	8.9	**11.5**
Ovary	5.9	8.9	N/A	**7.8**
Leukemia	7.4	7.9	N/A	**6.9**
Liver & Intrahepatic Bile Duct	6.5	7.6	N/A	**6.1**
Non-Hodgkins Lymphoma	6.6	5.7	N/A	**5.9**
Uterus	4.4	6.9	N/A	**5.2**
Esophagus	5.3	4.7	9.1	**5.1**
Bladder	4.3	6.2	N/A	**5.1**
Brain and Other CNS	2.6	4.1	N/A	**4.8**
Kidney & Renal Pelvis	3.5	3.4	N/A	**3.8**
Multiple Myeloma	3.3	3.3	N/A	**3.3**
Oral Cavity & Pharynx	3.6	3.1	N/A	**2.9**
Melanoma of Skin	N/A	1.4	N/A	**2.6**
Stomach	N/A	4.1	N/A	**2.5**
Cervix	N/A	3.3	N/A	**2.1**
Larynx	N/A	1.0	N/A	**1.2**
Thyroid	N/A	0.8	N/A	**0.4**

Source: Ohio Department of Health, 2017.

Description

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

Observations

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

- Cancer mortality rates for prostate, colon and rectum, breast, leukemia, liver and intrahepatic bile duct, esophagus, and oral cavity and pharynx were higher than the state average in at least two community counties.

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

Cancer Site/Type	Lorain County	Cuyahoga County	Erie County	Ohio
All Cancer Types	463.7	483.2	489.0	**461.6**
Prostate	122.6	131.7	97.0	**108.0**
Lung and Bronchus	69.0	65.6	60.8	**69.3**
Breast	68.6	73.1	70.0	**68.0**
Colon & Rectum	41.2	43.4	49.9	**41.7**
Other Sites/Types	33.3	39.5	42.0	**36.4**
Uterus	27.1	32.5	33.4	**29.2**
Bladder	23.0	20.9	26.6	**21.9**
Melanoma of Skin	20.2	16.8	28.2	**21.7**
Non-Hodgkins Lymphoma	18.6	20.1	22.9	**19.0**
Kidney & Renal Pelvis	18.7	16.9	16.3	**16.8**
Thyroid	17.5	16.4	22.4	**14.8**
Pancreas	14.4	13.8	12.8	**12.7**
Leukemia	10.6	12.7	10.6	**12.2**
Oral Cavity & Pharynx	10.5	11.1	12.3	**11.7**
Ovary	8.2	12.2	10.7	**11.4**
Cervix	8.3	6.6	6.6	**7.6**
Brain and Other CNS	7.0	6.7	7.4	**6.9**
Liver & Intrahepatic Bile Duct	6.2	8.9	5.1	**6.7**
Stomach	7.1	7.9	5.7	**6.4**
Multiple Myeloma	4.7	7.4	6.5	**5.8**
Testis	7.4	6.8	8.4	**5.8**
Esophagus	4.4	5.1	4.5	**5.1**
Larynx	3.6	4.3	5.3	**4.1**
Hodgkins Lymphoma	2.3	3.3	3.5	**2.7**

Source: Ohio Department of Health, 2016.

Description

Exhibit 29 presents age-adjusted cancer incidence rates by county.

Observations

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

- In all three counties, incidence rates for breast, thyroid, pancreas, and testis cancers were above Ohio averages.

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

Indicator	Lorain County	Cuyahoga County	Erie County	Ohio
Living with diagnosis of HIV infection (2016)	114.9	373.2	107.8	**199.5**
Gonorrhea	171.0	408.5	332.9	**206.6**
Chlamydia	487.0	884.8	529.9	**528.9**
Total Syphilis	12.4	29.8	18.6	**16.4**
Tuberculosis	2.3	2.2	-	**1.3**

Source: Ohio Department of Health, 2018.

Description

Exhibit 30 presents incidence rates for various communicable diseases in the community.

Observations

- The Lorain County rate for tuberculosis was more than 50 percent worse than the Ohio average.

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

- Erie County rates for gonorrhea, chlamydia, and syphilis were worse than Ohio Averages.

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

Indicator	Lorain County	Cuyahoga County	Erie County	Ohio
Low Birth Weight Percent	7.0%	8.5%	6.2%	**7.2%**
Very Low Birth Weight Percent	1.4%	2.2%	1.6%	**1.6%**
Births to Unmarried Mothers	48.4%	51.7%	50.2%	**43.2%**
Preterm Births Percent	8.3%	9.5%	8.0%	**8.7%**
Very Preterm Births Percent	1.6%	2.5%	1.7%	**1.8%**

Source: Ohio Department of Health, 2018.

Description

Exhibit 31 presents various maternal and infant health indicators.

Observations

- Lorain County compared favorably to Ohio averages for all indicators except births to unmarried mothers.

- All Cuyahoga County indicators were worse than Ohio averages, while Erie County compared unfavorably for very low birth weight births and births to unmarried mothers.

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

Indicator	Lorain County	Cuyahoga County	Erie County	Ohio
Overall Infant Mortality Rate	5.9	9.3	9.2	7.4
Black Infant Mortality Rate	10.9	16.3	N/A	15.2
Hispanic Infant Mortality Rate	6.0	6.0	N/A	7.3
White Infant Mortality Rate	5.1	5.2	N/A	5.8

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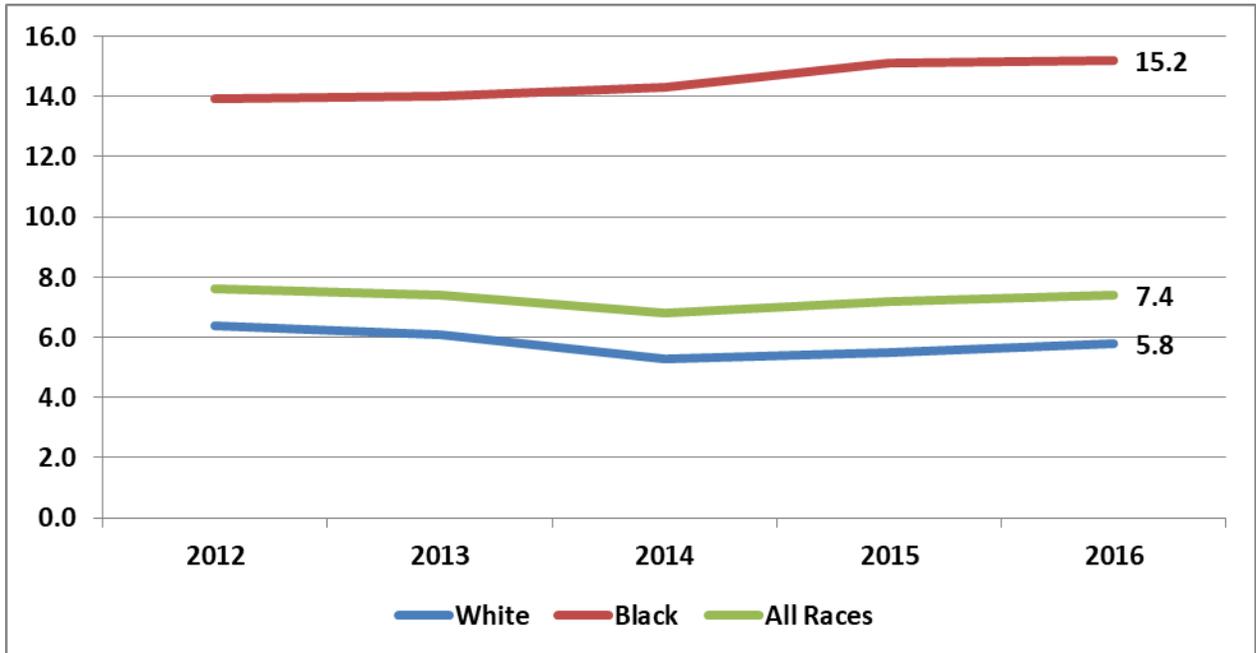
Description

Exhibit 32 presents infant mortality rates by race and ethnicity by county and for Ohio.

Observations

- The overall infant mortality rate and the Black infant mortality rate in Cuyahoga County were higher than the Ohio averages. The Black infant mortality rate in Erie County was higher than the Ohio average.

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

Exhibit 33: Infant Mortality Rates by Race, Ohio overall, 2012-2016

Source: Ohio Department of Health, 2018.

Description

Exhibit 33 presents infant mortality rates in Ohio by race for each year from 2012 to 2016.

Observations

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

Behavioral Risk Factor Surveillance System

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

County	City/Town	ZIP Code	Total Population 18+	% Arthritis	% Asthma	% Depression	% Diabetes	% Heart Disease	% Heart Failure	% High Blood Pressure	% High Cholesterol	% Adult Smoking	% COPD	% Back Pain
Lorain	Avon Lake	44012	18,385	20.9%	11.3%	17.2%	14.7%	10.1%	3.1%	33.4%	22.7%	20.9%	4.1%	27.2%
Lorain	Elyria	44035	48,827	26.4%	12.7%	20.4%	16.1%	11.4%	5.3%	32.4%	25.4%	29.3%	6.6%	33.4%
Lorain	Avon	44011	17,003	22.8%	9.2%	16.6%	11.2%	10.5%	2.5%	29.3%	23.6%	21.2%	4.4%	25.2%
Lorain	North Ridgeville	44039	25,233	21.4%	10.4%	15.3%	14.3%	9.7%	3.8%	30.0%	24.9%	22.7%	5.4%	26.4%
Cuyahoga	Westlake	44145	26,850	22.2%	10.3%	15.9%	14.2%	9.5%	3.2%	32.5%	24.6%	19.2%	4.9%	25.9%
Lorain	Lorain	44052	21,031	27.1%	14.6%	22.5%	16.7%	10.6%	5.7%	32.0%	24.4%	31.6%	7.5%	34.7%
Lorain	Sheffield Lake	44054	10,606	26.7%	10.7%	17.4%	13.9%	9.6%	3.9%	29.7%	24.6%	24.8%	5.1%	29.1%
Lorain	Amherst	44001	16,562	24.7%	10.6%	19.1%	16.0%	11.2%	5.7%	34.2%	27.5%	26.0%	6.1%	32.5%
Cuyahoga	Bay Village	44140	11,585	21.8%	10.4%	15.3%	11.3%	7.6%	2.8%	33.0%	23.8%	17.9%	4.7%	24.0%
Lorain	Lorain	44053	15,370	26.0%	11.4%	16.9%	16.6%	12.0%	5.1%	33.2%	28.6%	27.1%	6.2%	31.5%
Lorain	Lorain	44055	14,091	26.8%	14.9%	22.8%	16.1%	10.0%	5.8%	32.2%	24.2%	32.1%	8.1%	35.1%
Erie	Vermilion	44089	13,110	26.7%	10.1%	18.1%	15.4%	11.4%	5.2%	32.7%	27.9%	27.4%	6.7%	32.9%
Cuyahoga	North Olmsted	44070	25,696	22.3%	10.3%	16.7%	15.3%	11.5%	3.7%	32.3%	22.9%	23.3%	4.8%	27.6%
Cuyahoga	Rocky River	44116	16,136	20.9%	10.4%	17.9%	18.7%	12.2%	4.8%	31.6%	27.3%	20.9%	4.3%	26.0%
Hospital Community			280,485	24.1%	11.4%	18.2%	15.2%	10.6%	4.4%	32.1%	25.1%	24.9%	5.7%	29.7%
Ohio Average			9,044,061	24.2%	11.9%	19.2%	15.7%	10.7%	4.5%	31.8%	25.0%	27.5%	6.0%	31.1%

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

Description

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

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

Observations

- Avon community averages for the prevalence of high blood pressure and high cholesterol were worse than the Ohio averages.

- Lorain County ZIP code 44035 compared unfavorably to Ohio averages for all conditions.

Ambulatory Care Sensitive Conditions

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

County	City/Town	ZIP Code	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease	Hypertension	Congestive Heart Failure
Lorain	Avon Lake	44012	44	800	120	512	33	511
Lorain	Elyria	44035	118	481	134	1,516	73	779
Lorain	Avon	44011	53	714	88	487	47	553
Lorain	North Ridgeville	44039	27	667	156	681	74	454
Cuyahoga	Westlake	44145	33	615	115	618	67	588
Lorain	Lorain	44052	139	545	201	1,823	110	875
Lorain	Sheffield Lake	44054	80	200	110	821	20	562
Lorain	Amherst	44001	59	500	71	751	77	591
Cuyahoga	Bay Village	44140	26	400	52	453	35	518
Lorain	Lorain	44053	114	750	174	1,399	80	986
Lorain	Lorain	44055	171	400	235	2,012	107	1,027
Erie	Vermilion	44089	108	200	93	966	77	549
Cuyahoga	North Olmsted	44070	35	500	85	754	97	579
Cuyahoga	Rocky River	44116	37	750	86	731	62	635
Community Averages			**75**	**547**	**125**	**990**	**72**	**663**
Ohio Averages			**70**	**595**	**120**	**696**	**72**	**584**
United States Averages			69	351	102	481	49	322

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

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

County	City/Town	ZIP Code	Low Birth Weight	Dehydration	Bacterial Pneumonia	Urinary Tract Infection	Uncontrolled Diabetes	Young Adult Asthma	Lower-Extremity Amputation Among Patients with Diabetes
Lorain	Avon Lake	44012	-	299	185	250	38	38	49
Lorain	Elyria	44035	14	258	399	258	61	35	20
Lorain	Avon	44011	-	159	206	170	35	39	35
Lorain	North Ridgeville	44039	14	176	270	199	23	13	55
Cuyahoga	Westlake	44145	4	309	357	342	63	38	56
Lorain	Lorain	44052	4	426	325	234	91	13	48
Lorain	Sheffield Lake	44054	9	371	341	241	80	61	40
Lorain	Amherst	44001	12	308	243	260	41	-	24
Cuyahoga	Bay Village	44140	6	181	173	147	43	-	17
Lorain	Lorain	44053	9	483	369	356	60	126	34
Lorain	Lorain	44055	17	350	285	214	114	199	57
Erie	Vermilion	44089	-	340	286	294	23	80	15
Cuyahoga	North Olmsted	44070	6	239	270	297	42	35	15
Cuyahoga	Rocky River	44116	5	308	327	222	25	22	6
Community Averages			**8**	**290**	**303**	**254**	**53**	**46**	**34**
Ohio Averages			**18**	**218**	**238**	**198**	**50**	**36**	**36**
United States Averages			-	130	250	156	13	41	17

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

Description

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

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

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

Observations

- The rates of admissions for ACSC in the Avon community exceeded Ohio averages for the following conditions: diabetes short-term complications, diabetes long-term complications, COPD, hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infections, uncontrolled diabetes, and young adult asthma.

- Lorain County ZIP codes 44053 and 44055 had comparatively high PQI rates for nearly every condition. These ZIP codes also have above average poverty rates.

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

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

Indicator	Community Averages	Ohio Averages	Ratio: Avon / Ohio
Chronic Obstructive Pulmonary Disease	989.6	695.6	1.42
Dehydration	289.8	218.3	1.33
Urinary Tract Infection	254.2	197.5	1.29
Young Adult Asthma	45.9	35.7	1.29
Bacterial Pneumonia	302.7	238.4	1.27
Congestive Heart Failure	663.1	584.2	1.14
Diabetes Short-Term Complications	75.2	70.1	1.07
Uncontrolled Diabetes	52.8	50.2	1.05
Diabetes Long-Term Complications	125.5	120.2	1.04
Hypertension	71.7	71.6	1.00
Lower-Extremity Amputation Among Patients with Diabetes	33.5	36.3	0.92
Perforated Appendix	546.8	594.7	0.92
Low Birth Weight	8.3	18.1	0.46

Source: Cleveland Clinic, 2018.

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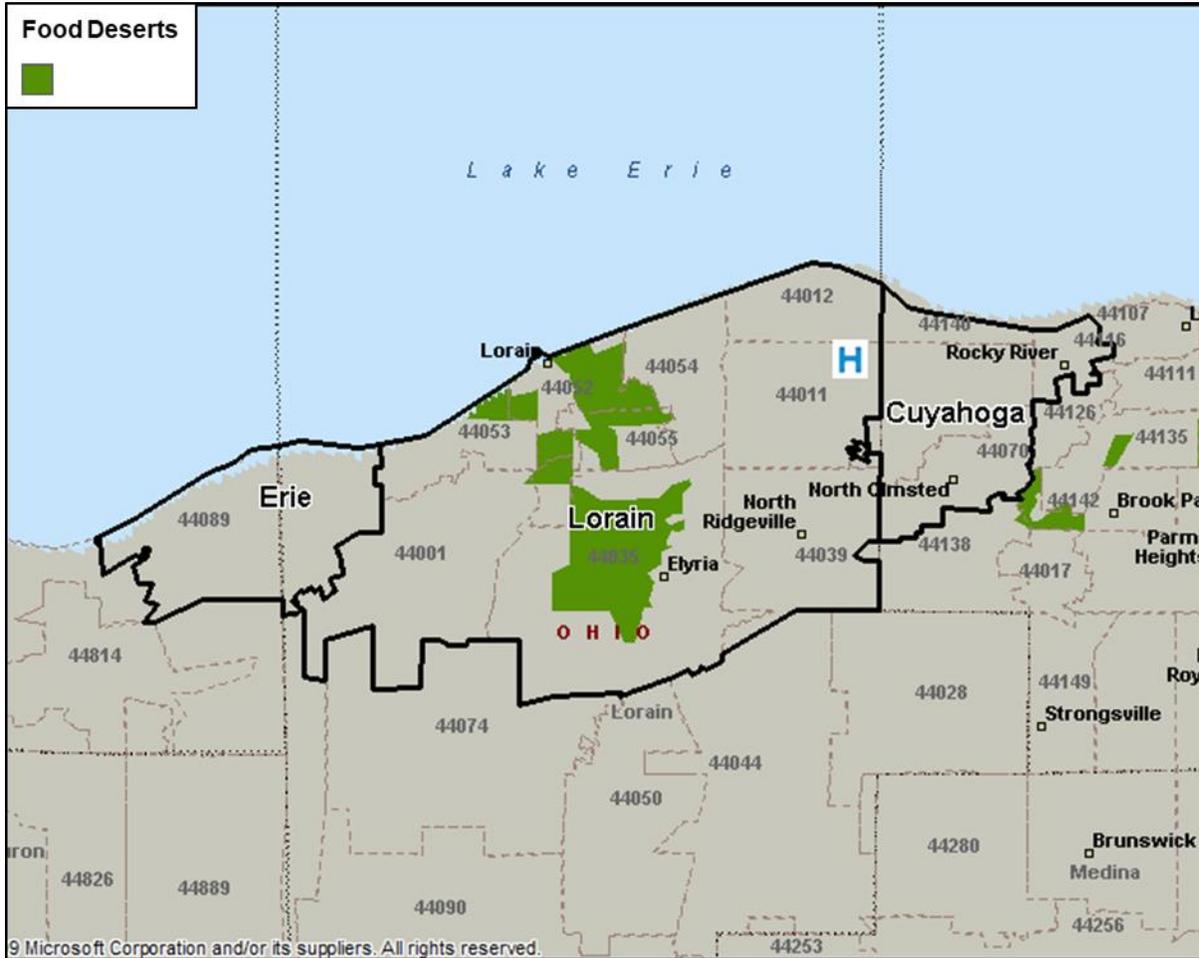
Description

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

Observations

- Community ACSC rates for COPD and dehydration were above Ohio averages by 30 percent or more.

Food Deserts

Exhibit 37: Food Deserts, 2017

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

Description

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

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

Observations

- Several census tracts in Lorain County have been designated as food deserts.

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Medically Underserved Areas and Populations

Exhibit 38: Medically Underserved Areas and Populations, 2018

Source: Microsoft MapPoint and HRSA, 2018.

Description

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

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

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population

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

group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if "unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides."[19]

Observations

- Several census tracts have been designated as areas where Medically Underserved Areas are present, particularly in Lorain County.

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[19]*Ibid.*

Health Professional Shortage Areas

Exhibit 39: Primary Care Health Professional Shortage Areas, 2018

County	Area
Lorain	Brighton Township
Lorain	Huntington Township
Lorain	Lagrange Township
Lorain	Penfield Township
Lorain	Rochester Township
Lorain	Wellington Township

Source: Health Resources and Services Administration, 2018.

Health Professional Shortage Areas

Exhibit 40: Dental Care Health Professional Shortage Areas, 2018
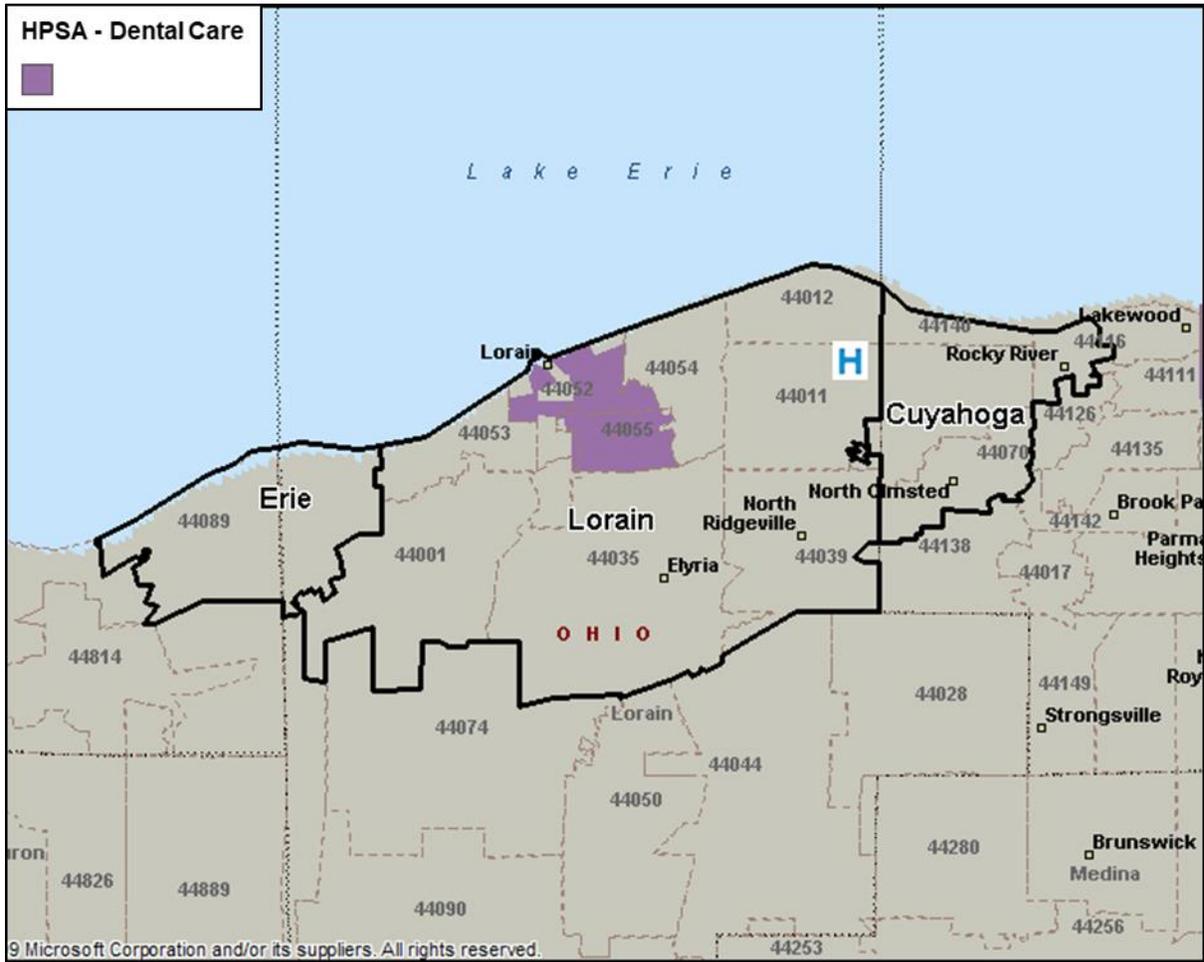
Source: Health Resources and Services Administration, 2018.

Description

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

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

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

Observations

- While no community census tracts have been designated as primary care HPSAs, several minor civil divisions within Lorain County have been designated, including the following townships: Brighton, Huntington, Lagrange, Penfield, Rochester, and Wellington.

- Census tracts in Lorain County have been designated as dental care HPSAs.

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

Findings of Other Assessments

In recent years, the Ohio Department of Health and local health departments in Lorain, Cuyahoga, and Erie counties conducted Community Health Assessments and developed Health Improvement Plans. This section identifies community health priorities found in that work. This CHNA report considers those findings when *significant* community health needs are specified.

State Health Improvement Plan, 2017-2019

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

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

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

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

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

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

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

2. Public Health System, prevention and health behaviors, e.g.,
   o Consume healthy food,
   o Reduce physical inactivity,
   o Reduce adult smoking, and

     o Reduce youth all-tobacco use.

3. Healthcare system and access, e.g.,
     o Reduce percent of adults who are uninsured,
     o Reduce percent of adults unable to see a doctor due to cost, and
     o Reduce primary care health professional shortage areas.

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

Cuyahoga County Community Health Assessment 2018

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

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

Quality of Life
1. Poverty
2. Food insecurity

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

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

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

Maternal/Child Health
13. Infant mortality

Lorain County Community Health Improvement Plan, 2014-2019

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

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

Erie County Community Health Improvement Plan, 2017-2020

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

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

APPENDIX C – COMMUNITY INPUT PARTICIPANTS

Individuals from a wide variety of organizations and communities participated in the interview process (**Exhibit 41**).

Exhibit 41: Interviewee Organizational Affiliations

Organization	
Alcohol and Drug Addiction Services Board of Lorain County	Lorain County Department of Health
American Heart Association	Lorain County Free Clinic
Benjamin Rose Institute on Aging	NAMI
Center for Community Solutions	Ohio Department of Health
Center for Health Affairs	The Catholic Health Association
Cuyahoga County Board of Health	The Centers (for families and children)
El Centro	The Gathering Place
Fairhill Partners	The LCADA Way
Greater Cleveland Food Bank	United Cerebral Palsy
Health Policy Institute of Ohio	United Way of Greater Lorain County
Kent State School of Public Health	Western Reserve Area Agency on Aging
Lorain County Board of Mental Health	
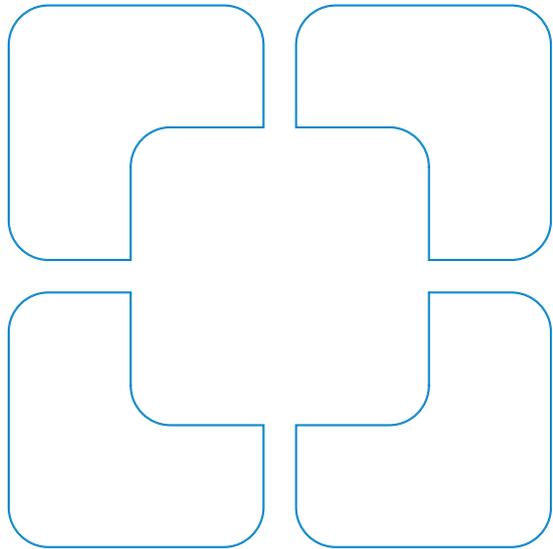
Cleveland Clinic
Avon Hospital

Implementation
Strategy Report
2019
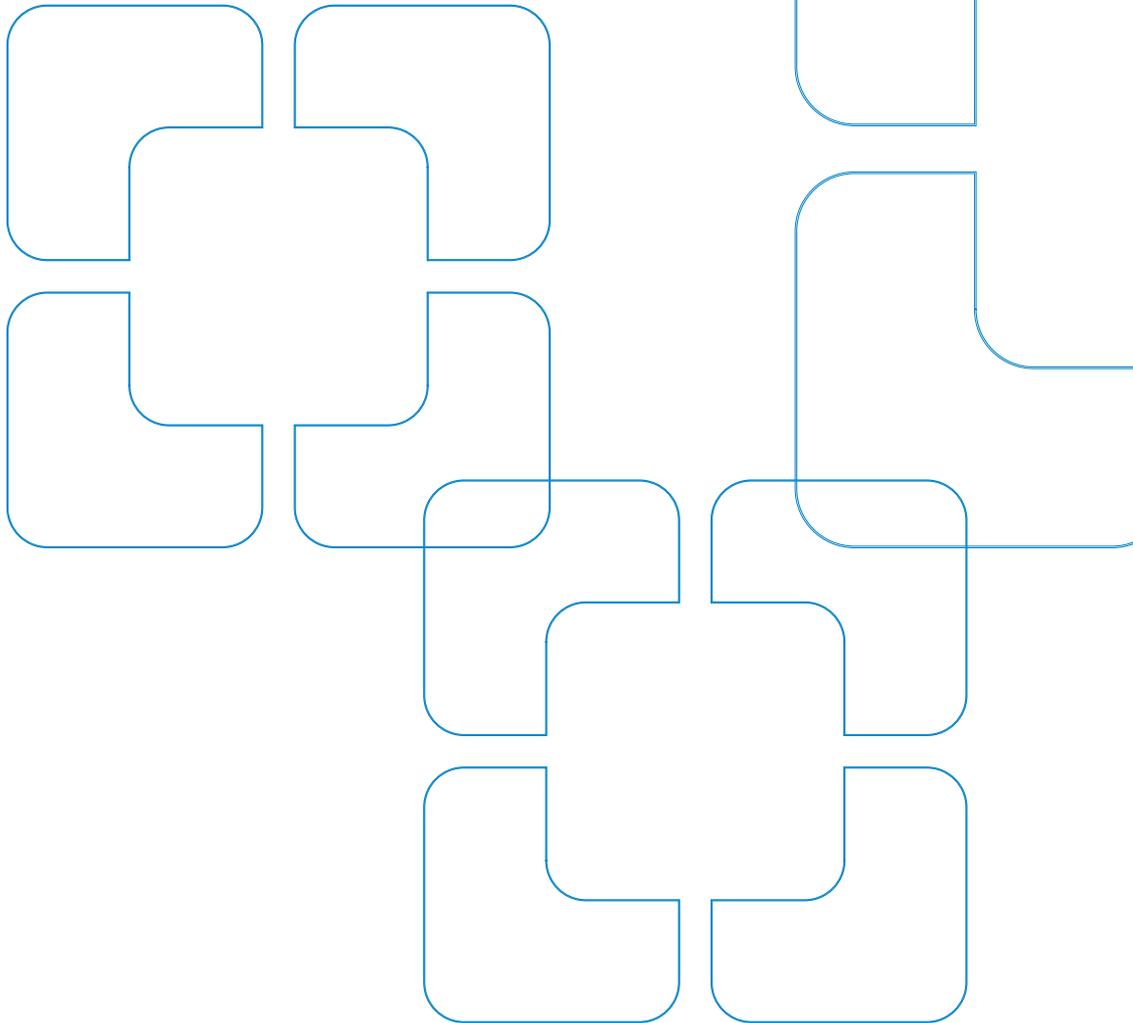
Cleveland Clinic Avon Hospital
33300 Cleveland Clinic Blvd.
Avon OH 44011

2019 Community Health Needs Assessment
Implementation Strategy for Years 2020 - 2022
As required by Internal Revenue Code § 501(r)(3)

Name and EIN of
Hospital Organization   Cleveland Clinic Avon Hospital
Operating Hospital Facility: #47-4442902

Date Approved by
Authorized Governing Body: April 9, 2020

Contact: Cleveland Clinic
                                               chna@ccf.org

TABLE OF CONTENTS

Avon Hospital
2019 IMPLEMENTATION STRATEGY

I. INTRODUCTION AND PURPOSE

This written plan is intended to satisfy the requirements set forth in Internal Revenue Code Section 501(r)(3) regarding community health needs assessments and implementation strategies. The overall purpose of the implementation strategy process is to align the hospital's limited resources, program services, and activities with the findings of the community health needs assessment ("CHNA").

A. Description of Hospital

Avon Hospital, which opened in November 2016, operates 126 staffed hospital beds and a 24-hour Emergency Department featuring board-certified, emergency medicine physicians available around-the-clock to provide comprehensive care to adults and children. Avon Hospital provides a spectrum of services, from critical care to cardiology, orthopedic surgery, and outpatient procedures. Additional information on the hospital and its services are available at https://my.clevelandclinic.org/locations/avon-hospital/.

The hospital is part of the Cleveland Clinic health system, which includes an academic medical center near downtown Cleveland, eleven regional hospitals in northeast Ohio, a children's hospital, a children's rehabilitation hospital, five southeast Florida hospitals, and a number of other facilities and services across Ohio, Florida, and Nevada. Additional information about Cleveland Clinic is available at https://my.clevelandclinic.org/.

B. Hospital Mission

Avon Hospital's mission statement is:

To provide better care for the sick, investigation of their problems and education of those who serve

II. COMMUNITY DEFINITION

For purposes of this report, Avon's community is defined as 14 ZIP codes in Lorain, Cuyahoga, and Erie counties, Ohio, accounting for over 78 percent of the hospital's recent inpatient volumes. The community was defined by considering the geographic origins of the hospital's discharges in calendar year 2017. The total population of Avon's community in 2017 was 360,706.

Avon Hospital is located within 12 miles of Cleveland Clinic Fairview Hospital and 16 miles of Cleveland Clinic Lutheran Hospital. Because of this proximity, a portion of Avon's community overlaps with that of Fairview and Lutheran hospitals. These hospitals work together with Richard E Jacobs, Avon Lake, Avon Pointe, Elyria, Lorain, North Ridgeville, Sheffield Village, Wellington and Lakewood, Amherst, and Family Health Centers as a part of the Cleveland Clinic health system to serve residents in its western communities.

III. HOW IMPLEMENTATION STRATEGY WAS DEVELOPED

This Implementation Strategy was developed by a team of members of senior leadership at Avon Hospital and Cleveland Clinic representing several departments of the organizations, including clinical administration, medical operations, nursing, finance, population health, and community relations. This team included input from the hospital's community and local non-profit organizations to prioritize selected strategies and determine possible collaborations. Alignment with county Community Health Assessments (CHA) and Ohio's State Health Assessment (SHA) was also considered. Each year, senior leadership at Avon Hospital and Cleveland Clinic will review this Implementation Strategy to determine whether changes should be made to better address the health needs of its communities.

IV. SUMMARY OF THE COMMUNITY HEALTH NEEDS IDENTIFIED

Avon Hospital's significant community health needs as determined by analyses of quantitative and qualitative data include:

Community Health Initiatives
- Addiction and Mental Health
- Chronic Disease Prevention and Management
- Infant Mortality
- Socioeconomic Concerns

Other Identified Needs
- Access to Affordable Health Care
- Medical Research and Health Professions Education

See the 2019 Avon Hospital CHNA for more information:
https://my.clevelandclinic.org/locations/avon-hospital/about/community

V. NEEDS HOSPITAL WILL ADDRESS

A. Cleveland Clinic Community Health Initiatives

Each Cleveland Clinic hospital provides numerous services and programs in efforts to address the health needs of the community. Implementation of our services focuses on addressing structural factors important for community health, strengthening trust with residents and stakeholders, ensuring community voice in developing strategies, and evaluating our strategies and programs.

Strategies within the ISRs are included according to the prioritized list of needs developed during the 2019 CHNA. Avon Hospital's community health initiatives combine Cleveland Clinic and local non-profit organizations resources in unified efforts to improve health and health equity for our community members, especially low-income, underserved, and vulnerable populations. Cleveland Clinic is currently undertaking a five-year community health strategy plan which may modify the outlined initiatives.

B. Avon Hospital Implementation Strategy 2020-2022

Avon Hospital collaborated with local hospitals, non-profit organizations, health department and community residents in the Lorain County Community Health Improvement Plan (CHIP) for 2020 through 2022. Aligned strategies are reflected in this report by this icon: ★. To view the full Lorain County CHIP please visit https://www.loraincountyhealth.com/cha.

The Implementation Strategy Report includes the priority community health needs identified during the 2019 Avon Hospital CHNA and hospital-specific strategies to address those needs from 2020 through 2022.

Addiction and Mental Health

Avon Hospital's 2019 CHNA identified substance abuse disorders, mental health issues and intimate partner violence as needs in the community. The 2020 - 2022 priority strategy will focus on the hospital's efforts to decrease the abuse of and overdose from opioids. Initiatives include:

Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A — Through Cleveland Clinic's Opioid Awareness Center, provide intervention and treatment for substance abuse disorders to Cleveland Clinic caregivers and their family members	Increase the number of individuals with opioid addiction and dependence who seek treatment
B — Through the Opioid Awareness Center, participation in the Northeast Ohio Hospital Opioid Consortium, and participation in the Lorain County Opiate Task Force, Cleveland Clinic will provide preventative education and share evidence-based practices	Reduce the number of individuals with opioid addiction and dependence
C — Collect unused medications through community-based drop boxes and a collection service	Reduce the availability of unused controlled substance prescriptions within the community
D — ★ Cleveland Clinic will develop suicide and self-harm policies procedures and screening tools for patients in a variety of care settings Screen patients over age 12 for clinical depression In collaboration with the Nord Center, Clear Vista, Lorain County Health and Dentistry, and the Mental Health, Addiction and Recovery Services Board of Lorain County, promote mental health and suicide prevention education	Reduce suicide rates, increase the number of individuals who seek mental health treatment, minimize the impact of trauma and violence on overall health and wellbeing, increase resilience, decrease stigma
E — ★ Provide school-based prevention programs and promote policies to increase the perception of risk of marijuana use for youth, decrease underage binge-drinking, tobacco use, and vaping	Decrease youth marijuana, tobacco, and alcohol use
F — ★ Improve identification of substance abuse disorders, streamline treatment referrals, and improve gaps in access to treatment through partnerships Connect patients with substance abuse disorders to local peer counselors	Improve access to treatment services, reduce overdose rates, improve access to recovery support, and reduce rates of relapse

Chronic Disease Prevention and Management

Avon Hospital's 2019 CHNA identified chronic disease and other health conditions as prevalent in the community (ex. heart disease, cancer, diabetes, respiratory diseases, obesity). Prevention and management of chronic disease were selected with the goal to increase healthy behaviors in nutrition, physical activity, and tobacco cessation. Initiatives include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Improve management of chronic conditions through Chronic Care Clinics employing a specialized model of care	Improve quality of life, decrease rates of complication, and improve treatment adherence for chronic disease patients
B ★	Promote early cancer detection through community outreach and education related to breast, colon, cervical, lung, and prostate cancers	Increase cancer screening rates, improve screening follow-up rates, and reduce the number of patients who present with late-stage cancers
C ★	Provide health screenings through community events, including screening for pre-diabetes and diabetes	Improve diabetes and pre-diabetes screening rates, increase the number of individuals with prediabetes who seek treatment, decrease diabetes incidence rates
D ★	Implement health promotion messaging, health education, and outreach programs related to reducing behavioral risk factors, increasing access to healthy foods, and increasing physical activity	Decrease smoking, improve physical activity, improve nutrition, decrease stress levels, decrease diabetes incidence rates, improve awareness of heart disease risk factors, decrease female heart disease mortality rates
E	Through the Healthy Communities Initiative (HCI), partner to fund programs designed to improve health outcomes in four core areas: physical activity, nutrition, smoking, and lifestyle management	Decrease smoking, improve physical activity, improve nutrition

Infant Mortality

Avon Hospital's 2019 CHNA identified that the infant mortality rate in Cuyahoga County was well above the Ohio and U.S. averages. Infant mortality rates at the local, state, and national levels have been particularly high for Black infants. The Lorain County CHA identified Maternal and Child Health as a priority. Although infant mortality rates in Lorain County are currently similar to Ohio's state rates, health disparities are prevalent. Addressing the causes of infant mortality and decreasing infant mortality rates were selected as priority strategies. In order to address infant mortality, Avon Hospital works collaboratively with Fairview Hospital, the closest Cleveland Clinic health system hospital that provides the full spectrum of birthing services. Initiatives include:

Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A Provide expanded evidence-based health education to expecting mothers and families	Improve the number of mothers who receive adequate prenatal care and improve breastfeeding rates
B Participate in *First Year Cleveland*, the Cuyahoga County Infant Mortality Task Force, to gather data, align programs, and coordinate a systemic approach to improving infant mortality	Reduce infant mortality inequity, improve the preterm birth rate, and decrease sleep-related infant deaths
C ★ Explore expansion of the Centering Pregnancy group prenatal care model to expecting mothers and increase the number of families who participate in evidence-based home visiting programs	Improve the preterm birth rate, increase pregnancy spacing, and reduce preterm birth inequity
D Outreach events like Community Baby Showers provide health information to families in specific high-risk geographical areas and encourage enrollment in supportive evidence-based programs	Improve the number of high-risk mothers who receive adequate prenatal care

Socioeconomic Concerns

Avon Hospital's 2019 CHNA demonstrated that health needs are multifaceted, involving medical as well as socioeconomic concerns. The assessment identified poverty, health equity, trauma and other social determinants of health as significant concerns. Poverty has significant implications for health, including the ability for households to access health services, afford basic needs, and benefit from prevention initiatives. Problems with housing, educational achievement, and access to workforce training opportunities also contribute to poor health. The Centers for Disease Control and Prevention defines social determinants of health as the "circumstances in which people are born, grow up, live, work and age that affect their health outcome."

Avon Hospital is committed to promoting health equity and healthy behaviors in our communities. The hospital addresses socioeconomic concerns through a variety of services and initiatives including cross-sector health and economic improvement collaborations, local hiring for hospital workforce, local supplies sourcing, mentoring of community residents, in-kind donation of time and sponsorships, anchor institution commitment, and caregiver training for inclusion and diversity. The socioeconomic initiatives highlighted for 2020 – 2022 include:

Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A Implement a system-wide social determinants screening tool for patients to identify needs such as alcohol abuse, depression, financial strain, food insecurity, intimate partner violence, and stress	Connect patients with substance abuse treatment, mental health treatment, and assistance with basic needs; reduce trauma and harm associated with violence
B Explore a common community referral data platform to coordinate services and ensure optimal communication	Improve active referrals to community-based organizations, non-profits, and other healthcare facilities; track referral outcomes
C ★ Through community partnerships, improve early childhood learning	Increase kindergarten readiness assessment rates
D Provide workforce development and training opportunities for youth K-12 in clinical and non-clinical areas, empowering Northeast Ohio's next generation of leaders	Increase diversity within the healthcare workforce, improve trust in providers, and improve local provider shortages

V. OTHER IDENTIFIED NEEDS

In addition to the community health needs identified in the CHNA, the hospital's 2019 CHNA also identified the needs of Access to Affordable Healthcare, and Medical Research and Professions Education.

Access to Affordable Health Care

Access to affordable health care is challenging for some residents, particularly to primary care, mental health, dental care, and addiction treatment services. Access barriers are many and include cost, poverty, inadequate transportation, a lack of awareness regarding available services, and an undersupply of providers. Cleveland Clinic continues to evaluate methods to improve patient access to care.

All Cleveland Clinic hospitals will continue to provide medically necessary services to all patients regardless of race, color, creed, gender, country of national origin, or ability to pay. Cleveland Clinic Financial Assistance. Initiatives include:
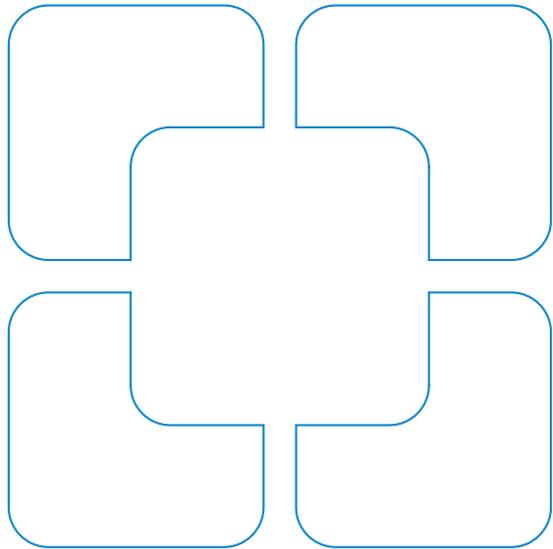
Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A Patient Financial Advocates assist patients in evaluating eligibility for financial assistance or public health insurance programs	Increase the proportion of eligible individuals who are enrolled in various assistance programs
B Support the Lorain Free Clinic financially and through the provision of free radiology and laboratory clinical services	Increase the number of individuals with a regular source of care, improve screening rates, improve chronic care management, increase medication adherence, and improve access to medical testing and specialized care
C Provide walk-in care at Express Care Clinics and offer evening and weekend hours	Improve the number of patients who receive the right level of care
D Utilizing medically secure online and mobile platforms, connect patients with Cleveland Clinic providers for telehealth and virtual visits	Overcome geographical and transportation barriers and improve access to specialized care

Medical Research and Health Professions Education

Cleveland Clinic cares for our communities by discovering tomorrow's treatments and educating future caregivers. Cures for disease and provision of quality health care are part of Cleveland Clinic's mission. Cleveland Clinic has been named among America's best employers for diversity by *Forbes* magazine for three years running. The diversity of our caregivers is a key strength that helps us better serve patients, each other, and our communities. We are committed to enhancing the diversity of our teams to deepen these connections. Initiatives include:

	Initiatives Including Collaborations and Resources Allocated	Anticipated Impacts
A	Through medical research, advance clinical techniques, devices, and treatment protocols in the areas of cancer, heart disease, diabetes, and others	Improve treatment efficacy and reduced morbidity and mortality
B	Through population health research, inform clinical interventions, healthcare policy, and community partnerships	Inform health policy at the local, state, and national levels, improve clinical protocols, create cost-savings, and improve population health outcomes
C	Sponsor high-quality medical education training programs for nurses and allied health professionals	Reduce provider shortages

For more information regarding Cleveland Clinic Community Health Needs Assessments and Implementations Strategy Reports, please visit www.clevelandclinic.org/CHNAReports or contact CHNA@ccf.org .