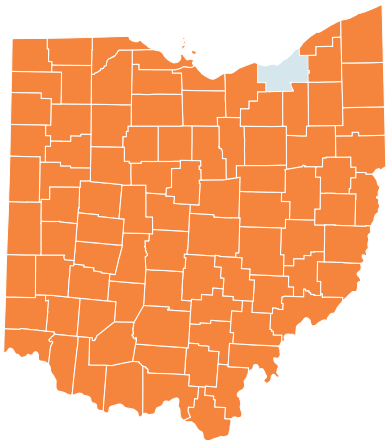
2018 Cuyahoga County Community Health Assessment

A Community Health Needs Assessment



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Acknowledgements

The 2018 Cuyahoga County Community Health Assessment represents an exciting 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 to conduct a joint assessment of the health of the Cuyahoga County community.

Additional organizations provided input that guided the content and format of this assessment. These organizations include: the Alcohol, Drug Addiction and Mental Health Services (ADAMHS) Board of Cuyahoga County, Asian Services In Action, Inc., Better Health Partnership, The Center for Community Solutions, Cleveland Clinic, the Cleveland Foundation, Cypress Research Group, the Health Policy Institute of Ohio, ideastream, MetroHealth, the Ohio Department of Health, Southwest General Health Center, St. Vincent Charity Medical Center and United Way of Greater Cleveland.

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Written Comments
University Hospitals solicited feedback on its 2015 Community Health Needs Assessments (CHNAs), which are posted on its website, but did not receive any comments. Individuals are encouraged to submit written comments on the current joint Community Health Needs Assessment (CHNA) to CommunityBenefit@UHhospitals.org. These comments provide additional information to hospital facilities regarding the broad interests of the community and help to inform future CHNAs and implementation strategies.

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1. Introduction

The 2018 Cuyahoga County Community Health Assessment represents an exciting 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. Historically, Cuyahoga County public health and hospital stakeholders completed independent assessments to understand the health needs of the community. In 2018, these entities committed their time and resources to bridging public health and clinical medicine by conducting a health assessment of Cuyahoga County together. This is the first joint assessment of its kind in Cuyahoga County and represents a new, more effective and collaborative approach to identifying and addressing the health needs of the community. As a result of this joint collaboration, the entities have worked together to establish the 2018 Cuyahoga County Community Health Assessment. This Assessment meets the requirements set forth under Treas. Reg. § 1.501(r) ("501(r) Regulations") and for the purposes of meeting these requirements, serves as the 2018 Community Health Needs Assessment ("CHNA") for the following University Hospitals Health System, Inc. hospitals: University Hospitals Ahuja Medical Center, UH Regional Hospitals (Bedford and Richmond Campuses), The Parma Community General Hospital Association d/b/a University Hospitals Parma Medical Center, University Hospitals St. John Medical Center, University Hospitals Cleveland Medical Center, University Hospitals Rainbow Babies & Children's Hospital, and Beachwood Rehabilitation Hospital, LLC (collectively "University Hospitals"). This work presages an even larger collaborative effort planned for 2019 that engages additional health care systems.

A tremendous wealth of health care resources exists in Cuyahoga County, yet there are stark inequities in the health experienced by its residents. The conditions that shape health – such as poverty, access to healthy food, and safe and affordable housing, to name a few – are not spread equitably across the county, resulting in significant differences in health outcomes and life expectancy. The decision to work collaboratively centers around the desire to more effectively address health inequities in Cuyahoga County and to align local community health improvement planning efforts with state population health efforts, which also place a strong emphasis on employing an equity lens. An equity lens is defined as the lens through which we view conditions and circumstances to assess who experiences benefits and burdens as the result of a program, policy, or practice.

Moving from Separate Health Assessments toward Greater Collaboration for Collective Impact

Certain hospitals as set forth in the 501(r) Regulations are required to complete a CHNA and corresponding implementation strategy at least once every three years in accordance with regulations promulgated by the Internal Revenue Service pursuant to the Patient Protection and Affordable Care Act (ACA), 2010[1]. In looking at the community population served by the hospital facilities and Cuyahoga County as a whole, it was clear that all of the facilities and organizations that are a part of this CHNA, define their community to be the same.

[1]The Patient Protection and Affordable Care Act (Pub. L. 111-148) added section 501(r) to the Internal Revenue Code, which imposes new requirements on nonprofit hospitals in order to qualify for an exemption under Section 501(c)(3), and adds new reporting requirements for such hospitals under Section 6033(b) of the Internal Revenue Code. UH followed the final rule entitled "Additional Requirements for Charitable Hospitals; Community Health Needs Assessments for Charitable Hospitals"; Requirement of a Section 4959 Excise Tax Return and Time for Filing the Return, was published by the IRS on December 31, 2014, and requires compliance after December 29, 2015.

Similar to the CHNAs that hospitals conduct, completing a community health assessment ("CHA") and a corresponding community health improvement plan ("CHIP") is an integral part of the process that local and state health departments must undertake to obtain accreditation through the Public Health Accreditation Board ("PHAB"). The Ohio Department of Health requires all local health departments to apply to become accredited through PHAB by 2018 and to be accredited by 2020. The initial 2013 CHA and 2015 CHIP conducted by the Cleveland Department of Public Health and the Cuyahoga County Board of Health to understand the health needs of Cuyahoga County residents were performed independently from hospital CHNAs.

During the process of crafting the 2013 local public health CHA, a multi-sector collective impact consortium, known as the Health Improvement Partnership-Cuyahoga (HIP-Cuyahoga) evolved from long-standing working groups to a sophisticated multi-sector consortium in order to facilitate collaborative community health improvement work across Cuyahoga County. HIP-Cuyahoga's backbone organizations consist of the Cuyahoga County Board of Health and other organizations listed in the Appendix. The consortium has grown to encompass over 300 organizations and over 1,000 individual stakeholders including members of the public.

HIP-Cuyahoga's four key approaches are perspective transformation, collective impact, community engagement, and health and equity in all policies. Since the CHA and CHIP, work has focused on the four priority areas of eliminating structural racism, improving healthy eating and active living, improving chronic disease, and increasing collaboration between public health and clinical care. These priorities were chosen through a facilitated process grounded in equity and aligned with both the Ohio State Health Improvement Plan and the National Prevention Strategy. To learn more about HIP-Cuyahoga's work, please visit http://hipcuyahoga.org/.

In October 2013 following the last CHA, a subcommittee of HIP-Cuyahoga was formed to focus on improving collaboration between public health and clinical care. Multiple stakeholders created the following objective, which set the foundation for the combined health assessment in this document: *to develop an integrated system to conduct future coordinated, comprehensive countywide community, clinical and behavioral health assessments to identify future priority focus area(s) through a clinical care and public health multi-stakeholder partnership*. This group of HIP-Cuyahoga members has been working for the past four years to develop authentic relationships with the area's regional hospital association, The Center for Health Affairs, and individual hospital systems, including University Hospitals, in order to realize this vision.

Present Shift to Conducting Joint Health Assessments: Definition of Community

University Hospitals recognizes that a county-level definition of community will allow the health care system to continue to comprehensively assess the health needs of its patients and the community in which its medical centers are located. This shift also allows the health care system to more readily collaborate with public health partners for both community health assessments and equity-grounded health improvement planning. Per 501r federal compliance, a joint CHNA is only allowable if it meets all the requirements of a separate CHNA; clearly identifies the hospital facilities involved; and if all of the collaborating hospital facilities and organizations included in the joint CHNA define their community to be the same[2]. The 2018 Cuyahoga County Community Health Assessment meets the CHNA reporting requirement for eight University Hospital (UH)

[2] 501r-3(b)(6)(v)

facilities that are located in Cuyahoga County and have the majority of their patient discharges from Cuyahoga County: UH Ahuja Medical Center, UH Beachwood Rehabilitation Hospital, UH Bedford Medical Center, UH Cleveland Medical Center, UH Parma Medical Center, UH Rainbow Babies & Children's Hospital, UH Richmond Medical Center and UH St. John Medical Center.

This shift in the way health assessments are conducted by Cuyahoga County's two local public health stakeholders and one of its largest health care systems is a deliberate attempt to work together more effectively and efficiently and demonstrates these partners' commitment to gaining a deeper understanding of the significant health inequities that have plagued our county. The 2018 Cuyahoga County Community Health Assessment also indicates the partners' desire to align health assessment planning both among partners at the local level and with state population health planning efforts – as described more fully in *Improving Population Health Planning in Ohio: Guidance for Aligning State and Local Efforts*, released by the Ohio Department of Health (ODH).

Future Opportunities to Align Health Planning with Other Stakeholders

One of the most significant aspects of the population health planning guidance released by ODH describes a new requirement for local public health departments to shift from conducting CHAs every five years to conducting health assessments every three years by January 1, 2020, to align with 501(c)(3) hospitals' CHNA reporting requirements. Also included in the guidance is language encouraging hospitals and public health departments to partner on assessments and corresponding plans.

The 2018 Cuyahoga County Community Health Assessment enables the Cleveland Department of Public Health, the Cuyahoga County Board of Health and University Hospitals to partner and collaborate on a smaller scale prior to conducting a more comprehensive health assessment in 2019. The 2019 health assessment will allow the Cleveland Department of Public Health, the Cuyahoga County Board of Health and University Hospitals – together with Case Western Reserve University School of Medicine, the Health Improvement Partnership-Cuyahoga, and The Center for Health Affairs – to align their health assessment and planning efforts with those of the additional Cuyahoga County hospital and other stakeholders that are not required to report until 2019 and to ensure that authentic community engagement is a central part of the planning and improvement processes.

2. Executive Summary

The 2018 Cuyahoga County Community Health Assessment represents an exciting 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. Historically, Cuyahoga County public health and hospital stakeholders completed independent assessments to understand the health needs of the community. In 2018, these entities committed their time and resources to bridging public health and clinical medicine by conducting a health assessment of Cuyahoga County together. This is the first combined assessment of its kind in Cuyahoga County and represents a new, more effective and collaborative approach to identifying and addressing the health needs of the community. This work helps to align local community health improvement planning efforts with state population health efforts and presages an even larger collaborative effort planned for 2019 that engages additional health care systems.

Several data sources provided by the following organizations informed the 2018 Cuyahoga County Community Health Assessment: 1) Centers for Disease Control and Prevention; 2) Ohio Department of Health; 3) Cuyahoga County Board of Health; 4) U.S. Census Bureau; 5) Ohio Hospital Association; 6) Prevention Research Center for Healthy Neighborhoods at Case Western Reserve University; and other national, state and local data sources (cited throughout the report). The assessment also encompasses interview data from several community stakeholders who are experts on the health care needs of residents in the county as well as existing community voice data gathered by a range of other Greater Cleveland organizations.

Health Equity – A Shared Vision in Cuyahoga County

Collectively, these data elucidate the health status of Cuyahoga County residents and areas ripe for improvement in the upcoming community health improvement plan. The report illuminates the stark reality that community residents living in some neighborhoods in Greater Cleveland do not have equitable opportunities to reach their full potential as a result of conditions impacting health. Some Cuyahoga County residents are born and live in places where it is difficult to grow up healthy. The conditions in which people live, and the opportunities they have, form the foundation for health, and without them, people are more likely to live shorter, sicker lives. The Health Improvement Partnership-Cuyahoga, known as HIP-Cuyahoga (www.hipcuyahoga.com) is a cross-sector partnership working to build opportunities for everyone in Cuyahoga County to have a fair chance to be healthy. When healthy living is easier, we all live longer and healthier lives. We believe that the differences highlighted in this report are a result of systems and structures that impact poor health for some and are avoidable, unfair and unjust. We commit to working together to rectify these inequities and achieve health equity in our community.

In partnership with the Health Policy Institute of Ohio, our shared definition of health equity is: *Everyone is able to achieve their full health potential. This requires addressing historical and contemporary injustices and removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments and health care.*

The following key findings from the 2018 Cuyahoga County Community Health Assessment illustrate these health inequities in our community:

1. **The strongest indicator we have of health status is poverty.** The 2018 Cuyahoga County Community Health Assessment identified several inequities in access to care and health outcomes based on socioeconomic status:
    a. One-third (35%) of city of Cleveland residents lived below the poverty line in 2016, compared to half that (18.1%) of county residents, as a whole.
    b. Likewise, Cleveland residents were significantly more likely to die of cardiovascular disease (+27.5%), a drug-induced death (+64.3%) or to be a homicide victim (+99.3%).

2. There are several priority health and safety concerns for Cuyahoga County and there are several reasons for this designation. They may be conditions where Cuyahoga County appears to compare unfavorably to its peer counties, they may be conditions that can be minimized or prevented via effective programming, or they may have been selected because they impact certain population groups in our county at particularly high frequency. For all of these, Cuyahoga County compares unfavorably to national benchmark goals in the following areas:

    a. Cuyahoga County's mortality rate from **cardiovascular disease** was significantly higher (199.8 per 100,000) than for the U.S. overall (165.5) and the national benchmark of 100.8. Cardiovascular disease was also the most common reason for hospitalizations in Cuyahoga County in 2016.

    b. Cuyahoga County's **suicide rate** is two points above the national benchmark of 10.2 (per 100,000). In surveys, county residents report an average of 3.7 **poor mental health days** per month. The **homicide rates** within Cuyahoga County (14.2) and the city of Cleveland (28.3) are significantly higher than the national benchmark of 5.5 (per 100,000).

    c. **Infant mortality** rates in Cuyahoga County (8.7 per 1,000) and the city of Cleveland (12.0) are also significantly higher than for the U.S. overall (5.9) and the national benchmark (6.0). Furthermore, the county rate is three times higher for Black, non-Hispanic infants (15.0) compared to White, non-Hispanic infants (4.5).

    d. **High blood lead levels** among young children (ages 5 and younger) are a persistent problem. For Cuyahoga County residents under age 6, 8.2% had dangerous blood lead levels (> 5 ug/dl) in 2016, and that was significantly higher for young children in the city of Cleveland (12.4%). This compares very unfavorably to the state (2.0%) and national rate (3.0% in 2015) overall. Blood lead levels above zero are considered above the national benchmark.

    e. The number of **unintentional opioid deaths** was high in Ohio overall (32.9 per 100,000), but somewhat higher in Cuyahoga County (38.2). In the city of Cleveland, the rate of unintentional opioid deaths is about twice as high (61.8) as in the county overall. The rate of unintentional opioid deaths in the city of Cleveland is about five times that of the U.S. overall (13.3).

    f. Many of the estimated 20,000 or more deaths in the U.S. from influenza each year may have been prevented by the flu vaccine. The national benchmark for vaccination levels among Medicare beneficiaries is 70%. Within Cuyahoga County during the 2017-2018 flu season, only 48.9% **received a flu vaccine**.

    g. **Tobacco (cigarette) use in Cuyahoga County is higher than the national rate (21% vs. 15.5%).** City of Cleveland residents use cigarettes at a much higher rate (35.2%). Of particular concern is

the higher incidence of mothers who smoked during pregnancy (U.S. overall, 7.2%; Cuyahoga County, 9.1%; city of Cleveland, 14.3%).

h. Within the city of Cleveland, **residents lack sufficient physical activity** at higher rates (58.1%) compared to the national benchmark (32.6%).

3. **Childhood asthma** was the most common ambulatory care sensitive (ACS) condition[1] for hospitalized children in 2016, where the incidence of childhood asthma differed based on race and/or ethnicity. Significantly higher proportions of hospitalized Medicaid beneficiaries were Black (4.2%) or of Hispanic descent (3.3%) compared to White children (1.3%). **This suggests higher rates of childhood asthma among Black and Hispanic children and lower access to primary care to minimize hospitalizations.** We know that exposure to asthma triggers like dust mites and indoor pollutants associated with substandard housing and exposure to environmental tobacco smoke and outdoor air pollutants are risk factors for childhood asthma, and optimizing clinical care, improving the quality of housing, and reducing trigger exposure can reduce asthma exacerbations.

4. The most common ACS conditions for older adult residents of Cuyahoga County in 2016 were **chronic obstructive pulmonary disease** (4.6% of all adults age 40+ hospitalizations) and **congestive heart failure** (5.5% of all seniors hospitalized). Improved screening and primary care for these conditions can reduce hospitalization rates.

5. An examination of all hospitalized Cuyahoga County patients' diagnoses in 2016 shines a light on the impact of chronic health conditions as well as the complexity of most hospitalization cases. Most inpatients had multiple secondary diagnoses requiring a high level of coordinated care. The following are conditions that were far more common as secondary diagnoses than as primary diagnoses (in other words, patients' secondary diagnoses did not lead to the hospitalization, but greatly complicated the care needed during hospitalization):

    a. Hyperlipidemia (18.3%)
    b. Type 2 diabetes (16.5%)
    c. Essential hypertension (16.0%)
    d. Anemias (11.2%)
    e. Nicotine dependence (10.4%)
    f. Substance dependence/abuse (alcohol, opioids, cocaine, cannabis, etc., 8.2%)
    g. Hypertensive heart & kidney disease (8.0%)
    h. Gastro-esophageal reflux disease (6.9%)
    i. Chronic kidney disease (6.8%)
    j. Asthma (5.8%)
    k. Adverse effect/poisoning by prescribed or over-the-counter drugs (4.9%)
    l. Chronic pain (4.2%)
    m. Encephalopathy (4.2%)
    n. Dementia (3.6%)

The most common reason children are hospitalized differs from that for adults. Looking just at hospitalized Cuyahoga County patients under the age of 18 in 2016, excluding healthy newborns, the most common primary diagnosis was related to diseases of the respiratory system (23.0%) – whereas for adults diseases of the circulatory system were the most common reason for hospitalization. Asthma was the most common condition and was a primary diagnosis for 4.6% of patients and a secondary diagnosis for 12.8% of young patients. Hospitalizations related to mental and behavioral health disorders (12.2%) comprised the second largest category of primary diagnoses among patients under the age of 18. Digestive system diseases (7.3%) were the third most common category of primary diagnoses among young patients.

6. Evidence is growing that food insecurity due to poverty and lack of access to high-quality nutritious food leads to increased risk for chronic disease and poor health outcomes. A large proportion of the city of Cleveland is considered a "food desert," where residents have limited local access to grocery stores and other sources of healthy food.

There were several notable areas of improvement with regard to drivers of health.

1. From 2013 to 2016, the **number of hospitalizations of Cuyahoga County residents decreased by 6.4%**.

- This decrease appears to have been driven largely by a reduction in the hospitalization rates for those aged 66 and older. The number of seniors in Cuyahoga County increased from 2013 to 2016 by 4.9%, but the **hospitalization levels for this population decreased by 10%** in that same time period.
- The hospitalization rates for younger residents also decreased from 2013 to 2016: by 4.0% for those aged 18 to 65 and by 5.2% for those under age 18.
- Many factors can account for this difference:
    a. Improved access to primary care and preventive care/health screenings.
    b. Increased access to the health care system via the expansion of Medicaid to cover more than 700,000 additional Ohio residents, of which 94,000 were from Cuyahoga County. This important policy decision resulted in a decline in the number of uninsured in Cuyahoga County from 12.5% to 4.9%.
    c. Better patient discharge communication, education, and care coordination, leading to reduced readmission rates for many of the leading causes of repeat hospitalizations.

2. Just as hospitalization rates have declined among Cuyahoga County residents from 2013 to 2016, **the proportion of ambulatory care sensitive (ACS) conditions for both children and adults has decreased.** This trend provides further evidence that improved disease screening and monitoring and improved access to primary care provided through Medicaid expansion are having an impact on the health and well-being of residents. In 2013, the proportion of adults hospitalized due to an ACS condition was 18.2%; this decreased to 15.2% in 2016. The reduction in ACS conditions among hospitalized children decreased even more. In 2013, 12.2% of children were hospitalized due to an ACS condition; by 2016, that rate was reduced to 8.2%.

In summary, there is some good news related to the health and well-being of Cuyahoga County residents. Hospitalizations decreased from 2013 to 2016, as did the frequency of hospitalizations related to a lack of

primary care. These changes were significant and likely a result of the health care and public health systems' focused attention on prevention and better management of several chronic diseases along with policy changes that extended Medicaid to additional Cuyahoga County residents.

However, Cuyahoga County still lags, often far behind, the rest of the state and the nation on several health indicators: poverty levels, cardiovascular disease, homicides, infant mortality, childhood lead poisoning, and opioid deaths. Each of these negatively impacts the length and quality of life of Cuyahoga residents.

We also know that there are significant inequities in access to quality care based on race and socioeconomic status in Cuyahoga County. Childhood asthma rates are significantly higher among Black and Hispanic children, and the same pattern persists for cardiovascular disease in adults. The city of Cleveland has opportunities to improve its infrastructure to better support strong health habits: most residents in the city of Cleveland live in a food desert and residents are not finding easy access to opportunities for physical activity.

[1] Ambulatory care sensitive (ACS) conditions are 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," according to the Agency for Healthcare Research and Quality.

Top Health Needs

These top 13 health issues were identified through a careful analysis of the qualitative and quantitative data provided in the 2018 Cuyahoga County Community Health Assessment:

<u>Quality of Life</u>

- Poverty
- Food insecurity

<u>Chronic Disease</u>

- Lead poisoning
- Cardiovascular disease
- Childhood asthma
- Diabetes

<u>Behavioral Health</u>

- Flu vaccination rates
- Tobacco use/COPD
- Lack of physical activity

<u>Mental Health and Addiction</u>

- Suicide/mental health
- Homicide/violence/safety
- Opioids/substance use disorders

<u>Maternal/Child Health</u>

- Infant mortality

Many of the top health and safety concerns for Cuyahoga County were selected based on Cuyahoga County comparing unfavorably to peer counties and unfavorably to national benchmark goals, such as cardiovascular disease and suicide rates. Some of the top health needs were chosen because certain population groups in Cuyahoga County experience these conditions at high rates, such as infant mortality and childhood asthma. Poverty was selected given that many inequities in access to care and health outcomes are based on socioeconomic status.

Prioritized List of Health Needs

From the list of 13 top health needs, the following health needs were selected as priorities that will be the focus of the Community Health Improvement Plan / Implementation Strategy. There is strong alignment between the selected health priorities and state population health priorities. In no particular order:

1. Poverty (i.e., healthy homes, food insecurity)
2. Opioids / Substance Use Disorders / Mental and Behavioral Health
3. Infant Mortality
4. Homicides / Violence / Safety
5. Chronic Disease Management and Prevention (cancer, diabetes, COPD, asthma, cardiovascular disease, healthy eating / active living)

3. Process and Methods

This report analyzed both qualitative and quantitative data to draw conclusions regarding the priority health needs of the Cuyahoga County population. Data were analyzed by several stakeholders, including two consulting companies whose qualifications are described in the Appendix.

Qualitative Data

There were several sources of qualitative data:

Community Leader Interviews

The 2018 Cuyahoga County Community Health Assessment Steering Committee (comprised of representatives from public health, hospitals, HIP-Cuyahoga, academia and others) determined that interviews with leaders from four organizations that provide unique perspectives on health care needs in Cuyahoga County would be conducted. Each of these organizations represents medically vulnerable, low-income or minority populations in Cuyahoga County.

A member of the Steering Committee affiliated with The Center for Health Affairs contacted each of the four identified organizations and scheduled interviews with community leaders representing those organizations in March 2018. All interviewees were told the purpose of the interviews. A copy of the community leader interview guide can be found in the Appendix. Interview results were analyzed by The Center for Health Affairs and are summarized in the Overview of Community Stakeholder section.

Existing Community Voice Data

To gain a deeper understanding of the process used by selected nonprofit organizations to gather information as well as to capture key findings from their research, The Center for Health Affairs hosted a meeting on March 1, 2018, and invited representatives from organizations known to have data that could help inform the 2018 Cuyahoga County Community Health Assessment. Organizations invited to participate in the meeting included: Asian Services in Action (ASIA, Inc.), the Cleveland Foundation, ideastream, The Center for Community Solutions and United Way of Greater Cleveland. The Center for Health Affairs summarized the key findings, which are included in the Overview of Community Stakeholder section. In addition, community voice data captured in a recently completed Community Health Needs Assessment by MetroHealth was also summarized.

Secondary Data

The indicators included in the 2018 Cuyahoga County Community Health Assessment were based on the 2013 Community Health Status Assessment (CHSA) produced through the Health Improvement Partnership-Cuyahoga (HIP-Cuyahoga) initiative. They were selected from four primary sources: the Mobilizing for Action through Planning and Partnerships (MAPP) Core indicators, the MAPP Extended indicators,[1] the Robert Wood Johnson Foundation *County Health Rankings* initiative,[2] and an indicator list developed during the 2011 Ohio Department of Health's Statewide Health Assessment.[3] More information on the original selection process can be found in the *Methods* section of the 2013 CHSA.[4]

The indicators were divided into the following 11 categories as suggested by the MAPP process:

1. Demographic characteristics
2. Socioeconomic characteristics
3. Health resource availability
4. Quality of life
5. Behavioral risk factors
6. Environmental health indicators
7. Social and mental health
8. Maternal and child health
9. Death, illness, and injury
10. Communicable disease
11. Sentinel events

New for the 2018 Cuyahoga County Community Health Assessment is an ”Emerging Health Issues” category. Zika virus infection and opioid-related deaths were included in this category. These data were analyzed by Cuyahoga County Board of Health epidemiologists and Case Western Reserve University preventive medicine residents.

Hospital Discharge Data

The 2018 Cuyahoga County Community Health Assessment also includes hospital discharge data. Where applicable, these data were added throughout the 11 categories described above. The analysis of acute care hospital discharge data was completed using comprehensive, de-identified patient-level data from the Ohio Hospital Association. It included discharge data from 2016 and was compared to previous years’ data when available.

Analysis of this data by Cypress Research Group focused on describing hospital patient volume trends, the types of population groups that were inpatients, and the diagnostic patterns of hospital inpatients. Overall patient groups were created for analysis in two main ways: 1) hospital inpatients who were residents of Cuyahoga County, but were hospitalized anywhere inside or outside of Cuyahoga County; and 2) inpatients in hospitals that are located in Cuyahoga County, regardless of their home county of residence. There is significant overlap between these two patient groups; however, patients from outside of Cuyahoga County were more likely to be hospitalized in Cuyahoga County than *vice versa*. We focused most of our analysis on the hospitalization patterns of Cuyahoga County residents and less on the patient population of Cuyahoga County hospitals.

Note that because our inpatient data have no patient identifying information, we cannot account for patients who were hospitalized multiple times. That is, we account for each hospitalization, regardless of whether or not that patient had been previously hospitalized. We do not present population counts of people who were hospitalized at least once; instead we present counts of each hospitalization event.

Data Sources and Analytic Plan

The analytic plan developed for the 2013 CHSA was used for the 2018 Cuyahoga County Community Health Assessment and included the following components:

1) Presenting the most recent data available (in many cases this was 2016 data).
2) Stratifying the data, where possible and applicable, by:
    a. Age groups (< 18, 18-34, 35-49, 50-64, and 65+ years)
    b. Gender (male, female)
    c. Race/ethnic groups (White, non-Hispanic; Black, non-Hispanic; Hispanic; and other)
    d. Geography (Cuyahoga County overall and the city of Cleveland only)
3) Benchmarking the local data with state and national data.
    a. Data for the city of Cleveland is included in the Cuyahoga County overall statistics.
    b. *Healthy People 2020*[5] goals and the Robert Wood Johnson Foundation *County Health Rankings*[3] were the primary sources for national benchmarking.

A complete list of data sources used for each indicator, along with the indicator definition, can be found in the Technical Guide, provided in the Appendix.

It is important to note that many of the calculations used the actual 2010 U.S. Census data for the denominator as opposed to the 2016 population estimates. This was done because of the variation that often occurs through the estimation process especially within population subgroups with respect to age, sex, and/or race/ethnicity. We do acknowledge that based on the 2016 estimates, there have been increases in the following population subgroups: Black, non-Hispanic, Hispanic, 18-34 years old; and 65 and older compared to 2010 data. Therefore, in some instances, the indicator values may be slightly higher/lower in these population subgroups.

References

[1] National Association of County and City Health Officials. *Mobilizing for Action through Planning and Partnerships: Web-based tool. CHSA Core Indicator and Extended Indicator List.* Washington, DC: National Association of County and City Health Officials; 2007.
[2] Ohio Department of Health. *2011 State Health Assessment*. Columbus, OH. May, 2011.
[3] Robert Wood Johnson Foundation. University of Wisconsin Population Health Institute. *County Health Rankings 2012.* Available at http://www.countyhealthrankings.org.
[4] Community Health Status Assessment for Cuyahoga County, Ohio: Health Improvement Partnership - Cuyahoga Initiative. March 2013. Available at http://hipcuyahoga.org/wp-content/uploads/2015/11/Full-Report-Combined-3.20.13.pdf.
[5] U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. Healthy People 2020. Washington, DC. Available at http://www.healthypeople.gov/2020/default.aspx.

Information Gaps

To the best of The Center for Health Affairs' and Cypress Research Group's knowledge, no information gaps have affected the ability of UH Ahuja Medical Center, UH Beachwood Rehabilitation Hospital, UH Bedford Medical Center, UH Cleveland Medical Center, UH Parma Medical Center, UH Rainbow Babies & Children's Hospital, UH Richmond Medical Center and UH St. John Medical Center to reach reasonable conclusions regarding community health needs.

4. Overview of Community Stakeholder Input

There were two primary ways that community stakeholder information was obtained: through community leader interviews and by summarizing existing community voice data.

A. Community Leader Interviews

Interviews were conducted in March 2018 with community leaders from the organizations listed below:

Alcohol, Drug Addiction and Mental Health Services (ADAMHS) Board of Cuyahoga County
Cleveland Department of Public Health
Cuyahoga County Board of Health
United Way of Greater Cleveland

Though these four organizations are relatively diverse in their work, there were some common themes running through their interviews. Lack of management of chronic health conditions, poverty, and longstanding health inequities across race and class were all mentioned as some of the leading issues impacting health. Other commonly mentioned challenges include infant mortality, the presence of lead in housing, and the continued existence of food deserts. There was also recognition of the problem of structural racism and the role it plays in achieving health equity. Structural racism is defined as racial bias across and within society. It is the cumulative and compounded effects of an array of factors such as public policies, institutional practices, cultural representations, and other norms that work in various, often reinforcing ways to perpetuate racial inequity. The end result is unequal access to opportunities that create health.

From the perspective of substance abuse and mental health, while the opioid crisis is acute, it is among several interrelated problems the community faces. Suicide risk, violence prevention, and increased emphasis on trauma-informed care are also areas of need in this realm.

There is a growing realization that social determinants of health, such as access to quality education, transportation and jobs, play a large role in impacting health and the importance of addressing a broad set of needs if the community is to move the needle on health status. In fact, these issues often present as barriers to accessing health services for many. Regarding mental health and substance abuse, stigma associated with these disorders often is a barrier for effective care.

Problems mentioned by various interviewees suggest the circular, generational nature of poverty, health and economic vitality. Low wages contribute to poor health and impact the population's ability to perform optimally in the workforce. The social determinants of health are a powerful barrier to a healthy, high-performing workforce, which impacts both individual and community-level economic vitality, limiting job creation and leading to low employment and wages. Interventions to improve the health of the population not only improve individuals' lives, but also ultimately support the ability of the region to grow and be economically vibrant.

It is agreed that, while additional funding is always needed, the region has significant resources, with a strong cadre of health care, public health and human service providers. Yet, it was pointed out, improved collaboration and coordination among the various stakeholders would increase effectiveness in addressing

community health problems. This includes hospitals and local public health entities. Interviewees cited opportunities for hospitals that included improving access to specialty services for all populations and improving their ability to care for patients with severe mental illness. There is also a need for improved supports and transitions out of the hospital for patients treated for drug overdoses.

The role of data and metrics can be useful in focusing efforts and monitoring progress. Effective measurement is crucial to understanding and addressing root problems, also known as upstream determinants of health. Efforts to achieve equity and improve population health must focus on a granular analysis of data in order to direct community health improvement resources to the areas of highest need and utilize the most high-yield interventions.

Finally, the region faces challenges related to population trends. The overall population has grown smaller, shrinking the tax base needed to fund services, while at the same time the population is aging, creating an increased need for services. Increased collaboration is a way to create abundance out of apparent shortage — taking on previously intractable problems, with health care systems, public health agencies and partners in other sectors each do what they do well, for greater collective impact.
In working toward *Collective Impact*:

1. All participants have a **common agenda** for change including a shared understanding of the problem and a joint approach to solving it through agreed upon actions.
2. Collecting data and **measuring results consistently** across all the participants, ensuring shared measurement for alignment and accountability.
3. A plan of action that outlines and coordinates **mutually reinforcing activities** for each participant.
4. Open and **continuous communication** across the many players to build trust, assure mutual objectives, and create common motivation.
5. A **backbone organization(s)** with staff and specific sets of skills to serve the entire initiative and coordinate participating organizations and agencies.

B. Existing Community Voice Data

Cuyahoga County is fortunate to have a rich array of nonprofit organizations that contribute to the health of the community through direct services, research, philanthropy, or in other important ways. Many of these entities have gathered data directly from community members in recent years that help illuminate the broad health needs of the community, including vulnerable populations. We refer to this as “community voice” data.

On March 1, 2018, The Center for Health Affairs hosted a meeting and invited representatives from organizations known to have data that could help inform the 2018 Cuyahoga County Community Health Assessment. Data from the meeting were typed up, analyzed and summarized below.

While there are undoubtedly other organizations in Cuyahoga County that have gathered community voice data, the entities known by the Cuyahoga County Health Assessment Steering Committee to have recently gathered data that could help inform our assessment are included in this section of the report.

ASIA, Inc.
Asian Services in Action ("ASIA") seeks to empower and advocate for Asian Americans & Pacific Islanders (AAPIs) and to provide AAPIs and other communities with access to quality, culturally, and linguistically appropriate information, health and social services. ASIA, Inc. operates two federally qualified health centers (FQHCs) and six social service departments.

ASIA has conducted community research in various areas related to health. Specifically, ASIA has focused on health insurance awareness within communities, wraparound services within health clinics, nutrition/physical activity-related health behavior, and environmental improvements desired by residents in the AsiaTown neighborhood.

In 2016, ASIA partnered with John Carroll University to conduct two focus groups to identify awareness and use of health insurance within Chinese and Korean communities. There were three common themes that emerged from the focus groups:

- One group of participants was confused about the difference between Medicare and Medicaid whereas the other group showed full understanding of Medicare and how it has helped them retain coverage.
- Participants from both groups did not understand what would happen to their health insurance cost and coverage after retirement.
- Both groups emphasized the importance of their relationship with their physician or family doctor.

In 2016, ASIA conducted semi-structured interviews with Burmese, Chinese and Nepali patients in their clinics regarding the type of wraparound services (i.e. case management, interpretation, transportation or health education) that are needed and the impact wraparound services have on their treatment plans. Key findings from the interviews included:

- Language access and transportation were the most valued wraparound services.
- Interviewees place a lot of trust in their providers to make decisions on care and treatment.

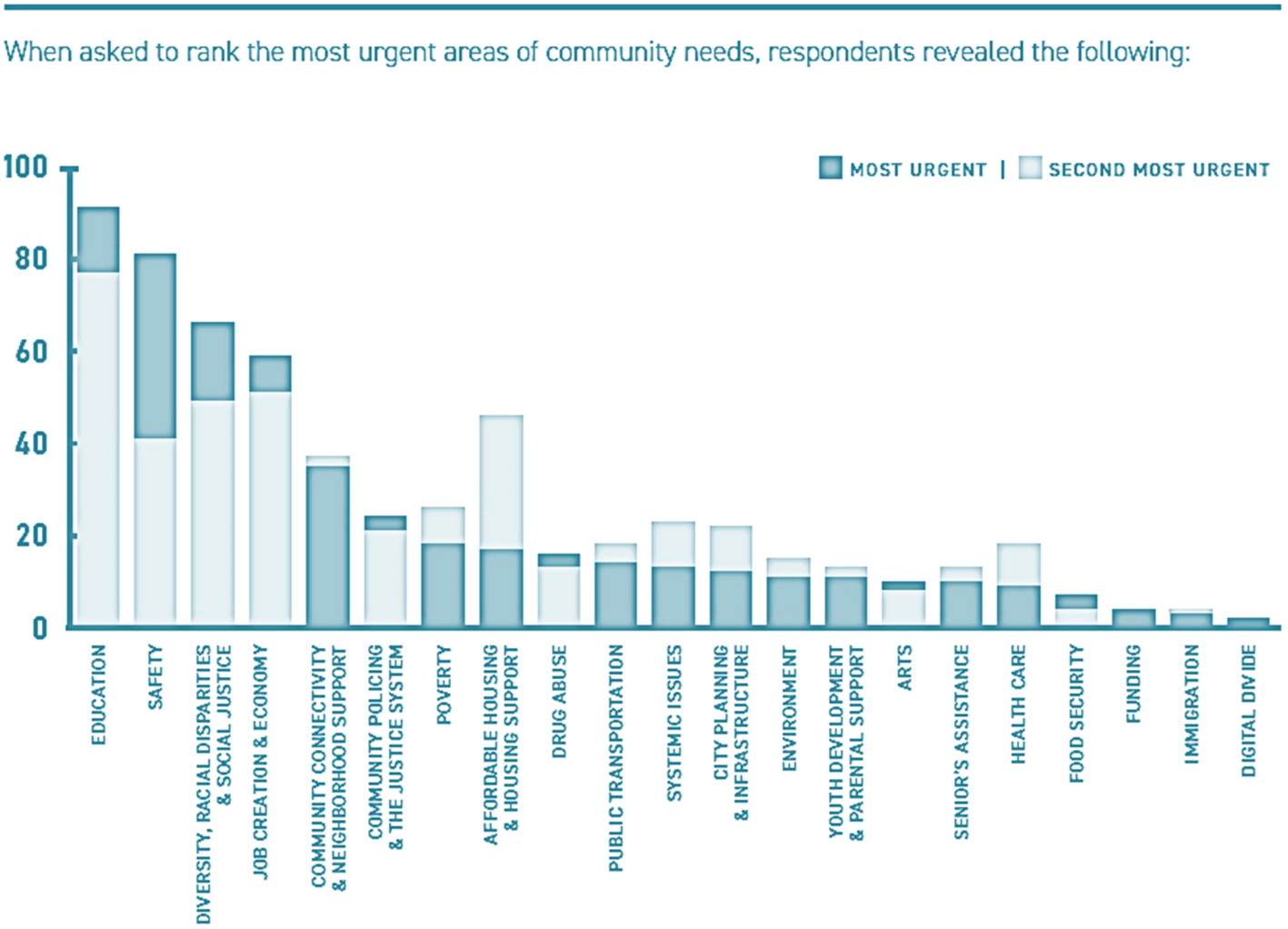
In 2017, ASIA used the Family Health Behavior Scale to gather information about food access and physical activity among Chinese, Korean, Nepalese, Filipino, and refugee communities that could also inform programming and improve services within the community. The results showed that 25% of participants within cultural language schools and ethnic voluntary social groups do not have access to physical activity opportunities whereas close to 60% of participants within refugee resettlement organizations do not have access to physical activity opportunities.

Cleveland Foundation
The Cleveland Foundation is the largest foundation in Northeast Ohio and serves to improve the lives of residents in Cuyahoga, Lake and Geauga counties. On July 30, 2017, the Cleveland Foundation led a day of community conversations that involved more than 2,000 Greater Clevelanders as part of the inaugural Common Ground event. Organized by the Cleveland Foundation and more than 50 community partners, Greater Clevelanders spread throughout 42 sites had the opportunity to share a conversation and a meal.

The purpose of the Common Ground conversations was for Greater Clevelanders to discuss a wide range of topics and create connections. Following the community conversations, participants completed a survey that

included questions to ascertain their perceptions of community needs that require urgent action. Highlights from the Common Ground follow-up survey, which had a 31% response rate, are as follows:

- 76% want to create positive change in the community.
- 75% want to work with others to improve the quality of life in Greater Cleveland.
- The top five cited community needs were: education; safety; diversity and social justice; job creation and the economy; and community connectivity and social support.



Source: *Cleveland Foundation*. "Common Ground: 2017 Snapshot."

ideastream

ideastream is a multiple media public service organization that applies the power of media to education, culture and citizenship. ideastream's programs and services include television viewing, listening and streaming radio content, and website-accessible content. With a goal of strengthening communities, ideastream reaches roughly 2.8 million people in a typical month from an 18-county service area that includes Cuyahoga County primarily through its five channels of public TV service on WVIZ/PBS and its news and public affairs radio station 90.3 WCPN.

As part of a Racial and Ethnic Approaches to Community Health (REACH) grant received by the YMCA of Greater Cleveland, ideastream was engaged to conduct six focus groups with residents from low-income African-American and Hispanic communities in the St. Clair/Superior, Glenville and Clark-Fulton neighborhoods of Cleveland from November 2015 to June 2016.

The project aimed to provide a better understanding of the exercise barriers low-income residents face and to gather thoughts on culturally appropriate messaging that would help motivate individuals to lead healthier lifestyles. Key themes that emerged from these community meetings included:

- Discrimination, either actual or perceived, is an issue that has health implications.
- Safety issues are pervasive and many residents do not feel safe, for example, jogging in their neighborhoods.
- Inadequate transportation options hinder residents' ability to exercise.
- Elderly individuals often feel that they can't exercise at existing health facilities because they are overrun with younger children.
- In the Latino community, there is a preference for participating in group exercise activities, but most health facilities are designed to focus on individual exercise.
- Food deserts impact the ability of residents to access healthy food.
- Marketing that promotes physical activity does not portray individuals who are racially or ethnically diverse.

The MetroHealth System

The MetroHealth System is a public health system serving the residents of Cuyahoga County, Ohio. Although not required by federal law to conduct a Community Health Needs Assessment, MetroHealth recently completed a health assessment to gain a more comprehensive understanding of the health needs of the community and to ensure that its community health activities were responsive to those needs.

In addition to analyzing data from many different secondary data sources, the health system conducted three focus groups and one roundtable discussion with key informants in the community. Nearly 30 individuals participated in the four conversations including residents from Cleveland's Clark-Fulton neighborhood, faith-based group representatives from several of Cleveland's east side neighborhoods, physicians practicing at MetroHealth, and community service providers who specialize in serving Latino and Hispanic residents. Key findings from the discussions included: social determinants of health (i.e. poverty, housing, structural racism) pose significant challenges to treating patients with chronic disease; lack of healthy food is a top health issue; and violence within the home and in the neighborhood is a frequently cited source of possible trauma, compounded by poverty, historic disinvestment and lack of clear avenues to opportunity.

The Community Health Needs Assessment helped MetroHealth identify five community health priorities that will guide its focus for the next three years:

- Reducing infant mortality.
- Addressing the opioid epidemic.
- Eliminating racial and ethnic disparities in chronic disease for MetroHealth patients.
- Community building in the Clark-Fulton neighborhood.
- Addressing community trauma in east side neighborhoods.

The Center for Community Solutions

The Center for Community Solutions is a nonpartisan think tank focused on solutions to health, social and economic issues. Over the years, many organizations in Northeast Ohio have partnered with The Center for Community Solutions to gather community voice data for a particular purpose and often with a specific question in mind.

Two projects are important to highlight for the purpose of the 2018 Cuyahoga County Community Health Assessment. Between November 2016 and February 2017, The Center for Community Solutions conducted a survey of people living with HIV/AIDS and key informant interviews with providers to better understand issues relating to housing faced by people living with HIV/AIDS in six Northeast Ohio counties, including Cuyahoga County. Key findings included:

- Access to stable housing is critical to ensuring individuals are able to maintain their health.
- Finding solutions to housing issues will require broad collaboration and creating new partnerships.

To assess the age-friendliness of Cleveland, The Center for Community Solutions conducted focus groups, a survey of randomly selected older adults, and a survey of service providers and the city of Cleveland Department of Aging from April 2015 through January 2016. Research demonstrated that there are many community assets, such as sufficient access to transportation, health care services and housing in the city, that support the needs of older adults. However, community challenges and opportunities include: many older adults are unaware of existing resources; safety is a key concern for older adults; and low-income older adults are more likely to report poor or fair health compared to upper-income individuals.

United Way of Greater Cleveland

United Way of Greater Cleveland is a local, independent nonprofit organization that is the largest private-sector funder of health and human services. Starting in June 2016, United Way of Greater Cleveland began a comprehensive process of gathering information from community leaders, residents, educators and nonprofit practitioners to better understand changes and challenges existing in the community. While United Way of Greater Cleveland is not required to conduct a health assessment, it is considered a best practice.

Working with The Center for Community Solutions and Case Western Reserve University, United Way's community assessment consisted of five components: demographic data, two surveys, focus groups, stakeholder interviews and feedback forums. As part of the health assessment, two surveys were disseminated and analyzed by The Center for Community Solutions. The first survey was sent to 26,000 community residents and 1,422 responses were received from seven counties, with 68% of responses coming from donors. The second survey, targeted to grantee organizations, was sent to 119 individuals and 66 responses were received. United Way conducted 23 focus groups with more than 175 representatives of funded programs over a four-month period; interviews with more than 50 stakeholders including university faculty, local political leaders, other philanthropic organizations, and county and city health and human service directors; and feedback forums for focus group participants to return for an opportunity to comment on initial findings.

Based on the extensive data that were gathered and analyzed, United Way identified the following five issues as priorities:

- Workforce development (creating an equitable economy)

- Education (investing in the future)
- Basic needs (enhancing access)
- Health and human services (enhancing community health)
- Safety (building a cohesive community)

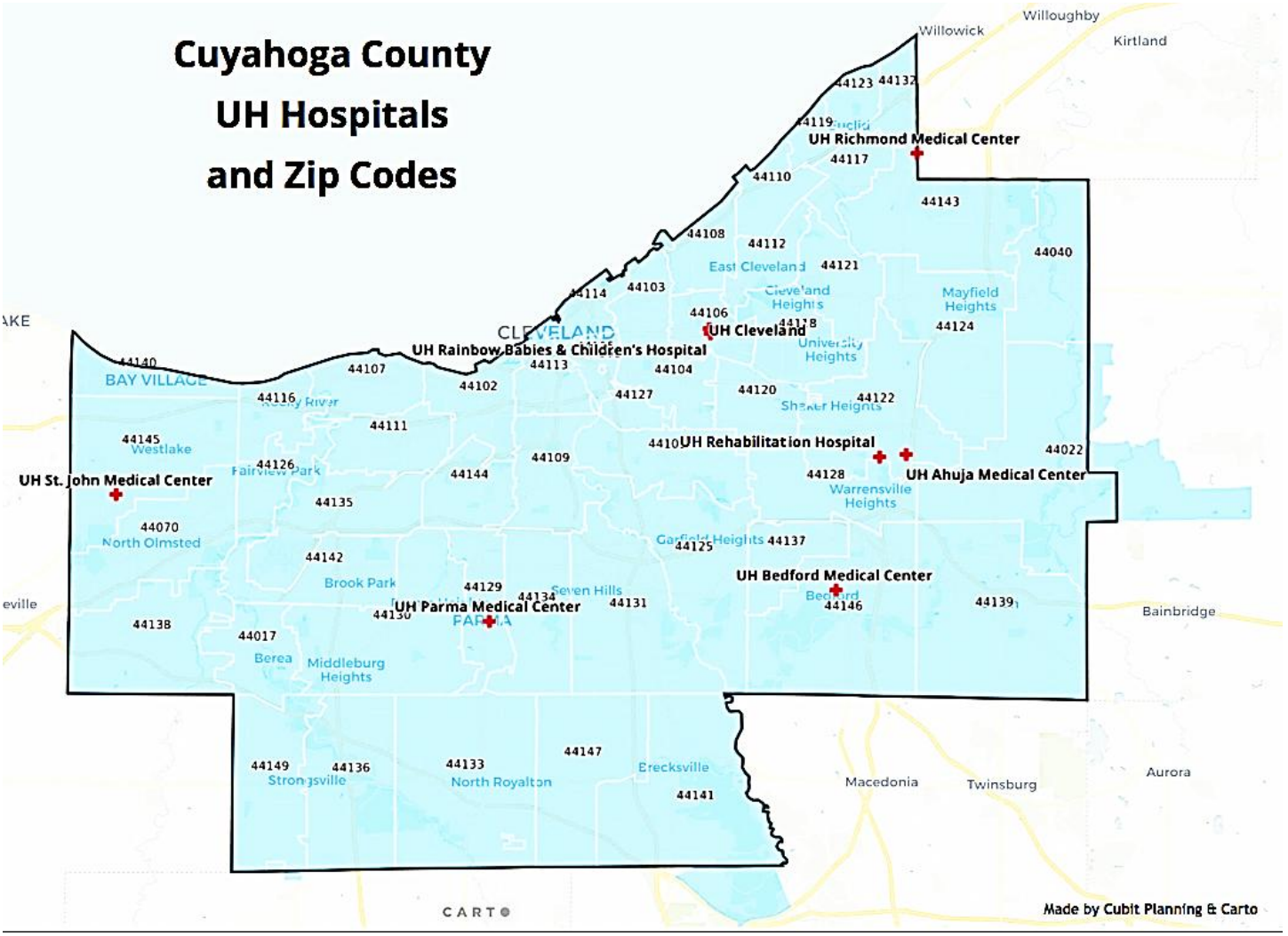
Summary

Community voice data shared by participating organizations helped to highlight a number of key themes regarding health needs in the community:

- Discrimination and racism create negative health implications for communities of color.
- Low-income individuals are more likely to report poor health than individuals with higher incomes.
- Safety concerns hamper many low-income residents' ability to exercise in their neighborhoods.
- There is a need to focus on job creation and workforce development to alleviate poverty, build wealth and create an equitable economy.
- Tied to workforce development, ensuring that the education system is strong and that educational attainment is high was cited by many as essential to addressing poverty and unemployment.

5. County Profile: Key Indicators

Cuyahoga County is one of Ohio's largest counties in terms of population. It sits within Northeast Ohio with a northern border of Lake Erie. It includes the City of Cleveland, but is marked by suburban and rural communities also. Eight University Hospital facilities are located throughout the county.



The following data provide an initial snapshot of the Cuyahoga County community and associated population health status. These key indicators provide a foundational narrative about the community captured in this assessment and will set the stage for both the 2019 assessment and subsequent collaborative community health improvement planning efforts. Furthermore, data combined from sources available to the two local health departments and University Hospitals provide a rich picture of the complexity of health outcomes and their associated determinants of health.

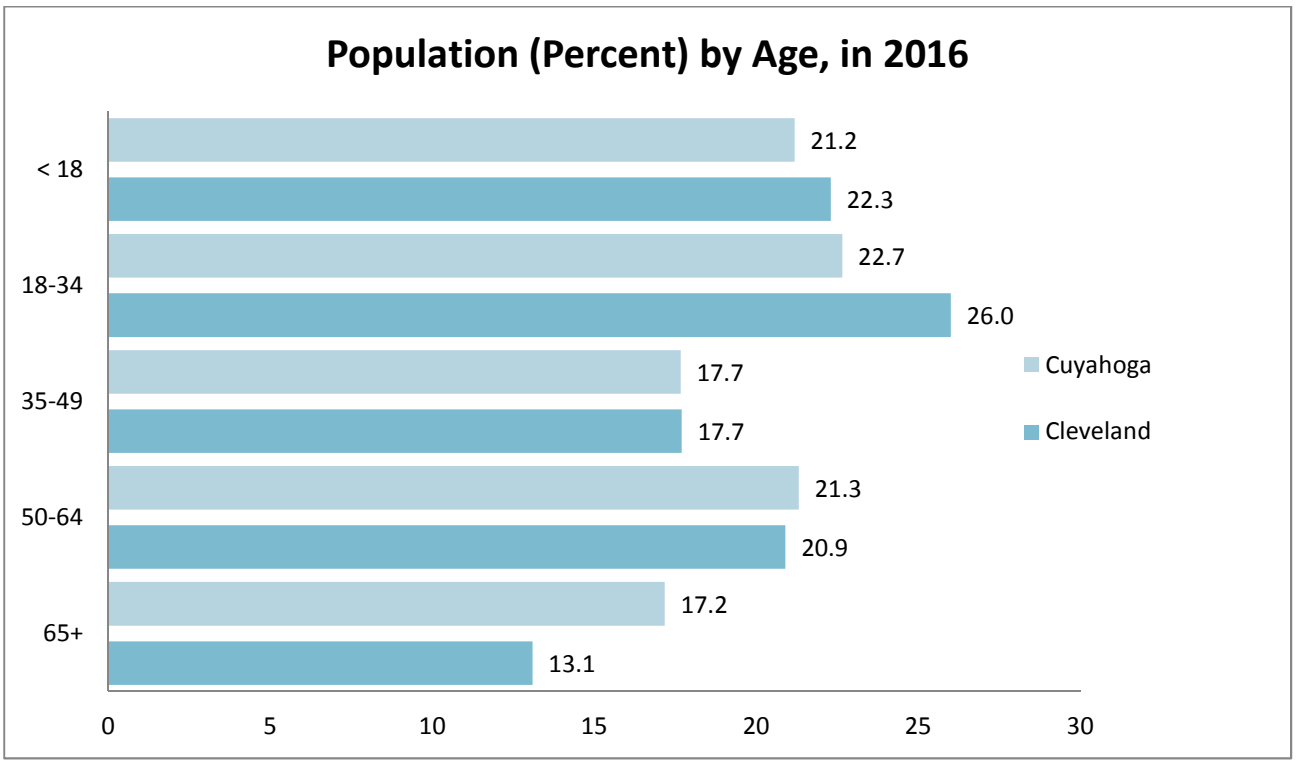
A. Demographic Characteristics: Age, Gender and Race/Ethnicity

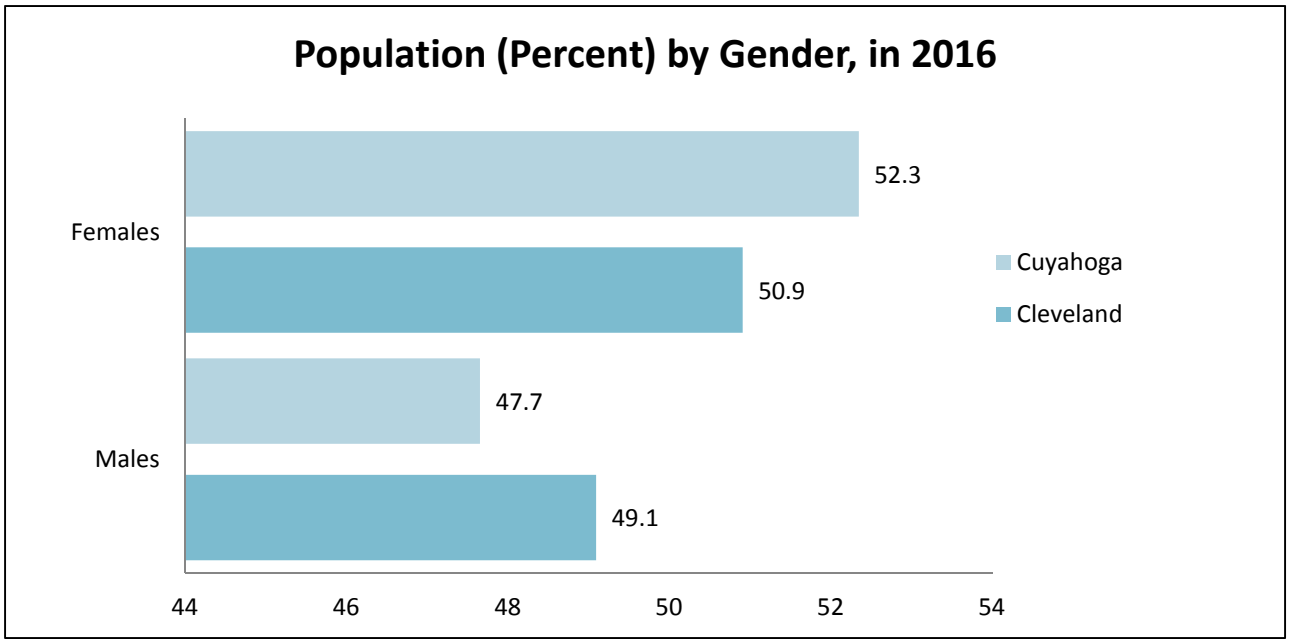
Demographic information about Cuyahoga County residents is provided in this section of the report. Demographic characteristics include measures of the total population (i.e. counts) and the percent of the total population by select characteristics such as age group, gender, and race/ethnicity.[1] Where data were available, attempts were made to provide information for the entire county as well as the city of Cleveland. Also, where possible, differences by age categories, gender, and race/ethnicity are presented.

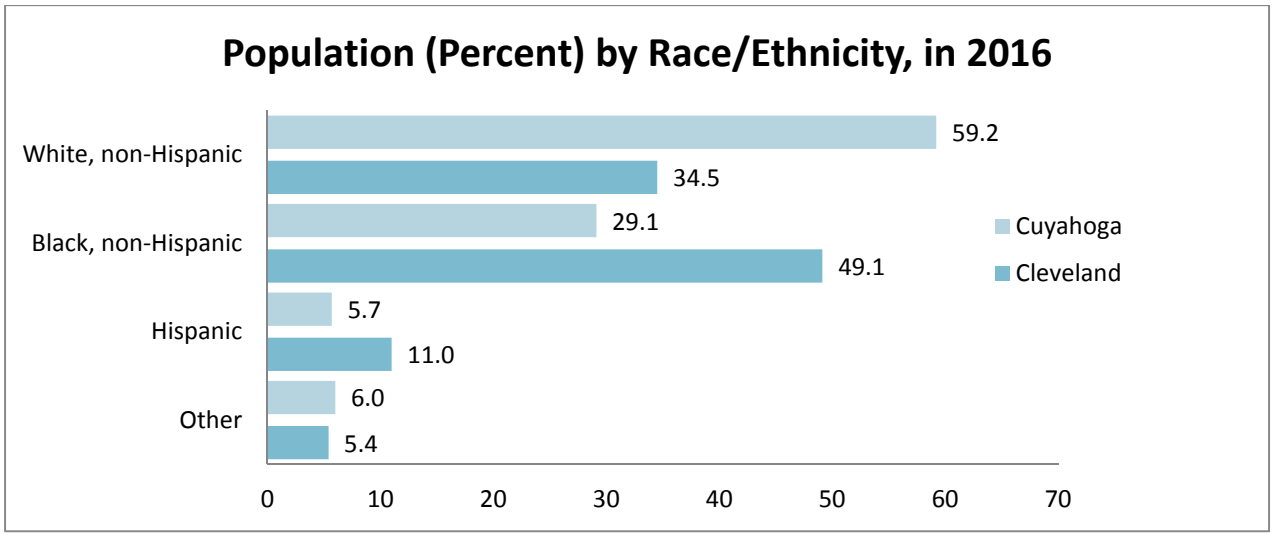
Comparisons of Select Demographics, 2016 and 2010: Cuyahoga County and the City of Cleveland

Demographic[2,3,4]	Cuyahoga County		City of Cleveland	
	2016	2010	2016	2010
Total Population	1,249,352	1,280,122	385,810	396,815
Age Group				
< 18	264,646	290,262	85,979	97,657
18-34	283,059	271,149	100,323	97,681
35-49	220,775	254,121	68,200	78,940
50-64	266,281	266,049	80,887	75,041
65 and older	214,591	198,541	50,421	47,496
Gender				
Male	595,477	607,362	189,401	190,285
Female	653,875	672,760	196,409	206,530
Race/Ethnicity				
Other	44,352	57,907	20,835	16,363
Hispanic	71,460	61,270	42,439	39,534
Black, non-Hispanic	381,372	374,968	189,432	208,208
White, non-Hispanic	752,168	785,977	133,104	132,710

Note: 2010 data are presented since many of the indicators use 2010 for the denominator of the calculation. These data were generated during the last U.S. Census and were considered to be the most stable estimate for population.


Population (Percent) by Age, in 2016
< 18
18-34
35-49
50-64
65+
21.2
22.3
22.7
26.0
17.7
17.7
21.3
20.9
17.2
13.1
Cuyahoga
Cleveland
0
5
10
15
20
25
30


Population (Percent) by Gender, in 2016
Females
Males
52.3
50.9
47.7
49.1
Cuyahoga
Cleveland
44
46
48
50
52
54



Summary

Cuyahoga County's population is growing older, on average. The 2016 population estimates indicate minor differences between Cuyahoga County overall and the city of Cleveland with respect to age groups and gender. Although small, the most notable differences include a greater percentage of persons 18 to 34 years of age living in the city of Cleveland compared to Cuyahoga County as a whole. Conversely, a greater percentage of individuals aged 65 and over are living in Cuyahoga County overall compared to the city of Cleveland.

There are significant racial/ethnic differences when comparing the city of Cleveland to Cuyahoga County as a whole. Specifically, the proportions of Black, non-Hispanic persons and Hispanic persons living in the city of Cleveland are nearly double those of Cuyahoga County overall. Additionally, when comparing the 2016 estimates to the 2010 census, there has been a population decline for both Cuyahoga County overall and the city of Cleveland. However, there has been an increase in the number of Hispanic persons living in both the city of Cleveland and Cuyahoga County as a whole.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments. Accessed on May 8, 2018.

[2] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Table DP05 and B01001. Available at http://factfinder2.census.gov. Accessed on April 25, 2016.

[3] U.S. Census Bureau. 2010 Census. Summary File1, Tables P12, P13, and PCT12. Available at http://factfinder2.census.gov. Accessed on April 13, 2012.

[4] U.S. Census Bureau. 2010 Census. Summary File1, Tables P8 and P9. Available at http://factfinder2.census.gov. Accessed on April 13, 2012.

B. Hospital Patients Served

Hospital Discharges, Cuyahoga County, 2016

- In 2016, there were 179,962 acute-care hospitalizations of Cuyahoga County residents. Of those, 54,396 (30.2%) were inpatients at a University Hospitals acute care facility. Note that many of these counts represent individuals who were hospitalized more than once. We show counts of hospitalizations, not counts of unique individuals who were hospitalized at least once.
- A small but significant proportion of Cuyahoga County residents were hospitalized in a facility outside of the county (2.4%, not shown). Most of those were in a facility in a county contiguous to Cuyahoga County (1.8%).
- 13.4% of hospitalized people under age 18; of those, 8.1% were newborns, and their stay was associated with their birth. Just over half (51.7%) were ages of 18 to 65. While those over age 65 comprise only about 17% of the population in Cuyahoga County, twice that percentage were those hospitalized in 2016 (35.9%).
- Note that not all of those hospitalized in Cuyahoga County acute care facilities were Cuyahoga County residents. In fact, one-third (34.5%, not shown) of hospitalizations in Cuyahoga County in 2016 were not residents of Cuyahoga County.

Acute Care Hospitalizations Among Residents of Cuyahoga County, 2016

	Cuyahoga County Resident Inpatient Hospitalizations – Acute Care Hospitals							
	Age 0 -17		Age 18-65		Age 66+		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total, Cuyahoga County Acute Care Facilities	23,509	97.7%	88,448	96.9%	63,620	98.4%	175,577	97.6%
Total, University Hospitals Acute Care Facilities	9,499	39.5%	23,913	26.2%	20,984	32.5%	54,396	30.2%
Total, Other Acute Care Facilities	14,010	58.2%	64,535	70.7%	42,636	65.9%	121,181	67.3%
Contiguous Counties	487	2.0%	1,952	2.1%	871	1.3%	3,310	1.8%
Rest of Ohio	76	0.3%	840	0.9%	159	0.2%	1,075	0.6%
Total	24,072	100.0%	91,240	100.0%	64,650	100.0%	179,962	100.0%
% of Total, By Age Group	13.4%		51.7%		35.9%		100%	

Hospitalizations of Non-Residents of Cuyahoga County in Cuyahoga County Hospitals, 2016

	Age 0 -17		Age 18-65		Age 66+		Total Non- Cuyahoga County Resident Inpatient Hospitalizations in Acute Care Hospitals	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Percent of Total, By Age Group	11,694	12.3%	48,868	51.5%	34,240	36.1	94,802	100%

Hospitalization Levels, Trends

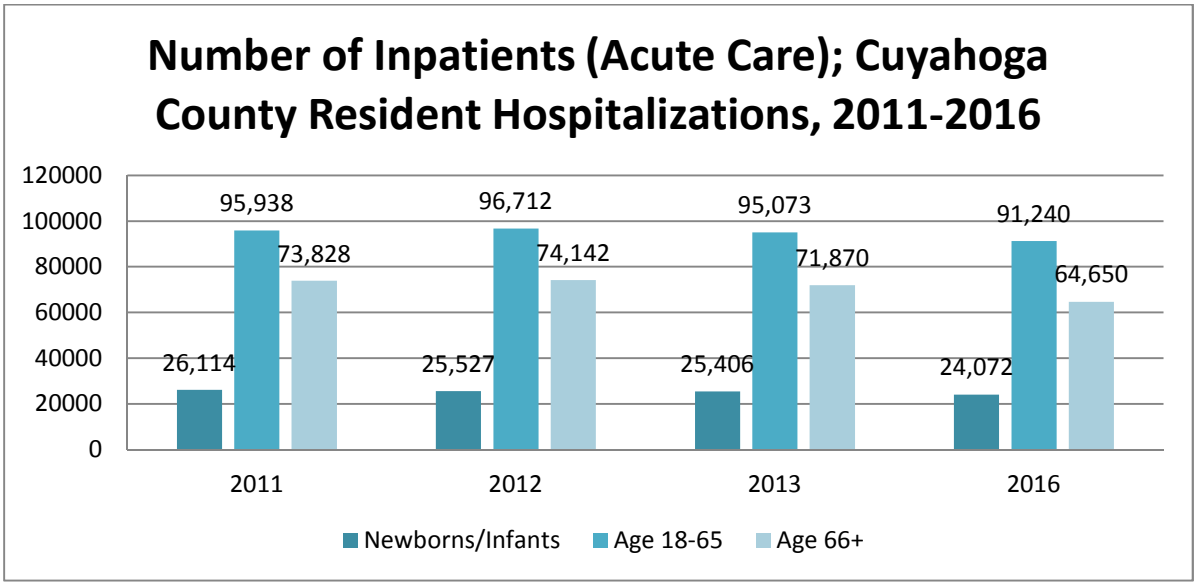
Among Cuyahoga County residents, we see a significant decline in hospitalization levels from 2011 to 2016. The number of hospitalized residents decreased by 8.1% during those five years. This was true for almost all of the surrounding counties, as well.

Trends in Acute Care Hospital Inpatient Levels, NE Ohio Counties
2011 to 2016

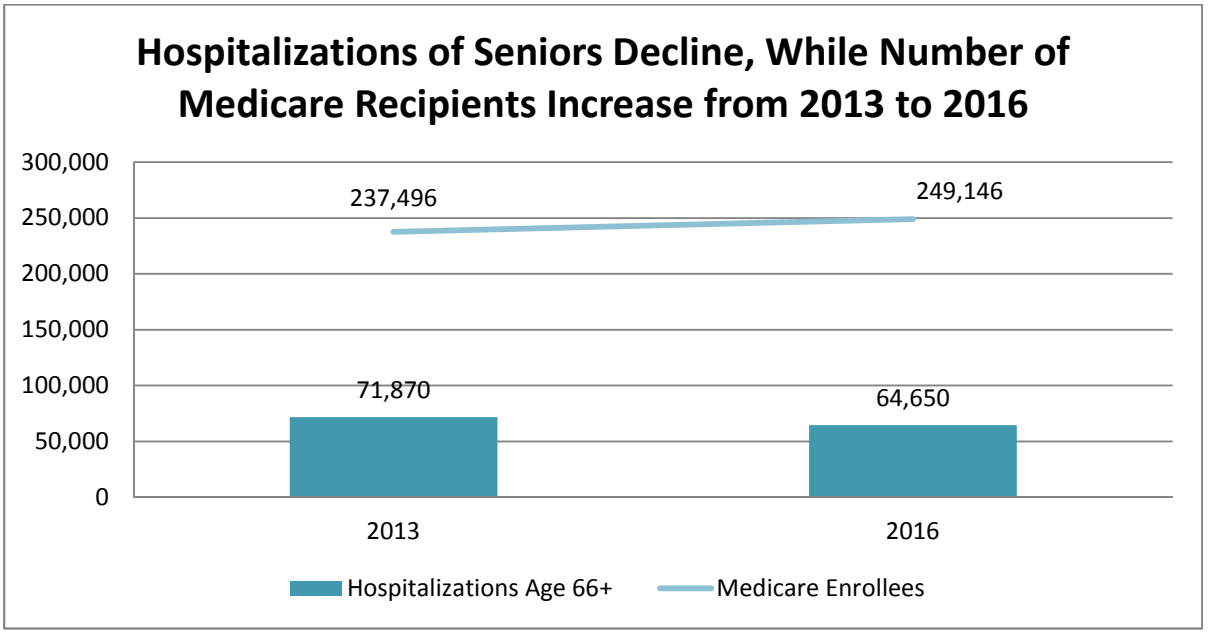
	2011	2012	2013	2016	Percent Change from 2011-2016
Ashland County	4,865	4,768	4,781	5,574	14.6%
Ashtabula County	15,170	13,889	14,069	15,000	-1.1%
Cuyahoga County	**195,880**	**196,381**	**192,349**	**179,962**	**-8.1%**
Erie County	11,655	11,303	11,189	11,571	-0.7%
Geauga County	9,750	10,045	9,379	9,057	-7.1%
Huron County	7,429	7,046	7,247	7,722	3.9%
Lake County	30,168	30,287	29,219	29,557	-2.0%
Lorain County	45,490	43,307	42,742	40,550	-10.9%
Mahoning County	35,118	34,059	33,309	33,919	-3.4%
Medina County	18,357	18,308	18,199	17,797	-3.1%
Portage County	19,762	18,905	17,990	17,658	-10.6%
Stark County	49,553	48,517	48,447	48,322	-2.5%
Summit County	72,122	70,259	66,685	64,755	-10.2%
Trumbull County	32,682	30,789	29,278	28,467	-12.9%
Wayne County	13,994	14,167	13,632	13,161	-6.0%
Total:	**562,014**	**552,040**	**538,522**	**523,072**	**-2.9%**

This reduction in hospitalization levels was driven mainly by lower hospitalization rates among those aged 66 and older and the reduction was most pronounced from 2013 to 2016. This is despite the number of senior citizens in Cuyahoga County increasing significantly during that same period.

Trends in Inpatient Levels, Cuyahoga County Resident Hospitalizations, By Age Group 2011 to 2016



Trends in Inpatient Levels of Cuyahoga County Residents Aged 66+ and Medicare Enrollee Levels, 2013 to 2016



Trends in Acute Care Hospital Inpatient Levels, Cuyahoga County, By Zip Code/Municipality 2011 to 2016

The reduction in hospitalization levels crosses almost all municipalities (based on zip codes) throughout Cuyahoga County.

Zip code	Main Municipality	2011	2012	2013	2016	Change to 2016 from Average of '11-'13.
44140	Bay Village	1,678	1,674	1,596	1,506	-8.7%
44122	Beachwood	6,006	5,776	5,465	4,876	-15.2%
44146	Bedford	5,085	5,145	4,809	4,578	-8.7%
44017	Berea	2,492	2,390	2,443	2,342	-4.1%
44141	Brecksville	1,360	1,453	1,355	1,265	-8.9%
44147	Broadview Heights	2,044	1,897	1,972	1,770	-10.2%
44142	Brook Park	2,916	3,089	3,005	2,665	-11.3%
44022	Chagrin Falls	1,650	1,651	1,615	1,518	-7.4%
44101	Cleveland- Industrial Core	90	85	93	93	4.1%
44127	Cleveland – Tremont	1,092	1,090	1,082	888	-18.4%
44118	Cleveland Hts/University Hts	4,923	4,914	4,912	4,493	-8.6%
44102	Cleveland- Ohio City	8,389	8,337	8,181	7,209	-13.2%
44144	Cleveland-Brooklyn	2,949	3,052	3,041	2,748	-8.8%
44120	Cleveland-Buckeye-Shaker	5,653	6,029	5,943	5,334	-9.2%

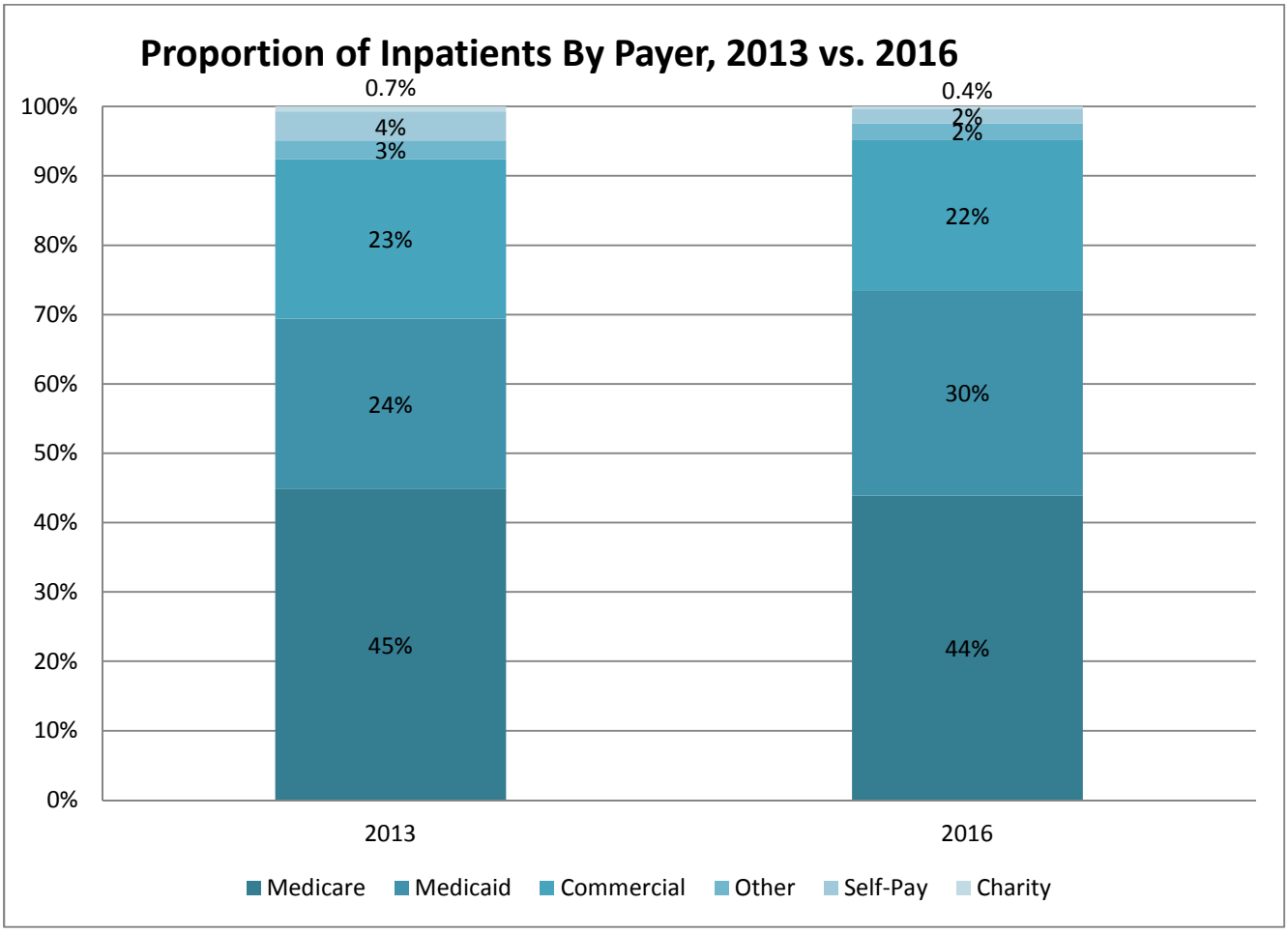
Zip code	Main Municipality	2011	2012	2013	2016	Change to 2016 from Average of '11-'13.
44115	Cleveland-Central	1,458	1,514	1,508	1,698	13.7%
44110	Cleveland-Collinwood	3,996	3,718	3,824	3,682	-4.3%
44114	Cleveland-Downtown	997	962	1,009	1,041	5.2%
44126	Cleveland-Fairview Park	2,232	2,195	2,082	2,076	-4.3%
44108	Cleveland-Glenville	4,764	5,051	4,635	4,286	-11.0%
44103	Cleveland-Hough	3,773	3,982	3,911	3,598	-7.5%
44104	Cleveland-Kinsman	4,184	4,357	4,569	4,166	-4.7%
44105	Cleveland-Kinsman	7,490	7,548	7,452	6,538	-12.8%
44111	Cleveland-Lorain & W. 130th	6,003	6,123	6,010	5,834	-3.5%
44113	Cleveland-Ohio City	2,712	2,937	2,818	2,353	-16.6%
44119	Cleveland-Pawnee & E. 185th	1,873	1,917	1,886	1,892	0.0%
44135	Cleveland-Riverside	4,878	4,726	4,774	4,565	-4.8%
44109	Cleveland-Tremont	6,923	6,920	6,830	6,375	-7.5%
44106	Cleveland-University Circle	4,304	4,437	4,201	3,781	-12.4%
44112	East Cleveland	5,085	4,795	4,566	4,439	-7.8%
44117	Euclid	2,300	2,123	2,232	2,125	-4.2%
44123	Euclid	2,462	2,631	2,444	2,473	-1.6%
44132	Euclid	2,266	2,304	2,362	2,382	3.1%
44125	Garfield Heights	4,507	4,457	4,481	4,026	-10.2%
44040	Gates Mills	388	358	341	319	-12.0%
44143	Highland Heights	3,322	3,633	3,419	3,656	5.7%
44131	Independence	2,659	2,788	2,713	2,617	-3.8%
44107	Lakewood	7,143	7,093	6,578	6,003	-13.5%
44137	Maple Heights	3,844	3,871	3,778	3,677	-4.0%
44124	Mayfield Heights-Pepper Pike	5,707	5,821	5,640	5,531	-3.3%
44130	Middleburg Heights	8,154	8,022	7,829	7,065	-11.7%
44070	North Olmsted	4,597	4,515	4,285	4,343	-2.7%
44133	North Royalton	3,562	3,624	3,370	3,269	-7.1%
44138	Olmsted Falls	2,855	2,861	3,029	2,674	-8.3%
44129	Parma	4,532	4,360	4,144	3,847	-11.5%
44134	Parma	5,521	5,503	5,261	4,998	-7.9%
44116	Rocky River	2,768	2,760	2,811	2,642	-5.0%
44139	Solon	2,210	2,278	2,309	2,256	-0.4%
44121	South Euclid	4,191	4,210	4,253	3,990	-5.4%
44136	Strongsville	3,016	3,045	3,151	2,953	-3.8%
44149	Strongsville	1,851	1,996	2,035	1,877	-4.3%
44128	Warrensville Heights	5,952	5,702	5,645	5,429	-5.9%
44145	Westlake	5,009	4,612	4,613	4,176	-12.0%

The distribution of payers for inpatients from 2011 to 2016 changed significantly over the past several years, mainly related to the expansion of the number of residents eligible for Medicaid in Cuyahoga County. A lower number and proportion of hospitalized residents with Medicare was seen in 2016 compared to 2013 (reduction of 8.5%); this relates to a lower number of hospitalized senior citizens in the county. Counter to that is a large increase (13.1%) of those covered by Medicaid. Related to that is a decrease in those who were self-pay or charity care in 2016 compared to 2013.

Trends in Sources of Insurance, Acute Care Hospital Inpatients, Cuyahoga County, By Payer 2011 to 2016

	2011	2012	2013	2016	% Change from 2013 to 2016
Medicare	88,049	85,867	86,374	78,997	-8.5%
Medicaid	43,613	47,343	47,108	53,287	13.1%
Commercial	47,704	44,435	44,242	38,981	-11.9%
Other	5,793	4,471	5,201	4,319	-17.0%
Self-Pay	10,644	11,167	8,033	3,674	-54.3%
Charity	77	3,098	1,391	704	-49.4%
	195,880	196,381	192,349	179,962	-6.4%

Major Payer Categories for Acute Care Inpatients, Cuyahoga County, 2013 to 2016



Commensurate with Cuyahoga County's population decline, the number of newborns in hospitals declined slightly from 2013 to 2016 (-1.4%). The number of newborns who required transfer to a different hospital, because of the need for specialized care, decreased substantially from 2013 to 2016 (-32.3%).

Trends in Newborns as Inpatients in Acute Care Facilities (Born in or out of Hospitals), Cuyahoga County Residents, 2013 to 2016

	2013	2016	Change
Newborn in or out of hospital	14,874	14,663	-1.4%
Newborn transferred to another hospital (included in count above)	699	473	-32.3%

Most Cuyahoga County residents gave birth in Cuyahoga County. In addition, many babies born in Cuyahoga County were born to non-county residents (4,931); however, most of them were residents of adjacent counties (not shown).

Newborns as Inpatients in Acute Care Facilities (Born in or out of Hospitals), Cuyahoga County, 2016

	Newborns of Cuyahoga County Residents		Newborns In Cuyahoga County Hospitals	
	Born In Cuyahoga County	Born Out of Cuyahoga County	Cuyahoga County Residents	Cuyahoga County Non-Residents
Born in or out of hospital	14,244	419	14,244	4,931
Transferred newborn to another hospital (included in count above)	461	12	461	268

Payers for Newborns as Inpatients in Acute Care Facilities (Born in or out of Hospitals), Cuyahoga County Residents, 2013 vs. 2016

Over half of newborns (53% in 2013 and 52% in 2016) were covered by Medicaid. The majority of newborns requiring transfer to a different facility had Medicaid coverage (74% in 2013 and 77% in 2016).

	2013				2016			
	Newborns in or out of hospital		Newborns Transferred to Other Hospital		Newborns in or out of hospital		Newborns Transferred to Other Hospital	
Medicaid (HMO)	6,612	44.5%	439	62.8%	6,680	45.6%	319	67.4%
Medicaid (Traditional)	1,321	8.9%	79	11.3%	968	6.6%	46	9.7%
Commercial Insurance	5,821	39.1%	110	15.7%	5,429	37.0%	72	15.2%
Other	447	3.0%	66	9.4%	579	3.9%	28	5.9%
Self-Pay	700	4.7%	6	0.9%	942	6.4%	8	1.7%
Charity Care	1	0.0%	0	0.0%	84	0.6%	0	0.0%
Total	**14,874**	**100.0%**	**699**	**100.0%**	**14,663**	**100.0%**	**473**	**100.0%**

Payers for Newborns as Inpatients in Acute Care Facilities (Born in or out of Hospitals), Cuyahoga County Hospitals, 2016

	Cuyahoga County Residents				Non-Residents of Cuyahoga County			
	Newborn		Transferred Newborn		Newborn		Transferred Newborn	
Medicaid Managed Care	6,585	46.2%	316	68.5%	1,151	23.3%	106	39.6%
Medicaid (Traditional)	942	6.6%	45	9.8%	184	3.7%	36	13.4%
Commercial Insurance	5,214	36.6%	64	13.9%	2,992	60.7%	98	36.6%
Self-Pay	893	6.3%	8	1.7%	407	8.3%	5	1.9%
Charity Uncompensated	84	0.6%	0	0.0%	4	0.1%	0	0.0%
Other	526	3.7%	28	6.1%	193	3.9%	23	8.6%

Primary and Secondary Diagnoses of Hospitalized Residents, All Ages

The following data identify the pattern of diagnoses for hospitalized residents in 2016. The general diagnostic categories pinpoint the most common reasons for hospitalization followed by the most common specific primary diagnoses within each general category to understand more specifically what leads to hospitalizations. Secondary inpatient diagnoses must also be analyzed as chronic disease comorbidities aid in identification of the chronic conditions that are resulting in most hospitalizations.

Of the 179,962 hospitalizations of Cuyahoga County residents in 2016, 27,037 (15.0%) were related to diseases of the circulatory system. This category was, by far, the most common primary diagnosis related to hospitalizations. The second most common categories were very close in terms of frequency and include: diseases of the respiratory system (9.2%), mental and behavior disorders (8.5%), and diseases of the digestive system (8.5%). While most of those hospitalized for childbirth had no pathology involved, childbirth and complications of pregnancy included 8.7% of all hospitalizations; along with that, 8.1% of all hospitalizations were newborns with no serious complications. In total, roughly 16% of hospitalizations were related to childbirth (mothers and their newborns).

Note that while cancers (neoplasms) were primary diagnoses for 3.5% of the hospitalizations in 2016, this is not reflective of the relative incidence of cancers in our community compared to other disease states. This is because cancer is generally treated on an outpatient basis.

Review of the following table shows that most hospitalizations were related to diseases, as opposed to singular events. Very few hospitalizations were related to harmful, one-time events (injuries, 3.7, and poisoning, 0.9%).

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary Diagnostic Category*

	Number	Percent
Total	**179,962**	**100.0%**
Diseases of the circulatory system	27,037	15.0%
Diseases of the respiratory system	16,631	9.2%
Childbirth and complications of pregnancy, childbirth, and the puerperium	15,673	8.7%
Newborns (with no serious complications)	14,580	8.1%
Mental and behavioral disorders	15,305	8.5%
Diseases of the digestive system	15,247	8.5%
Diseases of the musculoskeletal system and connective tissue	10,596	5.9%
Infectious and parasitic diseases	9,551	5.3%
Diseases of the genitourinary system	8,133	4.5%
Endocrine, nutritional and metabolic diseases	6,976	3.9%
Injury	6,718	3.7%
Cancers (neoplasms)	6,212	3.5%
Symptoms, signs, and ill-defined conditions	5,016	2.8%
Diseases of the nervous system and sense organs	4,673	2.6%
Diseases of the skin and subcutaneous tissue	4,056	2.3%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	2,799	1.6%
Poisoning	1,693	0.9%
Certain conditions originating in the perinatal period	979	0.5%
Congenital anomalies	424	0.2%
Diseases of the ear and mastoid process	224	0.1%
Diseases of the eye and adnexa	145	0.1%
Other	7,108	4.0%

*Primary diagnostic category is based on ICD-10 designations.

Circulatory Disease

The most common circulatory disease that was a primary diagnosis among those hospitalized in 2016 was congestive heart failure (2.8% of all hospitalizations). Myocardial infarction was the second most common (1.7%) followed by hypertensive heart and kidney diseases (1.7%), cerebral infarction (1.6%) and atrial fibrillation (1.4%).

As noted above, secondary diagnoses are of considerable interest in understanding the health of the population. Of all hospitalizations in 2016, 6.9% of patients were in congestive heart failure; and 5.3% had atrial fibrillation. Sixteen percent of hospitalized patients had a secondary diagnosis of primary hypertension; and 8.0% had hypertensive heart and kidney disease.

To summarize, diseases of the circulatory system were very common among those hospitalized: 62% had at least one secondary diagnosis related to circulatory disease.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Diseases of the Circulatory System

	Primary Diagnosis		Secondary Diagnoses	
	Number Of Cases With Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Diseases of the circulatory system	27,037	15.0%		
Most common specific diagnoses in category:				
Congestive heart failure	5,082	2.8%	12,281	6.9%
Myocardial infarction	3,101	1.7%	2,043	1.2%
Hypertensive heart & kidney diseases	3,031	1.7%	14,118	8.0%
Cerebral infarction	2,934	1.6%	2,221	1.3%
Atrial fibrillation	2,512	1.4%	9,377	5.3%
Atherosclerotic heart disease	1,205	0.7%	10,903	6.1%
Embolism (acute & chronic)	915	0.5%	3,156	1.8%
Essential (primary) hypertension	420	0.2%	28,297	16.0%
Hypotension	175	0.1%	7,579	4.3%
Cardiac vascular blockage	327	0.2%	2,328	1.3%
Peripheral vascular disease, unspecified	111	0.06%	4,217	2.4%
Cardiomyopathies	93	0.05%	2,328	1.3%
Primary pulmonary hypertension	91	0.05%	2,365	1.3%
Venous insufficiency (chronic) (peripheral)	56	0.03%	1,516	0.9%
Previous myocardial infarction	0	0.00%	4,172	2.4%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Diseases of the Respiratory System

Diseases of the respiratory system were the second most common general reason for hospitalizations in 2016 (primary diagnoses). The most common respiratory disease as a primary diagnosis was chronic obstructive pulmonary disease, COPD (2.8% of hospitalizations). Note that another 6.2% of inpatients had a COPD secondary diagnosis. Therefore, 9.0% of all hospitalizations in 2016 were diagnosed with COPD.

Pneumonia was the second most common primary diagnosis (2.1%), but was also a common secondary diagnosis (3.0%). Other respiratory conditions were also very common secondary diagnoses: chronic respiratory failure (4.0%), acute respiratory failure (4.8%) and asthma (5.8%). Almost one-third (31%) of those hospitalized in 2016 had a secondary diagnosis related to a respiratory condition.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Diseases of the Respiratory System

	Primary Diagnosis		Secondary Diagnoses	
	Number Of Cases With Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Diseases of the respiratory system	16,631	9.2%		
Most common specific diagnoses in category:				
Chronic obstructive pulmonary disease	5,086	2.8%	10,996	6.2%
Pneumonia (viral, bacterial and unspecified)	3,785	2.1%	5,263	3.0%
Chronic respiratory failure	1,342	0.8%	7,159	4.0%
Asthma	1,298	0.7%	10,215	5.8%
Pneumonitis due to inhalation of food and vomit	1,188	**0.7%**	1,403	0.8%
Acute respiratory failure	1,110	0.6%	8,554	4.8%
Pleural effusion	269	0.15%	2,995	1.7%
Atelectasis (collapsed lung)	9	0.01%	4,644	2.6%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Childbirth and Complications of Pregnancy, Childbirth and the Puerperium

Delivery of newborns accounted for about 16% of hospitalizations in 2016 (mothers and babies). While the great majority of mothers and babies were discharged without a major incident, complications during pregnancy and delivery were not rare. Roughly 1.1% of all hospitalizations in 2016 involved post-term pregnancies and 0.5% were related to preterm labor. About 2.0% of all hospitalizations (13% of all deliveries, not shown) included an abnormal fetal heart rate. Almost as many mothers (1.8%) were Streptococcus B carrier positive. Pre-eclampsia was associated with 0.6% of all hospitalizations, or 7% of all hospitalized pregnant patients.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Childbirth and Pregnancy

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases With Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Childbirth and complications of pregnancy, childbirth, and the puerperium	15,673	8.5%		
Most common specific diagnoses in category:				
Post-term pregnancy	1,423	0.8%	545	0.3%
Preterm labor (with or without delivery)	521	0.3%	284	0.2%
Abnormality in fetal heart rate and rhythm complicating labor and delivery	871	0.5%	2,678	1.5%
Streptococcus B carrier state complicating pregnancy and/or childbirth	634	0.4%	2,439	1.4%
Pre-eclampsia	642	0.4%	392	0.2%
Labor and delivery complicated by cord (prolapse, around neck, etc.)	459	0.3%	2,063	1.2%
Gestational hypertension	468	0.3%	273	0.2%
Anemia complicating pregnancy or childbirth	394	0.2%	1,942	1.1%
Supervision of elderly primi-/multigravida	88	0.05%	1,206	0.7%
Obesity complicating pregnancy and/or childbirth	216	0.1%	1,883	1.1%
Gestational diabetes	379	0.2%	351	0.2%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Mental and Behavior Disorders

Mental and behavior disorders were the fourth most common primary diagnoses among all hospitalizations in 2016 (8.5%). The most common primary diagnosis was major depressive disorder (2.0%), which was a secondary diagnosis for 5.2% of patients. Schizophrenia (1.7%) and schizoaffective disorders (0.8%) were the second and third most common primary diagnoses, but were secondary diagnoses for 2.0%. Any anxiety disorder was rarely a primary diagnosis (0.1%) but was among the most common secondary diagnoses (6.1%).

Substance abuse was among the least common mental and behavior disorders among those hospitalized, but it was not rare. Alcohol dependence was a primary diagnosis for 1.3% of patients, and opioid dependence was almost as common (0.9%). Nicotine dependence was almost never a primary diagnosis, but was a secondary diagnosis for 10.4% of hospitalization cases in 2016.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Mental and Behavioral Disorders

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases with Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Mental and behavioral disorders	15,305	8.5%		
Most common specific diagnoses in category:				
Major depressive disorder	3,567	2.0%	9,212	5.2%
Schizophrenia	3,074	1.7%	2,575	1.5%
Schizoaffective disorder (bipolar, depressive, or unspecified)	1,391	0.8%	961	0.5%
Bipolar disorder, with current episode	1,580	0.9%	2,592	1.5%
Anxiety disorders	205	0.1%	10,747	6.1%
Personality disorders	58	0.03%	1,175	0.7%
Attention-deficit hyperactivity disorder	50	0.03%	1,716	1.0%
Post-traumatic stress disorder, unspecified	42	0.02%	1,809	1.0%
Dementia	495	0.3%	6,339	3.6%
Alcohol abuse, uncomplicated	403	0.2%	3,640	2.1%
Alcohol dependence	2,260	1.3%	3,178	1.8%
Opioid dependence	1,527	0.9%	2,237	1.3%
Opioid abuse	30	0.02%	696	0.3%
Cannabis abuse/use	47	0.03%	3,728	2.1%
Sedative abuse/dependence	74	0.04%	583	0.3%
Cocaine abuse/use/dependence	76	0.04%	2,368	1.3%
Nicotine dependence	2	0.00%	18,358	10.4%
Intellectual disabilities	4	0.00%	1000	0.6%

Source: Ohio Hospital Association discharge data.
*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.

Diseases of the Digestive System

Digestive system diseases were also very common. Diverticulitis was the most common primary digestive system diagnosis (0.9%). Gastro-esophageal reflux disease was the most common secondary diagnosis (6.9%).

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Diseases of the Digestive System

	Primary Diagnosis		Secondary Diagnoses	
	Number Of Cases With Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Diseases of the digestive system	15,247	8.5%		
Most common specific diagnoses in category				
Diverticulitis	1,539	0.9%	2,085	1.2%
Gastrointestinal hemorrhage, unspecified	828	0.5%	1,215	0.7%
Melena	492	0.3%	1,028	0.6%
Alcoholic hepatitis, cirrhosis of liver, hepatic failure	476	0.3%	1,577	0.9%
Constipation	232	0.13%	6,205	3.5%
Gastro-esophageal reflux disease	182	0.10%	12,263	6.9%
Diaphragmatic hernia	127	0.07%	1,456	0.8%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Diseases of the Musculoskeletal System and Connective Tissue

Musculoskeletal system and/or connective tissue issues are less common among those hospitalized than the conditions described above. However, there are some specific conditions within this category that are quite common. Osteoarthritis was the primary diagnosis for 3.1% of inpatients in 2016, but another 4.5% had that as a secondary diagnosis. Gout and rheumatoid arthritis were less common (1.9% and 1.0%, respectively, of all secondary diagnoses).

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Diseases of the Musculoskeletal System and Connective Tissue

	Primary Diagnosis		Secondary Diagnoses	
	Number Of Cases With Diagnoses*	Percent of All Cases*	Number of Cases With Diagnoses**	Percent of All Cases**
Diseases of the musculoskeletal system and connective tissue	10,596	5.9%		
Most common specific diagnoses in category:				
Osteoarthritis	5,540	3.1%	7,997	4.5%
Rheumatoid arthritis	78	0.04%	1,692	1.0%
Gout	128	0.07%	3,431	1.9%
Spinal Stenosis	822	0.5%	1,619	0.9%
Osteoporosis (age-related)	102	0.06%	3,334	1.9%
Fibromyalgia	2	0.00%	1,778	1.0%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Infectious and Parasitic Diseases

In 2016, 5.3% hospitalizations were related to infectious diseases, but they included a myriad of infectious agents and systems of the body. Intestinal infections were the most common (nearly 1.0% of primary diagnoses). Streptococcus and Staphylococcus were the most common infectious agents.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Infection & Parasitic Diseases

	Primary Diagnosis		Secondary Diagnosis	
	Number Of Cases With Diagnoses*	Percent of All Cases*	Number of Cases With Diagnoses**	Percent of All Cases**
Infectious and parasitic diseases	9,551	5.3%		
Most common specific diagnoses in category:				
Intestinal infection (bacterial or viral)	1,729	0.96%	2,471	1.4%
Streptococcus infection	276	0.15%	2,206	1.2%
Staphylococcus infection	482	0.27%	642	0.4%
Methicillin susceptible Staphylococcus aureus infection	3	0.00%	776	0.4%
Methicillin resistant Staphylococcus aureus infection	0	0.00%	1,049	0.6%
Sepsis due to Escherichia coli [E. coli]	501	0.28%	79	0.0%
Unspecified Escherichia coli [E. coli	1	0.00%	2,574	1.5%
Klebsiella pneumoniae [K. pneumoniae]	0	0.00%	1,068	0.6%
Sexually transmitted diseases (besides HIV)	53	0.03%	548	0.3%
Hepatitis C	10	0.01%	1,449	0.8%
Hepatitis B	2	0.00%	186	0.1%
Hepatitis E	22	0.01%	32	0.0%
Hepatitis A	7		20	0.0%
Candida infection	54	0.03%	1,044	0.6%
Enterococcus infection	1	0.00%	691	0.4%
Tinea (fungus infection)	2	0.00%	591	0.3%
Human immunodeficiency virus [HIV] disease	147	0.08%	322	0.2%
All other sepsis (mostly unspecified bacteria)	6,439	3.58%	2,059	1.2%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Diseases of the Genitourinary System

Within diseases of the genitourinary system, acute kidney failure was the most common diagnosis (impacting about 8.3% of all hospitalizations, and a primary diagnosis for 2.0%).

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Genitourinary System

	Primary Diagnosis		Secondary Diagnosis	
	Number Of Cases With Diagnoses*	Percent of All Cases*	Number of Cases With Diagnoses**	Percent of All Cases**
Diseases of the genitourinary system	8,133	4.5%		
Most common specific diagnoses in category:				
Acute kidney failure	3,616	2.0%	11,246	6.3%
Urinary tract infection, site not specified	1,768	1.0%	4,819	2.7%
Benign prostatic hyperplasia	112	0.06%	3,446	1.9%
Chronic kidney disease	45	0.03%	12,008	6.8%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Endocrine, Nutritional and Metabolic Diseases

While this disease category was among the least common in terms of directly leading to hospitalizations, these afflictions were the most common secondary diagnoses. Almost one-in-five (18.3%) inpatients had a secondary diagnosis of hyperlipidemia, and almost as many (16.5%) had type 2 diabetes.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Endocrine, Nutritional and Metabolic Diseases

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases with Diagnosis*	Percentage of All Cases*	Number of Cases with Diagnosis**	Percent of All Cases**
Endocrine, nutritional and metabolic diseases	6,976	3.9%		
Most common specific diagnoses in category:				
Hyperlipidemia, unspecified	2	0.00%	32,438	18.3%
Complications due to type 2 diabetes	1,909	1.1%	20,358	11.5%
Type 2 diabetes, without complications	13	0.01%	8,854	5.0%
Complications due to type I diabetes	1,147	0.6%	2,524	1.4%
Obesity (diagnosed only if severe & interferes with treatment)	593	0.3%	15,861	8.9%
BMI greater than 30	2	0.00%	15,236	8.6%
Dehydration	685	0.4%	10,833	6.1%
Hypothyroidism	38	0.02%	8,735	4.9%
Acidosis	57	0.03%	8,264	4.7%
Alkalosis	0	0.00%	1,420	0.8%
Mixed disorder of acid-base balance	2	0.00%	1,053	0.6%
Hypokalemia	157	0.09%	11,608	6.5%
Hyperkalemia	358	0.20%	6,556	3.7%
Hypo-osmolality and hyponatremia	449	0.25%	7,517	4.2%
Protein-calorie malnutrition	123	0.07%	5,160	2.9%
Hypercholesterolemia	0	0.00%	4,922	2.8%
Vitamin D deficiency, unspecified	4	0.00%	3,497	2.0%
Hypomagnesemia	40	0.02%	4,458	2.5%
Hyperlipidemia	0	0.00%	2,653	1.5%
Hypovolemia	30	0.02%	2,630	1.5%
Disorders of phosphorus metabolism	2	0.00%	2,442	1.4%
Hyperosmolality and hypernatremia	75	0.04%	2,650	1.5%
Hypocalcemia	29	0.02%	1,388	0.8%
Hypercalcemia	74	0.04%	696	0.4%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Injuries

Injuries were among the least common reasons for hospitalization. The most common injury was related to bone fractures (2.2% of all primary diagnoses).

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Injuries

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases with Diagnosis*	Percent of All Cases*	Number of Cases with Diagnosis**	Percent of All Cases**
Injury	6,718	3.7%	0	0.0%
Most common specific diagnoses in category:				
Bone fracture	4,005	2.2%	4,448	2.5%
Concussion/Traumatic Brain Injury	939	0.5%	796	0.4%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Cancer (and other neoplasms)

The following table shows the most common types of cancer requiring hospitalization.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Cancer

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases with Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Cancers	6,212	3.5%		
Most common specific diagnoses in category:				
Breast (female only)	163	0.09%	438	0.2%
Prostate (males only)	262	0.15%	477	0.3%
Lung	725	0.40%	694	0.4%
Intestinal system	550	0.31%	422	0.2%
Pancreas	181	0.10%	190	0.1%
Brain	161	0.09%	133	0.1%
Liver	118	0.07%	144	0.1%
Cancer: ear, nose, throat	102	0.06%	142	0.1%
Stomach	86	0.05%	58	0.0%
Myeloma	86	0.05%	415	0.2%
Esophagus	76	0.04%	84	0.0%
Lymphatic system	51	0.03%	595	0.3%
Secondary malignant neoplasm	1,125	0.63%	5,531	3.1%
Benign neoplasms	964	0.54%	2,108	1.2%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Diseases of the Nervous System and Sense Organs

While overall these conditions were among the least common reasons for hospitalization, epilepsy accounted for 0.8% of all reasons for hospitalization in 2016. Another 1.5% of inpatients had a secondary diagnosis of epilepsy. Encephalopathy and chronic pain were both relatively common secondary diagnoses (4.2% each). Note that although Alzheimer's and Parkinson's diseases were infrequently associated with those hospitalized, this is not an indication of these being infrequent conditions in our community. These conditions, too, are generally treated on an outpatient basis.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Diseases of the Nervous System and Sense Organs

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases with Diagnosis*	Percent of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Diseases of the nervous system and sense organs	4,673	2.6%		
Most common specific diagnoses in category:				
Epilepsy	1,491	0.83%	2,747	1.5%
Encephalopathy	483	0.27%	7,431	4.2%
Alzheimer's Disease	425	0.24%	809	0.5%
Migraine headaches	261	0.14%	1,533	0.9%
Chronic pain	216	0.12%	7,532	4.2%
Parkinson's disease	127	0.07%	594	0.3%
Mono/Polyneuropathies	93	0.05%	2,041	1.2%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Skin Diseases

Cellulitis was, by far, the most common skin disease among those hospitalized and accounted for almost 2% of primary diagnoses.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Skin Diseases

	Primary Diagnosis		Secondary Diagnoses	
	Number Of Cases With Diagnoses*	Percent of All Cases*	Number of Cases With Diagnoses**	Percent of All Cases**
Diseases of the skin and subcutaneous tissue	4,056	2.3%		
Most common specific diagnoses in category:				
Cellulitis of lower limb	1,676	1.3%	2,570	1.4%
Cellulitis of upper limb	362	0.20%	442	0.2%
Cellulitis, other than a limb	390	0.22%	837	0.5%
Pressure ulcer of sacral area	104	0.06%	2,482	1.4%

* Total includes all diagnoses within this category, not just those shown.

**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Diseases of the Blood and Blood-Forming Organs (and certain disorders involving the immune mechanism)

Anemias dominated the blood diseases associated with hospitalizations. While rarely a primary diagnosis, they were very commonly a secondary diagnosis. One-in-nine inpatients had a secondary diagnosis of an anemia.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Diseases of the Blood and Blood-Forming Organs

	Primary Diagnosis		Secondary Diagnoses	
	Number of Cases with Diagnosis*	Percentage of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	2,799	1.6%		
Most common specific diagnoses in category:				
Iron-deficiency Anemias	478	0.27%	3,711	2.1%
Acute post-hemorrhagic anemia	299	0.17%	6,759	3.8%
Anemia in chronic kidney disease	13	0.01%	2,738	1.5%
Anemia, unspecified	226	0.13%	9,176	5.2%
Thrombocytopenia	47	0.03%	4,828	2.7%
Sickle Cell (with and without crisis)	1,082	0.60%	945	0.5%
Pancytopenia	135	0.08%	876	0.5%
Elevated white blood cell count, unspecified	20	0.01%	4,088	2.3%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Poisoning

Poisoning accounted for fewer than 1% of all reasons for hospitalization in 2016. By far the most common poisoning agents were prescription or over-the-counter medications (0.85%, or almost all, 94%, of poisonings). Note that this was true as a secondary diagnosis for 4.9% of inpatients.

Cuyahoga County Residents, All Acute Care Hospitalizations Discharged in 2016
Primary and Secondary Diagnoses: Poisoning

	Number of Cases with Diagnosis*	Percentage of All Cases*	Number of Cases With Diagnosis**	Percent of All Cases**
Poisoning	1,693	0.9%		
Most common specific diagnoses in category:				
Adverse effect/poisoning by prescribed drugs, over-the-counter drugs	1,535	0.85%	8,639	4.9%

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

Primary and Secondary Diagnoses of Hospitalized Residents, Under 18 Only

Among the 8,113 hospitalized children (under age 18, excluding healthy newborns) in 2016, the most common primary diagnosis was related to diseases of the respiratory system (23.0%). Asthma (of various types and stages) was the most common condition: a primary diagnosis for 4.6% of the pediatric inpatients and a secondary diagnosis for another 12.8%. The second most common reason for hospitalization (primary diagnosis) was related to mental/behavioral health (12.2%).

Cuyahoga County Residents, Under 18 Only, Excluding Healthy Newborns
2016 Hospitalizations

Primary Diagnosis			Secondary Diagnoses		
	Number Of Cases With Diagnosis*	Percent of All Cases*		Number Of Cases With Diagnoses**	Percent of All Cases**
Diseases of the respiratory system	**1,867**	**23.0%**			
Asthma	374	4.6%	Asthma (mild to severe)	973	12.8%
Acute bronchiolitis due to respiratory syncytial virus	315	3.9%	Acute upper respiratory infection, unspecified	386	5.1%
Acute bronchiolitis, unspecified	193	2.4%	Acute respiratory failure	318	4.2%
Pneumonia, unspecified organism	190	2.3%	Acute respiratory distress syndrome	275	3.6%
Moderate persistent asthma with status asthmaticus	170	2.1%	Pneumonia (various agents)	246	3.2%
Acute upper respiratory infection, unspecified	83	1.0%	Acute bronchiolitis (various agents)	239	3.2%
			Rhinitis (various agents)	139	1.8%
			Atelectasis	152	2.0%
			Chronic respiratory failure	82	1.1%
Mental and behavioral disorders	**989**	**12.2%**			
Major depressive disorder, recurrent severe without psychotic features	147	1.8%	Attention-deficit hyperactivity disorder, unspecified type	537	7.1%
Major depressive disorder, single episode, unspecified	74	0.9%	Generalized anxiety disorder	301	4.0%
Adjustment disorder with mixed disturbance of emotions and conduct	65	0.8%	Anxiety disorder, unspecified	294	3.9%
Major depressive disorder, single episode, severe without psychotic features	61	0.8%	Post-traumatic stress disorder, unspecified	220	2.9%
Major depressive disorder, recurrent, moderate	68	0.8%%	Oppositional defiant disorder	211	2.8%
Intermittent explosive disorder	57	0.7%	Major depressive disorder, single episode, unspecified	176	2.3%
			Autistic disorder	170	2.2%
			Other disorders of psychological development	141	1.9%

Primary Diagnosis			Secondary Diagnoses		
			Attention-deficit hyperactivity disorder, combined type	101	1.3%
			Conduct disorder, unspecified	98	1.3%
			Panic disorder without agoraphobia	92	1.2%
			Developmental disorder of speech and language, unspecified	84	1.1%
			Nicotine dependence, cigarettes, uncomplicated	78	1.0%
			Cannabis use, unspecified, uncomplicated	73	1.0%
Diseases of the digestive system	**591**	**7.3%**			
Acute appendicitis	114	1.4%	Constipation, unspecified	358	4.7%
Gastro-esophageal reflux disease without esophagitis	53	0.7%	Noninfective gastroenteritis and colitis, unspecified	52	0.7%
Constipation, unspecified	50	0.6%			
Fecal impaction	43	0.5%			
Diseases of the nervous system and sense organs	**532**	**6.6%**			
Epilepsy, unspecified, not intractable, without status epilepticus	73	0.9%	Obstructive sleep apnea (adult) (pediatric)	134	1.8%
Other generalized epilepsy and epileptic syndromes, not intractable, without status epilepticus	48	0.6%	Insomnia, unspecified	117	1.5%
			Epilepsy, unspecified, not intractable, without status epilepticus	98	1.3%
			Spastic quadriplegic cerebral palsy	77	1.0%
Endocrine, nutritional and metabolic diseases	**469**	**5.8%**	Dehydration	852	11.3%
Type 1 diabetes mellitus with ketoacidosis without coma	130	1.6%	Acidosis	183	2.4%
Type 1 diabetes mellitus with hyperglycemia	25	0.3%	Obesity	218	2.9%
Dehydration	154	1.9%	Vitamin D deficiency, unspecified	139	1.8%
Severe protein-calorie malnutrition	29	0.4%	Hypokalemia	137	1.8%
Moderate protein-calorie malnutrition	21	0.3%	Hypo-osmolality and hyponatremia	109	1.4%
			Hyperkalemia	77	1.0%
Certain conditions originating in the perinatal period	**446**	**5.5%**			

Primary Diagnosis			Secondary Diagnoses		
Neonatal jaundice	86	1.0%	Neonatal jaundice, unspecified	110	1.4%
Disturbance of temperature regulation of newborn, unspecified	38	0.5%	Newborn affected by maternal infectious and parasitic diseases	71	0.9%
Injury	**387**	**4.8%**			
Other	**349**	**4.3%**			
Infectious and parasitic diseases	**307**	**3.8%**	Unspecified Escherichia coli [E. coli] as the cause of diseases classified elsewhere	73	1.0%
Viral intestinal infection, unspecified	50	0.6%	Other viral infections of unspecified site	55	0.7%
Viral infection, unspecified	50	0.6%			
Sepsis, unspecified organism	44	0.5%			
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	**295**	**3.6%**			
Hb-SS disease with crisis, unspecified	97	1.2%	Anemia, unspecified	198	2.6%
Hb-SS disease with acute chest syndrome	33	0.4%	Iron deficiency anemia, unspecified	123	1.6%
			Acute posthemorrhagic anemia	63	0.8%
			Sickle-cell trait	59	0.8%
			Sickle-cell disease without crisis	57	0.8%
			Thrombocytopenia, unspecified	50	0.7%
Diseases of the skin and subcutaneous tissue	**268**	**3.3%**			
			Dermatitis, unspecified	238	3.1%
			Cellulitis	129	1.7%
			Diaper dermatitis	118	1.6%
Complications of pregnancy, childbirth, and the puerperium	**258**	**3.2%**			
			Abnormality in fetal heart rate and rhythm complicating labor and delivery	47	0.6%
Congenital conditions	**244**	**3.0%**			
			Atrial septal defect	132	1.7%
			Patent ductus arteriosus	38	0.5%

Primary Diagnosis			Secondary Diagnoses		
			Congenital laryngomalacia	51	0.7%
Diseases of the musculoskeletal system and connective tissue	**200**	**2.5%**			
Poisoning	**187**	**2.3%**			
Diseases of the genitourinary system	**174**	**2.1%**			
Tubulo-interstitial nephritis	42	0.5%	Acute kidney failure	96	1.5%
Diseases of the circulatory system	82	**1.0%**	Essential (primary) hypertension	104	1.4%
			Hypotension, unspecified	57	0.8%
Cancers (and other neoplasms)	**64**	**0.8%**			
Diseases of the ear and mastoid process	**29**	**0.4%**			
Diseases of the eye and adnexa	**28**	**0.3%**			

*Total includes all diagnoses within this category, not just those shown.
**These are duplicated counts; patients may have more than one secondary diagnosis.
Source: Ohio Hospital Association discharge data.

C. Socioeconomic: At-A-Glance Summary

Socioeconomic characteristics include measures that have been shown to affect health status, such as income, education, and employment, and the proportion of the population represented by various levels of these variables.[1]

Summary of *Socioeconomic* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Percent of population unemployed[2]	2016	7.6%	13.9%	3.2%[b]
Percent of population without health insurance[3]	2016	4.9%	7.4%	NA
Average life expectancy (in years)[4]	2016	76.4	72.2	NA
Percent of total residents below poverty level[5]	2016	18.1%	35.0%	NA
Percent of population with at least a high school degree (or equivalent)[6]	2016	89.5%	81.0%	NA

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Summary

City of Cleveland residents are faced with more challenging socioeconomic conditions (i.e. higher unemployment, higher poverty, lower insurance coverage, lower levels of educational attainment) compared to Cuyahoga County residents overall, based on these data. Compared to Cuyahoga County as a whole, individuals residing in the city of Cleveland are almost twice as likely to be living below the federal poverty level. The relationship between health and socioeconomic factors has been well documented and these data show that average life expectancy in the city of Cleveland is four years less (72.2) compared to the Cuyahoga County overall (76.4).

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments. Accessed on May 8, 2018.

[2] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Tables S2301 and B23001. Available at http://factfinder2.census.gov. Accessed on April 21, 2018 and April 27, 2018.
[3] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Tables S2701 and B27001. Available at http://factfinder2.census.gov. Accessed on April 21, 2018 and April 27, 2018.
[4] Cuyahoga County Board of Heath (CCBH) Using Vital Statistics provided by the Ohio Department of Health (ODH) and the U.S. Census Bureau. Age Groups and Sex: 2010. 2010 Census Summary File 1. Tables QT-P1. Available at http://factfinder2.census.gov. Accessed on June 13, 2012.
[5] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Table S1701. Available at http://factfinder2.census.gov. Accessed on April 30, 2018.
[6] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Tables S1501. Available at http://factfinder2.census.gov. Accessed on April 21, 2018.

Socioeconomic: Percent of Population Unemployed

Unemployment can contribute to a wide range of concerns from self-reported physical illness to death and suicide. Studies have shown that unemployment can lead to an increase in unhealthy behaviors related to alcohol and tobacco consumption, diet, exercise, and other health-related behaviors, which in turn can lead to increased risk for disease or mortality. Given that employee-sponsored health insurance is the most common source of health insurance coverage, unemployment can also limit access to health care.[1] This indicator measures the number of people aged 16 years and older that are part of the civilian labor force, seeking work, but unemployed.

Percent of Population Unemployed, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Percent of Population Unemployed	👎 7.6%	👎 13.9%	3.2%[b]

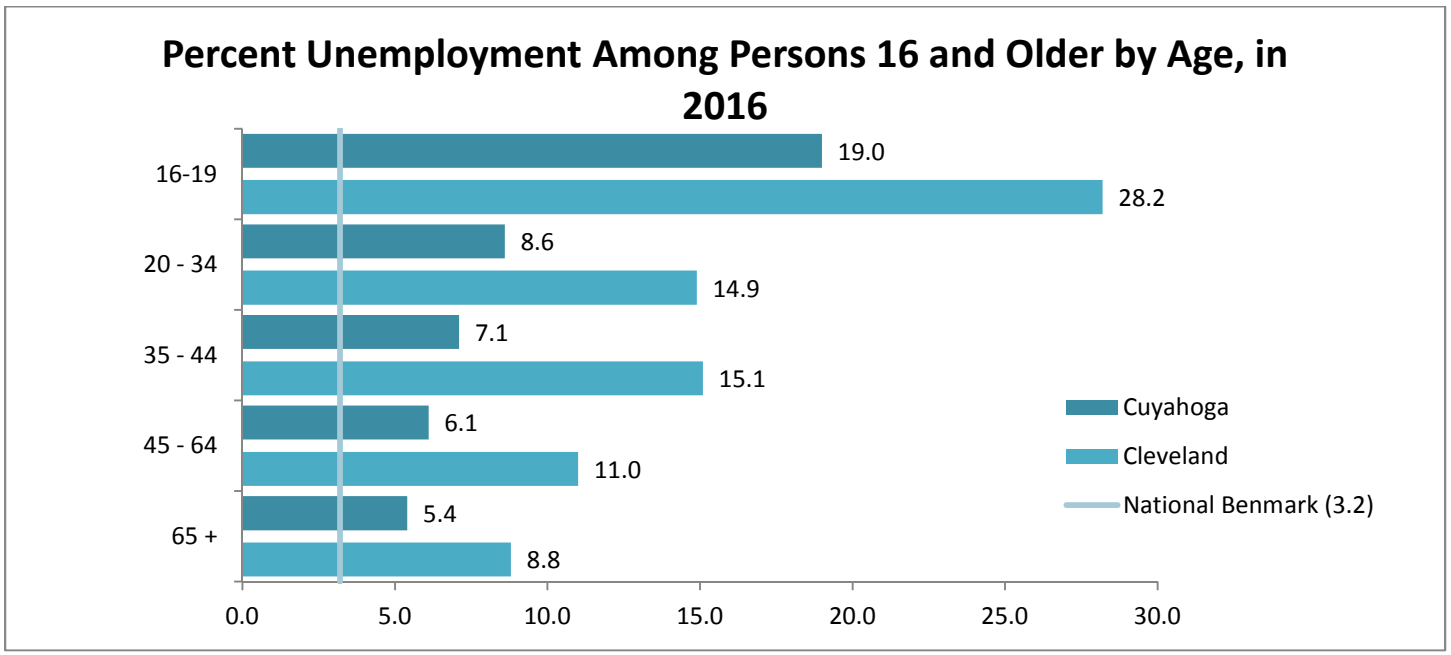
👎 Does not meet the national benchmark. Requires a closer look.

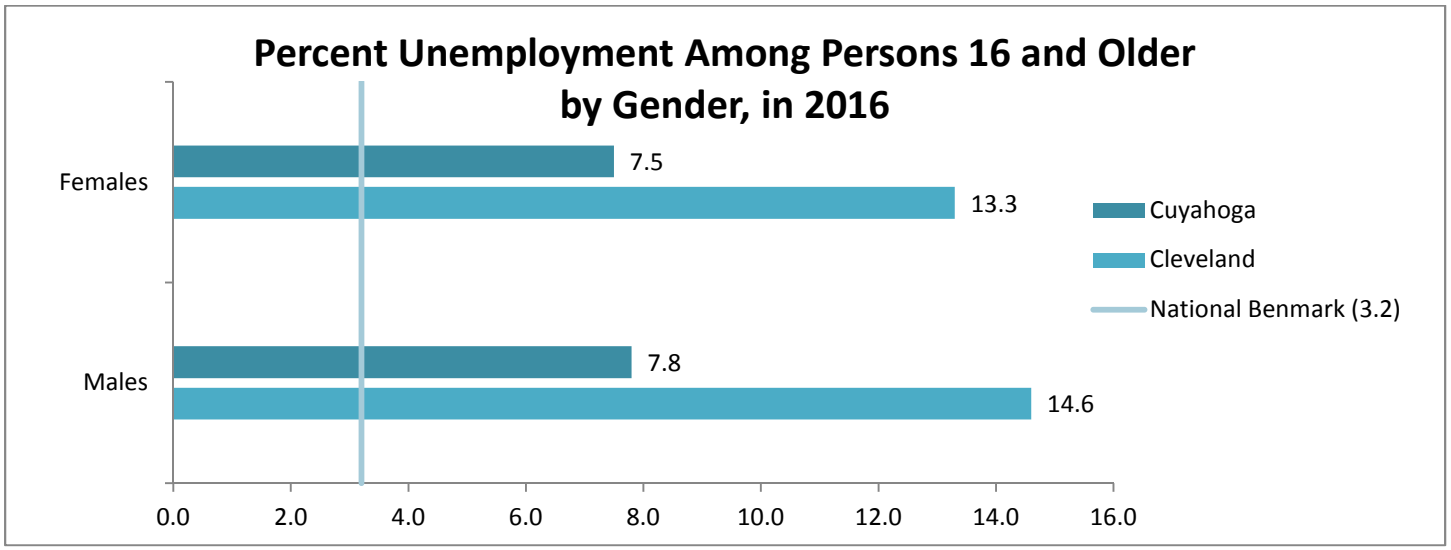
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

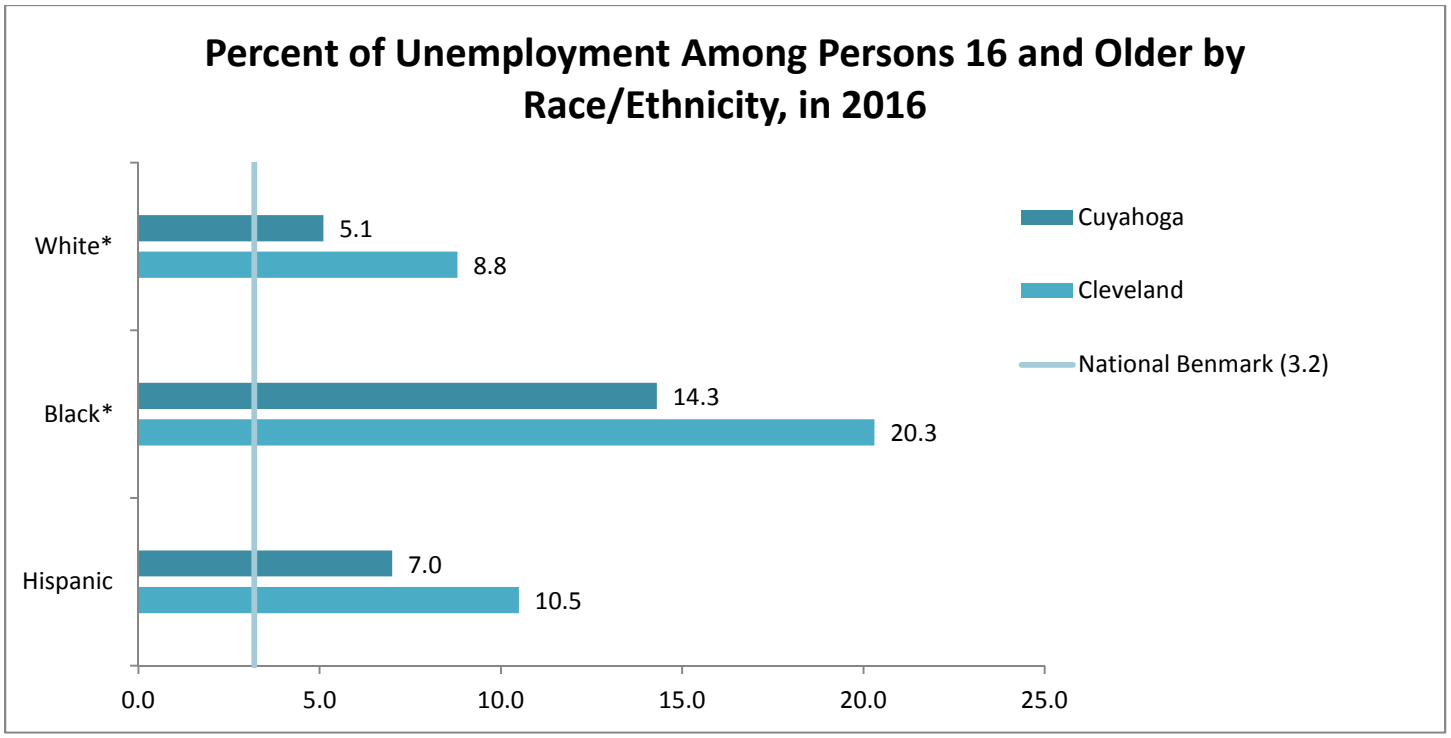
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.


Percent Unemployment Among Persons 16 and Older by Age, in 2016
16-19
20 - 34
35 - 44
45 - 64
65 +
19.0
28.2
8.6
14.9
7.1
15.1
6.1
11.0
5.4
8.8
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Cuyahoga
Cleveland
National Benmark (3.2)


Percent Unemployment Among Persons 16 and Older by Gender, in 2016
Females
Males
7.5
13.3
7.8
14.6
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
Cuyahoga
Cleveland
National Benmark (3.2)



* Includes persons with Hispanic origin

Summary

City of Cleveland residents experience a higher unemployment rate compared to Cuyahoga County residents overall across all age, gender, and race/ethnic groups. Also, in general, Blacks and Hispanics are more likely to be unemployed compared to Whites in both the city of Cleveland and Cuyahoga County overall. The unemployment rate for Cuyahoga County as a whole and the city of Cleveland is higher than both the state and national rates (5.7 and 5.8 respectively).[2]

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.

[2] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Tables S2301 and B23001. Available at http://factfinder2.census.gov. Accessed on April 21, 2018 and April 27, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

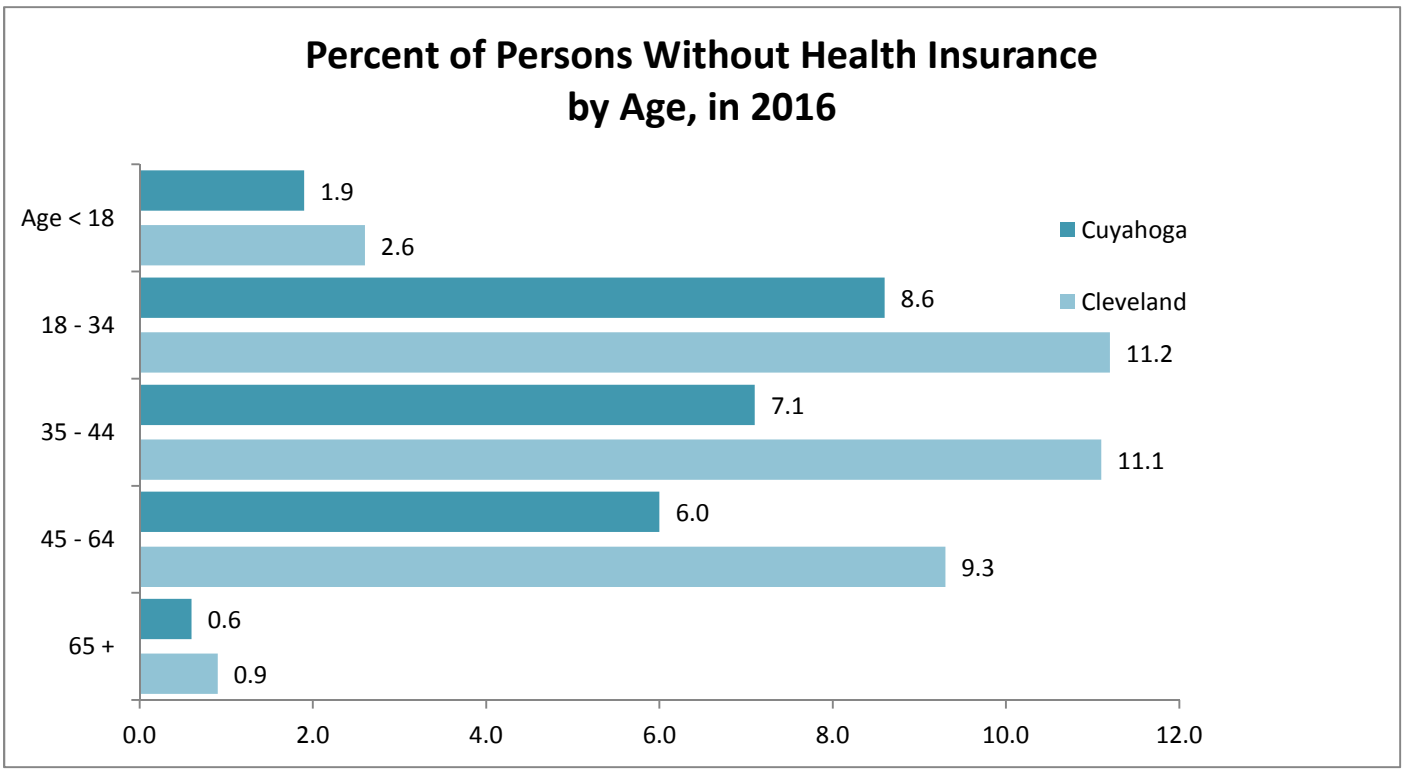
Socioeconomic: Percent of Population without Health Insurance

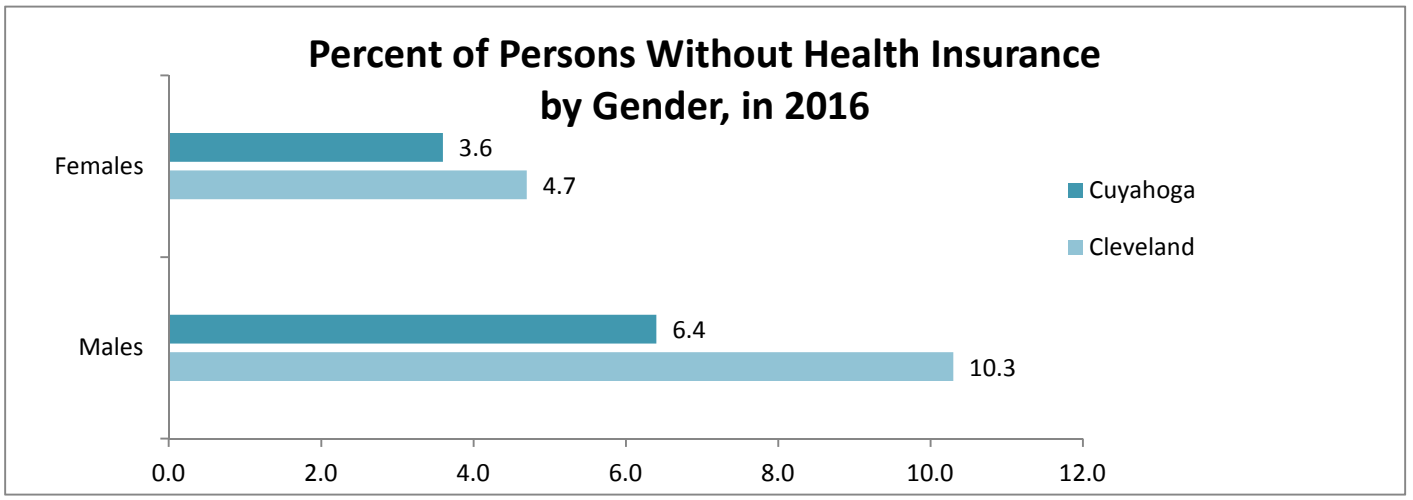
Individuals who do not have health insurance have difficulty assessing needed clinical care, prevention services, and/or do not seek medical care because of financial concerns. Not obtaining needed or timely health care can lead to poorer health and potentially greater long-term medical expenditures.[1] This indicator measures the number of civilian noninstitutionalized people reporting that they do not have health insurance.

Percent of Population without Health Insurance, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

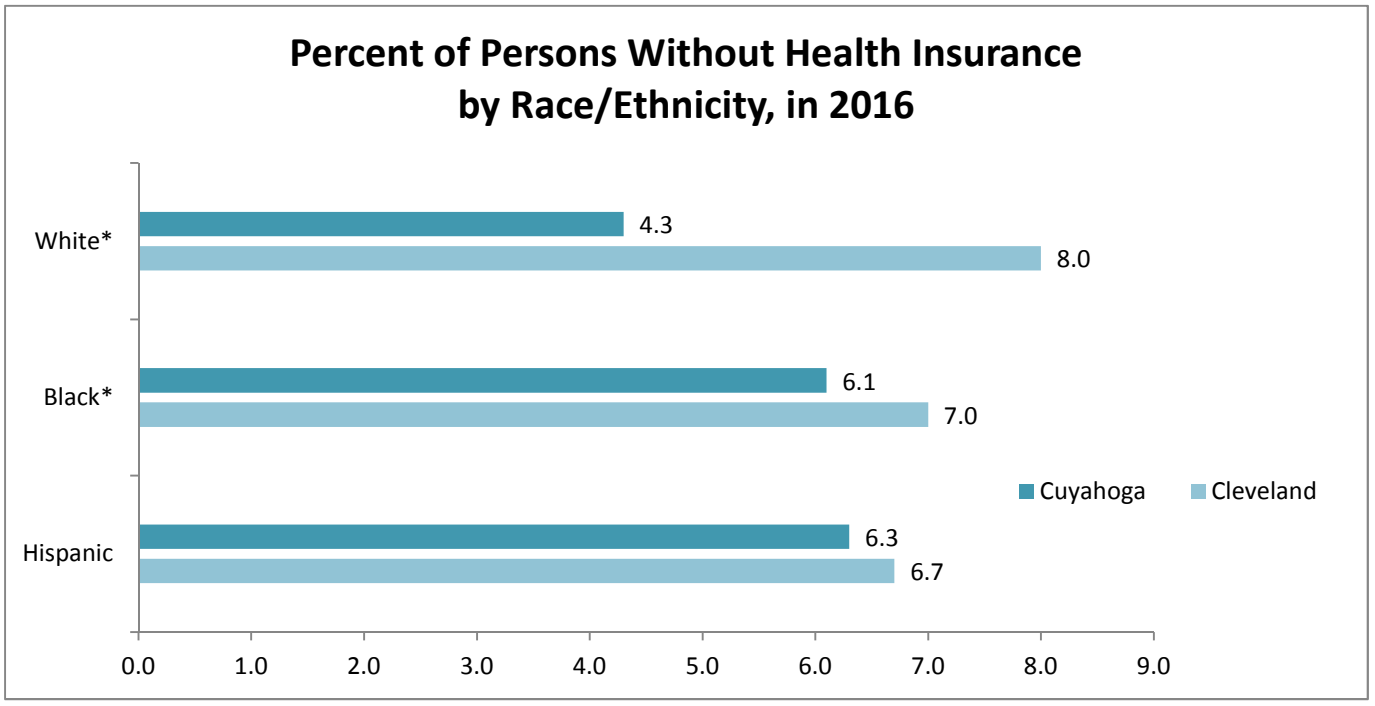
Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Percent of Population without Health Insurance	4.9%	7.4%	NA

*National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.





* Includes persons with Hispanic origin



Summary

The uninsured rate is higher for the city of Cleveland compared to Cuyahoga County overall across age, gender and race/ethnic groups. Also, in general, uninsured rates are higher among: 18-64 year olds; males; and Blacks and Hispanics. The uninsured rate in Cuyahoga County is lower than both the state (5.6%) and national (8.6%) rates.[2] Additionally, the percent of the population without health insurance for the city of Cleveland is lower than the nation.

References

[1] Centers for Disease Control and Prevention. Health Care: See Why Being Insured Matters. Available at http://www.cdc.gov/Features/VitalSigns/HealthcareAccess/. Accessed on June 27, 2012.

[2] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Tables S2701 and B27001. Available at http://factfinder2.census.gov. Accessed on April 21, 2018 and April 27, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

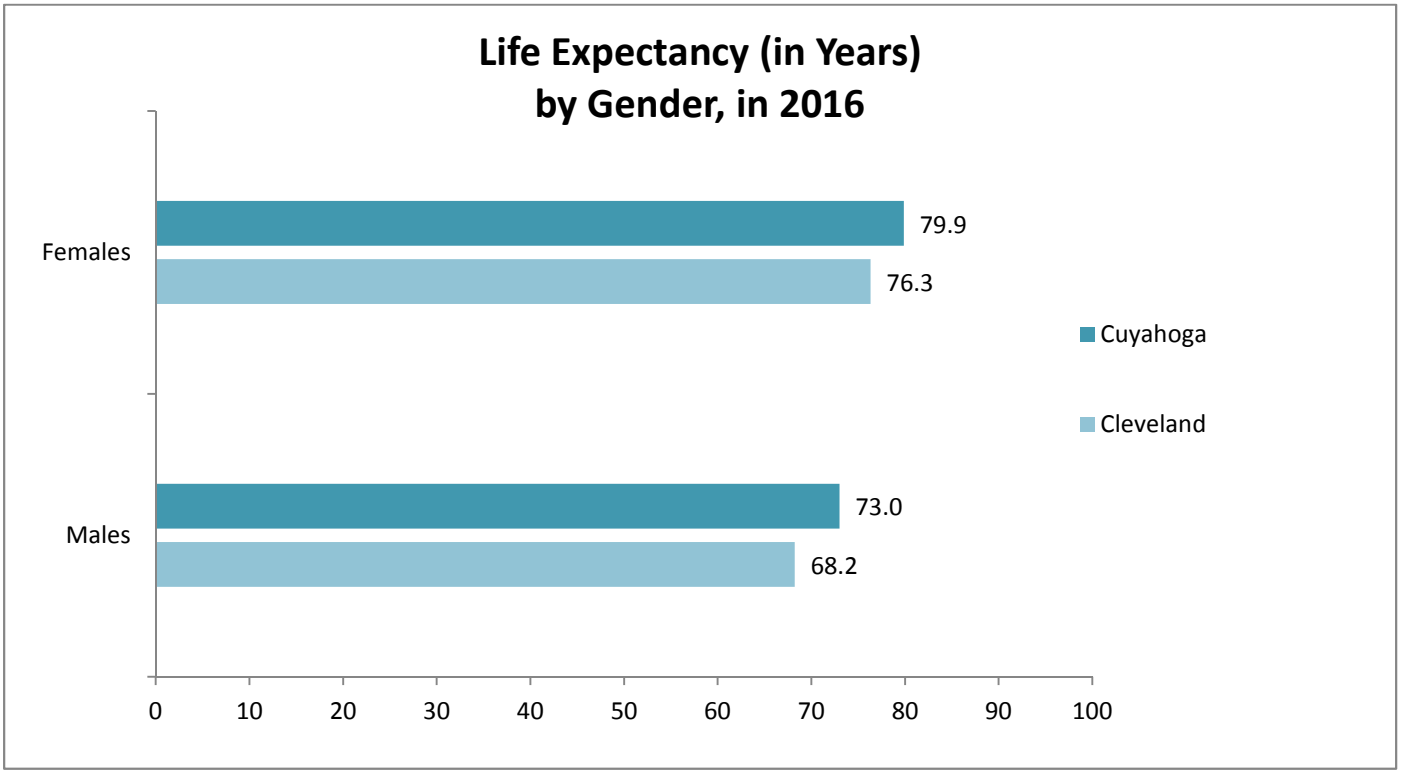
Socioeconomic: Average Life Expectancy

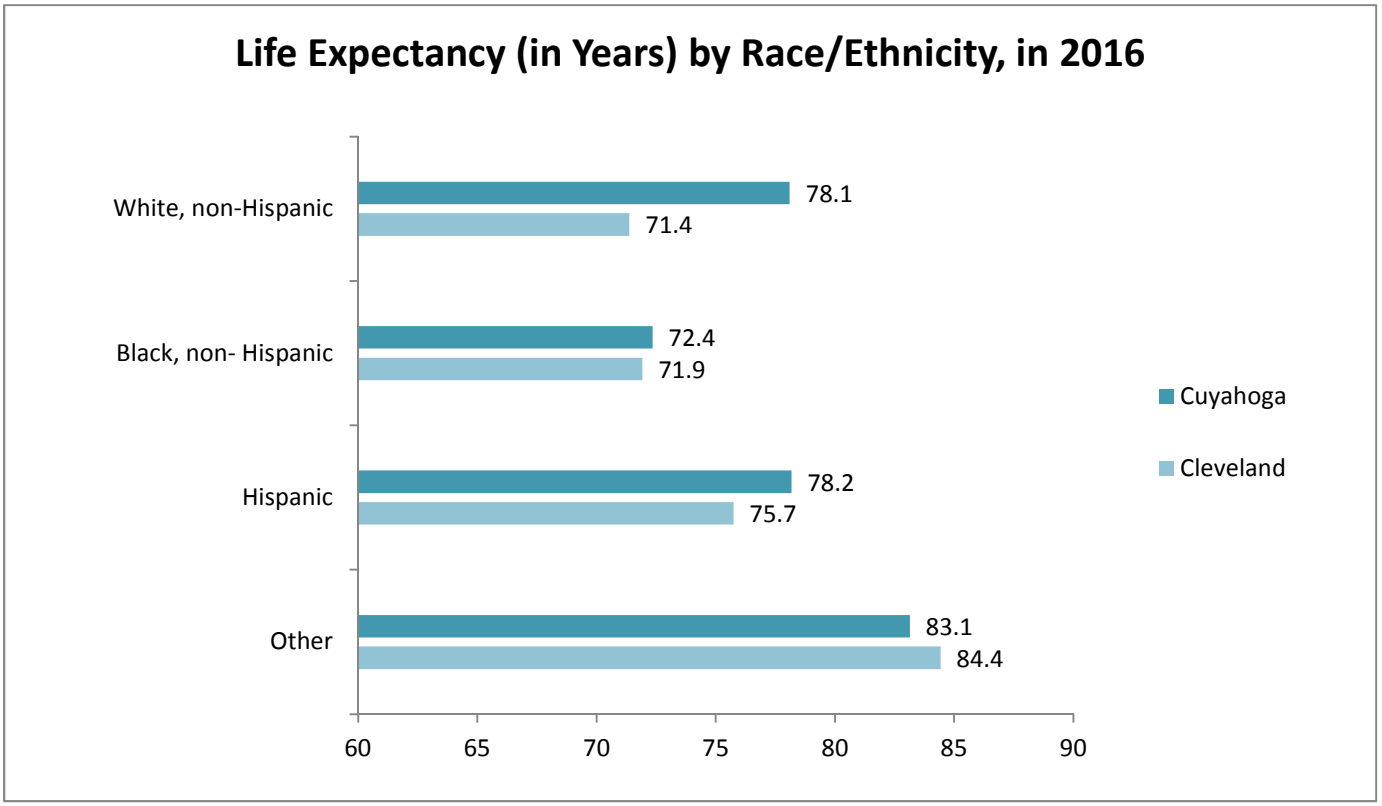
Life expectancy is a summary mortality measure often used to describe the overall health status of a population. Life expectancy is defined as the average number of years a population of a certain age would be expected to live.[1]

Average Life Expectancy, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Average Life Expectancy (in years)	76.5	72.2	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.





Summary

In general, average life expectancy is higher for Cuyahoga County residents overall compared to city of Cleveland residents across all ages, genders, and racial/ethnic groups (except persons of 'Other' origin). Additional disparities also exist. Specifically, females live an average of 7 years more than males. In Cuyahoga County overall, non-Hispanic Blacks live approximately 5 to 11 years less than non-Hispanic Whites, Hispanics, and persons of 'Other' origins. The average life expectancy for the nation is 78.7 years which is longer than both the Cuyahoga County (76.5 years) and city of Cleveland (72.2 years) rates.[3]

References

[1] Healthy People 2020. General Health Status. Available at http://www.healthypeople.gov/2020/about/GenHealthAbout.aspx#life. Accessed on June 27, 2012.

[2] Cuyahoga County Board of Heath (CCBH) Using Vital Statistics provided by the Ohio Department of Health (ODH) and the U.S. Census Bureau. Age Groups and Sex: 2010. 2010 Census Summary File 1. Tables QT-P1. Available at http://factfinder2.census.gov. Accessed on June 13, 2012.

[3] Arias E, Heron M, Xu JQ. United States life tables, 2014. National vital statistics reports; vol 66 no 4. Hyattsville, MD: National Center for Health Statistics. 2017.

Note: For additional information about this indicator please see the *Technical Guide.*

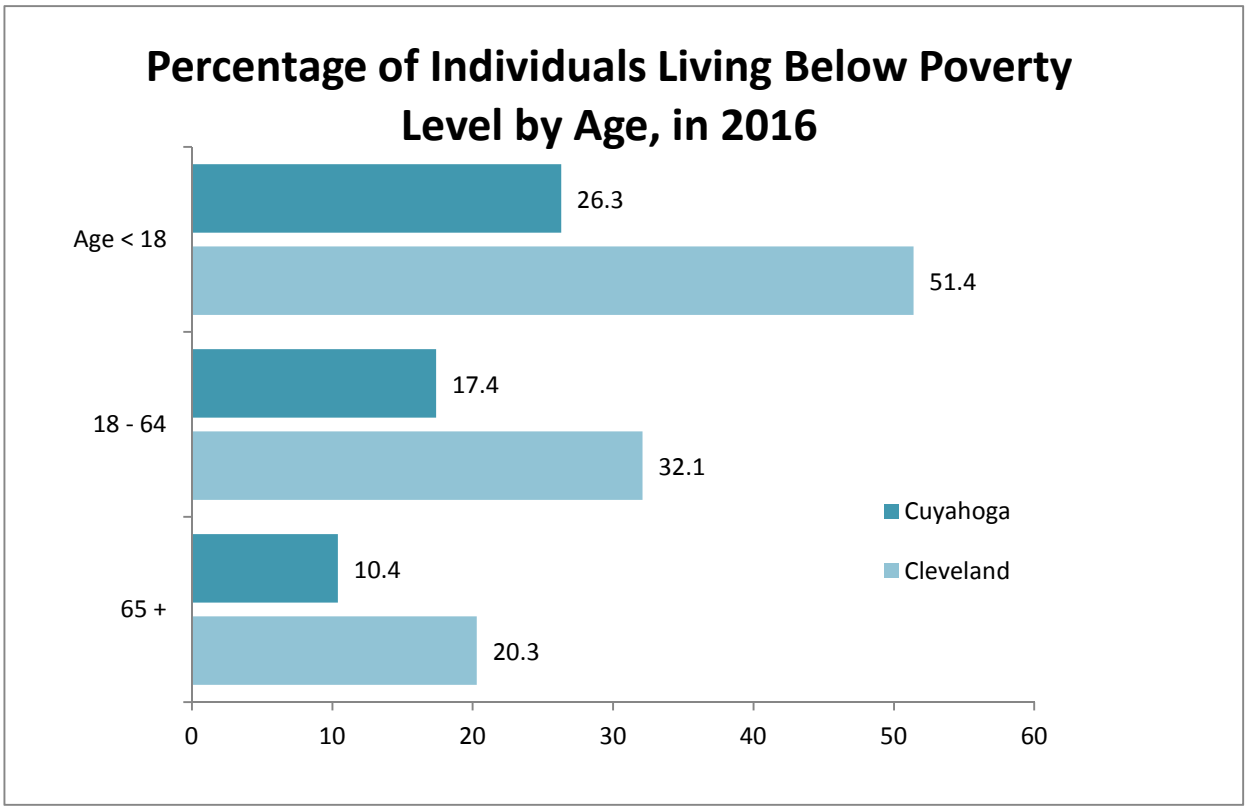
Socioeconomic: Percent of Individuals Living Below Poverty Level

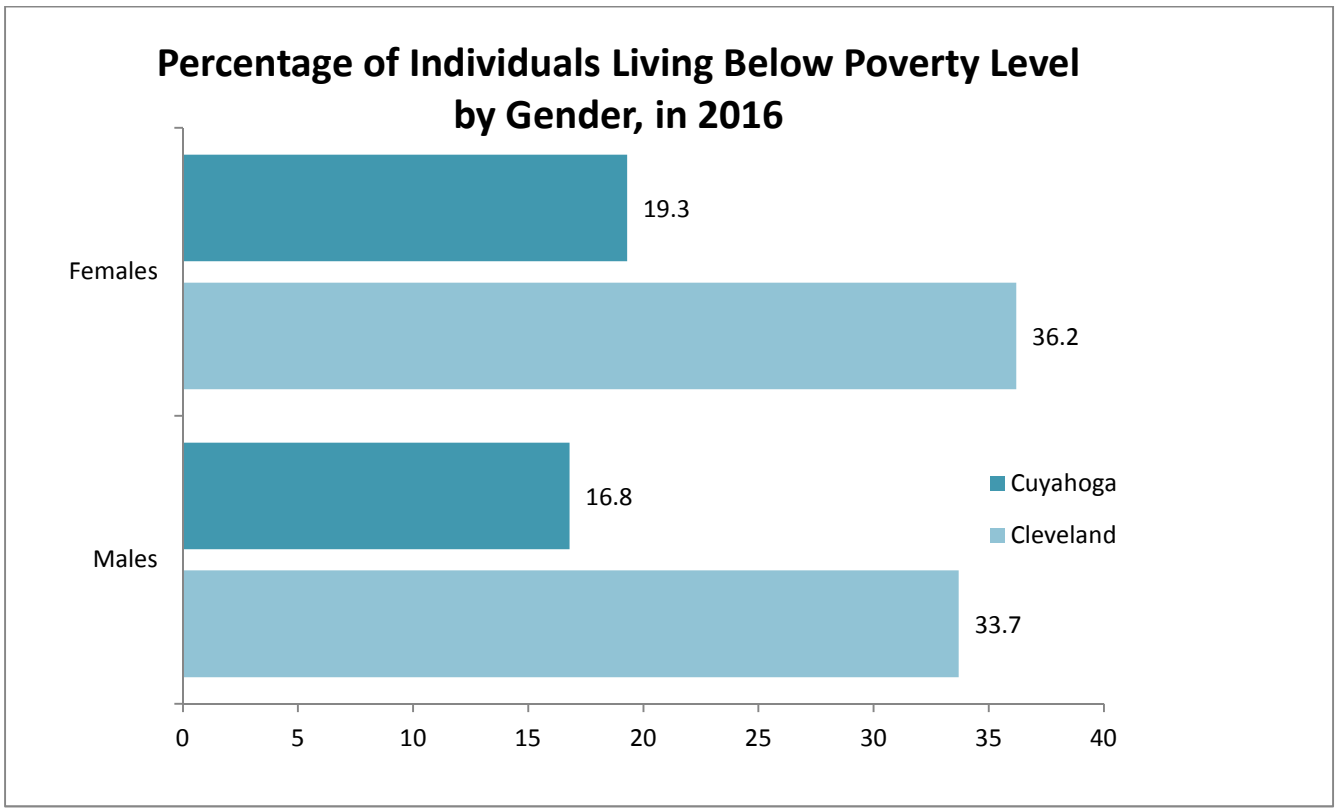
Poverty can contribute to negative health consequences, such as increased risk of premature death, high rates of disease, depression, intimate partner violence, and poor health behaviors.[1] This indicator measures the number of individuals living below the federal poverty level.

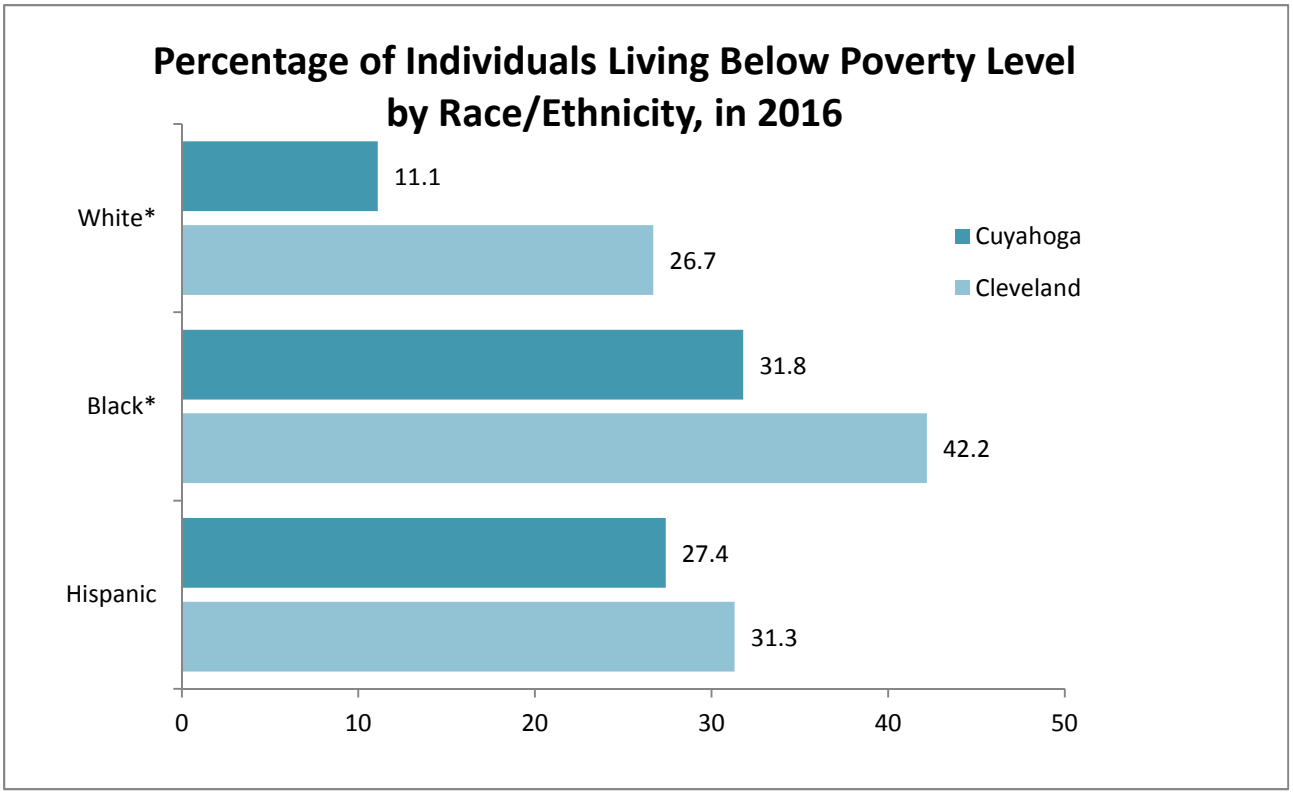
Percent of Individuals Living Below Poverty Level, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Percent of Individuals Below Poverty Level	18.1%	35.0%	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.







*Includes persons with Hispanic origin

Summary

Compared to Cuyahoga County overall, individuals residing in the city of Cleveland are almost twice as likely to be living below the poverty level across all age and gender groups. More than half of children in the city of Cleveland are living below the poverty level (51.4%) compared to 26.3 percent of children in Cuyahoga County overall. In general, the percent of people living in poverty is greatest among: people less than 18 years old; females; and Hispanics and Blacks compared to Whites. Although individuals of all racial/ethnic groups living in the city of Cleveland have higher poverty rates compared to rates for Cuyahoga County as a whole, the disparity in poverty rates is highest when comparing Whites living in the city of Cleveland (11.1%) to Whites living in Cuyahoga County as a whole (26.7%). The percent of the population living below the poverty level is higher for Cuyahoga County overall (18.1%) and the city of Cleveland (35.0%) compared to the state of Ohio and the nation (14.6% and 14.0%, respectively).[2]

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.

[2] U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Table S1701. Available at http://factfinder2.census.gov. Accessed on April 30, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Socioeconomic: Percent of Individuals with a High School Education or Higher

The relationship between more education and improved health outcomes is well established. Furthermore, years of formal education have been shown to be strongly correlated with improved work and economic opportunities, reduced psychosocial stress, and healthier lifestyles.[1] This indicator measures the number of people who attained a high school degree (or equivalent) or higher.

Percent of Individuals with a High School Education or Higher, 2016: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

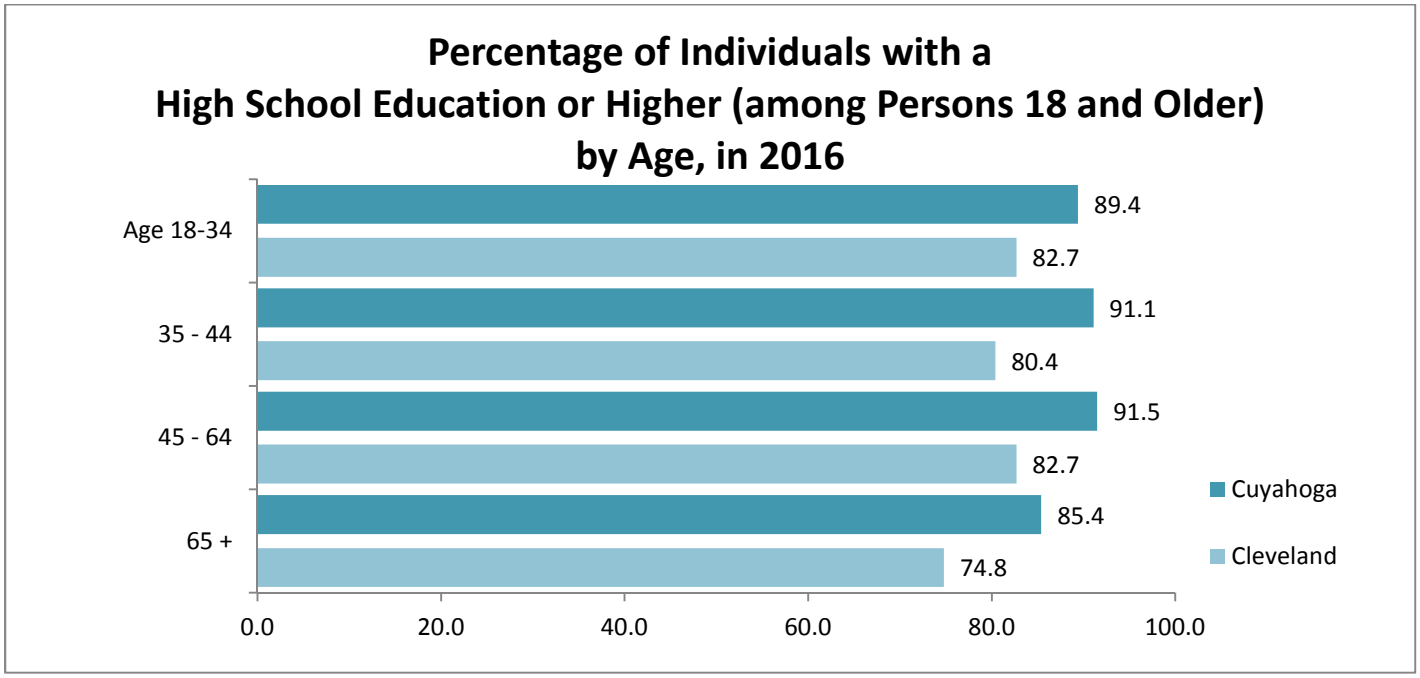
Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Percent of Individuals with a High School Education (or equivalent) or Higher (persons 18 and older)	89.5%	81.0%	NA

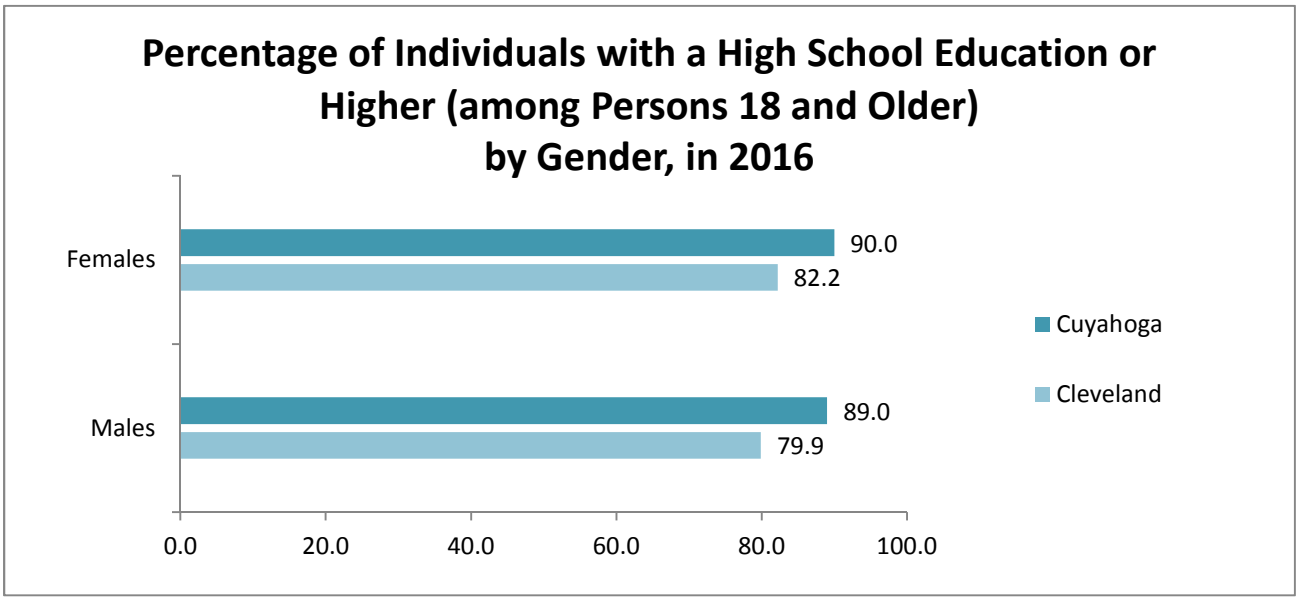
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

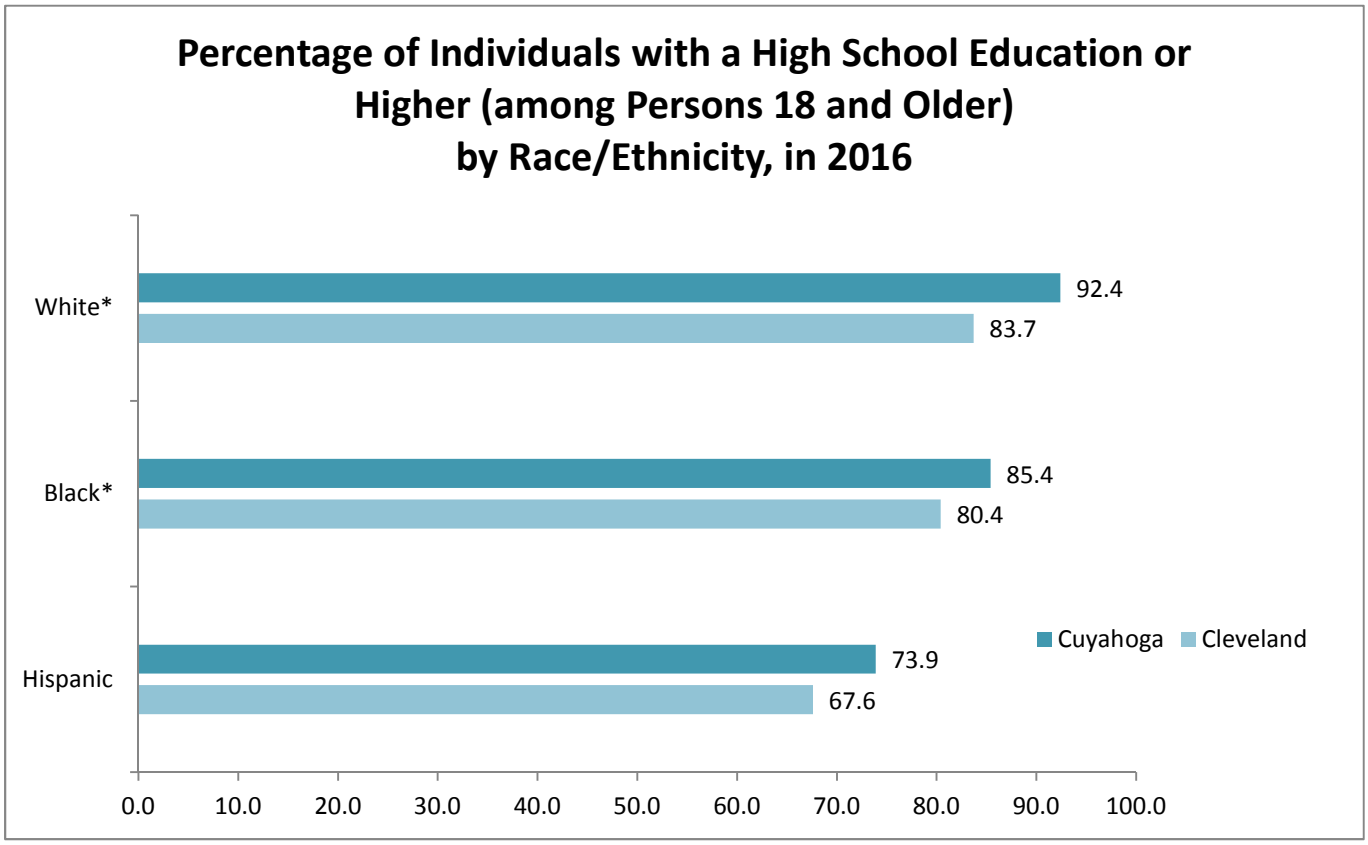
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.







*Includes persons with Hispanic origin

Summary

In general, the percent of the population who attained a high school degree or higher is greater for Cuyahoga County overall compared to the city of Cleveland across all age, gender, and racial/ethnic groups. Additional

disparities also exist. The following groups were less likely to have obtained at least a high school degree: individuals 65 years of age and older; males; and Hispanics and Blacks compared to Whites. Also, the percent of the population having attained at least a high school degree is similar for Cuyahoga County when compared to the state (89.6%), but is higher than the national rate (87.4%).[3] City of Cleveland residents are less likely to have obtained a high school degree compared to both state and national rates.

References
[1]University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.
[2]U.S. Census Bureau. American Community Survey, 2016, 1 Year Estimates, Tables S1501. Available at http://factfinder2.census.gov. Accessed on April 21, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

D. Health Resource Availability: At-A-Glance Summary

This category represents factors associated with health system capacity, which includes both the number of licensed health personnel and the physical capacity of health facilities. In addition, health resources indicators include measures of access, utilization, cost, and quality of health care and prevention services. Patterns of service delivery and the roles of public and private sectors as payers and/or providers may also be important. [1]

Summary of the *Health Resource Availability* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County[2]	City of Cleveland	National Benchmark*
Preventable hospital stay rate	2015	53	Not Available	35[b]
Licensed primary care physicians	2015	☆ 900:1	Not Available	1,030:1[b]
Proportion of population without a regular source of primary care	Not Available	Not Available	Not Available	NA
Percent of children who visited a doctor in the past year	Not Available	Not Available	Not Available	NA
Medicaid physician availability: ratio	Not Available	Not Available	Not Available	NA

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.

Summary

The preventable hospital stay rate for Cuyahoga County (53 per 1,000) is lower than the rate for the state of Ohio[2] (57 per 1,000), but much higher than the national benchmark, which is 35 per 1,000 Medicare enrollees. The availability of primary care physicians, one for every 900 residents, is better in Cuyahoga County than the national benchmark of one per 1,030 residents. Primary care physician availability locally is far better than the state (one for every 1,310 residents).[2]

There were several indicators within this category where data were not available. Having access to this data is important for understanding community health and well-being and the lack of data signals an opportunity to ensure this data is available for subsequent assessments of community health undertaken in the county.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments. Accessed on May 8, 2018.

[2] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

Health Resource Availability: Ambulatory Care Sensitive Discharges

Here we show the ambulatory care sensitive (ACS) cases of hospitalized Cuyahoga County residents for 2016. Ambulatory care sensitive conditions are 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," according to the Agency for Healthcare Research and Quality. The incidence of ambulatory care sensitive discharges has been used as an index of adequate primary care in a market area.

Ambulatory Care Sensitive* Cases, Inpatients in Acute Care Facilities
Cuyahoga County Residents, 2016

	Cuyahoga County Residents: All		Acute Care Facility, System & Location					
			UH Hospital in Cuyahoga County		Non-UH Hospital in Cuyahoga County		Non-Cuyahoga County Hospital	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	179,962	100.0%	54,396	100.0%	121,181	100.0%	4,385	100.0%
Any ACS Condition	**25,646**	**14.3%**	**8,241**	**15.2%**	**17,042**	**14.1%**	**363**	**8.3%**
Chronic Obstructive Pulmonary Disease	5,709	3.2%	1,478	2.7%	4,156	3.4%	75	1.7%
Congestive Heart Failure	5,349	3.0%	1,743	3.2%	3,538	2.9%	68	1.6%
Diabetes	2,840	1.6%	837	1.5%	1,964	1.6%	39	0.9%
Cellulitis	2,131	1.2%	604	1.1%	1,485	1.2%	42	1.0%
Grand Mal Seizure and Other Convulsions	1,491	0.8%	560	1.0%	918	0.8%	13	0.3%
Hip/Femur Fracture (age 45 and older)	1,484	0.8%	516	0.9%	944	0.8%	24	0.5%
Gastrointestinal Obstruction	1,441	0.8%	498	0.9%	927	0.8%	16	0.4%
Asthma	1,298	0.7%	612	1.1%	668	0.6%	18	0.4%
Hypertension	985	0.5%	303	0.6%	659	0.5%	23	0.5%
Dehydration	715	0.4%	311	0.6%	388	0.3%	16	0.4%
Kidney/Urinary Tract Infection	512	0.3%	169	0.3%	333	0.3%	10	0.2%
Gastroenteritis	432	0.2%	140	0.3%	285	0.2%	7	0.2%
Appendicitis	365	0.2%	117	0.2%	238	0.2%	10	0.2%
Convulsions/epilepsy (age 6 and older)	349	0.2%	123	0.2%	222	0.2%	4	0.1%
Bacterial Pneumonia	250	0.1%	51	0.1%	196	0.2%	3	0.1%
Severe Ear, Nose and Throat Infections	195	0.1%	99	0.2%	95	0.1%	1	0.0%
Myocardial Infarction	159	0.1%	48	0.1%	107	0.1%	4	0.1%
Pelvic Inflammatory Disease	117	0.1%	41	0.1%	75	0.1%	1	0.0%
Angina	104	0.1%	22	0.0%	80	0.1%	2	0.0%
Dental Conditions	75	0.0%	16	0.0%	57	0.0%	2	0.0%

	Cuyahoga County Residents: All		Acute Care Facility, System & Location					
			UH Hospital in Cuyahoga County		Non-UH Hospital in Cuyahoga County		Non-Cuyahoga County Hospital	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Nutritional Deficiencies	68	0.0%	36	0.1%	31	0.0%	1	0.0%
Convulsions/epilepsy (age 5 and younger)	61	0.0%	37	0.1%	23	0.0%	1	0.0%
Hypoglycemia	46	0.0%	18	0.0%	28	0.0%	0	0.0%
Failure To Thrive (Infants Only)	21	0.0%	11	0.0%	10	0.0%	0	0.0%
Conditions preventable via immunization	4	0.0%	1	0.0%	3	0.0%	0	0.0%
Other Tuberculosis	3	0.0%	2	0.0%	1	0.0%	0	0.0%
Anemia	2	0.0%	1	0.0%	1	0.0%	0	0.0%
Congenital Syphilis	0	0.0%	0	0.0%	0	0.0%	0	0.0%

*See Appendix E for ICD-10 Codes for each ACS condition category.

Summary

In 2016, there were 179,962 Cuyahoga County residents who were discharged, as inpatients, from an acute care hospital. Of those hospitalized in a Cuyahoga County hospital, 54,396 (30.2%) were in a University Hospitals acute care facility.

Overall, 14.3% of the hospitalizations of Cuyahoga County residents, at any hospital, were due to an ACS condition. The most common ACS condition among those hospitalized was chronic obstructive pulmonary disease, which comprised 3.2% of all hospitalized Cuyahoga County residents. The second most common ACS condition was congestive heart failure (3.0% of all Cuyahoga County resident hospitalizations in 2016). Among the less common, but not uncommon, ACS conditions were diabetes (1.6%) and cellulitis (1.2%). All other ACS conditions were the primary diagnosis for fewer than 1.0% of inpatients.

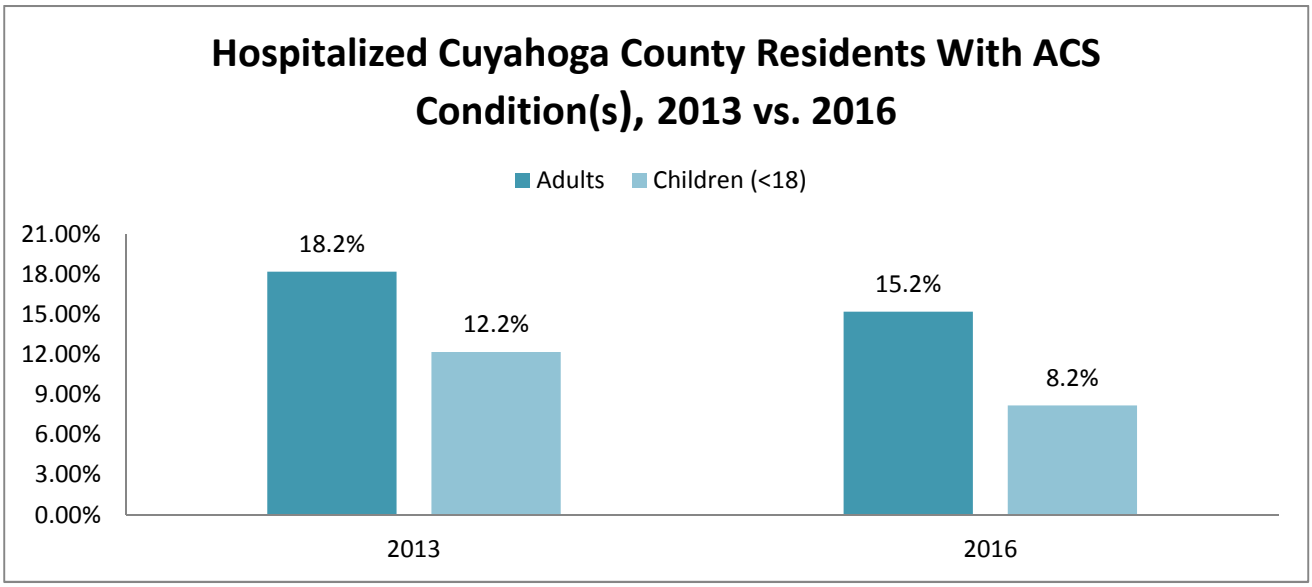
Ambulatory Care Sensitive Cases, By Age Group
Inpatients in Acute Care Facilities, Cuyahoga County Residents, 2016

	Cuyahoga County Residents									
	Cuyahoga County Residents		Child/Youth (Under age 18)		Adult, Age 18-40		Adult, Age 41-65		Adult, Age 66+	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total:	179,962	100.0%	23,257	100.0%	34,352	100.0%	57,703	100.0%	64,650	100.0%
Any ACS Condition	**25,646**	**14.3%**	**1,910**	**8.2%**	**2,556**	**7.4%**	**9,521**	**16.5%**	**11,659**	**18.0%**
Chronic Obstructive Pulmonary Disease	5,709	3.2%	15	0.1%	56	0.2%	2,732	4.7%	2,906	4.5%
Congestive Heart Failure	5,349	3.0%	1	0.0%	130	0.4%	1,679	2.9%	3,539	5.5%
Diabetes	2,840	1.6%	187	0.8%	698	2.0%	1,299	2.3%	656	1.0%
Cellulitis	2,131	1.2%	114	0.5%	258	0.8%	902	1.6%	857	1.3%
Grand Mal Seizure and Other Convulsions	1,491	0.8%	357	1.5%	353	1.0%	521	0.9%	260	0.4%
Hip/Femur Fracture (age 45 and older)	1,484	0.8%	0	0.0%	0	0.0%	175	0.3%	1309	2.0%
Gastrointestinal Obstruction	1,441	0.8%	66	0.3%	119	0.3%	537	0.9%	719	1.1%
Asthma	1,298	0.7%	554	2.4%	237	0.7%	378	0.7%	129	0.2%
Hypertension	985	0.5%	0	0.0%	55	0.2%	391	0.7%	539	0.8%
Dehydration	715	0.4%	154	0.7%	51	0.1%	181	0.3%	329	0.5%
Kidney/Urinary Tract Infection	512	0.3%	58	0.2%	164	0.5%	175	0.3%	115	0.2%
Gastroenteritis	432	0.2%	21	0.1%	80	0.2%	162	0.3%	169	0.3%
Appendicitis	365	0.2%	79	0.3%	119	0.3%	122	0.2%	45	0.1%
Convulsions/epilepsy (age 6 and older)	349	0.2%	24	0.1%	85	0.2%	128	0.2%	112	0.2%
Bacterial Pneumonia	250	0.1%	35	0.2%	32	0.1%	76	0.1%	107	0.2%
Severe Ear, Nose and Throat Infections	195	0.1%	108	0.5%	17	0.0%	39	0.1%	31	0.0%
Myocardial Infarction	159	0.1%	0	0.0%	4	0.0%	66	0.1%	89	0.1%
Pelvic Inflammatory Disease	117	0.1%	6	0.0%	72	0.2%	33	0.1%	6	0.0%
Angina	104	0.1%	2	0.0%	4	0.0%	51	0.1%	47	0.1%
Dental Conditions	75	0.0%	8	0.0%	22	0.1%	27	0.0%	18	0.0%
Nutritional Deficiencies	68	0.0%	30	0.1%	5	0.0%	16	0.0%	17	0.0%
Convulsions/epilepsy (age 5 and younger)	61	0.0%	61	0.3%	0	0.0%	0	0.0%	0	0.0%
Hypoglycemia	46	0.0%	6	0.0%	10	0.0%	18	0.0%	12	0.0%
Failure To Thrive (Infants Only)	21	0.0%	21	0.1%	0	0.0%	0	0.0%	0	0.0%
Conditions preventable via immunization	4	0.0%	1	0.0%	0	0.0%	2	0.0%	1	0.0%
Other Tuberculosis	3	0.0%	0	0.0%	0	0.0%	2	0.0%	1	0.0%
Anemia	2	0.0%	2	0.0%	0	0.0%	0	0.0%	0	0.0%

The incidence of ACS conditions varies by age. These differences can help us understand in which areas of primary care increased resources are needed.

- For youth and children, the incidence of ACS conditions was much lower than the overall population. The most common ACS conditions were asthma (2.4%) and grand mal seizures (1.5%).
- The ACS incidence for young adults (aged 18-40) was also lower than overall (7.4%). Diabetes (2.0%) and grand mal seizures (1.0%) were the most common ACS conditions for this age group.
- For older (non-senior) adults (age 40-65), the incidence of ACS conditions was higher (16.5%). Among this age group, chronic obstructive pulmonary disease (4.7%), congestive heart failure (2.9%), diabetes (2.3%) and cellulitis (1.6%) were the most common ACS conditions.
- Seniors had the highest level of ACS conditions (18.0%). They had the same top ACS conditions as middle-aged adults, but common ACS conditions for seniors also included hip/femur fractures (2.0%) and gastrointestinal obstructions (1.1%).

Incidence of Ambulatory Care Sensitive Cases, Cuyahoga County, 2013 vs. 2016



The incidence of ambulatory care sensitive cases among hospitalized Cuyahoga County resident inpatients decreased from 2013 to 2016 for both adults (18.2% to 15.2%) and children (12.2% to 8.2%). This suggests improved access to preventive care and chronic care management via greater investment in continuity primary care for Cuyahoga County residents.

Ambulatory Care Sensitive Cases, Adults Only
Cuyahoga and Surrounding Counties, 2016
Most Common ACS Diagnoses

	Cuyahoga County Resident		Lake County Resident		Geauga County Resident		Portage County Resident		Summit County Resident		Medina County Resident		Lorain County Resident		Ashtabula County Resident	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Total Adult Hospitalizations:	155,890	100%	26,228	100%	7,826	100%	15,287	100%	55,628	100%	1,5262	100%	35,241	100%	13,304	100%
Total, Any ACS Condition:	**23,661**	**15.2%**	**3939**	**15.0%**	**1,005**	**12.8%**	**2,119**	**13.9%**	**7993**	**14.4%**	**2,125**	**13.9%**	**5,216**	**14.8%**	**2,191**	**16.5%**
Chronic Obstructive Pulmonary Disease	5,694	3.7%	925	3.5%	185	2.4%	402	2.6%	1,745	3.1%	459	3.0%	1,407	4.0%	602	4.5%
Congestive Heart Failure	5,348	3.4%	846	3.2%	240	3.1%	513	3.4%	1,783	3.2%	511	3.3%	942	2.7%	528	4.0%
Diabetes	2,629	1.7%	341	1.3%	53	0.7%	213	1.4%	895	1.6%	160	1.0%	542	1.5%	183	1.4%
Cellulitis	2,011	1.3%	444	1.7%	101	1.3%	175	1.1%	737	1.3%	185	1.2%	477	1.4%	193	1.5%
Hip/Femur Fracture (age 45 and older)	1,484	1.0%	341	1.3%	111	1.4%	177	1.2%	654	1.2%	183	1.2%	356	1.0%	142	1.1%
Gastrointestinal Obstruction	1,373	0.9%	247	0.9%	69	0.9%	168	1.1%	617	1.1%	204	1.3%	332	0.9%	146	1.1%
Grand Mal Seizure and Other Convulsions	1,115	0.7%	144	0.5%	54	0.7%	71	0.5%	343	0.6%	94	0.6%	191	0.5%	96	0.7%
Hypertension	985	0.6%	97	0.4%	29	0.4%	83	0.5%	217	0.4%	85	0.6%	156	0.4%	57	0.4%

Comparing the proportion of adult hospitalizations in Cuyahoga and its surrounding counties, we see little difference between Cuyahoga (15.2%) Lake (15.0%), Summit (14.4%) and Lorain (14.8%) counties. We do see at least a percentage point lower incidence of ACS cases among adults in Geauga (12.8%), Portage (13.9%) and Medina (13.9%) counties. The most common ACS condition for Cuyahoga, Lake and Lorain counties was COPD. For surrounding counties, congestive heart failure was a more common ACS condition than COPD.

Ambulatory Care Sensitive Cases, Children (17 and younger) Only Cuyahoga and Surrounding Counties, 2016

Most Common ACS Diagnoses

	Cuyahoga County Resident		Lake County Resident		Geauga County Resident		Portage County Resident		Summit County Resident		Medina County Resident		Lorain County Resident		Ashtabula County Resident	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Total Hospitalizations of Children:	23,257	100%	3,236	100%	1,198	100%	2,306	100%	8,804	100%	2,464	100%	5,094	100%	1,696	100%
Total, Any ACS Condition:	**1,910**	**8.2%**	**236**	**7.3%**	**72**	**6.0%**	**135**	**5.9%**	**401**	**4.6%**	**107**	**4.3%**	**439**	**8.6%**	**167**	**9.8%**
Asthma	554	2.4%	36	1.1%	13	1.1%	14	0.6%	65	0.7%	14	0.6%	105	2.1%	32	1.9%
Grand Mal Seizure and Other Convulsions	357	1.5%	43	1.3%	10	0.8%	27	1.2%	69	0.8%	26	1.1%	86	1.7%	21	1.2%
Diabetes	187	0.8%	37	1.1%	12	1.0%	24	1.0%	65	0.7%	16	0.6%	46	0.9%	12	0.7%
Dehydration	154	0.7%	16	0.5%	8	0.7%	11	0.5%	29	0.3%	5	0.2%	48	0.9%	24	1.4%
Cellulitis	114	0.5%	13	0.4%	3	0.3%	11	0.5%	23	0.3%	11	0.4%	19	0.4%	18	1.1%
Severe Ear, Nose and Throat Infections	108	0.5%	17	0.5%	1	0.1%	8	0.3%	28	0.3%	3	0.1%	17	0.3%	8	0.5%
Appendicitis	79	0.3%	19	0.6%	9	0.8%	4	0.2%	22	0.2%	10	0.4%	34	0.7%	11	0.6%

Cuyahoga and Lorain counties had the highest levels of ACS conditions among hospitalized children in 2016 (8.2% and 8.6%, respectively). Summit County, the second most populous county in our region, and the only other county with a significant population living in an urban environment, had almost the lowest level of ACS cases for children (4.6%); only Medina County had a lower level (4.3%).

Asthma was the most common ACS condition for hospitalized children who live in Cuyahoga County (2.4%). For most of the other counties in the region, with the exception of Lorain County, the incidence of asthma as an ACS condition was at least half Cuyahoga County's rate. Grand mal seizures/other convulsions were the second most common ACS conditions in Cuyahoga County (1.5%), but the incidence was similar to most other counties with the exception of Geauga and Summit counties (0.8% each).

Health Resource Availability: Preventable Hospitals Stays

Preventable hospital stays are defined as the number of hospital discharges for ambulatory care sensitive conditions per 1,000 Medicare enrollees. This information is obtained from *County Health Rankings* provided by the authors of the Dartmouth Atlas of Health Care using Medicare claims data.[1]

Rate of Preventable Hospital Stays for Medicare Beneficiaries, 2015:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland	National Benchmark*
Preventable Hospital Stays (per 1,000 Medicare enrollees)	53	Not Available	35[b]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Information by gender and race/ethnicity is not available for this indicator.

Summary

The preventable hospital stay rate for Cuyahoga County (53 per 1,000 Medicare enrollees) is lower than the rate for the state of Ohio[2] (57 per 1,000 Medicare enrollees), but much higher than the national benchmark, which is 35 per 1,000 Medicare enrollees. These hospitalizations have both medical and social determinants.

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.

[2] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Health Resource Availability: Licensed Primary Care Physicians

Having an adequate number of health care providers in the community is an important component of access to care.[1] This indicator is a ratio of the number of people per each licensed primary care physician. The data on primary care physicians comes from the Health Resources and Services Administration's Area Resource File (ARF) as presented in the *County Health Rankings*. The national benchmark used by the *County Health Rankings*[1] project is 1,030 people per primary care physician.

Ratio of the Number of People to Licensed Primary Care Physicians, 2015: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland	National Benchmark*
Ratio of Licensed Primary Care Physician	☆ 900:1	Not Available	1030:1[b]

☆ Meets the national benchmark.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Information by gender and race/ethnicity is not available for this indicator.

Summary

The availability of primary care physicians, one for every 900 residents, is better in Cuyahoga County than the national benchmark of one per 1,030 residents. Primary care physician availability locally is far better than the state (one for every 1,310 residents).[2] This information suggests that there is not a shortage in the number of licensed primary care physicians in Cuyahoga County.

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.

[2] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

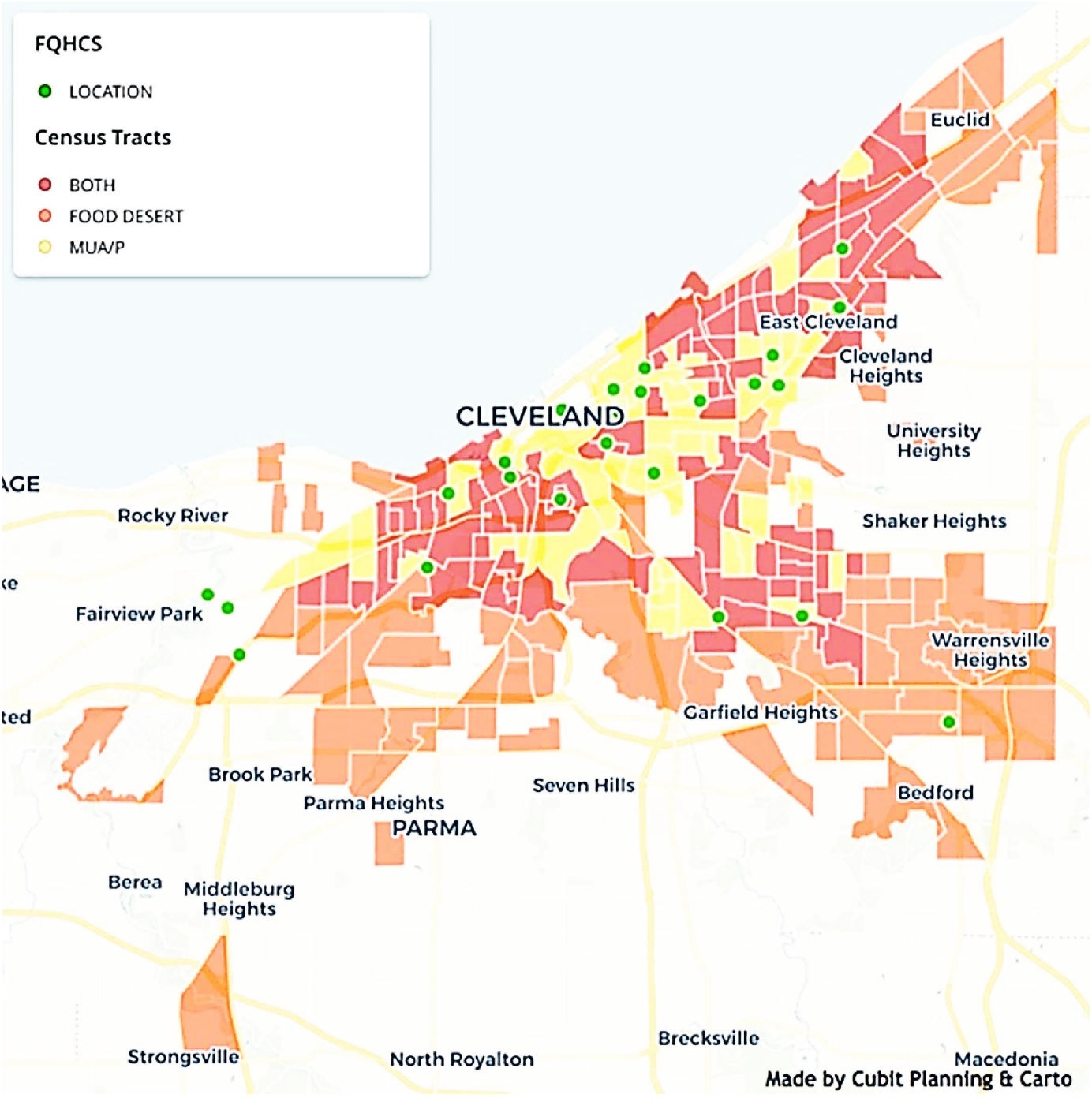
Note: For additional information about this indicator please see the *Technical Guide.*

Health Resource Availability: Federally Qualified Health Centers and Medically Underserved Areas

Understanding Cuyahoga County residents' access to primary care is important to gaining a more complete picture of the conditions that impact a person's ability to be healthy. The map below displays three things: 1) the location of federally qualified health centers (FQHCs) or look-alikes; 2) medically underserved areas/populations (MUA/Ps), which are defined by the Health Resources & Services Administration (HRSA) as having too few primary care providers, high infant mortality, high poverty or a high elderly population; and 3) food deserts, which are census tracts where a significant proportion of the population is not within a ½ mile of a grocery store. Census tracts that are both MUAs and food deserts are also displayed.

The map below shows that almost all of the city of Cleveland is considered a MUA. Food deserts cover a smaller area within the city. Suburban areas of Cuyahoga County are far less likely to be either a MUA or a food desert. There are 26 FQHCs in Cuyahoga County. Of those, five are new locations since 2013.

Cuyahoga County: Location of Federally Qualified Health Centers, Medically Underserved Areas, and Food Deserts



E. Quality of Life: At-A-Glance Summary

Quality of Life (QOL) is a construct that "connotes an overall sense of well-being when applied to an individual" and a "supportive environment when applied to a community" (Moriarty, 1996). While some QOL dimensions can be quantified using indicators that research has shown to be related to determinants of health and community well-being, other valid QOL dimensions include community residents' perceptions about aspects of their neighborhoods and communities that either enhance or diminish their quality of life.[1] Currently available statistics tend to focus on the latter.

Summary of the *Quality of Life* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Percent of population living in food desert areas[2]**	2016-2017	35.6%	60.7%	NA
Homicide rate[3] (per 100,000 population)	2016	14.2	28.3	5.5[a]
Percent of population with access to exercise opportunities[4] **	2016	☆ 96.0%	Not Available	91.0%[b]
Proportion of persons satisfied with the quality of life in the community	Not Available	Not Available	Not Available	NA
Proportion of residents planning to stay in the community/neighborhood for the next five years	Not Available	Not Available	Not Available	NA

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** This indicator has changed compared to the 2013 Cuyahoga County Community Health Status Assessment and is no longer directly comparable.

Summary

The homicide rate in the city of Cleveland (28.3) is almost double the rate for Cuyahoga County overall (14.2) and neither the city nor the county are meeting the national benchmark (5.5). Almost twice as many city of Cleveland residents live in a food desert compared to Cuyahoga County overall. Conversely, the majority of Cuyahoga County residents (96%) have access to exercise opportunities and the county meets the national benchmark for access to exercise facilities.

Of note, there were two indicators within this category where data were not available for both the city of Cleveland and Cuyahoga County: the proportion of persons satisfied with the quality of life in the community and the proportion of residents planning to stay in the community/neighborhood for the next five years. Having access to these data is important for understanding community health and well-being and the lack of data signals an opportunity to ensure this data is available for subsequent assessments of community health undertaken in the county.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Cuyahoga County Planning Commission and Cuyahoga County Board of Health. 2016-2017 Cuyahoga County Supermarket Assessment. Available at http://www.ccbh.net/cuyahoga-county-supermarket-assessment/. Accessed April 23, 2018.

[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[4] Homicide deaths. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. Available at https://wisqars-viz.cdc.gov/. Accessed on April 23, 2018.

Quality of Life: Percentage of People Living in Food Desert Areas

Food deserts are generally described as areas "with limited access to affordable and nutritious food, particularly in low-income areas,"[1] or areas "distant from mainstream grocery stores."[2] Understanding food deserts is important because studies have shown that supermarket access plays a role in diet-related diseases such as obesity, heart disease, and diabetes[3] and is important for the economic health of neighborhoods. This measure looks at the percentage of people who are both low income and live more than a half a mile away from a supermarket or grocery store.

Percentage of Population Living in Food Desert Areas, 2016-2017: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

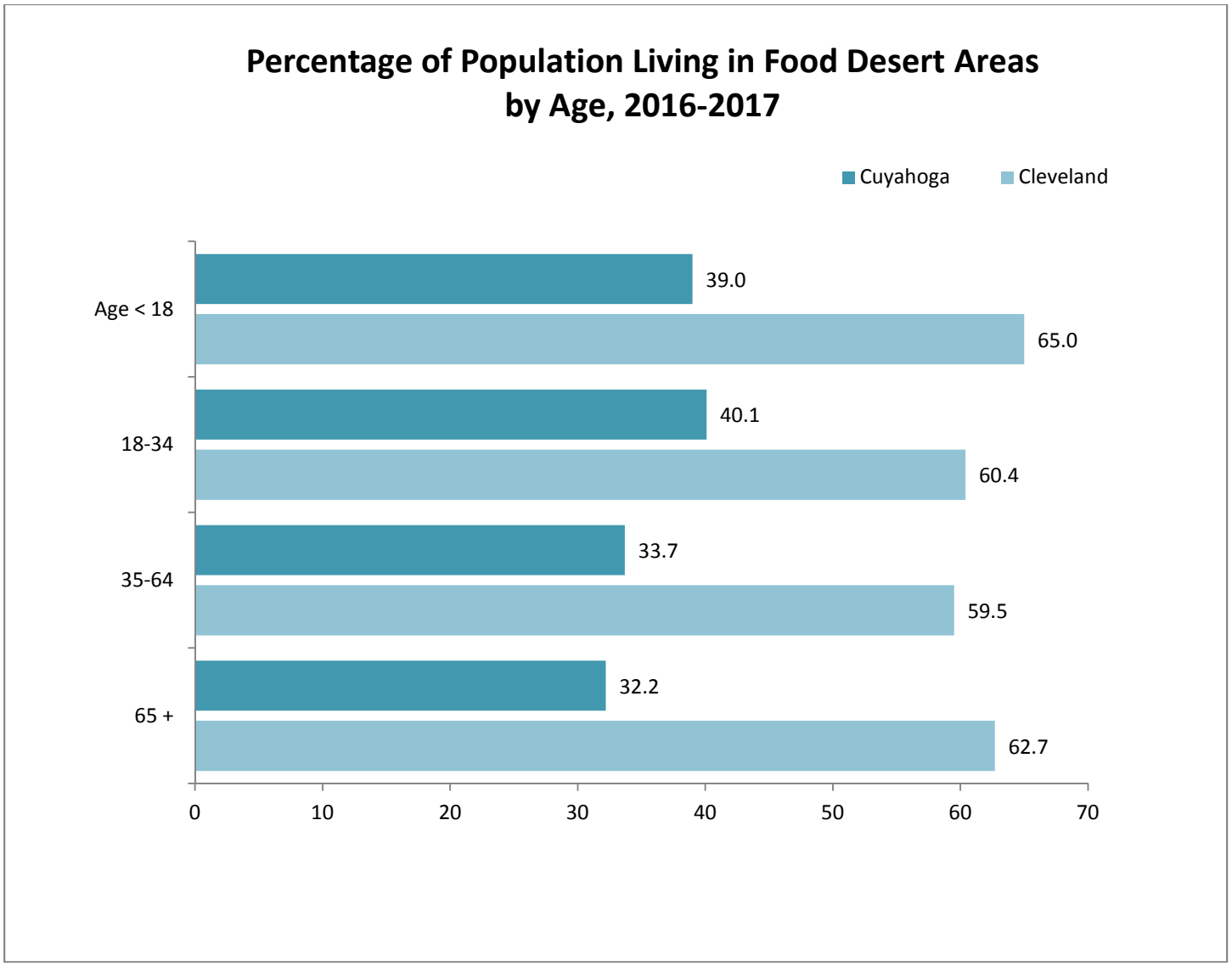
Indicator	Cuyahoga County[4]	City of Cleveland[4]	National Benchmark*
Percent of Population Living in Food Desert Areas	35.6%	60.7%	NA

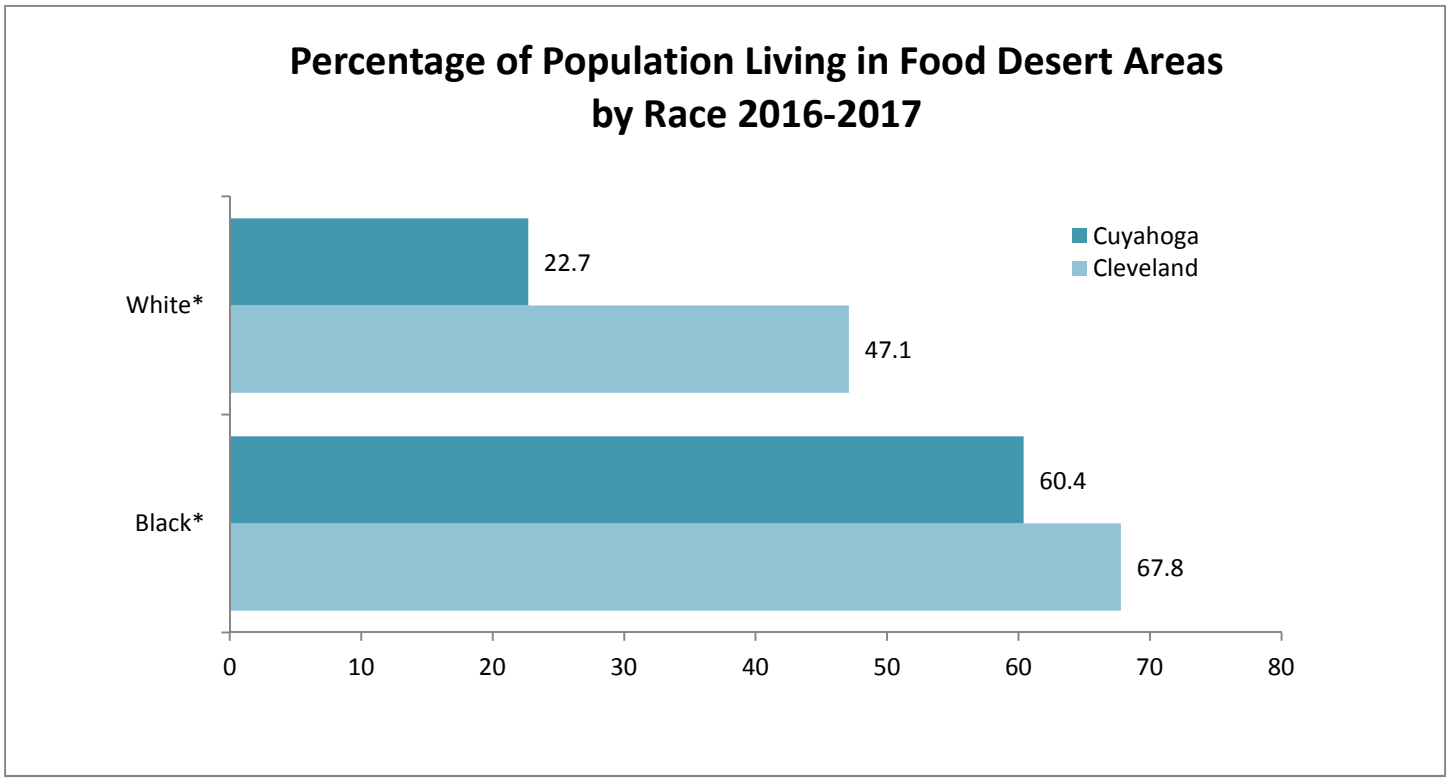
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.


Percentage of Population Living in Food Desert Areas by Age, 2016-2017
Cuyahoga
Cleveland
Age < 18
39.0
65.0
18-34
40.1
60.4
35-64
33.7
59.5
65 +
32.2
62.7
0
10
20
30
40
50
60
70



*Includes persons with Hispanic origin

Approximately one out of three people in Cuyahoga County overall and nearly two out of three people in the city of Cleveland live in areas that are more than a half a mile away from a supermarket or a grocery store (i.e. live in a food desert). This is similar across all age groups. In Cuyahoga County overall, nearly one out of every four White residents lives in a food desert compared to almost two out of every three Black residents. In the city of Cleveland, nearly one out of every two White residents lives in a food desert compare to almost two out of every three Black residents. Living in a food desert has the potential to reduce access to healthy foods, an important factor for proper growth and development in children and youth. Although the data are not shown, it is also known that among people living in a food desert, 22.3% of the households in Cuyahoga County overall and 25.7% in the city of Cleveland do not own a vehicle.[4]

References

[1] Ploeg, M., Breneman, V., Farrigan, T., Hamrick, K., Hopkins, D., Kaufman, P., Lin, B., Nord, M., Travis A. Smith, T., and Williams, R. Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences, USDA Report to Congress, Administrative Publication No. (AP-036) 160 pp, June 2009. Available at http://www.ers.usda.gov/publications/ap-administrative-publication/ap-036.aspx. Accessed on June 28, 2012.

[2] Mari Gallagher Research and Consulting Group. Examining the Impact of Food Deserts on Public Health in Chicago. 2006. Available at http://www.marigallagher.com/site_media/dynamic/project_files/Chicago_Food_Desert_Report.pdf. Accessed on June 28, 2012.

[3] The Reinvestment Fund. Economic Impacts of Supermarkets on Their Surrounding Communities, TRF Reinvestment Brief, Issue 4. Available at http://www.trfund.com/resource/downloads/policypubs/supermarkets.pdf. Accessed on June 28, 2012.

[4] Cuyahoga County Planning Commission and Cuyahoga County Board of Health. 2016-2017 Cuyahoga County Supermarket Assessment. Available at http://www.ccbh.net/cuyahoga-county-supermarket-assessment/. Accessed April 23, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Quality of Life: Homicide Rate

High levels of violent crime (including homicides) negatively impact physical safety and psychological well-being, as well as overall health. For example, residents can be deterred from pursuing healthy behaviors such as outdoor exercise. Evidence also suggests that increased stress levels may contribute to obesity prevalence, even after controlling for physical activity levels and diet.[1] This indicator measures the number of homicide deaths (i.e. the act of a human killing another human) per 100,000 population. The *Healthy People 2020* goal is to decrease the homicide rate to 5.5 per 100,000 population.

Homicide Rate, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Homicide Rate (per 100,000 population)**	14.2	28.3	5.5[a]

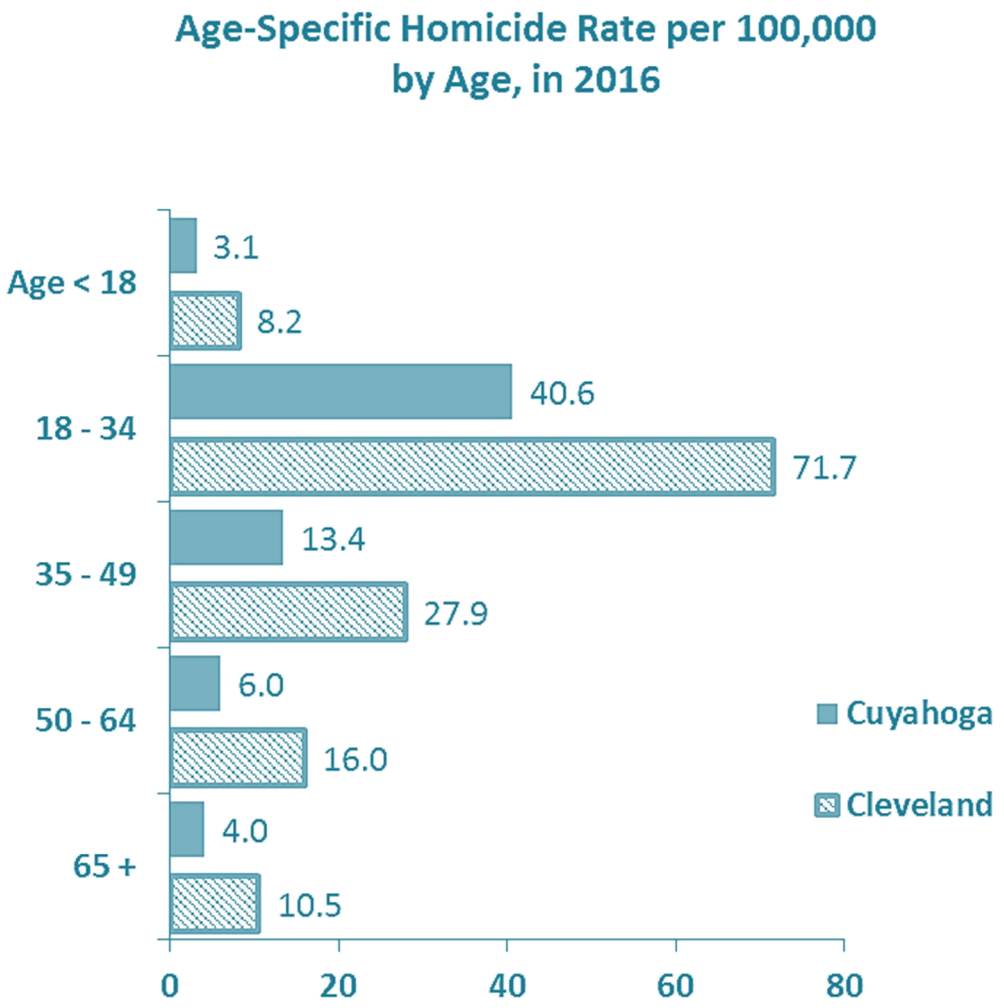
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

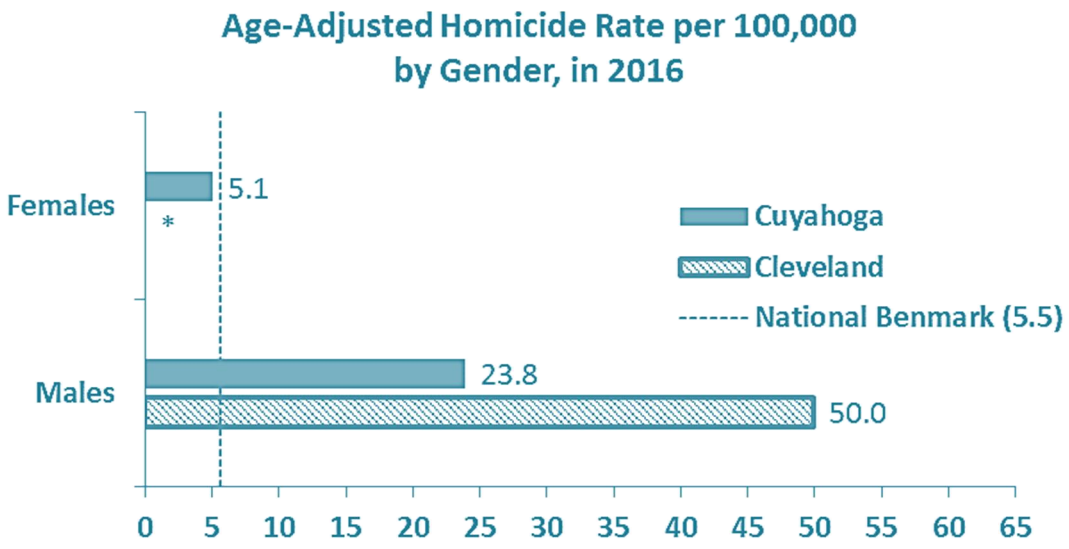
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

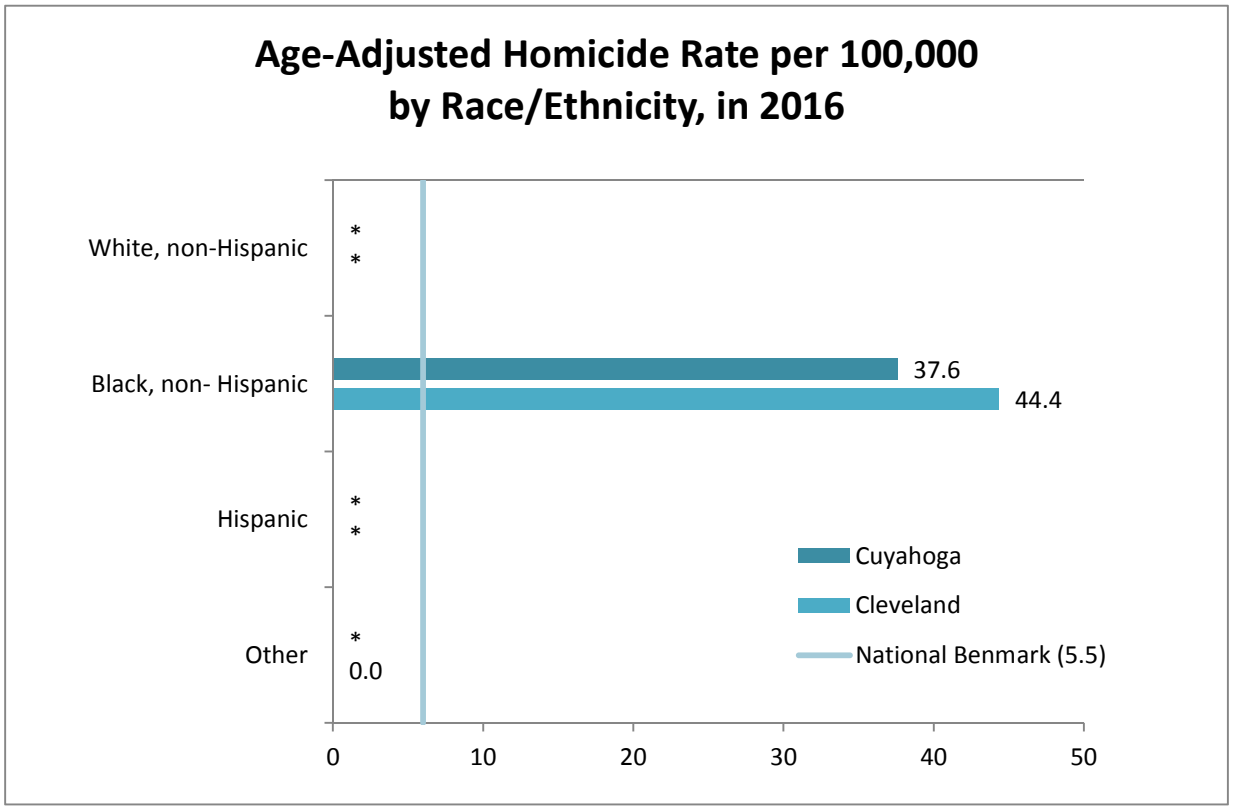
NA National benchmark was not identified.



Note: Rate uses the 2010 population data for the denominator.
*Age-adjusted rates are not presented when there are less than 20 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Age-adjusted rates are not presented when there are less than 20 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Age-adjusted rates are not presented when there are less than 20 cases total for the time period due to instability.

Summary

The homicide rate for Cuyahoga County overall and the city of Cleveland do not meet the *Healthy People 2020* goal. Also, there are significant age, gender, and geographic health disparities that exist. Specifically, homicide rates are highest among: 18-34 year olds; males (the rate is approximately four times higher compared to females); Black non-Hispanic residents; and in the city of Cleveland (the rate is approximately twice as high compared to the county overall among the different age groups and among males). The homicide rates for both Cuyahoga County overall and the city of Cleveland are significantly higher than the state of Ohio (6.5) and the nation (6.1).[3]

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] Homicide deaths. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. Available at https://wisqars-viz.cdc.gov/. Accessed on April 23, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Quality of Life: Recreational Facilities Rate

Choices made by individuals and communities to engage in physical activity can be influenced by the availability of recreational facilities. Living close to places with recreational opportunities has been associated with higher levels of physical activity and lower rates of poor health outcomes from lack of physical activity, poor diet and obesity.[1] Physical activity locations are defined as recreational facilities or local, state, and national parks.[2] This indicator measures the percentage of individuals in a county who live reasonably close to a location for physical activity. Reasonably close is defined as residing in: a census block that is within a half mile of a park; in an urban census block that is within one mile of a recreational facility; or in a rural census block that is within three miles of a recreational facility.

Percentage of Population with Access to Exercise Opportunities, 2016: Cuyahoga County and the City of Cleveland Compared to the National Benchmark**

Indicator	Cuyahoga County[1]	City of Cleveland	National Benchmark*
Rate of Recreational Facilities	☆ 96.0	Not Available	91.0[b]

☆ Meets the national benchmark.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** This indicator has changed compared to the 2013 assessment and is no longer directly comparable.

Note: Information by age, gender and race/ethnicity is not available for this indicator.

Summary

The percentage of people with access to exercise opportunities in Cuyahoga County (96.0%) is higher than the national benchmark (91.0%) and the overall state of Ohio (85%).

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on June 27, 2012.

[2] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on April 23, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

F. Behavioral Risk Factors: At-A-Glance Summary

Behaviors believed to cause, or contribute to disease, injuries and death during youth and adolescence and significant morbidity and mortality in later life are risk factors in this category.[1]

Summary of the *Behavioral Risk Factor* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Percent of Obese Adults[2,3]	2014	☆ 30.0%	35.0%	30.5%[a]
Percent of Obese Adolescents in 9th-12th Grade[4]	2017	15.5%	NA	NA
Percent of Current Cigarette Use Among Adults[2,3]	2016 (Cuyahoga) 2014 (Cleveland)	21.0%	35.2%	12.0%[a]
Percent of Current Cigarette Use Among Adolescents in 9th-12th Grade[4]	2017 (Cuyahoga)	☆ 6.2%	NA	16.0%[a]
Percent of Current Cigar Use Among Adolescents in 9th-12th grade	2017 (Cuyahoga)	13.1%	NA	8.0%[a]
Percent of Adults Consuming 5 or more fruits and vegetables per day[2]	2014 (Cleveland)	NA	16.9%	NA
Percent of Adolescents in 9th-12th Grade Consuming 5 or more fruits and vegetables per day[4]	2017 (Cuyahoga)	19.5%	NA	NA
Rate of Illegal Drug use (per 100,000 population)[5]	2014	Not Available	713.7	NA
Percent Insufficient Physical Activity among Adults[2]**	2014 (Cuyahoga) 2009 (Cleveland)	☆ 24.0%	58.1%	32.6%[a]

☆ Meets the national benchmark.

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** This indicator has changed compared to the 2013 assessment and is no longer directly comparable.

Summary

Cuyahoga County is meeting the national benchmarks for obese residents, adolescent cigarette use and sufficient physical activity. However, the city of Cleveland is not meeting the national benchmarks in those same areas. City of Cleveland residents experience obesity rates (35.0%) greater than the county overall (30.0%) and higher than the national benchmark (30.5%). The percent of adults who have insufficient physical activity in Cleveland (58.1) is almost twice the national benchmark (32.6%) and significantly higher than the rate for Cuyahoga County as a whole (24.0%). Also, cigarette use among adults in the city of Cleveland (35.2%) is almost three times the national benchmark (12.0%) and higher than Cuyahoga County as a whole (21.0%).

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on April 18, 2018.

[3] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

[4] Prevention Research Center for Healthy Neighborhoods (PRCHN). Case Western Reserve University. 2017 YRBS: County Demographic Prevalence. Available at http://www.prchn.org/Downloads/2017%20County%20Demographic%20Prevalence.pdf. Accessed on April 18, 2018.

[5] NEO CANDO 2010+ system, Northeast Ohio Data Collaborative (http://neocando.case.edu/neocando/). Accessed April18, 2018.

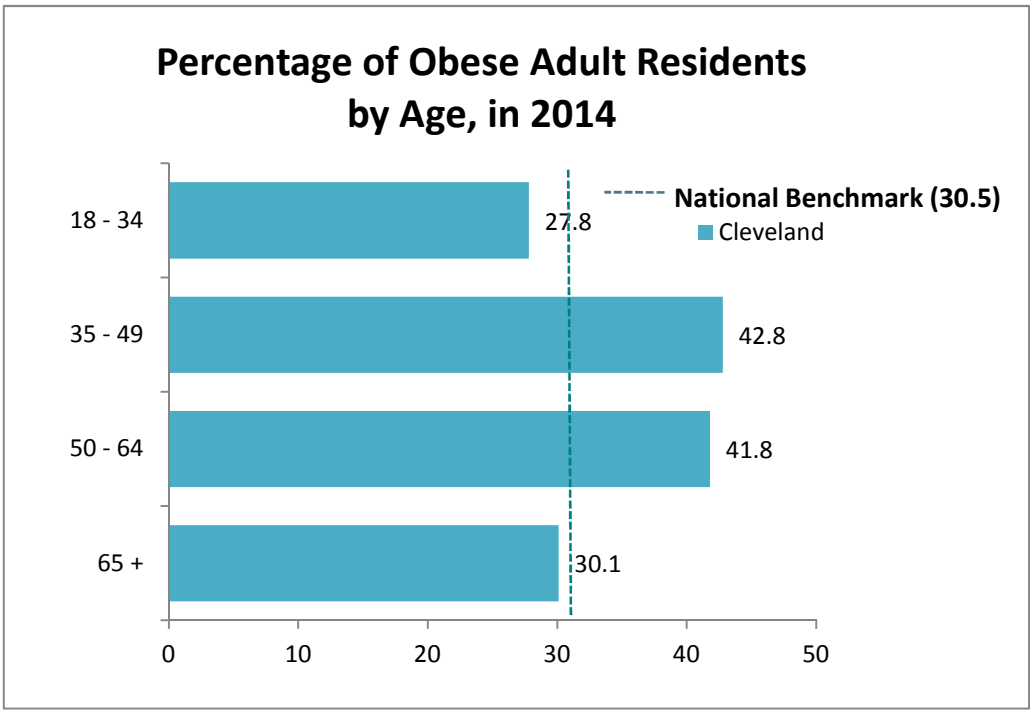
Behavioral Risk Factors: Obesity

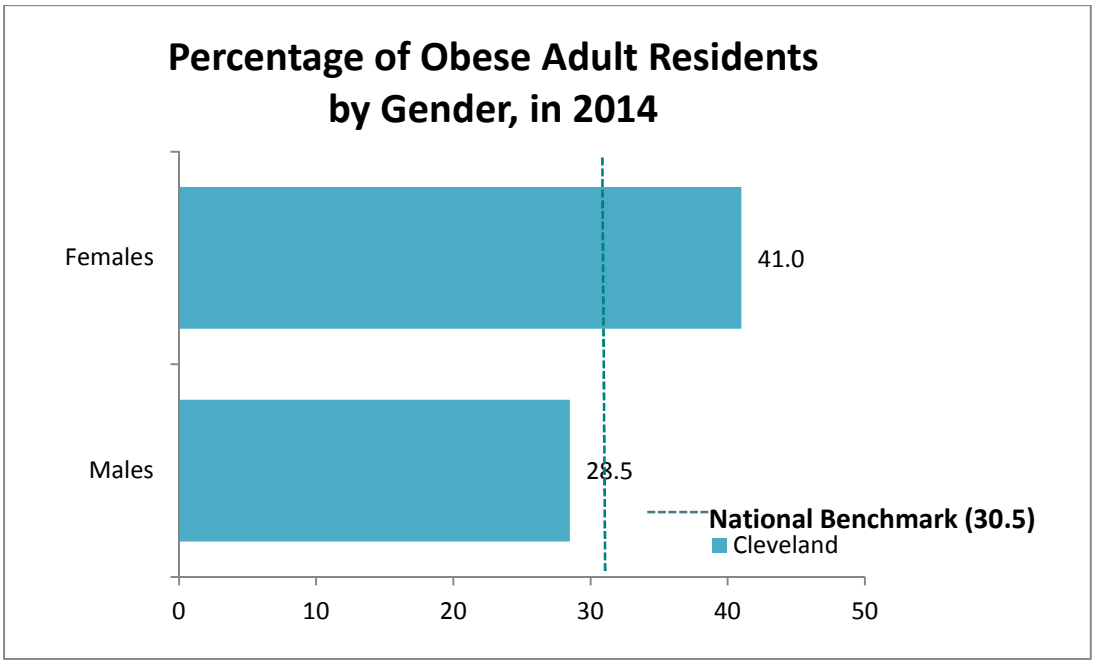
Being obese has important health consequences including putting individuals at a higher risk for heart disease, type 2 diabetes, certain types of cancers, hypertension and stroke.[1] People are generally considered obese if they have a body mass index (BMI) of 30 or higher.[2] The *Healthy People 2020* goal is to reduce the percent of obese people in the nation to 30.5% or below.[3] In 2014, according to local assessments of adults in Cleveland and Cuyahoga County, the percentages of obese adults (defined as a BMI of ≥ 95th percentile for age and sex) are presented below as part of the Centers for Disease Control and Prevention's Behavioral Risk Factor Survey and the Youth Risk Behavior Survey.[4,5]

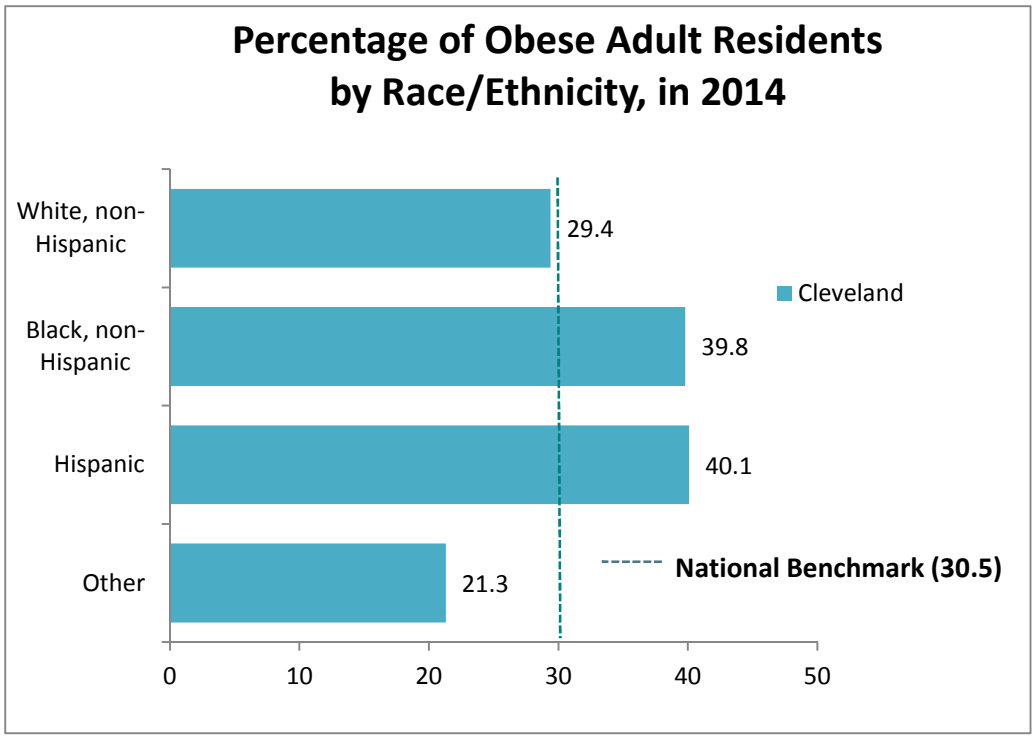
Percent of Obese Adult Residents, 2014:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2] 2014	City of Cleveland[2] 2014	National Benchmark*
Percent of Obese Adults	☆ 30.0%	35.0%	30.5%[a]
Percent of Obese Adolescents in 9th-12th Grade[5]	15.5%	NA	NA

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.




Percentage of Obese Adult Residents by Gender, in 2014
Females
41.0
Males
28.5
National Benchmark (30.5)
Cleveland
0
10
20
30
40
50


Percentage of Obese Adult Residents by Race/Ethnicity, in 2014
White, non-Hispanic
29.4
Black, non-Hispanic
39.8
Hispanic
40.1
Other
21.3
Cleveland
National Benchmark (30.5)
0
10
20
30
40
50

Summary

The percentage of obese adults (30.0%) living in Cuyahoga County is lower than the state of Ohio (32.0%) and slightly lower than the national benchmark (30.5%). However, city of Cleveland residents experience obesity rates (35.0%) greater than the county overall (30.0%) and higher than the national benchmark (30.5%).[6] Among 9th to 12th grade students in Cuyahoga County, the obesity rate was 15.5% in 2017.[5] Also, among 9th to 12th grade students, the percentage of obese students is higher for Black, non-Hispanic, and Hispanic students compared to White, non-Hispanic students and Other race/ethnic groups.

References

[1] Centers for Disease Control and Prevention. Overweight and Obesity. Available at http://www.cdc.gov/obesity/. Accessed on April 18, 2018.
[2] Ogden CL, Carroll MD, Fryar CD, Flegal KM. Prevalence of obesity among adults and youth: United States, 2011–2014. NCHS data brief, no 219. Hyattsville, MD: National Center for Health Statistics. 2015.
[3] Healthy People 2020. Nutrition and Weight Status. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status. Accessed on May 4, 2018.
[4] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on April 18, 2018.
[5] Prevention Research Center for Healthy Neighborhoods (PRCHN). Case Western Reserve University. 2017 YRBS: County Demographic Prevalence. Available at http://www.prchn.org/Downloads/2017%20County%20Demographic%20Prevalence.pdf . Accessed on April 18, 2018.
[6] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

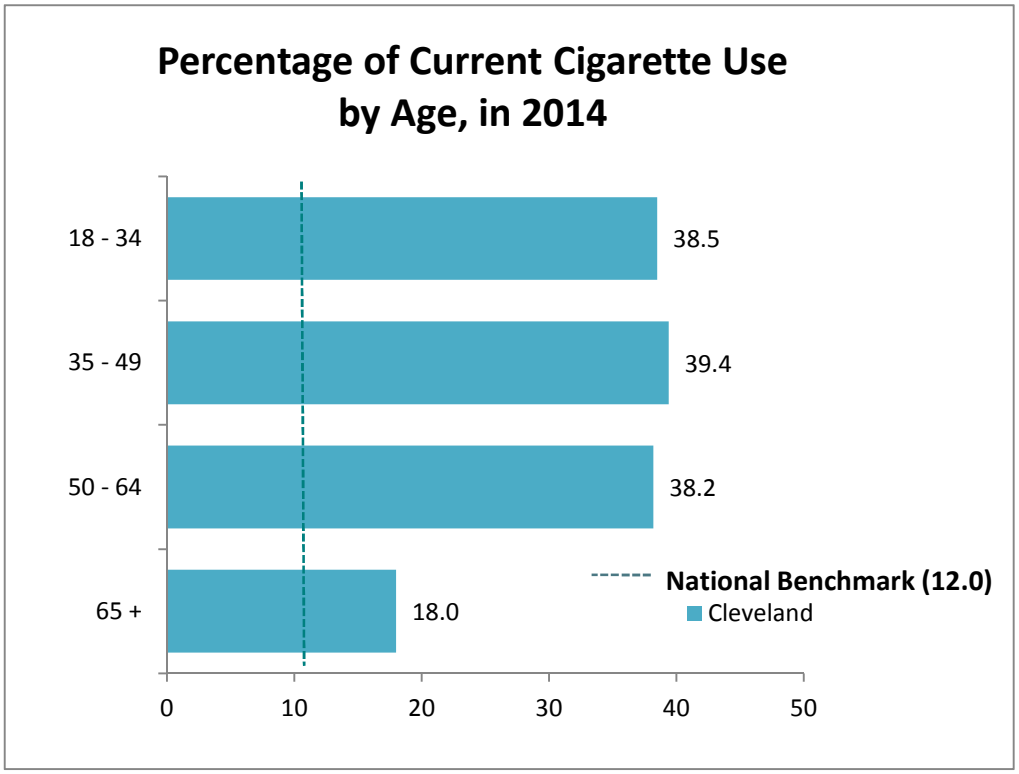
Behavioral Risk Factors: Tobacco Use

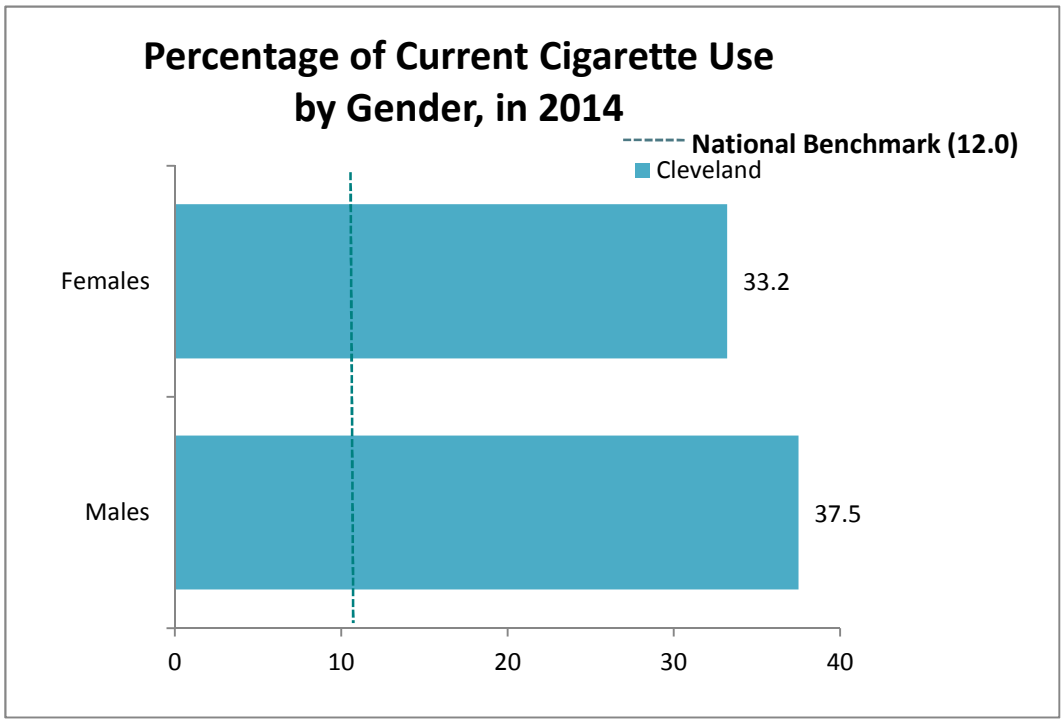
Tobacco use is the single most preventable cause of death and disease in the United States and is responsible for causing negative health consequences such as cancer, heart disease, lung diseases (including emphysema, bronchitis, and chronic airway obstruction), and premature birth, low birth weight, stillbirth, and infant death.[1] This indicator measures the number of people who currently use cigarettes based on t*he estimated percent of the adult population that currently smokes every day or "most days" and has smoked at least 100 cigarettes in their lifetime* as part of the Centers for Disease Control and Prevention's Behavioral Risk Factor Survey and the Youth Risk Behavior Survey.[2,3,4] The *Healthy People 2020* goal is to reduce the percent of cigarette use to 12.0% among adults and to 16.0% among adolescents.[1] Also, this indicator measures the number of adolescents who use cigars. The *Healthy People 2020* goal is to reduce the percent of adolescents who use cigars to 8.0%.[1]

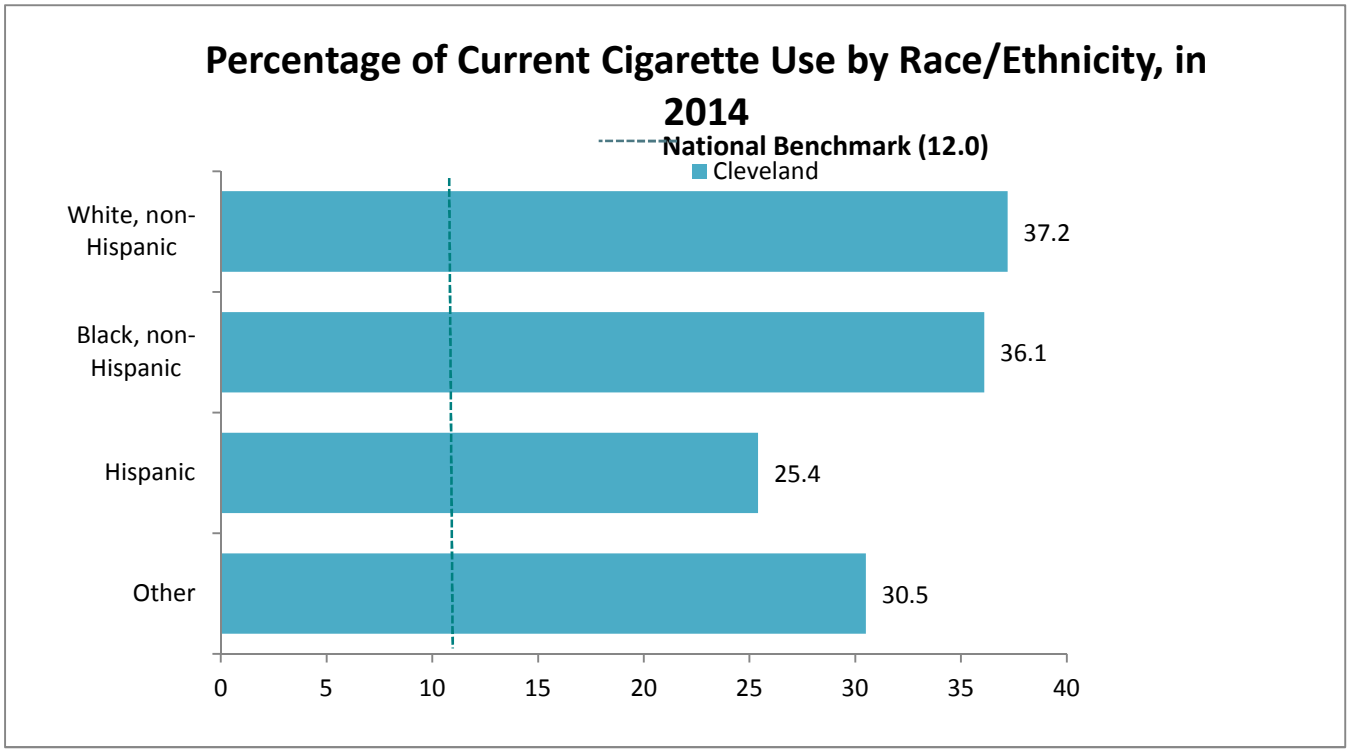
Percent of Tobacco Use among Residents:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2,3]	City of Cleveland[4] (2014)	National Benchmark*
Percent of Current Cigarette Use Among Adults in 2016	21.0%	35.2%	12.0%[a]
Percent of Current Cigarette Use Among Adolescents in 9th-12th Grade in 2017	☆ 6.2%	NA	16.0%[a]
Percent of Current Cigar Use Among Adolescents in 9th-12th grade in 2017	13.1%	NA	8.0%[a]

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.


Percentage of Current Cigarette Use by Age, in 2014
18 - 34
35 - 49
50 - 64
65 +
38.5
39.4
38.2
18.0
National Benchmark (12.0)
Cleveland
0
10
20
30
40
50


Percentage of Current Cigarette Use by Gender, in 2014
National Benchmark (12.0)
Cleveland
Females
Males
33.2
37.5
0
10
20
30
40



Summary

Cuyahoga County has a lower percentage of adult cigarette smokers (21.0%) compared to the state of Ohio (23.0%), but a rate that is higher than both the nation (15.5%) and the national benchmark (12.0%).[5] Cigarette use among adults in the city of Cleveland (35.2%) is almost three times the national benchmark (12.0%) and higher than Cuyahoga County as a whole (21.0%) and the state (23.0%). The percentage of adolescents (in 9th to 12th grade) who currently use cigarettes is 6.2% for Cuyahoga County overall, which is less than the national benchmark (16.0%). However, the percent of adolescents in the county who currently use cigars is 13.1% which is higher than the national benchmark (8.0%).[1,4] Cigarette use is slightly higher among males (37.5%) compared to females (33.2%) in the city of Cleveland. The rate of cigarette use among White, non-Hispanic residents (37.2%) is similar to the rate among Black, non-Hispanic residents (36.1%) in the city of Cleveland. Hispanic residents have the lowest rate of cigarette use (25.4%) in the city of Cleveland.

References

[1] Healthy People 2020. Tobacco. Available at http://healthypeople.gov/2020/LHI/tobacco.aspx. Accessed on April 18, 2018.
[2] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.
[3] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on April 18, 2018.
[4] Prevention Research Center for Healthy Neighborhoods (PRCHN). Case Western Reserve University. 2017 YRBS: County Demographic Prevalence. Available at http://www.prchn.org/Downloads/2017%20County%20Demographic%20Prevalence.pdf . Accessed on April 18, 2018.
[5] Centers for Disease Control and Prevention. Current Cigarette Smoking Among Adults in the United States. Available at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm Accessed on April 18, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

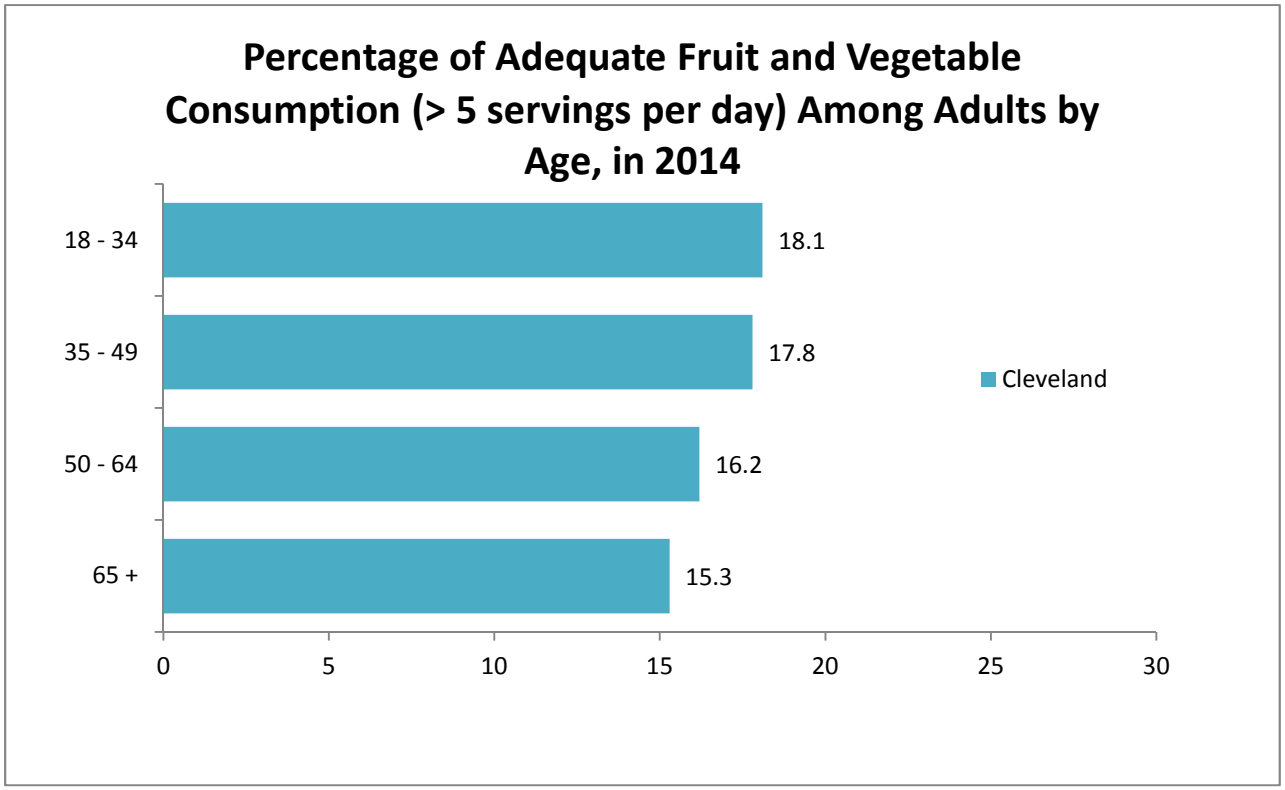
Behavioral Risk Factors: Fruit and Vegetable Consumption

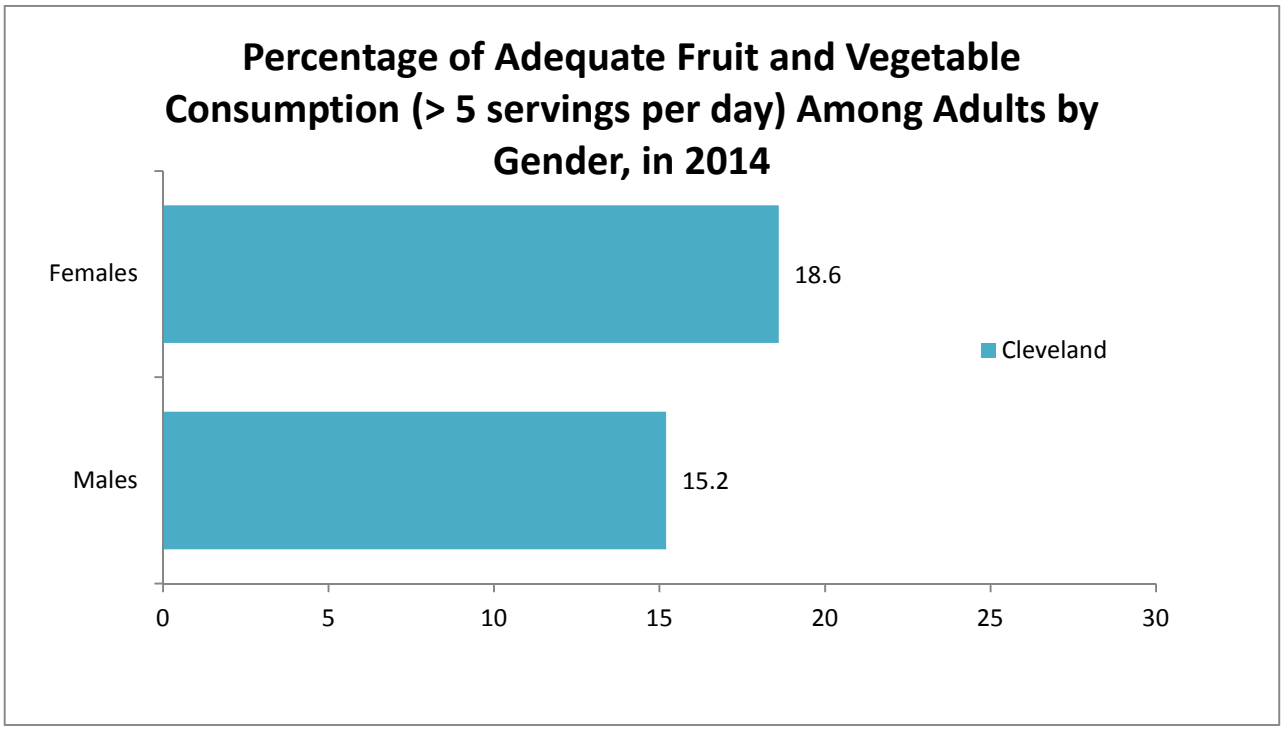
Key to the growth and development of children is good nutrition. A healthy diet is important to help individuals reduce their risk of many health conditions including: malnutrition, iron-deficiency anemia, obesity, heart disease, high blood pressure, dyslipidemia (poor lipid profiles), Type 2 diabetes, osteoporosis, oral disease, constipation and diverticular disease.[1] This indicator measures the number of people who currently consume five or more servings of fruits and vegetables per day (based on answering questions from the Centers for Disease Control and Prevention's Behavioral Risk Factor Survey and the Youth Risk Behavior Survey).[2] There is no direct *Healthy People 2020* goal for this indicator.

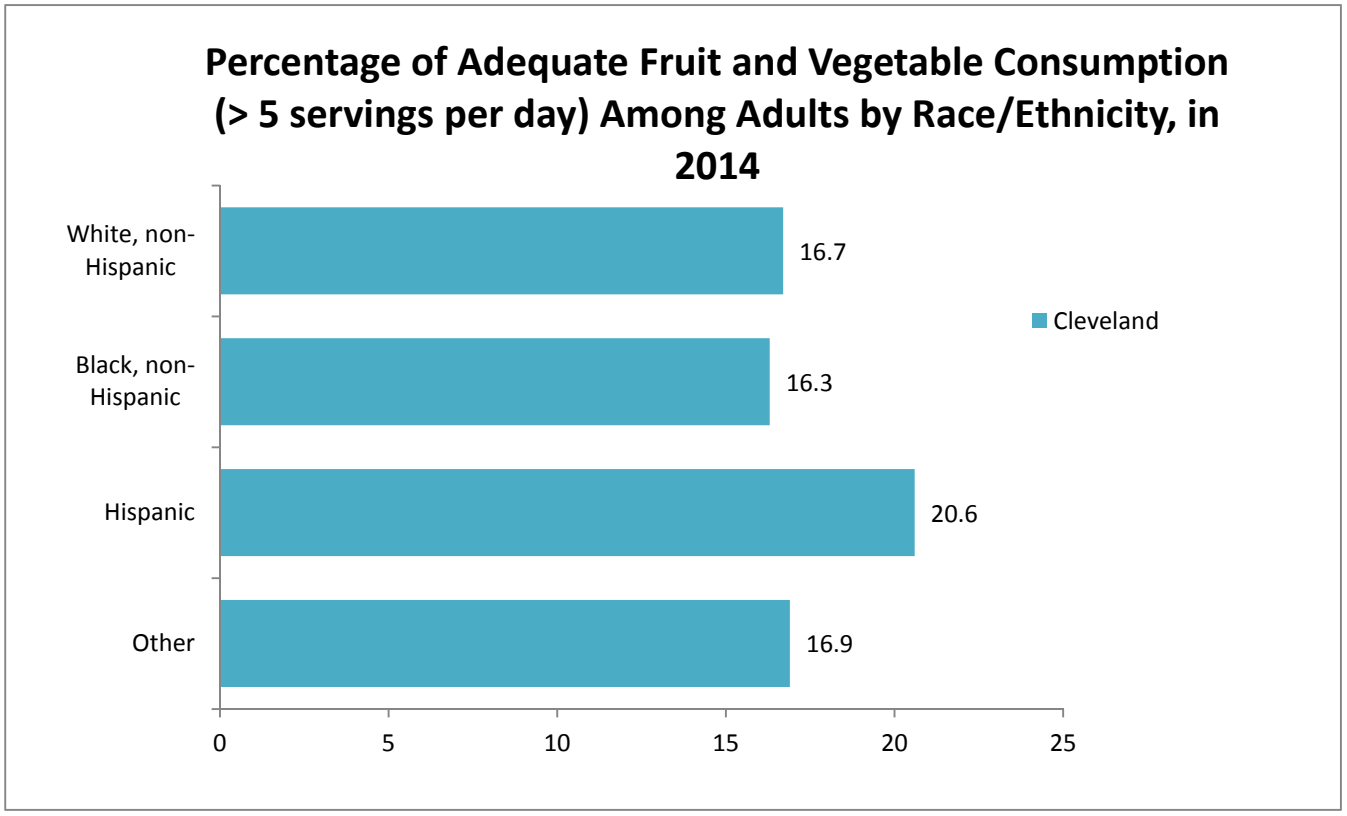
Percent of Adults and Adolescents Consuming Five or More Servings of Fruit and Vegetables Per Day, 2014 and 2017:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County 2017[2]	City of Cleveland 2014[3]	National Benchmark*
Percent of Adults consuming 5 or more fruits and vegetables per day	Not Available	16.9%	NA
Percent of Adolescents in 9th-12th Grade Consuming 5 or more fruits and vegetables per day	19.5%	Not Available	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.


Percentage of Adequate Fruit and Vegetable Consumption (> 5 servings per day) Among Adults by Age, in 2014
18 - 34
35 - 49
50 - 64
65 +
18.1
17.8
16.2
15.3
Cleveland
0
5
10
15
20
25
30


Percentage of Adequate Fruit and Vegetable Consumption (> 5 servings per day) Among Adults by Gender, in 2014
Females
Males
18.6
15.2
Cleveland
0
5
10
15
20
25
30



Summary

The percentage of adult and adolescent residents in the city of Cleveland and Cuyahoga County overall reporting that they eat fruits and vegetables five or more times a day was very low (i.e. approximately 1 out of every 5 residents). Adequate fruit and vegetable consumption for city of Cleveland adults was lower than the overall state of Ohio (21.0% in 2009) and the nation (23.5% in 2009).[4] Among 9th to 12th grade adolescents, fruit and vegetable consumption rates are consistent among Black, non-Hispanic and Hispanic students and White, non-Hispanic students.

References

[1] Healthy People 2020. Nutrition and Weight Status. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicId=29. Accessed on April 18, 2018.

[2] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2017 Cuyahoga County Middle School Youth Risk Behavior Survey Report. Available at http://www.prchn.org/. Accessed on March 19, 2018

[3] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report.

[4] Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online]. 2015. [accessed Apr 18, 2018]. URL: https://www.cdc.gov/brfss/brfssprevalence/.

Note: For additional information about this indicator please see the *Technical Guide.*

Behavioral Risk Factors: Illegal Drug Use

Drug use has been implicated in causing widespread damage to users' physical and emotional health and often leads to disease or permanent death. Beyond the negative impacts on a user's health, illicit drug use also impacts families, coworkers and many others.[1] This indicator is calculated by using the number of illicit drug arrests per 100,000 population.[2]

Rate of Illicit Drug Arrests, 2014:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County	City of Cleveland[2]	National Benchmark*
Rate of Illicit Drug Arrests (per 100,000 population)	Not Available	713.7	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.

Summary

The rate of arrest for illegal drug use was 713.7 per 100,000 population in the city of Cleveland in 2014.

References

[1] U.S. Department of Justice. National Drug Intelligence Center. *National Drug Threat Assessment 2010*. February 2010. Archived but available at: https://www.justice.gov/archive/ndic/pubs38/38661/drugImpact.htm. Accessed April 18, 2018.
[2] NEO CANDO 2010+ system, Northeast Ohio Data Collaborative (http://neocando.case.edu/neocando/). Accessed April18, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Behavioral Risk Factors: Physical Activity

A relationship has been established between decreased physical activity and certain diseases and conditions including stroke, type 2 diabetes, cancer, heart disease and premature death.[1] Regular physical activity can help lower the risk of many diseases and improve the quality of life for individuals of all ages. The *Healthy People 2020* goal is to reduce the percentage of adults who engage in no leisure-time physical activity to 32.6%.[2]

Percent of Adults with Insufficient Physical Activity:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator**	Cuyahoga County (2014)[1]	City of Cleveland (2009)[3]	National Benchmark*
Percent Insufficient Physical Activity	☆ 24.0%	58.1%	32.6%[a]

☆ Meets the national benchmark.

Does not meet the national benchmark. Requires a closer look.

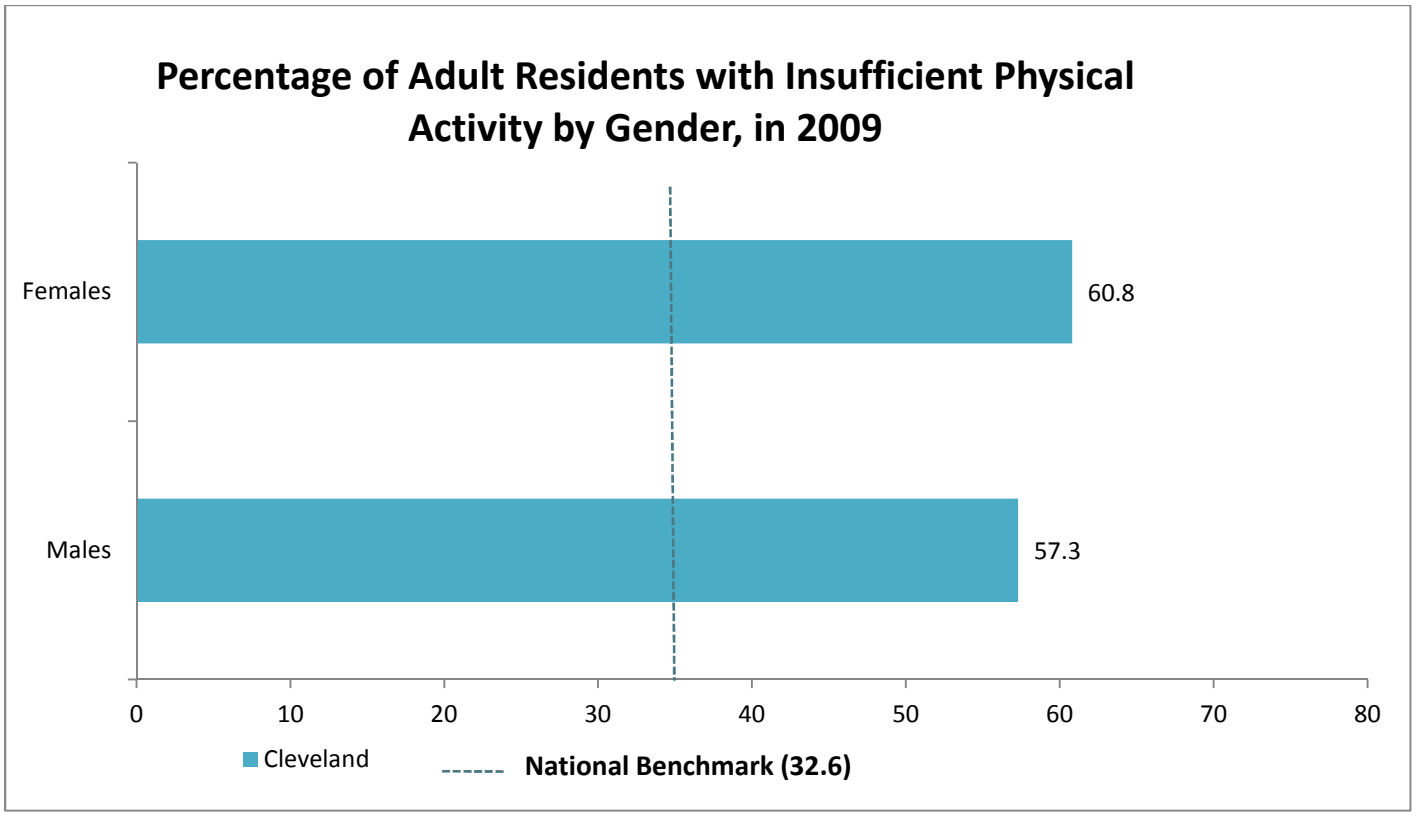
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

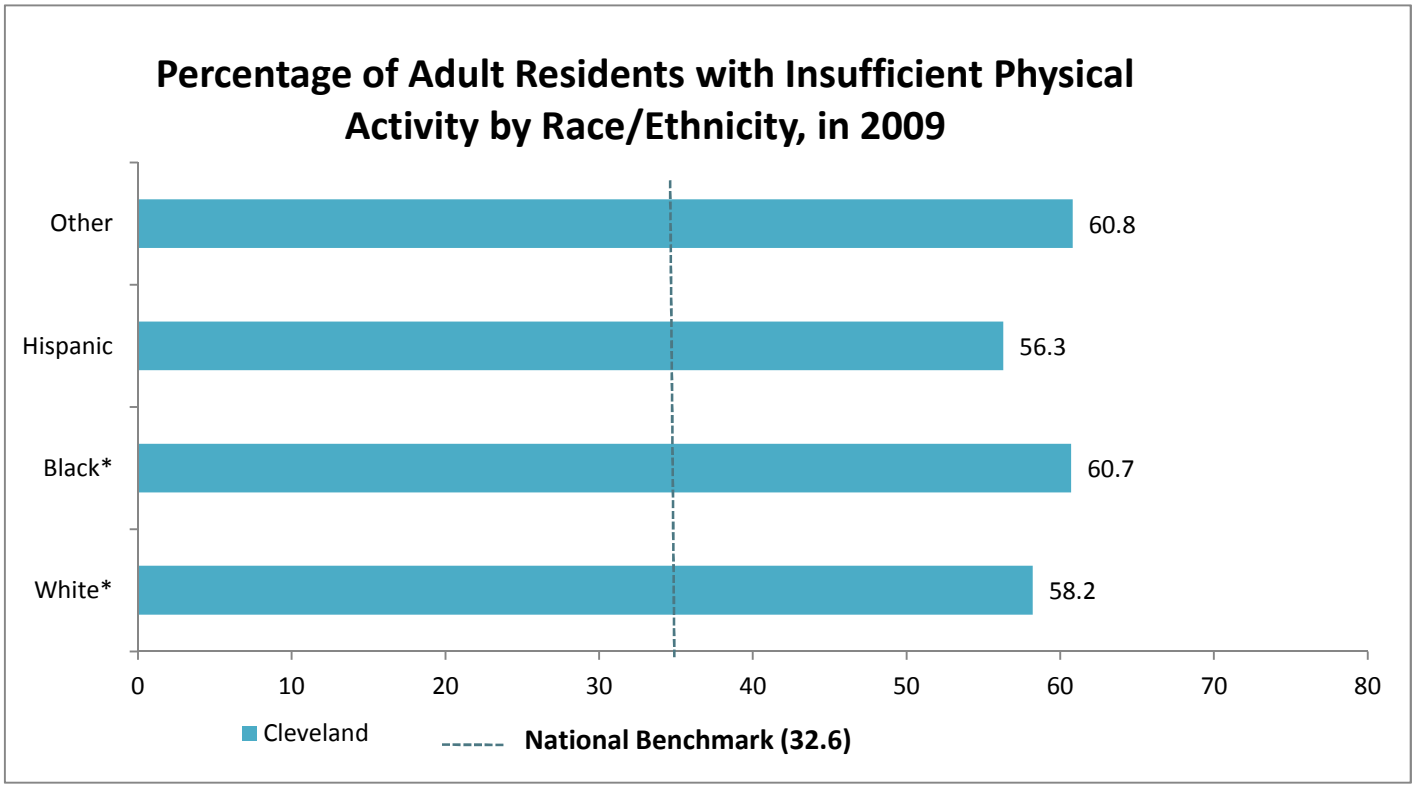
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** This indicator has changed compared to the 2013 assessment and is no longer directly comparable.


Percentage of Adult Residents with Insufficient Physical Activity by Gender, in 2009
Females
60.8
Males
57.3
0
10
20
30
40
50
60
70
80
Cleveland
National Benchmark (32.6)


Percentage of Adult Residents with Insufficient Physical Activity by Race/Ethnicity, in 2009
Other
60.8
Hispanic
56.3
Black*
60.7
White*
58.2
0
10
20
30
40
50
60
70
80
Cleveland
National Benchmark (32.6)

Summary

The percentage of adults not getting the recommended amount of physical activity in Cuyahoga County (24.0%) is better than the national benchmark (32.6%) and the state of Ohio (26.0%).[1] However, the percentage of city of Cleveland residents not getting the recommended amount of physical activity (58.1%) is significantly higher than Cuyahoga County overall, worse than the state and almost twice the national benchmark.

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2018. Physical Inactivity. Available at http://www.countyhealthrankings.org/app/ohio/2018/measure/factors/70/description Accessed on March 19, 2018.

[2] Healthy People 2020. Physical Activity. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/physical-activity. Accessed on April 18, 2018.

[3] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2009 Local Behavior Risk Factor Surveillance System Report.

Note: For additional information about this indicator please see the *Technical Guide.*

G. Environmental Health: At-A-Glance Summary

Health and quality of life are directly impacted by the physical environment. Clean water and air, and food that is safely prepared are important for physical health. The risk of preventable disease increases with exposure to environmental substances such as hazardous waste or lead. Unintentional home, work or recreational injuries may result in premature disability or death across all age groups.[1]

Summary of the *Environmental Health Indicators*:
Cuyahoga County and the City of Cleveland with Comparisons to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Percentage of children less than six years old with blood lead levels ≥ 5 ug/dL[2]	2016	8.2%	12.4%	0.0[a]
Percentage of children less than six years old with blood lead levels ≥ 10 ug/dL[2]	2016	2.5%	3.7%	0.0[a]
Particulate matter (PM<2.5) **[3]	2012	12.9	NA	6.7[b]
Number of houses built prior to 1950[4]	2016	245,426	138,512	NA
Percentage of houses built prior to 1950[4]	2016	39.7%	65.2%	NA
Percentage of residents reporting smoking inside home within the past week[5]	2014	NA	34.4%	NA
Foodborne disease caused by Campylobacteriosis[6]**	2016	17.3	15.6	8.5[a]
Foodborne disease caused by E. coli O157:H7[6]**	2016	0.9	***	0.6[a]
Foodborne disease caused by Hemolytic uremic syndrome (HUS) [6]**	2016	0.0	0.0	1.0[a]
Foodborne disease caused by Listeriosis[6]**	2016	0.5	0.0	0.2[a]
Foodborne disease caused by Salmonellosis[6]**	2016	12.0	11.6	11.4[a]
Foodborne disease caused by Vibriosis[6]**	2016	0.0	0.0	0.2[a]
Foodborne disease caused by Yersiniosis[6]**	2016	0.6	***	0.3[a]

☆ Meets the national benchmark.

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** Rate is per 100,000 population.

*** Rate may be unstable because there were fewer than five cases.

Summary

Blood lead levels among city of Cleveland children under six years of age are higher than rates for Cuyahoga County overall. The city of Cleveland has a higher percentage of homes built prior to 1950 compared to the county. Cuyahoga County is achieving the national benchmarks in two of the seven environmental health indicators and the city of Cleveland is achieving the national benchmarks for four of the seven indicators of common foodborne diseases. However, across all of the remaining environmental health indicators in this category, Cuyahoga County overall and the city of Cleveland are not achieving goals set through national benchmarks (where applicable).

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Cuyahoga County Board of Health (CCBH) using data provided by the Ohio Department of Health's Childhood Lead Poisoning Prevention Program.

[3] University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018.

[4] U.S. Census Bureau. American Community Survey, 2016, 1- Year Estimates, Table B25034. Available at http://factfinder2.census.gov. Accessed on April, 24, 2018.

[5] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Accessed April 23, 2018.

[6] Cuyahoga County Board of Heath (CCBH) using data obtained from the Ohio Disease Reporting System (ODRS).

Environmental Health: Childhood Lead Poisoning

Children who are lead poisoned often have no obvious symptoms, but lead poisoning affects nearly every system in the body. There is no safe level of lead exposure.[1] Exposure to lead can result in slower cognitive development, stunted growth, hearing loss, toxic effects on kidneys, vitamin D metabolism damage, and impaired blood production.[2] This indicator measures the number of children less than six years of age who were tested and found to have elevated blood lead levels.

Percentage of Children Less Than Six Years Old Tested That Have Elevated Blood Lead Levels, 2016: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Percentage of children less than six years old with blood lead levels ≥ 5 ug/dL[2]	8.2%	12.4%	0.0[a]
Percentage of children less than six years old with blood lead levels ≥ 10 ug/dL[2]	2.5%	3.7%	0.0[a]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Summary

While childhood lead poisoning has been significantly reduced, there remains a significant number of poisoned children within the city of Cleveland and some of the inner-ring suburban communities (i.e. those communities that share a land border with the city of Cleveland). The percentage of children with blood lead levels exceeding 5 ug/dl and 10 ug/dl for Cuyahoga County overall and the city of Cleveland were higher than the state of Ohio (2.0% and 0.8% respectively)[4] and the 2015 national values (3.3%, 0.5% respectively).[5]

References

[1] Ohio Department of Health. Lead. Available at https://www.odh.ohio.gov/odhprograms/eh/phs_environmental/leadlp/lead.aspx Accessed on April 24, 2018.

[2] Schwartz, J., Angle, C., and Pitcher, H. Relationship between childhood blood lead levels and stature. Pediatrics (1986) 77,3: 281–88.

[3] Cuyahoga County Board of Health (CCBH) using data provided by the Ohio Department of Health's Childhood Lead Poisoning Prevention Program.

[4] Childhood lead poisoning, 2015. Ohio Department of Health. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/eh/lead-poisoning---children/2016/Data-Statistics/2015_CountyBreakdown_table.pdf?la=en Accessed on April 24, 2018.

[5] Number of Children Tested and Confirmed EBLLs by State, Year, and BLL Group, Children <72 months old. Centers for Disease Control National Surveillance Data (1997-2015). Available at https://www.cdc.gov/nceh/lead/data/national.htm Accessed on March 13, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Environmental Health: EPA Air Quality Standards

Elevated air pollution causes negative health consequences including: decreased lung function, chronic bronchitis, and asthma, and can increase the risk of premature death among older adults.[1]

Average Daily Density of Fine Particulate Matter, 2012:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator**	Cuyahoga County[2]	City of Cleveland	National Benchmark*
Particulate Matter (PM<2.5 micrometers)	12.9	Not Available	6.7 [b]

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** The definition for this indicator has changed compared to the 2013 assessment and is no longer directly comparable.

Summary

Cuyahoga County's average daily density of fine particulate matter is higher than the state of Ohio (11.3) and the national benchmark (6.7). Data for the city of Cleveland were not available for this indicator.

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2017. Air Pollution. Available at http://www.countyhealthrankings.org/app/ohio/2018/measure/factors/125/description Accessed on March 13, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Environmental Health: Unhealthy Air Quality

The home is the place where children are most exposed to secondhand smoke and a major location of secondhand smoke exposure for adults. Secondhand smoke exposure in the home has been consistently linked to a significant increase in both heart disease and lung cancer risk among adult nonsmokers.[2] This indicator is based on responses to the question: *"Has anyone smoked in your home at least once in the past 7 days?"* This question is asked as part of the Cleveland –Cuyahoga County Behavioral Risk Factors Surveillance Survey (BRFSS) and is an adaptation of the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey.[1]

Percentage of People Reporting Smoking Inside of the Home within the Past Week, 2014: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

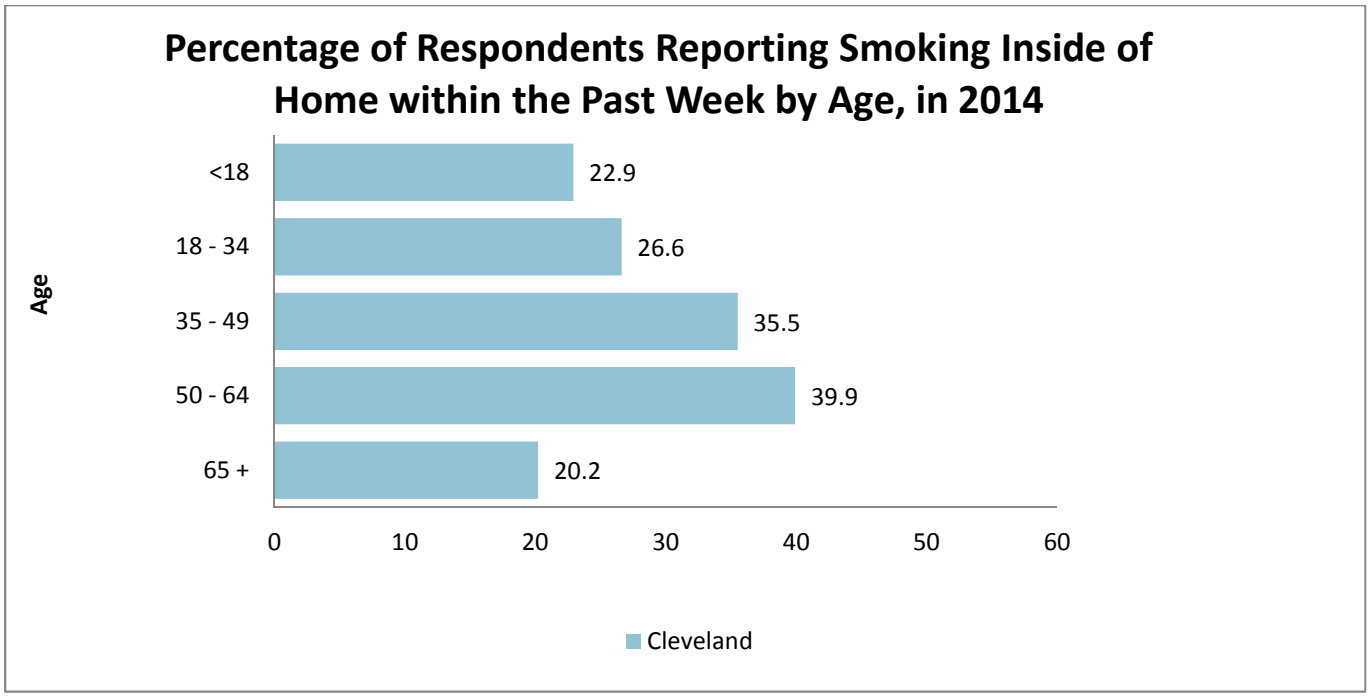
Indicator	Cuyahoga County	City of Cleveland 2014	National Benchmark*
Smoking inside of home within the past week	NA	34.4%	NA

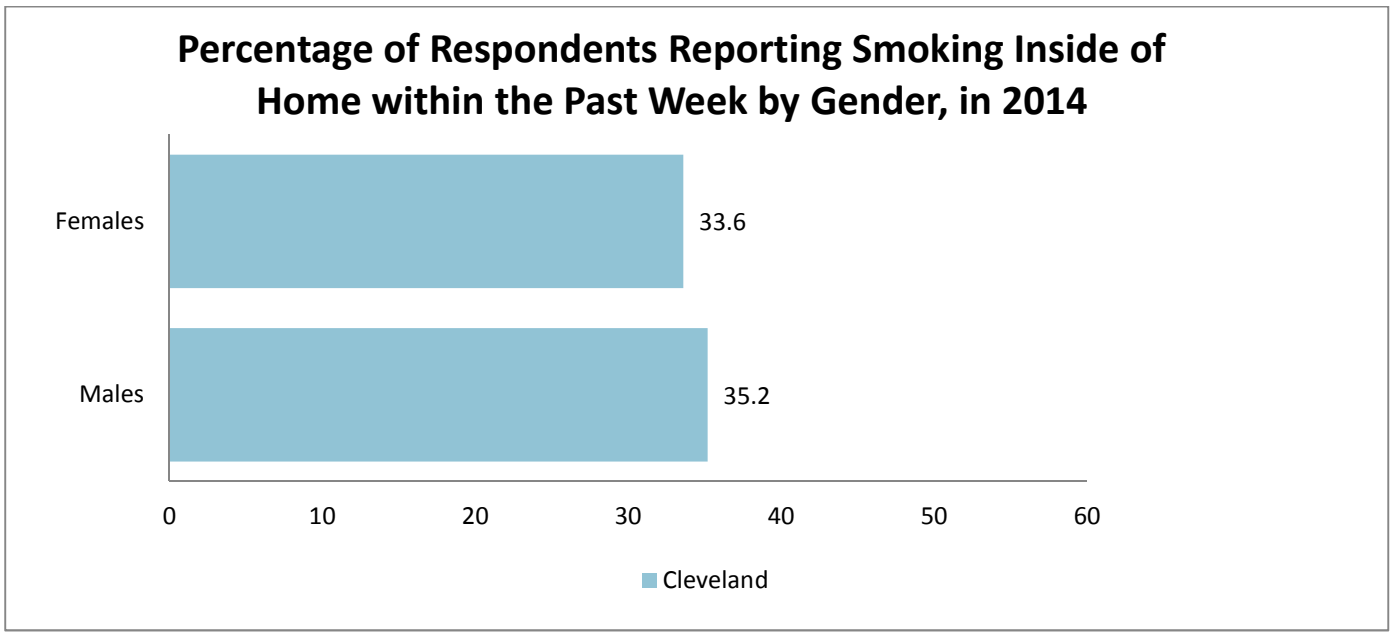
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

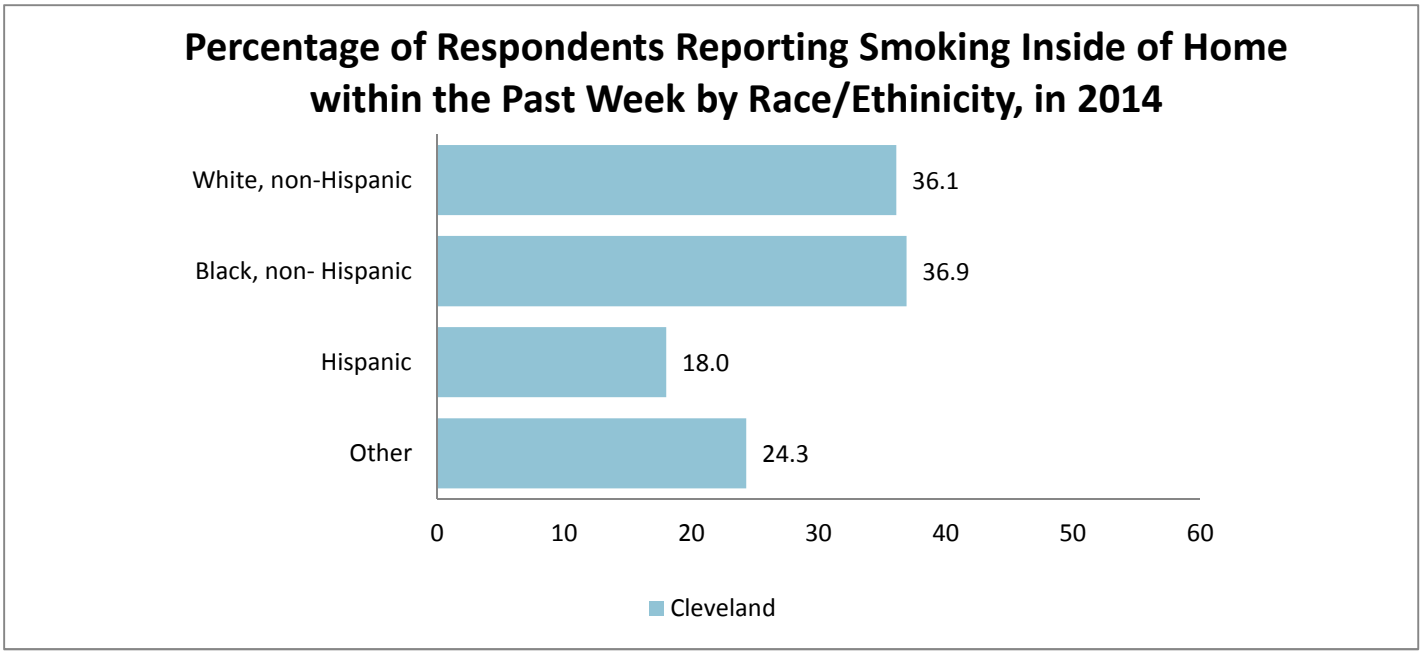
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.







Summary

The percentage of adults aged 18 and over that reported smoking within their home in the past week was 34.4% in the city of Cleveland. Adults aged 35 to 64 years old reported the highest smoking rates in the home (between 35% and 40%). Hispanic adults and adults of other race/ethnicity categories in Cleveland reported lower percentages of smoking inside the home compared to White, non-Hispanic and Black, non-Hispanic populations. Data were not available for Cuyahoga County overall.

References

[1] Behavioral Risk Factor Surveillance System. Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at **http://www.prchn.org/**. Accessed on April 24, 2018.

[2] U.S. Department of Health and Human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General, U.S. Department of Health and Human Services. Secondhand Smoke Exposure in the Home. Available at https://www.surgeongeneral.gov/library/reports/secondhandsmoke/fullreport.pdf
Accessed on April 24, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Environmental Health: Houses Built Prior to 1950

The main sources of lead exposure in U.S. children are lead-based paint and lead-contaminated dust. All homes built before 1950 were exclusively painted with lead-based paints. In 1978 lead was banned for use in housing. Houses built prior before 1978 are likely to contain some lead-based paint. While the presence of lead-based paint doesn't cause lead poisoning, as the paint deteriorates paint flakes and dust are easily ingested by young children.[1] This indicator measures the number of houses built before 1950.

Number and Percent of Houses Built Before 1950 (2016 data): Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Number of Houses Built Prior to 1950	245,426	138,512	NA
Percentage of Houses Built Prior to 1950	39.7%	65.2%	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Summary

Given the large number of houses built before 1950 within the city of Cleveland and Cuyahoga County overall, there is significant potential for a large number of children to be at risk for lead poisoning in the Greater Cleveland area. The percent of houses built prior to 1950 in Cuyahoga County overall and the city of Cleveland was higher than the state of Ohio (26.9%) and the nation (17.8%).[2] It is important to educate parents as well as the medical community of this risk and provide information on how individuals can take steps to reduce the risk. Community-level interventions have been shown to be effective, and may be a particularly important strategy for reducing the risk of environmental exposures and health behaviors (such as tobacco and substance use, diet and physical activity, that are susceptible to environmental influences.

References

[1] Centers for Disease Control and Prevention (CDC) Lead Prevention Tips. Available at https://www.cdc.gov/nceh/lead/tips.htm Accessed on April, 24, 2018.

[2] U.S. Census Bureau. American Community Survey, 2016, 1- Year Estimates, Table B25034. Available at http://factfinder2.census.gov. Accessed on April, 24, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Environmental Health: Foodborne Disease

Foodborne illnesses create a burden on public health and contribute to the cost of health care. Ensuring proper processes and steps are followed in the food safety system can help prevent foodborne illnesses. Food production, processing, preparation, packing, distribution/transportation and storage are all part of the food safety system.[1] Seven diseases that are commonly transmitted through food were selected for this indicator.

Rates of Select Foodborne Diseases, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Campylobacteriosis (per 100,000 population)	17.3	15.6	8.5[a]
E. coli O157:H7 (per 100,000 population)	0.9	**	0.6[a]
Hemolytic uremic syndrome (HUS) (per 100,000 population)	0.0	0.0	1.0[a]
Listeriosis (per 100,000 population)	0.5	0.0	0.2[a]
Salmonellosis (per 100,000 population)	12.0	11.6	11.4[a]
Vibriosis (per 100,000 population)	0.0	0.0	0.2[a]
Yersiniosis (per 100,000 population)	0.6	**	0.3[a]

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate suppressed if there were fewer than five cases.

Summary

Given the preventable nature of foodborne diseases, it is important to take steps to increase knowledge about how people can reduce their personal risk for these illnesses. Rates for these selected foodborne diseases were similar for the city of Cleveland compared to Cuyahoga County overall. For Cuyahoga County overall, hemolytic uremic syndrome (HUS) which is often associated with an E. coli O157:H7 infection, and vibriosis met the national benchmark. The city of Cleveland met the national benchmark for the same two diseases as well as for E. coli O157:H7 infection and listeriosis.

When comparing local foodborne disease rates to the state of Ohio and the nation, Campylobacteriosis rates for Cuyahoga County are higher than the state (16.9) and the nation (12.8).[3,4] For the city of Cleveland, Campylobacteriosis rates are lower than the state and higher than the nation.[3,4] Cuyahoga County has a higher rate of E.coli O157:H7 compared to the state (0.7) but has a similar rate compared to the nation (1.0). The city of Cleveland has a lower E.coli O157:H7 rate than the state and the nation. Hemolytic uremic syndrome (HUS) and Vibriosis rates in Cuyahoga County and the city of Cleveland rates are lower than state (0.1, 0.1 respectively), and nation (HUS rate unavailable nationally, 0.4 respectively).[3,4] Cuyahoga County's listeriosis rate is higher than the state (0.3) and nation (0.2).[3,4,5] The city of Cleveland's listeriosis rate was 0.0. For salmonellosis, Cuyahoga County and the city of Cleveland rates are lower than the state (13.2) and the nation (15.7).[3,4] Yersiniosis rates for Cuyahoga County and the city of Cleveland are higher or similar to the state (0.5) and the nation (0.3).[3,4]

References

[1] Healthy People 2020. Food Safety. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/food-safety. Accessed on May 4, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using data obtained from the Ohio Disease Reporting System (ODRS) which is administered by the Ohio Department of Health.

[3] Ohio Department of Health. 2016 Annual Summary of Infectious Diseases, Ohio. Available at https://www.odh.ohio.gov/en/healthstats/disease/idann/idsum16/16idsum. Accessed April 24, 2018.

[4] Foodborne Disease Active Surveillance Network. FoodNet 2015 Surveillance Report (Final Data). Centers for Disease Control and Prevention. Available at https://www.cdc.gov/foodnet/pdfs/FoodNet-Annual-Report-2015-508c.pdf. Accessed April 24, 2018.

[5] Morbidity and Mortality Weekly Report. Summary of Notifiable Infectious Diseases and Conditions – United States 2015. Weekly. August 11, 2017, 64(53);1-143. AVAILABLE AT https://www.cdc.gov/mmwr/volumes/64/wr/mm6453a1.htm?s_cid=mm6453a1_w August Accessed April 24, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

H. Social and Mental Health: At-A-Glance Summary

This category represents social and mental factors and conditions which directly or indirectly influence overall health status and individual and community quality of life. Substance abuse and violence within the home and the community may influence mental health and overall psychological well-being and safety.[1]

Summary of the *Social and Mental Health* Indicators:
Cuyahoga County and the City of Cleveland with Comparisons to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Rate of child abuse and neglect among children (per 1,000 children)[2]	2012	☆ 7.3	13.9	8.5[a]
Violent crime rate (per 100,000 population)[3]	2012-2014 (Cuyahoga) 2014 (Cleveland)	589.0	1,631.3	62.0[b]
Suicide rate (per 100,000 population)[4]**	2016	12.2	12.2	10.2[a]
Domestic violence rate (per 100,000 population)[2]	2014	Not Available	1,569.8	NA
Average number of poor mental health days within the past month[3,5]	2016 (Cuyahoga) 2014 (Cleveland)	3.7 days	6.2 days	3.1 days[b]

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

Summary

The violent crime rate in the city of Cleveland is almost three times the rate for Cuyahoga County as a whole and both the city and county rates are significantly higher than the national benchmark. The suicide rates in Cuyahoga County (12.2) and the city of Cleveland (12.2) are higher than the national benchmark (10.2). The city of Cleveland has a child abuse/neglect rate almost twice that of Cuyahoga County as a whole. Also, residents of Cuyahoga County experience an average of 3.7 poor mental health days per month compared to 6.2 poor mental health days per month for city of Cleveland residents.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu). Accessed March 19, 2018.

[3] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

[4] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH)

[5] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on March 13, 2018.

Social and Mental Health: Rate of Child Abuse and Neglect

Children raised in safe and nurturing families and neighborhoods, free from maltreatment and other social adversities, are more likely to have better outcomes as adults.[1] Child abuse and neglect are confirmed cases where there was abuse and/or neglect of a child less than 18 years old.[2]

Rate of Child Abuse and Neglect Among Children, 2012:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Rate of child abuse and neglect among children less than 18 years old (per 1,000 children)	☆ 7.3	13.9	8.5[a]

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
Note: Information by age, gender, and race/ethnicity is not available for this indicator.

Summary

The rate of child abuse and neglect among children in the city of Cleveland is almost twice as high as the overall county rate, and higher than the national rate (9.1).[3]

References

[1] National Research Council and Institute of Medicine; Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. From neurons to neighborhoods: The science of early childhood development. Shonkoff J, Philips D, editors. Washington: National Academy Press; 2000.
[2] NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu). Accessed March 19, 2018.
[3] U.S. Department of Health and Human Services. Administration for Children and Families. Children's Bureau. Child Maltreatment 2016. Available at http://www.acf.hhs.gov/ Accessed April 26, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Social and Mental Health: Violent Crime Rate

Violence in the home and the community has an impact on general psychological well-being.[1] Homicide, rape, robbery and aggravated assaults are included in the violent crime rate.[2] High crime rates increase stress, deter residents from pursing healthy behaviors, and compromise overall well-being.[3]

Violent Crime Rate:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County (2012-2014)[3]	City of Cleveland (2014)[2]	National Benchmark*
Violent Crime Rate (per 100,000 population)	589.0	1,631.3	62.0[b]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Information by age, gender, and race/ethnicity is not available for this indicator.

Summary

The violent crime rate for the city of Cleveland is almost three times the rate for Cuyahoga County overall. The city of Cleveland (1,631.3) and Cuyahoga County (589.0) both experience violent crime rates well above the rate for the state of Ohio (290.0) and significantly higher than the national benchmark (62.0).[2]

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu). Accessed March 19, 2018.

[3] University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Social and Mental Health: Suicide

Mental disorders are defined as health conditions that involve alterations in mood, thinking and/or behavior. Often associated with impaired functioning and distress, mental disorders contribute to a variety of problems including pain, disability and death.[1] This measure is the number of deaths due to self-harm and is a leading health indicator associated with the *Healthy People* 2020 initiative.[1]

Suicide Rate, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Suicide Rate (per 100,000 population)**	12.2	12.2	10.2[a]

Does not meet the national benchmark. Requires a closer look.

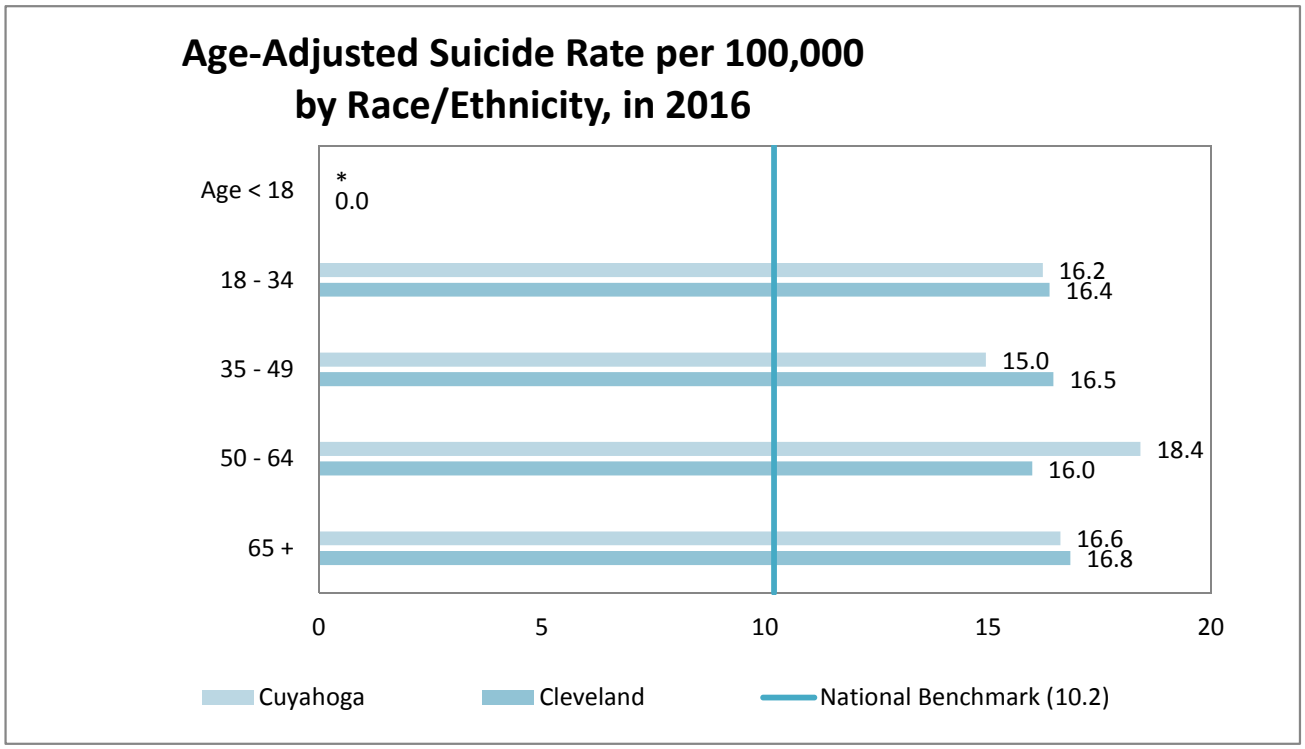
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

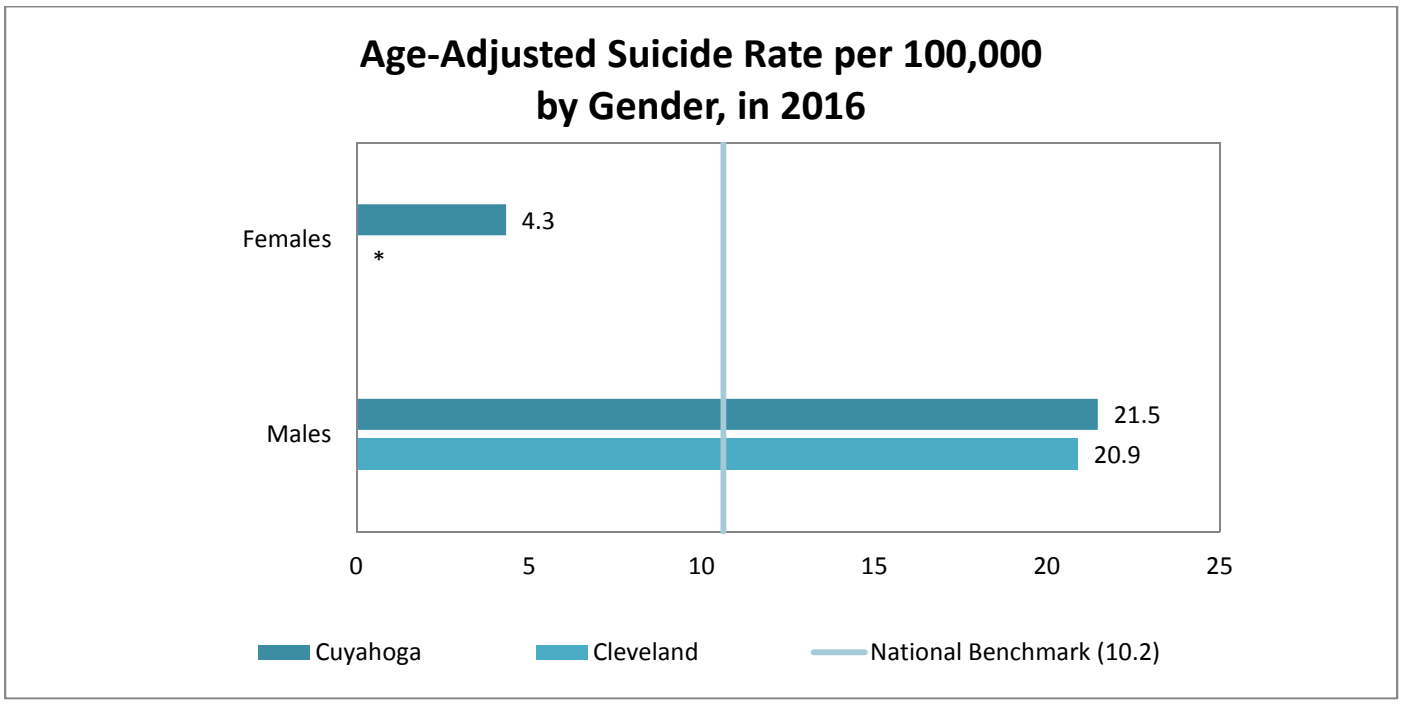
NA National benchmark was not identified.

** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

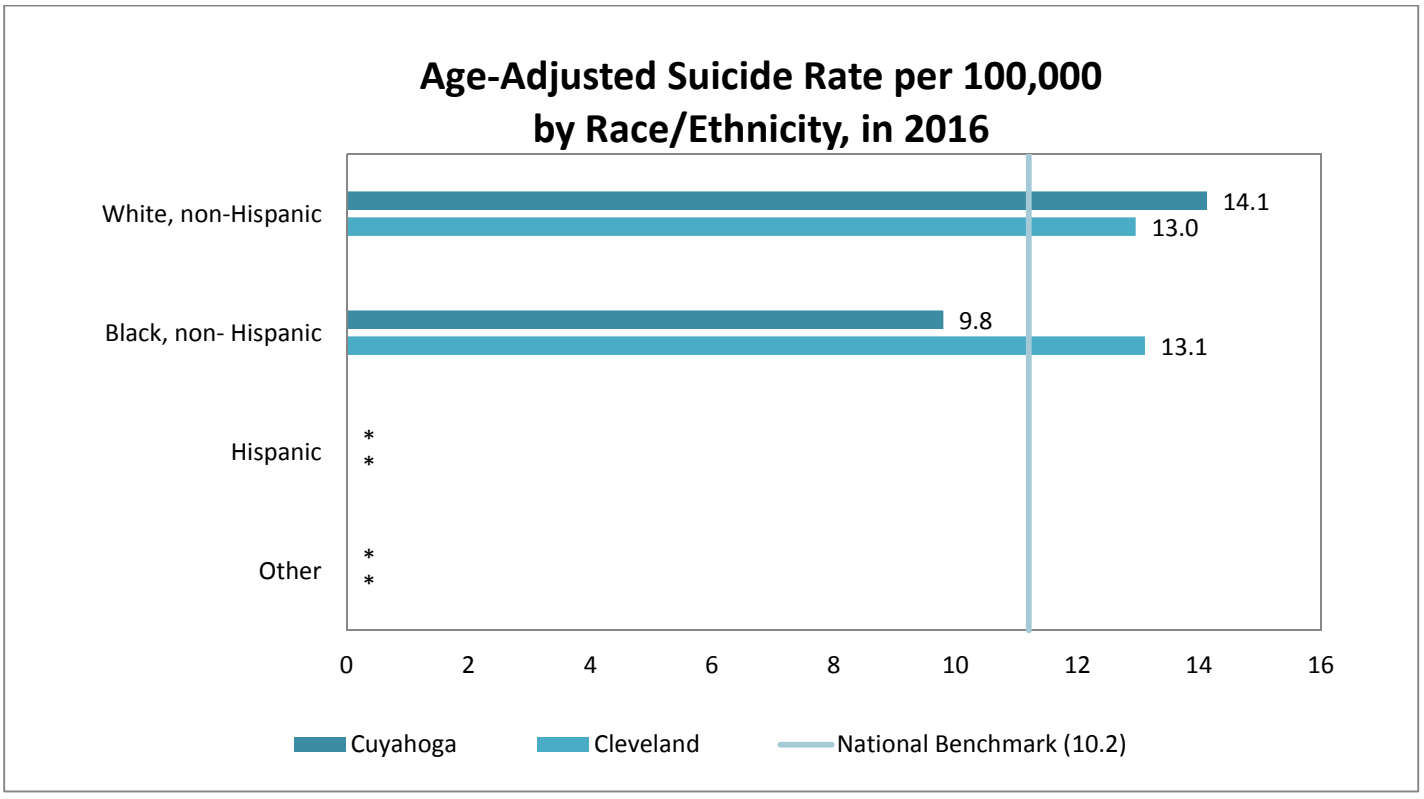


Note: Rate uses the 2010 population data for the denominator.

*Rates are not presented when there are less than 5 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 20 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 20 cases total for the time period due to instability.

Summary

This summary is in relation to suicide rates that are presented. Some suicide rates for certain subgroups were not able to be presented due to numbers of cases being less than 20. The overall suicide rates for Cuyahoga County (12.2) and the City of Cleveland (12.2) are higher than the national benchmark (10.2) but lower than the state of Ohio (14.1) and the nation (13.0 in 2014).[3]

References

[1] Healthy People 2020. Mental Health and Mental Disorders. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders?topicid=28. Accessed on April 29, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH)

[3] Ohio Selected Causes of Death (113 Categories). 2016. Ohio Department of Health (ODH). Available at http://publicapps.odh.ohio.gov/EDW/DataBrowser/Browse/Mortality. Accessed on April 4, 2018.

[4] Suicide deaths. The National Institute of Mental Health Information Resource Center. Available at https://www.nimh.nih.gov/health/statistics/suicide.shtml

Note: For additional information about this indicator please see the *Technical Guide.*

Social and Mental Health: Domestic Violence Rate

General psychological well-being is influenced by the presence or absence of violence in the home and the community.[1] Spousal abuse, parental abuse and sibling abuse are types of non-aggravated assaults that are considered domestic violence.[2]

Domestic Violence Rate, 2014:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Domestic Violence Rate (per 100,000 population)	Not Available	1,569.8	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
Note: Information by age, gender, and race/ethnicity is not available for this indicator.

Summary

Violence adversely affects health and welfare through premature death, disability and medical costs. Students who report exposure to violence in their neighborhood and school are at higher risk for school behavior problems.[3] The domestic violence rate in the City of Cleveland is 1,569.8 per 100,000 population. Although Cuyahoga County or national benchmark data are unavailable, the domestic violence rate is considered an important indicator of the health of a community.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.
[2] NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu). Accessed March 19, 2018.
[3] Medical Costs and Productivity Losses Due to Interpersonal and Self-directed Violence in the United States. Am J Prev Med 2007;32(6). Available at https://www.cdc.gov/violenceprevention/pdf/medical_costs.pdf. Accessed on May 8, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Social and Mental Health: Average Number of Poor Mental Health Days in the Past Month

The average number of poor mental health days within the past month is based on responses to the question: "*Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good*?" This question is asked as part of the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS). A person's overall quality of life is impacted by both physical and mental health.[1]

Average Number of Poor Mental Health Days Within the Past Month: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County (2016)[1]	City of Cleveland (2014)[1]	National Benchmark*
Average number of poor mental health days within the past month	3.7 days	6.2 days	3.1 days[b]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Information by gender and race/ethnicity is not available for this indicator.

Summary

The number of poor mental health days (3.7) reported by people living in Cuyahoga County is higher than the national benchmark of 3.1 days, but less than the rate for the state of Ohio (4.3 days).[2] City of Cleveland residents experience an average of 6.2 poor mental health days per month, which is twice the national benchmark and higher than both the state and overall Cuyahoga County rates.

References

[1] University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on April 26, 2018.

[2] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report.

Note: For additional information about this indicator please see the *Technical Guide.*

I. Maternal and Child Health: At-A-Glance Summary

The health of infants and children, a known vulnerable population, is a significant area for monitoring and comparison. Birth data and outcomes and mortality data for infants and children are included in this category. Given the correlation between maternal care and birth outcomes, measures of maternal use of and/or access to care are also included. It is important to note that births to teen mothers is a key indicator of increased risk of poor health outcomes for both mother and child.[1]

Summary of the *Maternal and Child Health* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Birth Rate Among Adolescents Females 10-14 Years Old (per 1,000)	2016	0.3	0.5	NA
Birth Rate Among Adolescents 15-17 Years Old (per 1,000)	2016	☆ 7.9	☆ 16.2	36.2[a]
Premature Births per 100 Live Births	2016	11.9	14.5	9.4[a]
Percent of Women Receiving Prenatal Care in First Trimester	2016	69.9%	61.9%	77.9%[a]
Percent of Mothers Who Smoked during Pregnancy	2016	9.1%	14.3%	1.4%[a]
Infant (birth to 1 year) Mortality Rate (per 1,000 live births)	2016	8.7	12.0	6.0[a]
Neonatal (birth to 28 days) Mortality Rate (per 1,000 live births)	2016	6.1	7.4	4.1[a]
Post-neonatal (1 month to 1 year) Mortality Rate (per 1,000 live births)	2016	2.6	4.6	2.0[a]
Death Rate for Children 1-4 Years Old (per 100,000 children)	2016	☆ 16.6	31.1	26.5[a]
Death Rate for Children 5-9 Years Old (per 100,000 children)	2016	☆ 9.1	**	12.4[a]
Death Rate for Children 10-14 Years Old (per 100,000 children)	2016	☆ 8.4	**	14.8[a]
Death Rate for Children 1-14 Years Old (per 100,000 children)	2016	10.9	17.4	NA

☆ Meets the national benchmark.
Does not meet the national benchmark. Requires a closer look.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rates are not presented when there are less than 5 cases total for the time period due to instability.

Summary

Both the Cuyahoga County and the city of Cleveland birth rates for adolescents 15-17 years of age are below the national benchmark. In both the city of Cleveland and Cuyahoga County overall, the percent of mothers who smoked during pregnancy and the percent of mothers not receiving prenatal care in the first trimester did not meet their respective national benchmarks. Infant mortality, neonatal mortality, and post-neonatal mortality rates for Cuyahoga County overall and the city of Cleveland do not meet the *Healthy People 2020* Goals. Child mortality rates for all three age groups (1-4, 5-9, and 10-14 years) in Cuyahoga County meet the national benchmarks. For all of the maternal and child indicators presented above, the city of Cleveland fares worse than Cuyahoga County overall.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

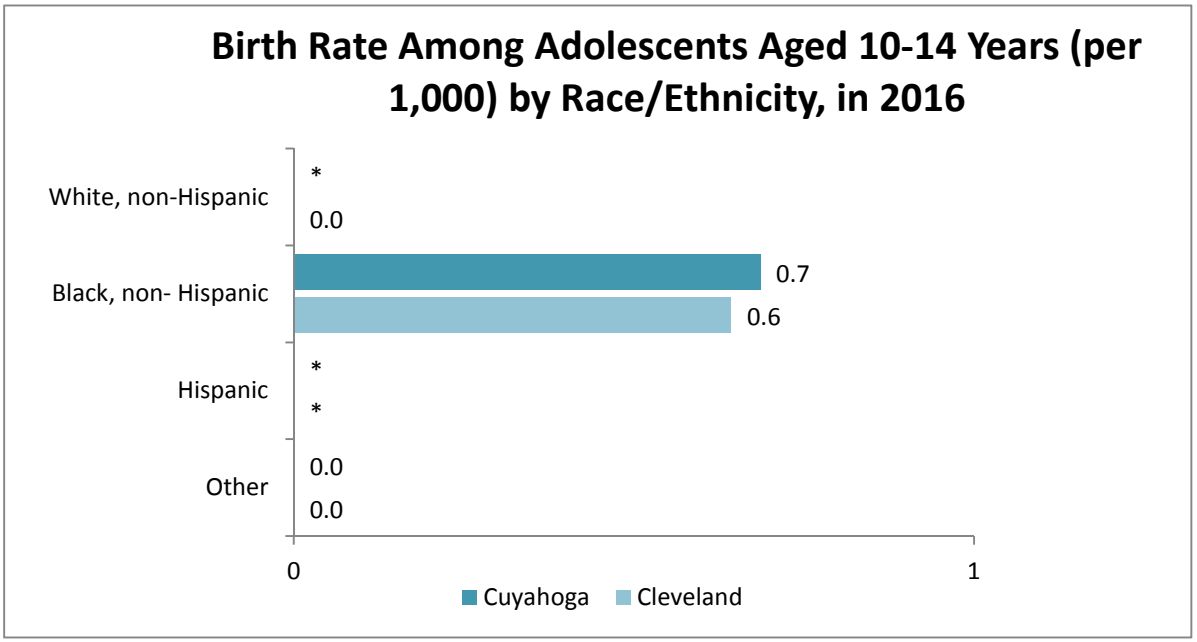
Maternal and Child Health: Adolescent Birth Rate

Becoming pregnant decreases the likelihood that adolescents will complete their education. By age 22, roughly 50% of teen mothers get a high school diploma, compared to 90% of teen girls who do not give birth. For teen fathers, only 50% who have children before age 18 finish high school or get their GED by age 22.[1] Most teen pregnancies are unintended, and children born due to unintended pregnancies have worse physical health and social/emotional outcomes.[2] This indicator measures the number of births occurring to girls 10-14 and 15-17 years of age.

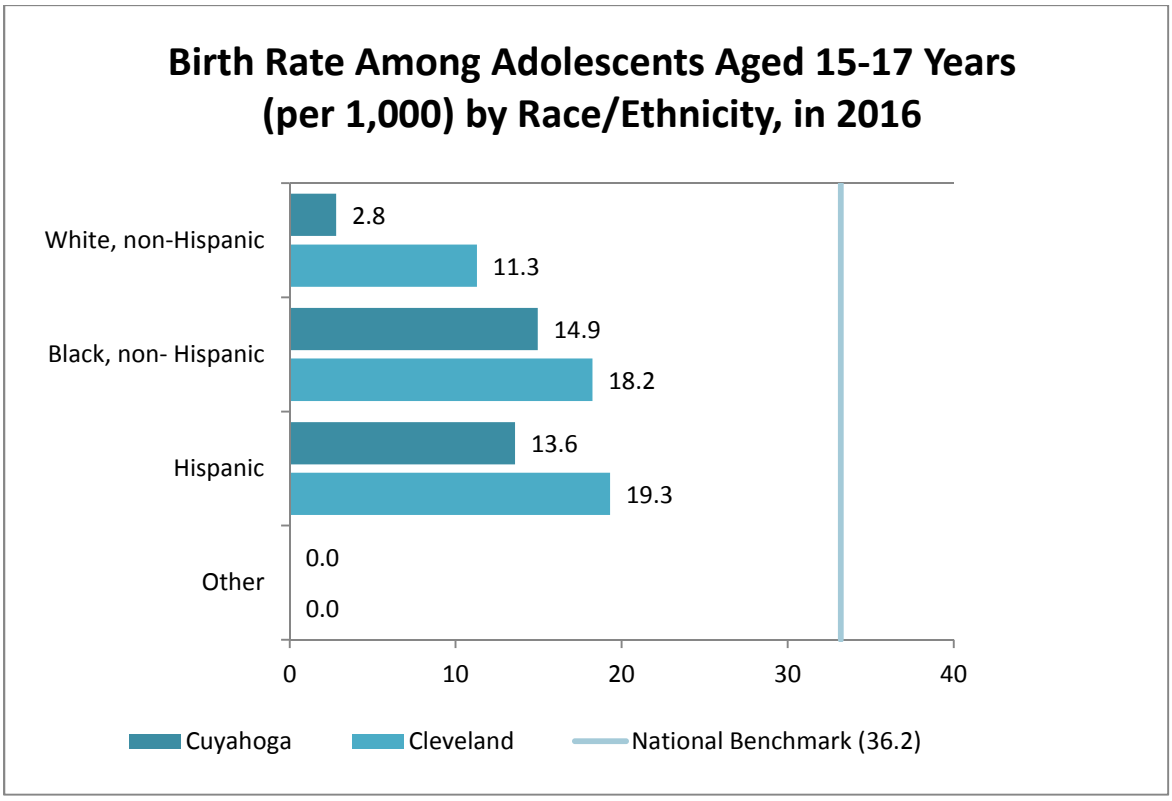
Birth Rate Among Adolescents, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Birth Rate Among Adolescents 10-14 Years Old (per 1,000 females)	0.3	0.5	NA
Birth Rate Among Adolescents 15-17 Years Old (per 1,000 females)	☆ 7.9	☆ 16.2	36.2[a]

☆ Meets the national benchmark.
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator.



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator.

Summary

Birth rates among adolescents 15 to 17 years old in the city of Cleveland are more than twice as high as rates for Cuyahoga County overall. The birth rate for 15 to 17 year olds in Cuyahoga County overall is lower than the nation (9.9 in 2015), but in the city of Cleveland, the birth rate for this age group (16.2) is higher than the national rate.[5]

References

[1] Healthy People 2020. 2020 Leading Health Indicator Topics, Reproductive and Sexual Health. Available at http://healthypeople.gov/2020/lhi/reproductiveHealth.aspx?tab=determinants. Accessed on April 30, 2018.
[2] Healthy People 2020. 2020 Family Planning Available at http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicId=13. Accessed on April 30, 2018.
[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

Note: For additional information about this indicator please see the *Technical Guide.*

Maternal and Child Health: Prematurity

The leading cause of death among America's newborns is prematurity. Newborns born premature that survive often have lifelong health problems including intellectual disabilities, cerebral palsy, chronic lung disease, blindness and hearing loss.[1] A birth is considered premature if the gestation period is less than 37 weeks. This indicator measures the percent of all live births that are born before 37 weeks gestation.[1]

Percent of Live Births that are Premature, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Percent Premature Births per 100 Live Births	11.9%	14.5%	9.4%[a]

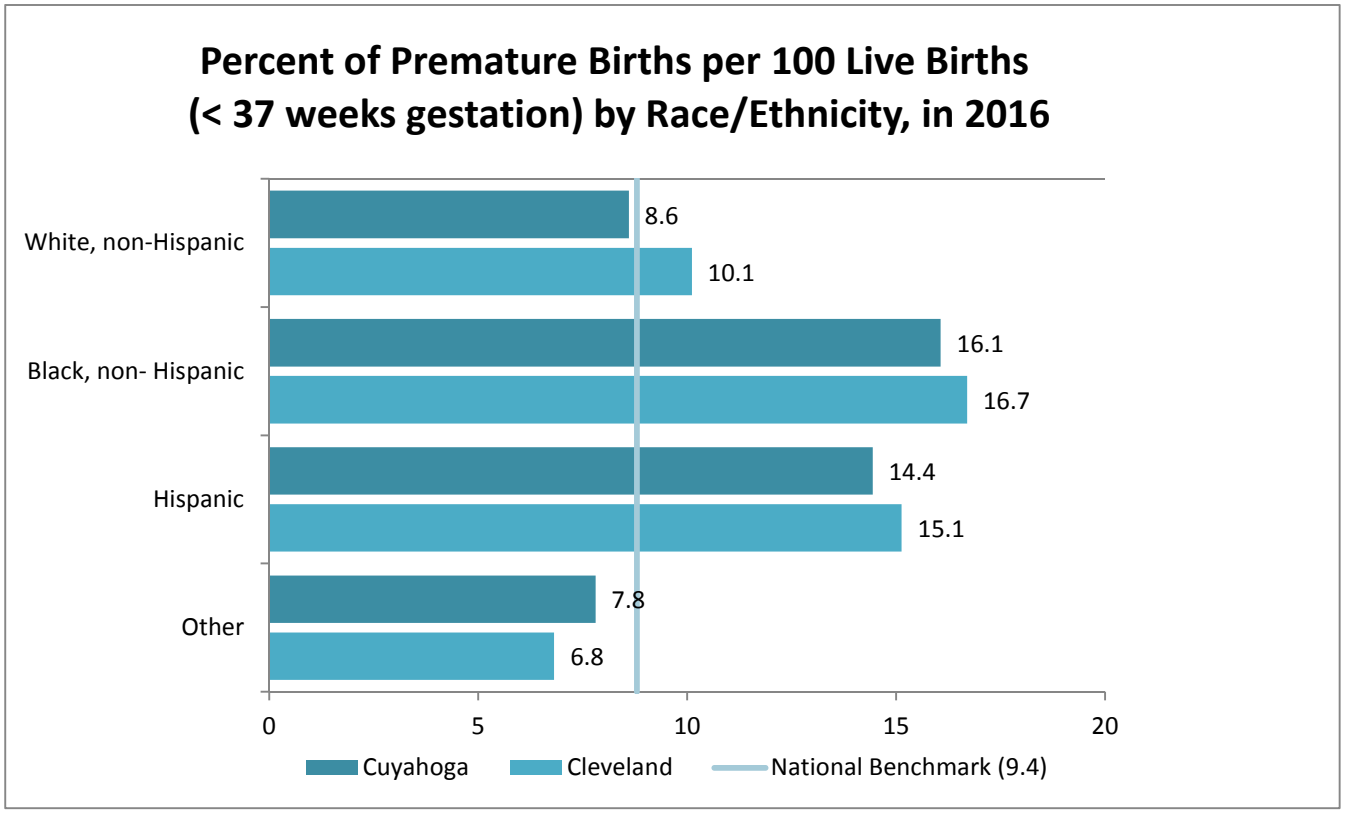
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.



Summary

The percent of premature births for Cuyahoga County overall and the city of Cleveland do not meet the national benchmark. Also, the percent of live births that are premature in Cuyahoga County overall and the city of Cleveland are higher than both the state of Ohio (10.3%) and the nation (9.6%).[3]

References

[1] March of Dimes. Prematurity Campaign. Available at http://www.marchofdimes.com/mission/prematurity-campaign.aspx. Accessed on April 30, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] March of Dimes. Prematurity Campaign. 2016 Premature Birth Report Card. Available at http://www.marchofdimes.com/materials/premature-birth-report-card-ohio.pdf Accessed on April 30, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Maternal and Child Health: Prenatal Care

Early prenatal care allows women and their health care providers to address health problems and health behaviors that can be especially important during the early stages of pregnancy. Women who get prenatal care in the first trimester have better birth outcomes and a lower risk of complications during pregnancy and childbirth.[1] This indicator measures the proportion of live births for which the woman received prenatal care in the first trimester.

Percent of Women Receiving Prenatal Care in the First Trimester, 2016: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Percent of Women Receiving Prenatal Care in First Trimester	69.9%	61.9%	77.9%[a]

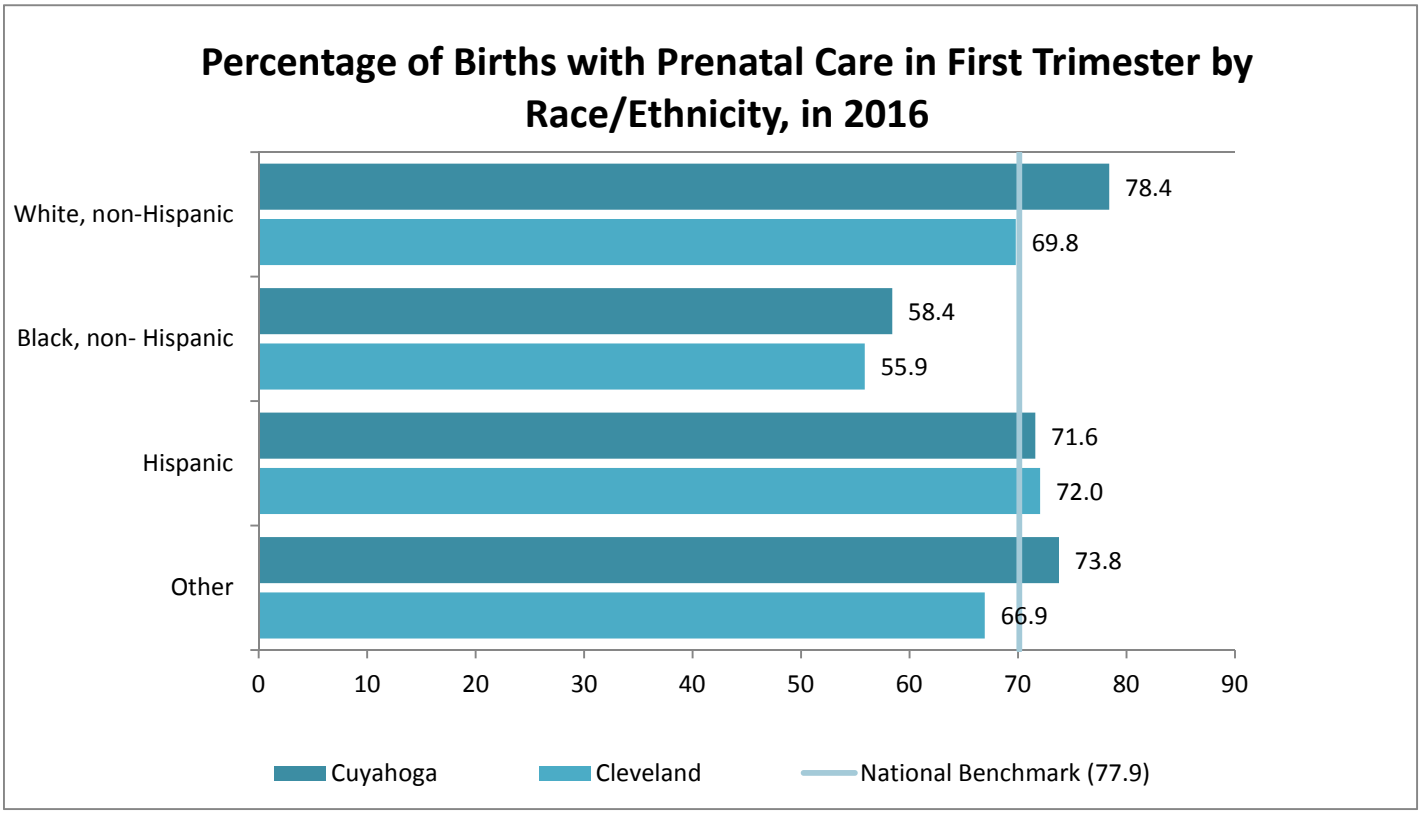
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.



Summary

The percent of women receiving prenatal care in the first trimester in Cuyahoga County overall and the city of Cleveland do not meet the *Healthy People 2020* goal. Also, geographic and racial/ethnic health disparities exist. Black, non-Hispanic women have lower rates of prenatal care in the first trimester compared to all other racial/ethnic groups. White-non-Hispanic women living in Cuyahoga County have first trimester prenatal care rates almost 10% higher than White, non-Hispanic women living in the city of Cleveland. The percent of women receiving prenatal care in the first trimester for Cuyahoga County overall and the city of Cleveland is also lower than the state of Ohio[3] (74.4% in 2014) and the nation[4] (77.1% in 2016).

References

[1] Ohio Department of Health. Ohio PRAMS Fact Sheet. Prenatal Care. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/prams---pregnancy-risk-assessment-monitoring-program/Reports-and-Fact-Sheets/prenatalcarefs.pdf?la=en Accessed on April 30, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] March of Dimes. PeriStats. Ohio. Quick Facts. Prenatal Care. Available at https://www.marchofdimes.org/peristats/Peristats.aspx Accessed on April 30, 2018.

[4] Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2016. National Vital Statistics Reports; vol 67 no 1. Hyattsville, MD: National Center for Health Statistics. 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Maternal and Child Health: Smoking During Pregnancy

The health, nutrition and behaviors of mothers during pregnancy and early childhood influences the cognitive and physical development of infants and children.[1] Mothers who smoke are at an increased risk for delivering a low birth weight infant as well as being at increased risk for miscarriage, birth defects and Sudden Infant Death Syndrome (SIDS).[2] This indicator measures the number of mothers who smoked at any time during their pregnancy. The *Healthy People 2020* goal is to reduce smoking among pregnant women to 1.4%.

Percent of Mothers Who Smoked During Pregnancy, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Percent of Mothers Who Smoked During Pregnancy	9.1%	14.3%	1.4%[a]

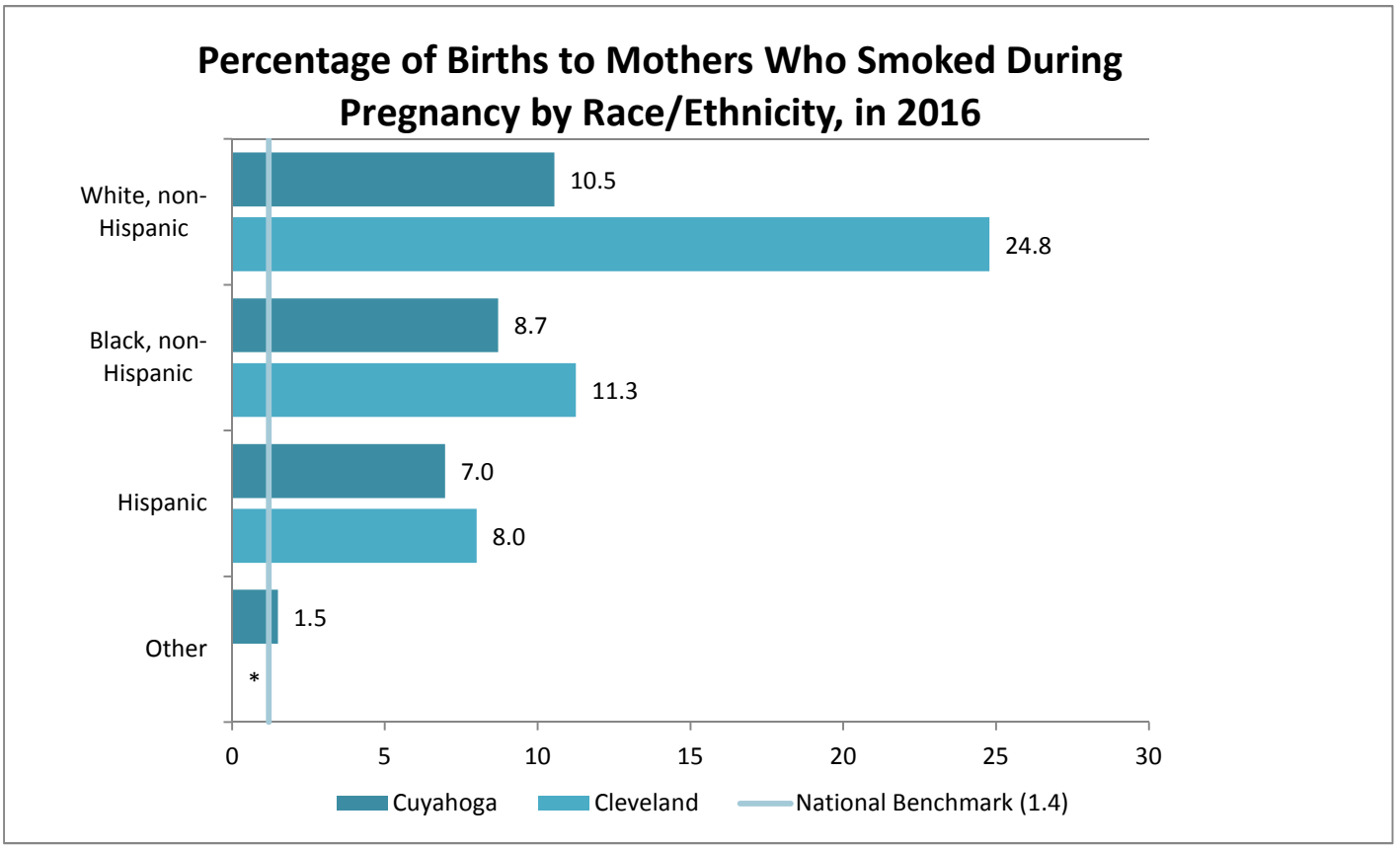
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.



Summary

The percent of women who smoked during pregnancy for Cuyahoga County overall and the city of Cleveland do not meet the Healthy People 2020 goal. The biggest geographic disparity is among White, non-Hispanic mothers where the maternal smoking percentage for the city of Cleveland is twice as high as for the county overall. Also, the percent of mothers who smoked during pregnancy in Cuyahoga County overall is lower than in the state of Ohio[4] (16.9%), but higher than the national rate (7.2%).[5]

References

[1] Healthy People 2020. Maternal, Infant, and Child Health. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health. Accessed on April 30, 2018.

[2] Centers for Disease Control and Prevention. Reproductive Health. Tobacco Use and Pregnancy. Available at http://www.cdc.gov/reproductivehealth. Accessed on April 30, 2018.

[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[4] Ohio Department of Health. Ohio Partners for Smoke Free Families (OPSFF): A perinatal smoking cessation program. Available at www.odh.gov/odhprograms/psmok/presmoke1.aspx. Accessed on April 30, 2018.

[5] Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2016. National Vital Statistics Reports; vol 67 no 1. Hyattsville, MD: National Center for Health Statistics. 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Maternal and Child Health: Infant Mortality

Key to the health of the next generation is ensuring the well-being of mothers, infants and children. An understanding of the health and well-being of these populations can help predict future public health challenges for communities, families and the health care system.[1]

The infant mortality rate is defined as deaths of infants less than one year of age per 1,000 births. The *Healthy People 2020* goal is to reduce the infant mortality rate to 6.0 deaths per 1,000 births. The neonatal infant mortality rate is the number of deaths within the first 28 days of life per 1,000 live births. The *Healthy People 2020* goal is to reduce the neonatal infant mortality rate to 4.1 deaths per 1,000 live births. Post-neonatal mortality rate is defined as the number of deaths after the first 28 days of life and before 1 year of age per 1,000 live births. The *Healthy People 2020* goal is to reduce the post-neonatal mortality rate to 2 deaths per 1,000 live births.

Infant Mortality, Neonatal Mortality, and Post-neonatal Mortality Rates, 2016: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Infant Mortality Rate (birth to 1 year, per 1,000 live births)	8.7	12.0	6.0[a]
Neonatal Mortality Rate (birth to 28 days per 1,000 live births)	6.1	7.4	4.1[a]
Post-neonatal Mortality Rate (1 month to 1 year)	2.6	4.6	2.0[a]

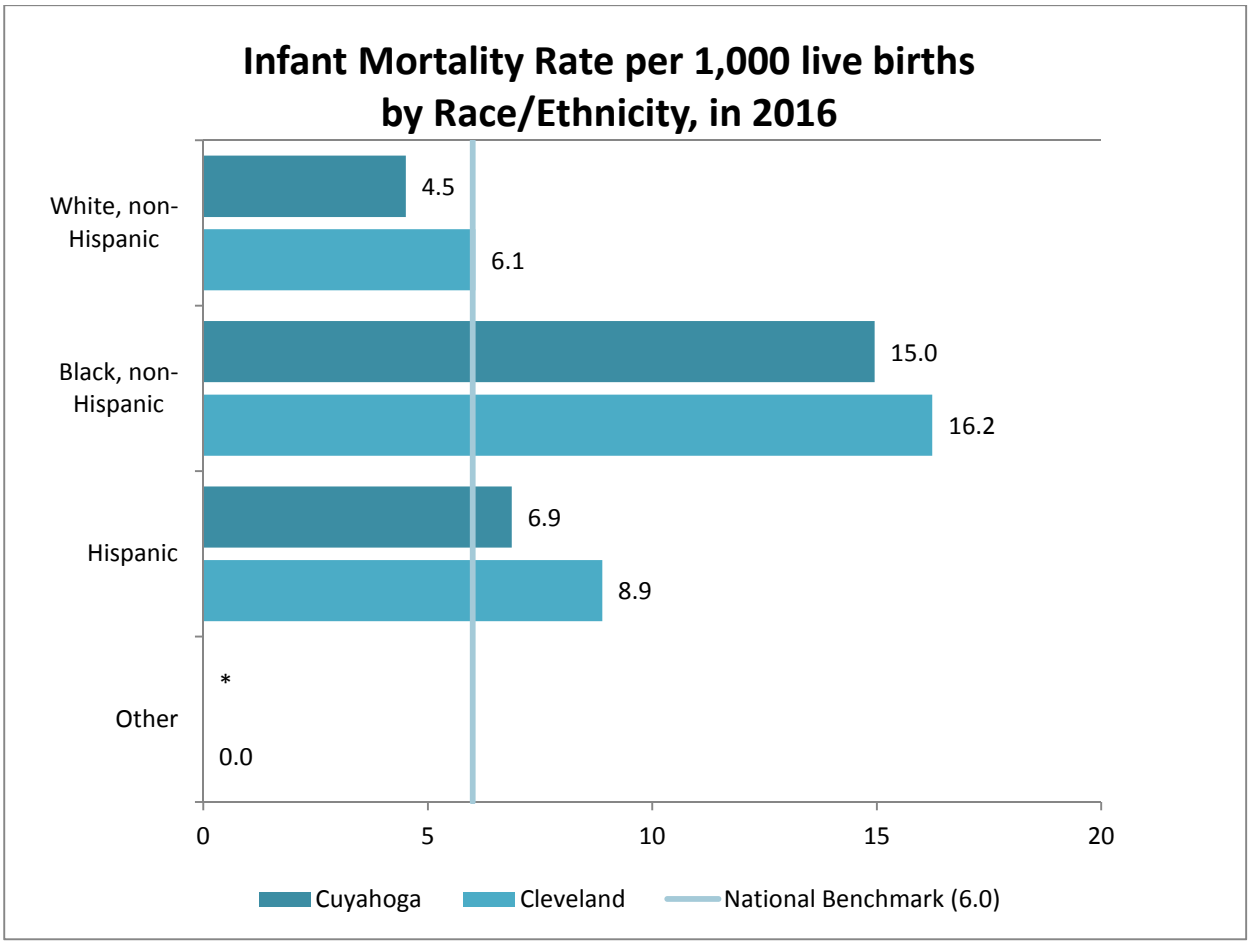
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

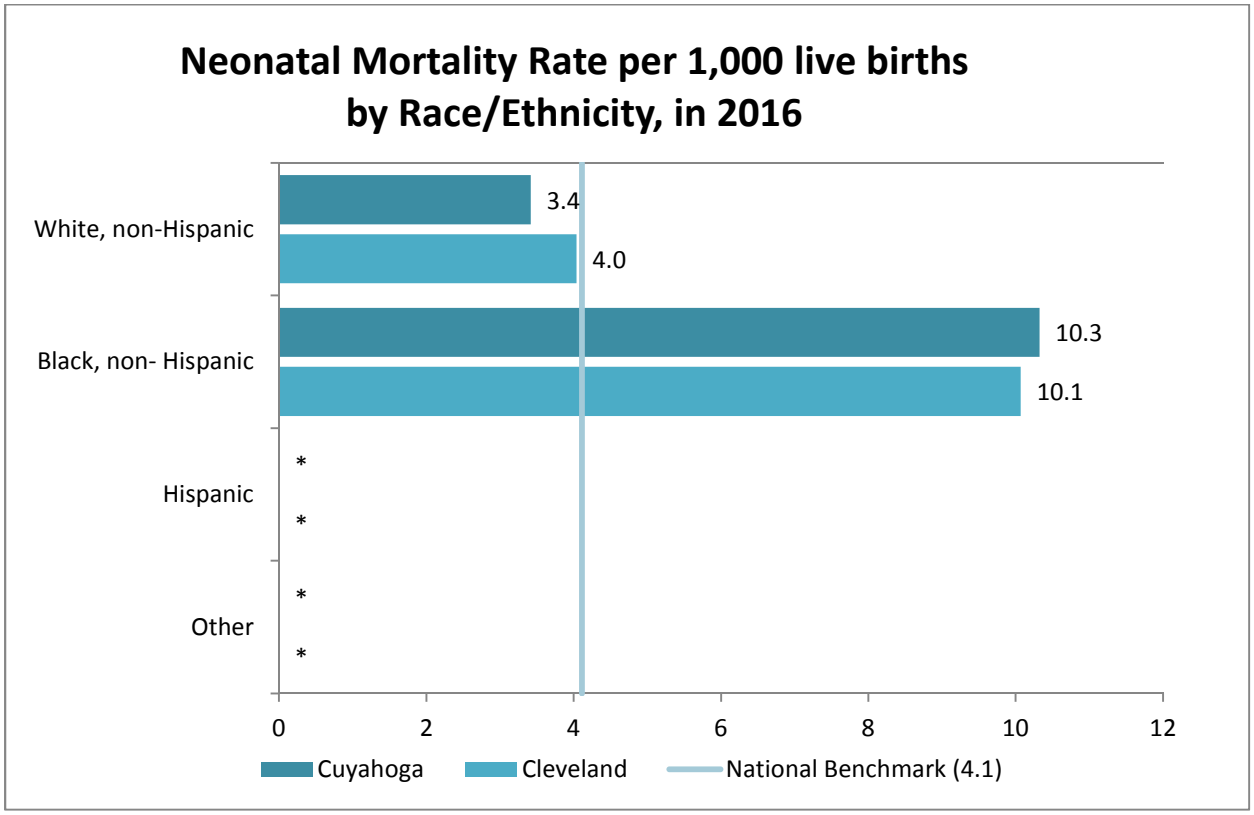
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

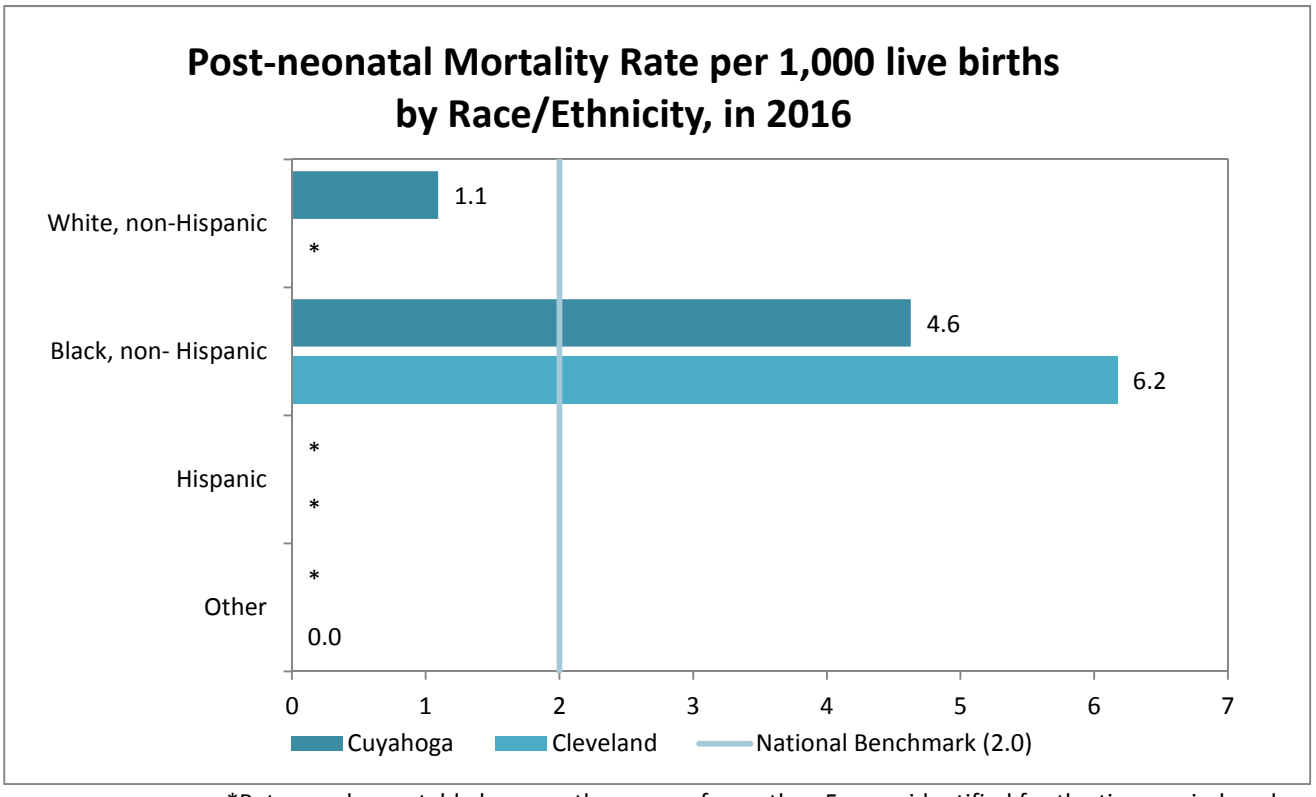
NA National benchmark was not identified.



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator.



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator.



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator.

Summary

Infant mortality, neonatal mortality, and post-neonatal mortality rates for Cuyahoga County overall and the city of Cleveland do not meet the *Healthy People 2020* goals and the city of Cleveland fares worse than the county overall on all three measures. The infant mortality, neonatal mortality, and post-neonatal mortality rates for Cuyahoga County overall and the city of Cleveland are higher than the rates for the state of Ohio (7.4, 5.2, and 2.3, respectively).[3] Of particular concern is the significantly higher infant mortality, neonatal mortality and post-neonatal mortality rates among Black, non-Hispanic babies compared to White babies.

References

[1] Healthy People 2020. Maternal, Infant, and Child Health. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health . Accessed on April 30, 2018.
[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).
[3] Ohio Department of Health. 2016 Ohio Infant Mortality Data: General Finding. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/cfhs/OEI/2016-Ohio-Infant-Mortality-Report-FINAL.pdf. Accessed on May 3, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Maternal and Child Health: Child Deaths

According to the National Center for Health Statistics' National Vital Statistics System (NVSS), the four primary causes of deaths to children 1-14 years old are unintentional injuries, birth defects, homicide, and cancer.[1] This indicator measures the number of deaths to children 1-14 years old. The three *Healthy People 2020* goals related to this indicator are to reduce the mortality rate to 26.5 per 100,000 children 1-4 years old, to 12.4 per 100,000 children 5-9 years old, and to 14.8 per 100,000 children 10-14 years old.[2]

Death Rates Among Children 1-14 Years Old, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Death Rate for Children 1-4 Years Old (per 100,000 children)	☆ 16.6	31.1	26.5[a]
Death Rate for Children 5-9 Years Old (per 100,000 children)	☆ 9.1	**	12.4[a]
Death Rate for Children 10-14 Years Old (per 100,000 children)	☆ 8.4	**	14.8[a]
Death Rate for Children 1-14 Years Old (per 100,000 children)	10.9	17.4	NA

☆ Meets the national benchmark.

Does not meet the national benchmark. Requires a closer look.

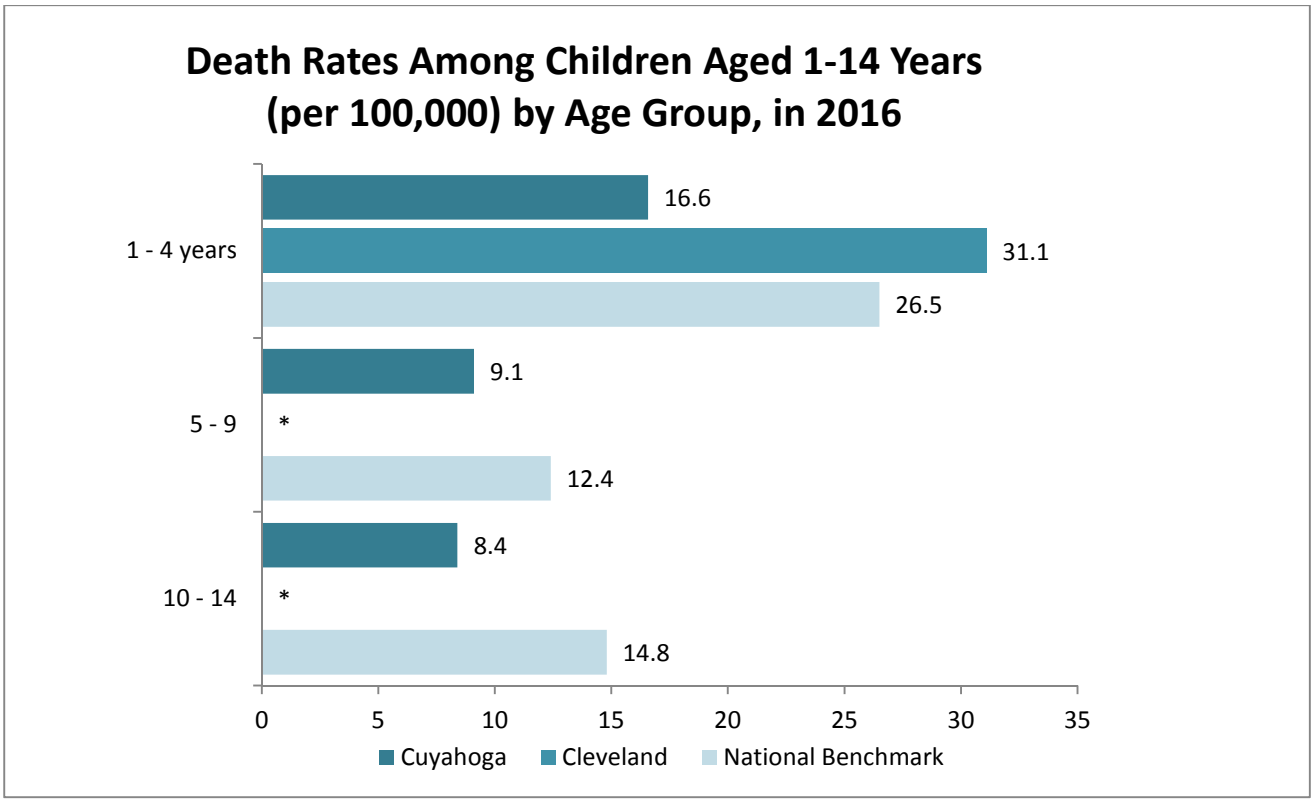
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

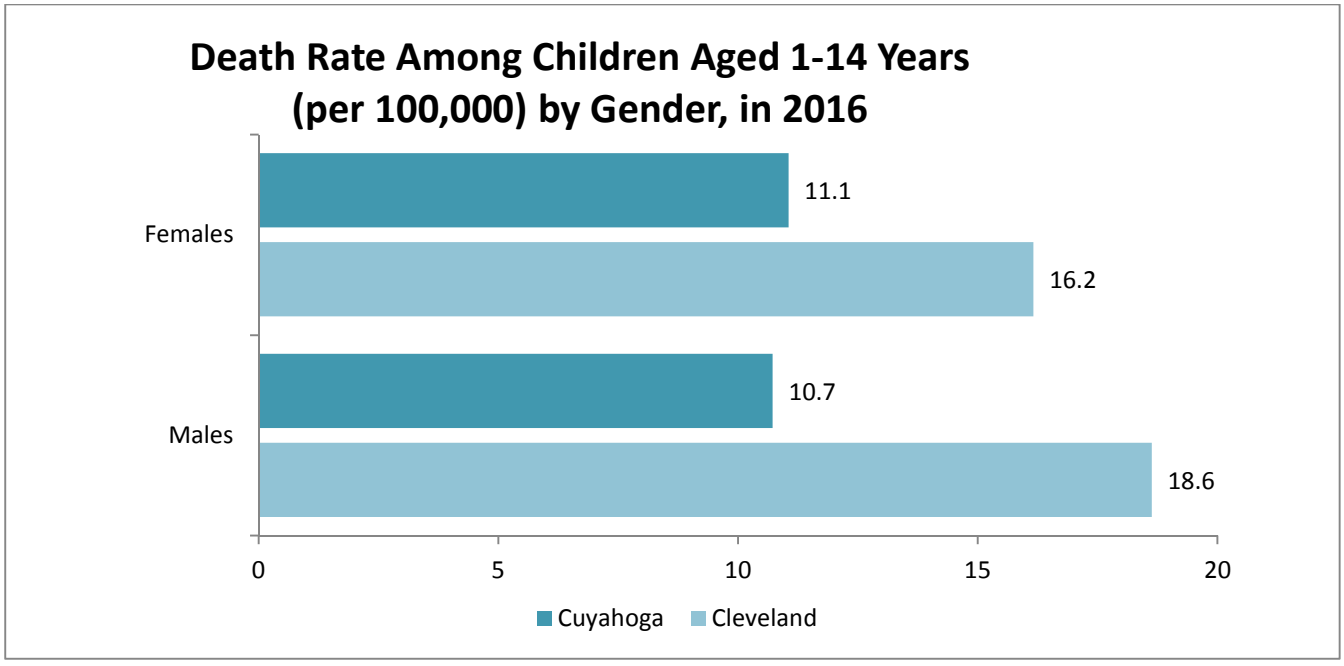
[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

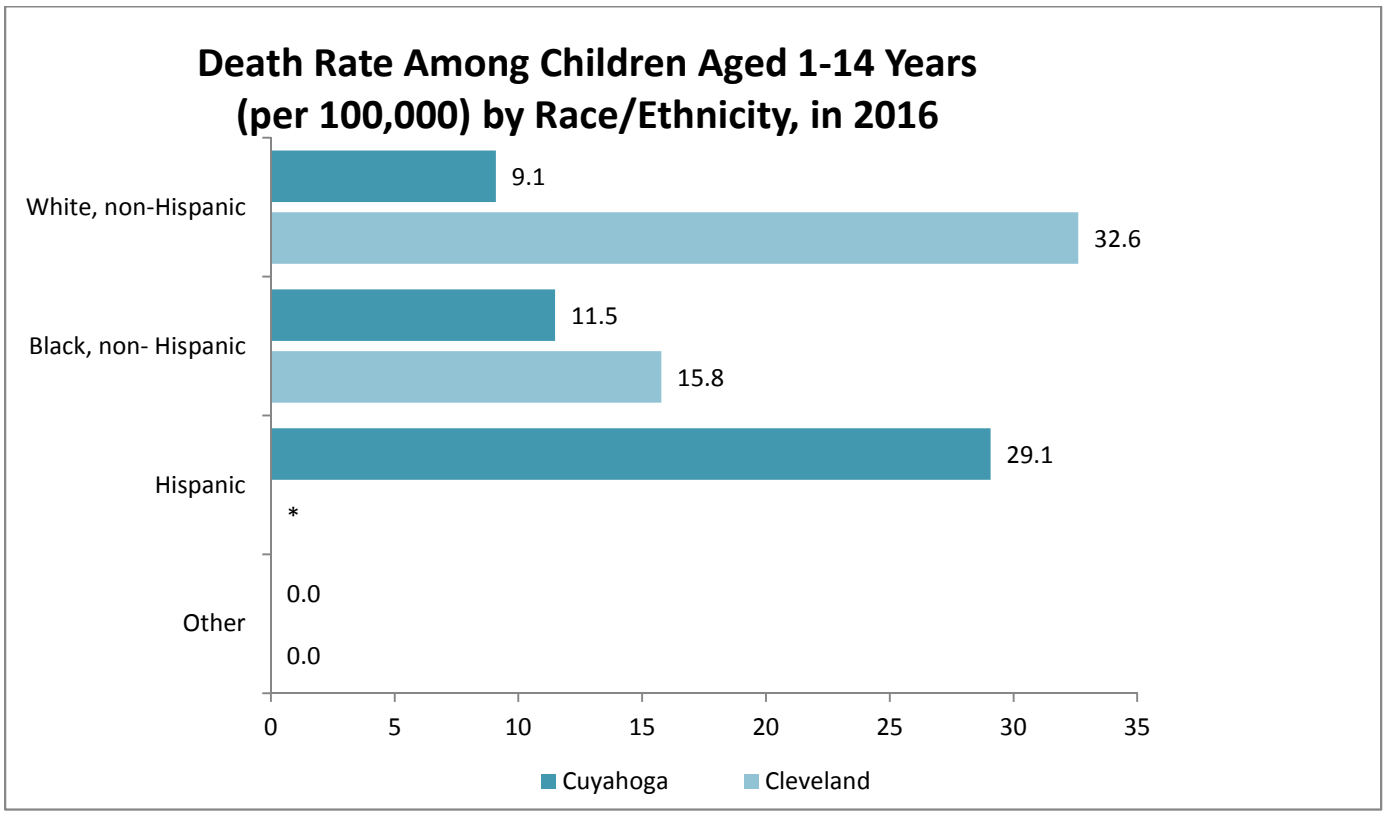
** Rates are not presented when there are less than 5 cases total for the time period due to instability.



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator



*Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator



***Rate may be unstable because there were fewer than 5 cases identified for the time period analyzed.
Note: Rate uses the 2010 population data for the denominator

Summary

Child mortality rates for all three age groups (1-4, 5-9, and 10-14 years) in Cuyahoga County overall meet the *Healthy People 2020* goal. The child mortality rate for children 1 to 4 years old in the city of Cleveland are almost twice the rate compared to Cuyahoga County overall and do not meet the *Healthy People 2020* goal. The national child mortality rates for children ages 1 to 4 and 5 to 9 were 24.9 and 13.2 in 2015.[2]

References

[1] Child Health. National Center for Health Statistics. https://www.cdc.gov/nchs/fastats/child-health.htm Accessed on April 30, 2018.
[2] Healthy People 2020. Maternal, Infant, and Child Health. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health. Accessed on April 30, 2018.
[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

Note: For additional information about this indicator please see the *Technical Guide.*

J. Death, Illness, and Injury: At-A-Glance Summary

A community's health status is measured in two ways: mortality (death rates within a population) and morbidity (incidence and prevalence of disease). Mortality rates may be shown as crude rates or age-adjusted rates; by degree of premature death (often shown as years of potential life lost); and by cause (diseases, i.e. cancer and non-cancer; or injury, i.e. intentional and unintentional). Morbidity rates may be shown as age-adjusted incidence of cancer and chronic disease.[1]

Summary of the *Death, Illness, and Injury* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Mortality rate for all causes[2] **	2016	836.9	1,063.2	NA
Mortality rate for all cancer types[2]**	2016	185.0	226.2	160.6[a]
Mortality rate for cardiovascular disease[2]**	2016	199.8	255.1	103.4[a]
Number of years of potential life lost (YPLL)[2]	2016	9,365.4	13,367.4	5,300[b]
Percent of respondents reporting their health status as fair or poor[3,4]	2016 (Cuyahoga) 2014 (Cleveland)	16.0%	28.7%	12.0%[b]
Average number of sick days within the past month[3,4]	2016 (Cuyahoga) 2014 (Cleveland)	3.7	5.0	3.0[b]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator. Rates are per 100,000 population.

Summary

Across all indicators in this category, Cuyahoga County overall and the city of Cleveland are not achieving goals set through national benchmarks, where national benchmarks are available. The city of Cleveland fares worse than the county overall across all indicators. More than one in every four residents living in the city of Cleveland report that they are in fair or poor health compared to roughly one in every six residents in Cuyahoga County overall.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018.

[4] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report.

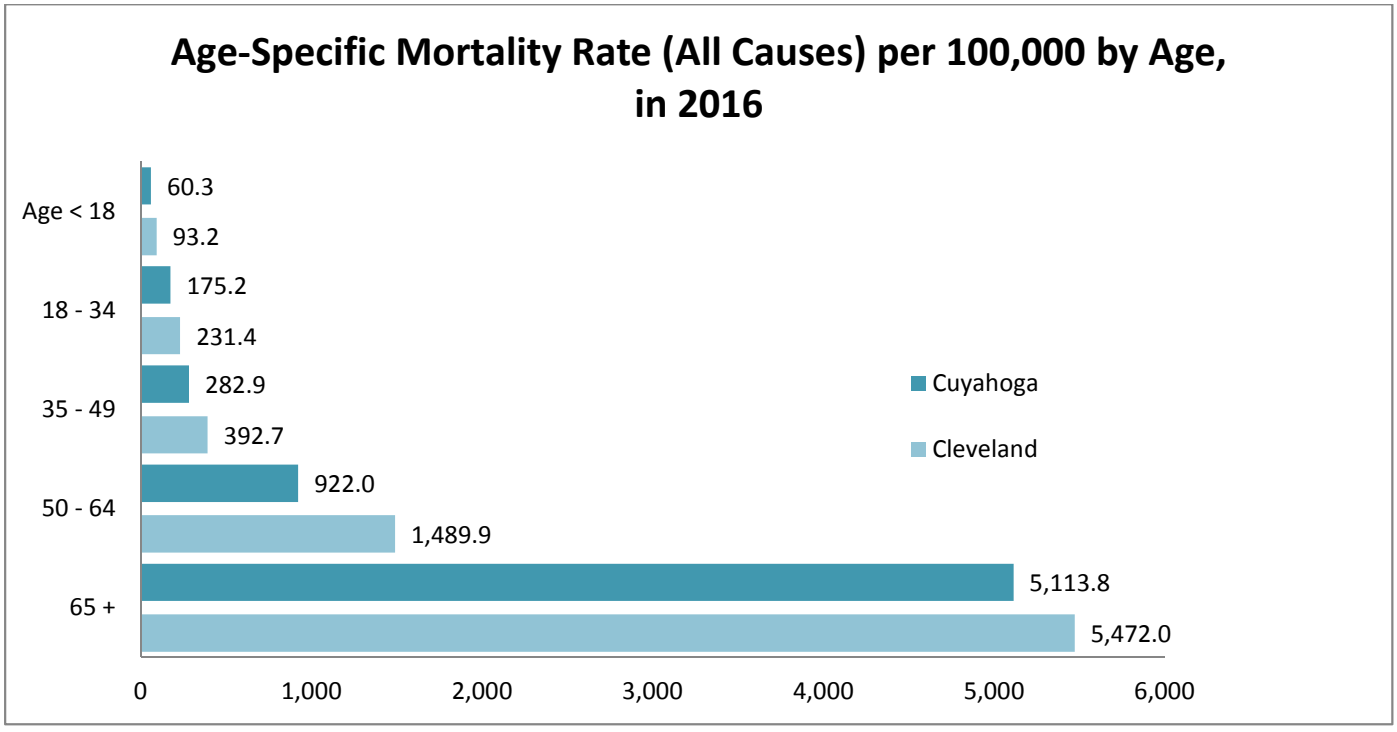
Death, Illness, and Injury: Mortality Rate for All Causes

Evaluation of the health status in a community includes measurement of rates of death within a population (commonly referred to as mortality) and rates of the incidence (new cases) and prevalence (existing cases) of disease (commonly referred to as morbidity).[1] This indicator measures the number of deaths due to all causes.

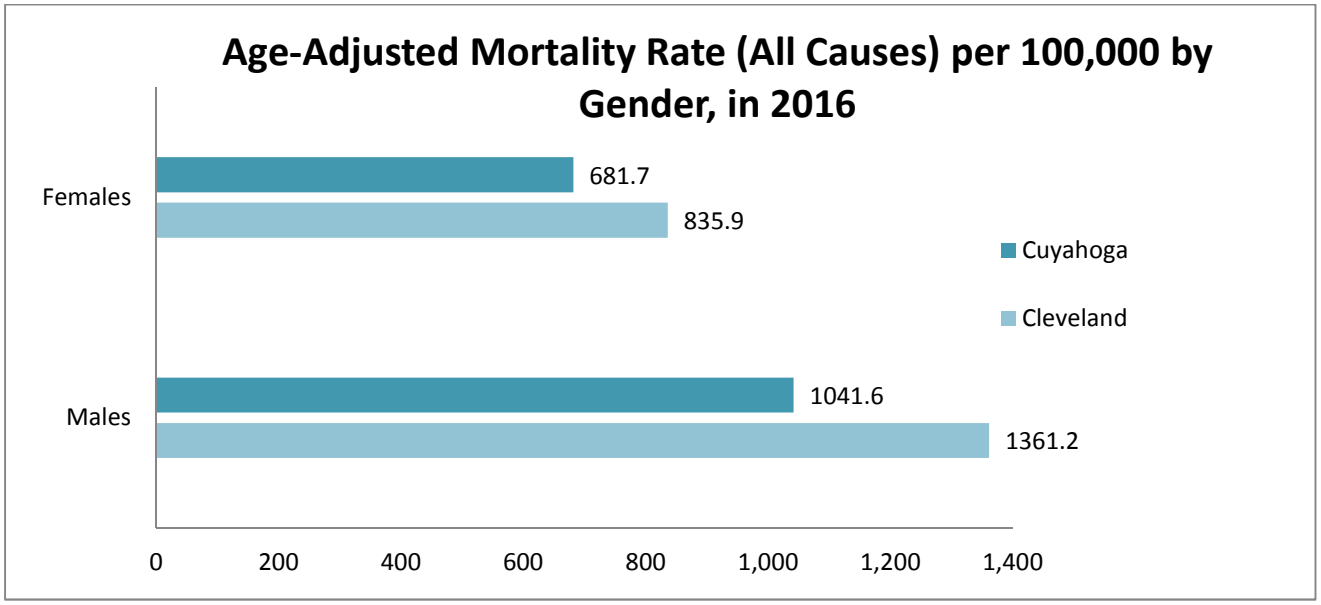
Mortality Rate for All Causes, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Mortality rate for all causes (per 100,000 population)**	836.9	1,063.2	NA

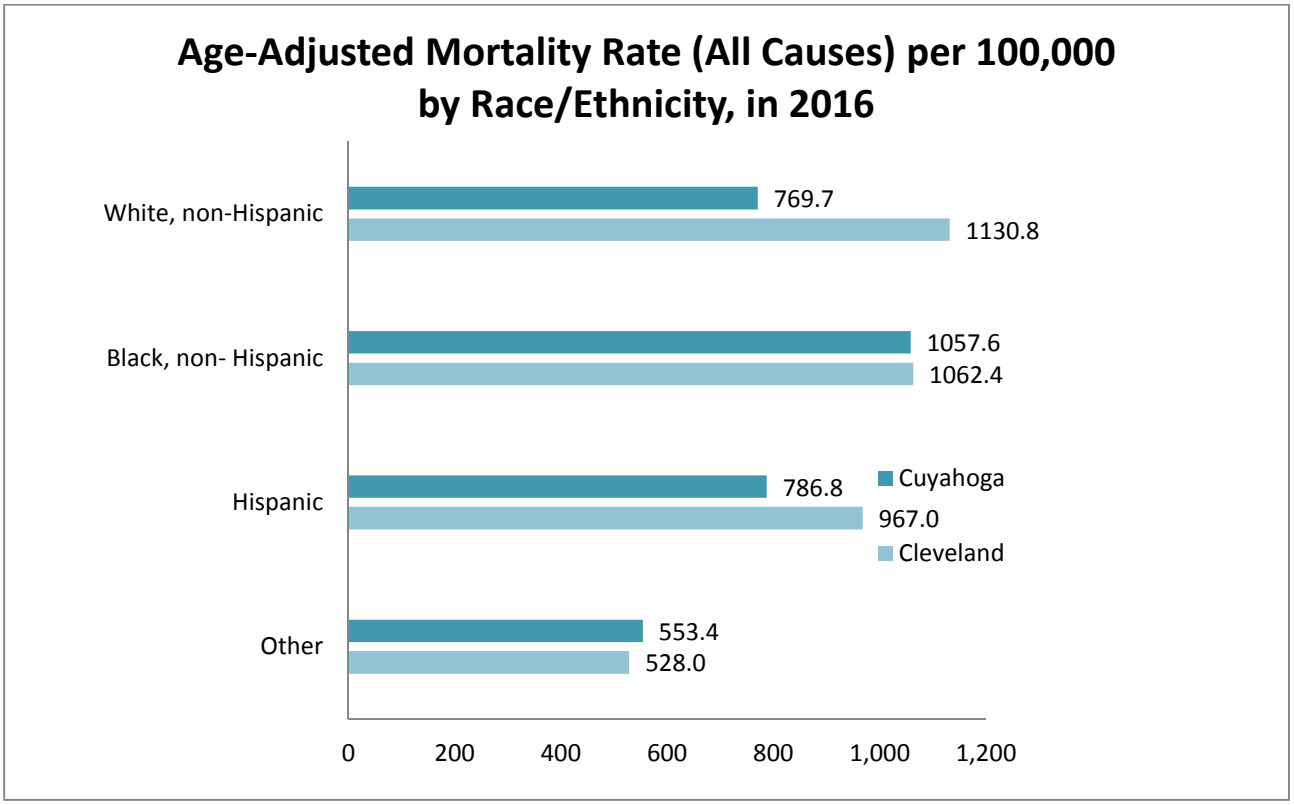
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is age-specific and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

Summary

Across all groups (i.e. age, gender, and race/ethnicity), the age-adjusted mortality rates due to all causes were higher for the city of Cleveland compared to Cuyahoga County overall (except for individuals of 'Other' race/ethnicity). The greatest racial/ethnic disparity was within the White, non-Hispanic population where the

mortality rate for Whites living in the city of Cleveland was 47% higher compared to Whites living in Cuyahoga County, overall. Also, the Cuyahoga County mortality rate for all causes was lower than the state of Ohio rate (832.3)[3] and higher than the national rate (728.8).[4] The mortality rate for the city of Cleveland was higher than both the state and the nation.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments. Accessed on May 8, 2018.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on May 11, 2018.

[4] Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017.

Note: For additional information about this indicator please see the *Technical Guide.*

Death, Illness, and Injury: Cancer Mortality Rate

Reducing risk factors such as tobacco use, physical inactivity, poor nutrition, obesity and ultraviolet light exposure may help prevent many cancers. Some cancers can be prevented by getting vaccinated against the hepatitis B virus and human papillomavirus.[1] This indicator measures the number of deaths due to all cancer types.

Cancer Mortality Rate, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Mortality rate for all cancer types (per 100,000 population)**	185.0	226.2	160.6[a]

Does not meet the national benchmark. Requires a closer look.

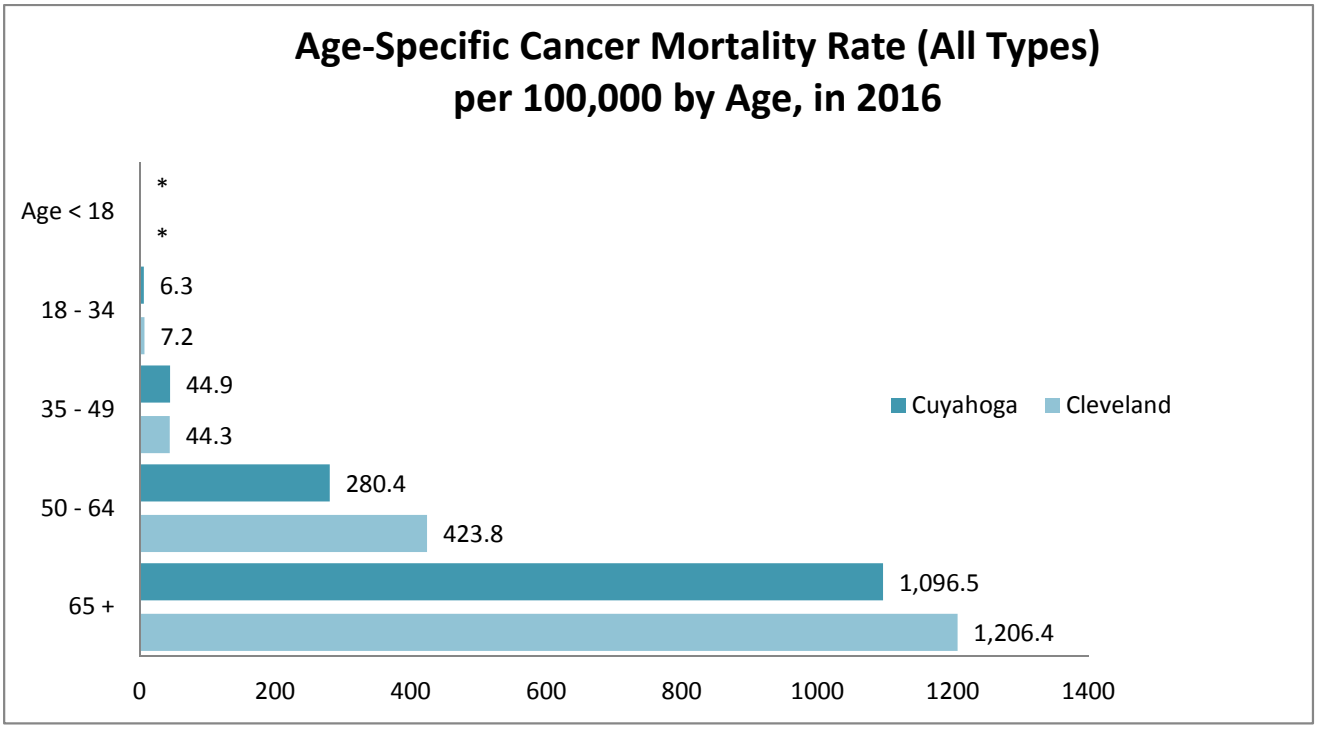
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

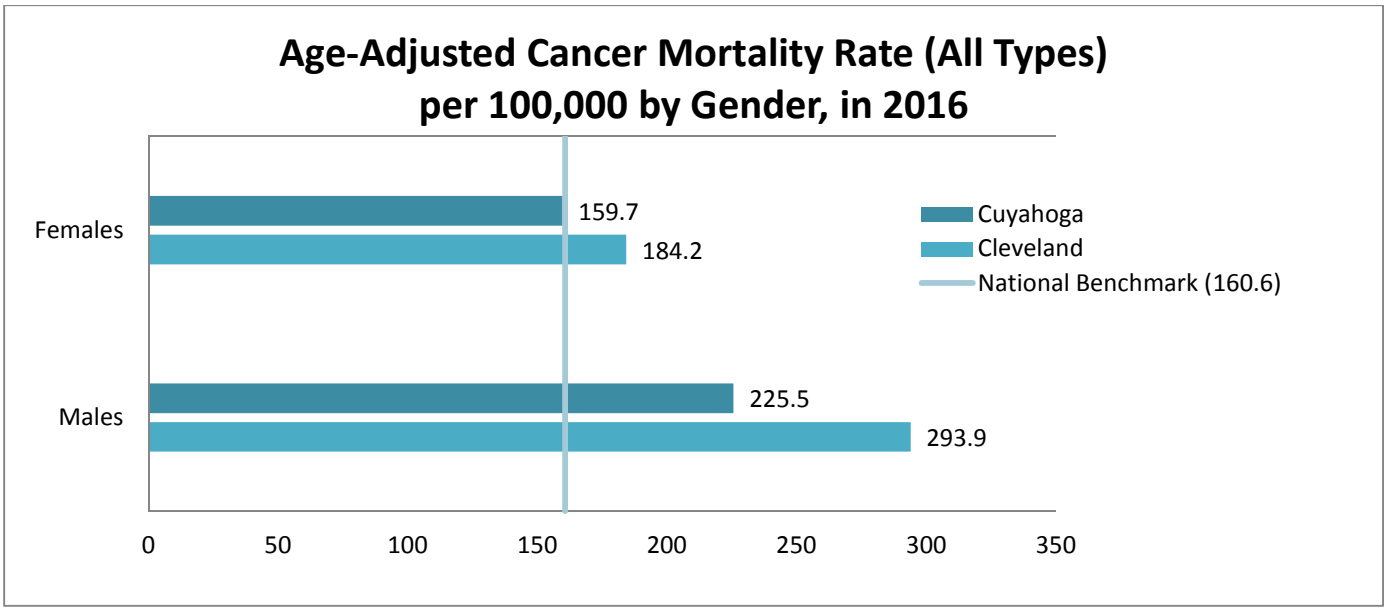
[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

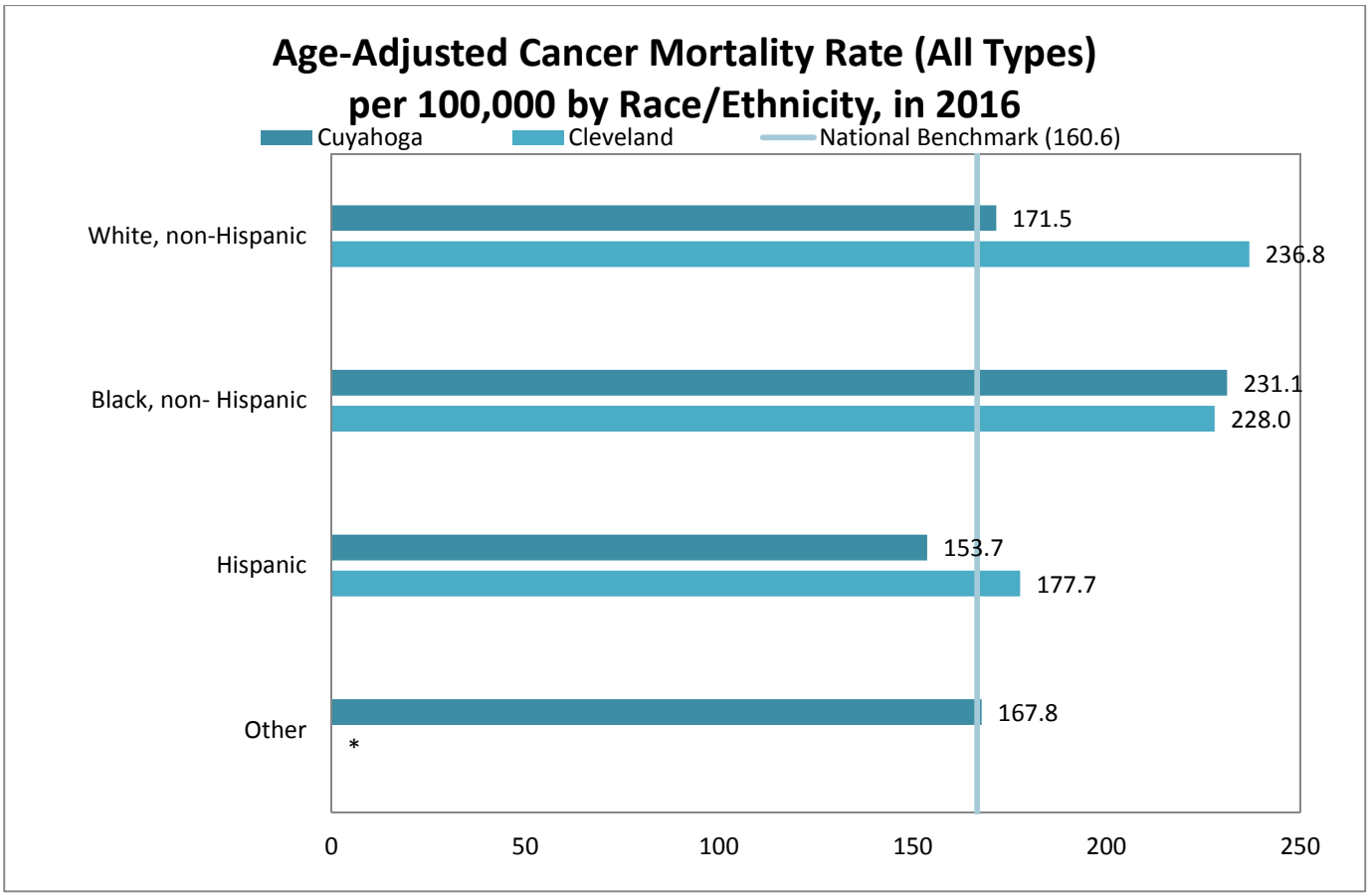
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is age-specific and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

Summary

Across demographic groups (i.e. gender and race/ethnicity), the cancer mortality rate was higher for city of Cleveland residents compared to Cuyahoga County residents overall, except for those ages 35 to 49 years and Black, non-Hispanic individuals. The greatest racial/ethnic disparity was within the White, non-Hispanic population where the cancer mortality rate for Whites living in the city of Cleveland was 38% higher compared to Whites living in the County overall. Also, both Cuyahoga County (185.0) and the City of Cleveland (226.2) have higher cancer mortality rates compared to the state of Ohio (173.4)[3] and the nation (155.8).[4]

References

[1] Healthy People 2020. Cancer. Accessible at http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=5. Accessed on June 27, 2012.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on May 11, 2018.

[4] Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017.

Note: For additional information about this indicator please see the *Technical Guide.*

Death, Illness, and Injury: Cardiovascular Disease Mortality Rate

Since 1921, the leading cause of death in the United States has been heart disease. However, age-adjusted cardiovascular disease death rates have declined 60% since 1950, which represents one of the most critical public health achievements of the 20th century.[1] This indicator measures the number of people with heart disease as the underlying cause of death.

Mortality rate for Cardiovascular Disease, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Mortality rate for cardiovascular disease (per 100,000 population)**	199.8	255.1	103.4[a]

Does not meet the national benchmark. Requires a closer look.

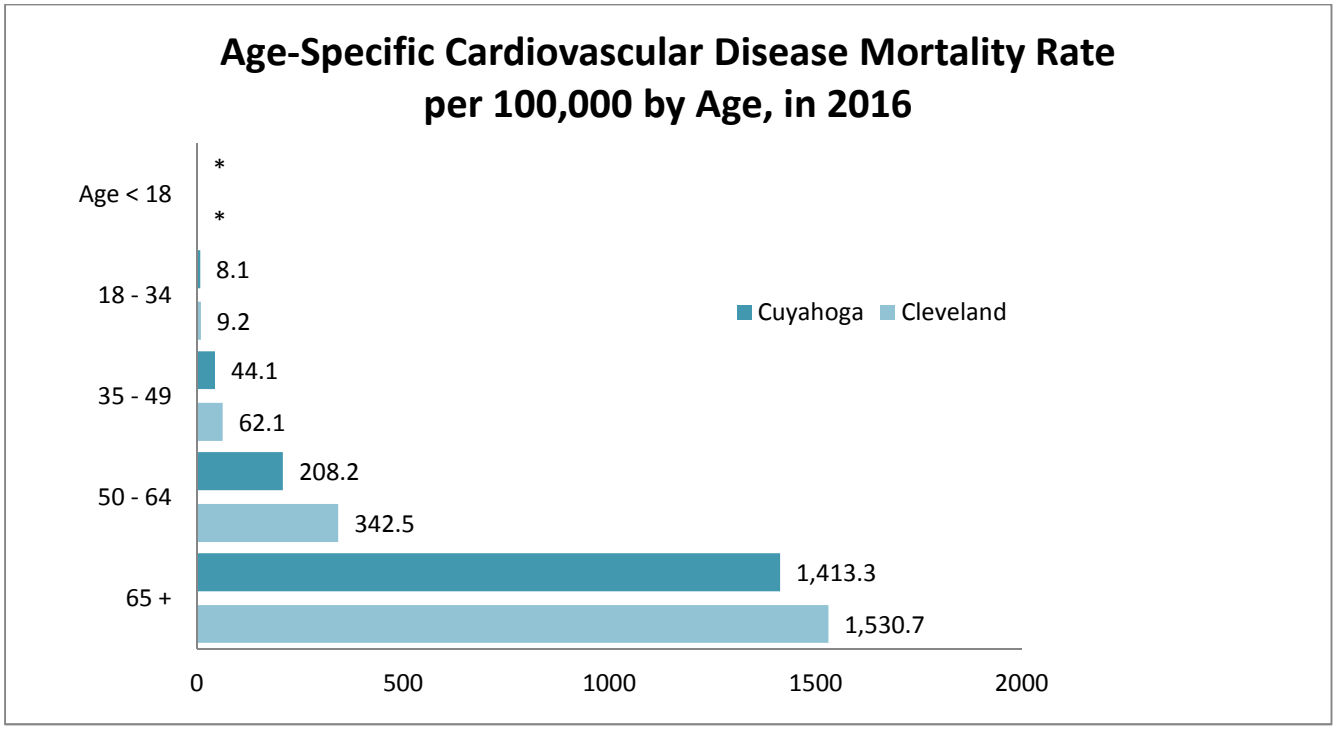
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

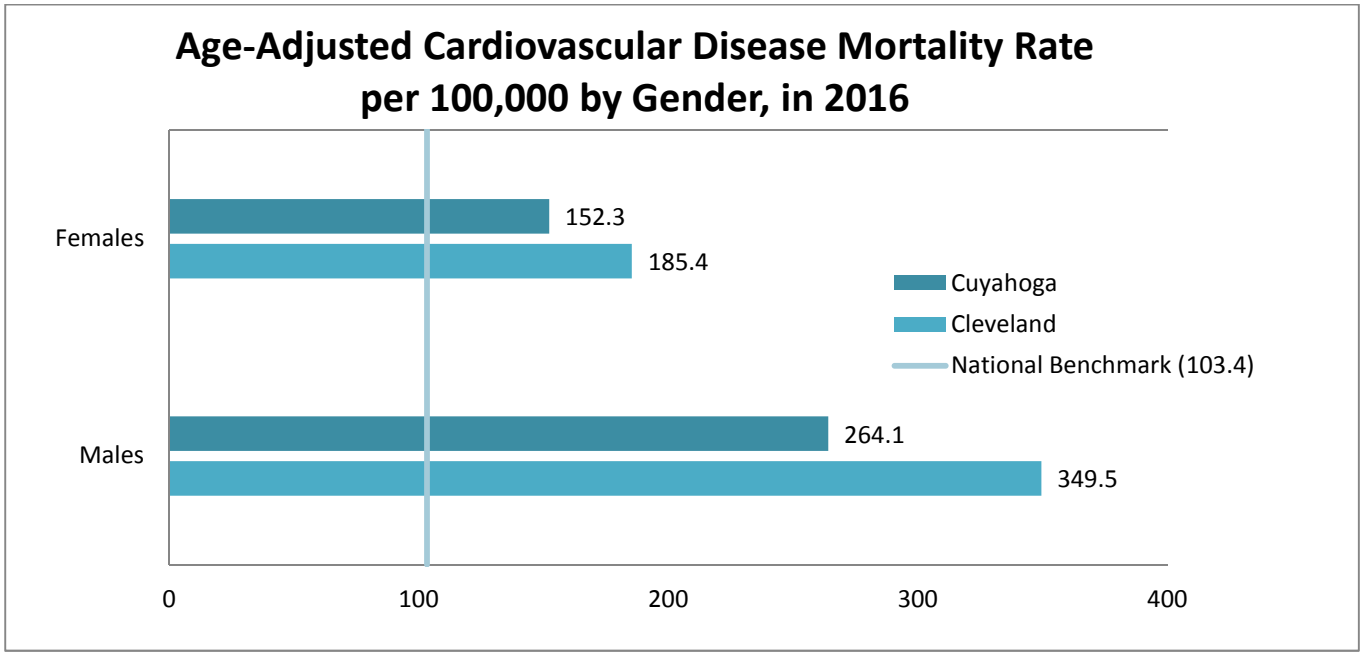
[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

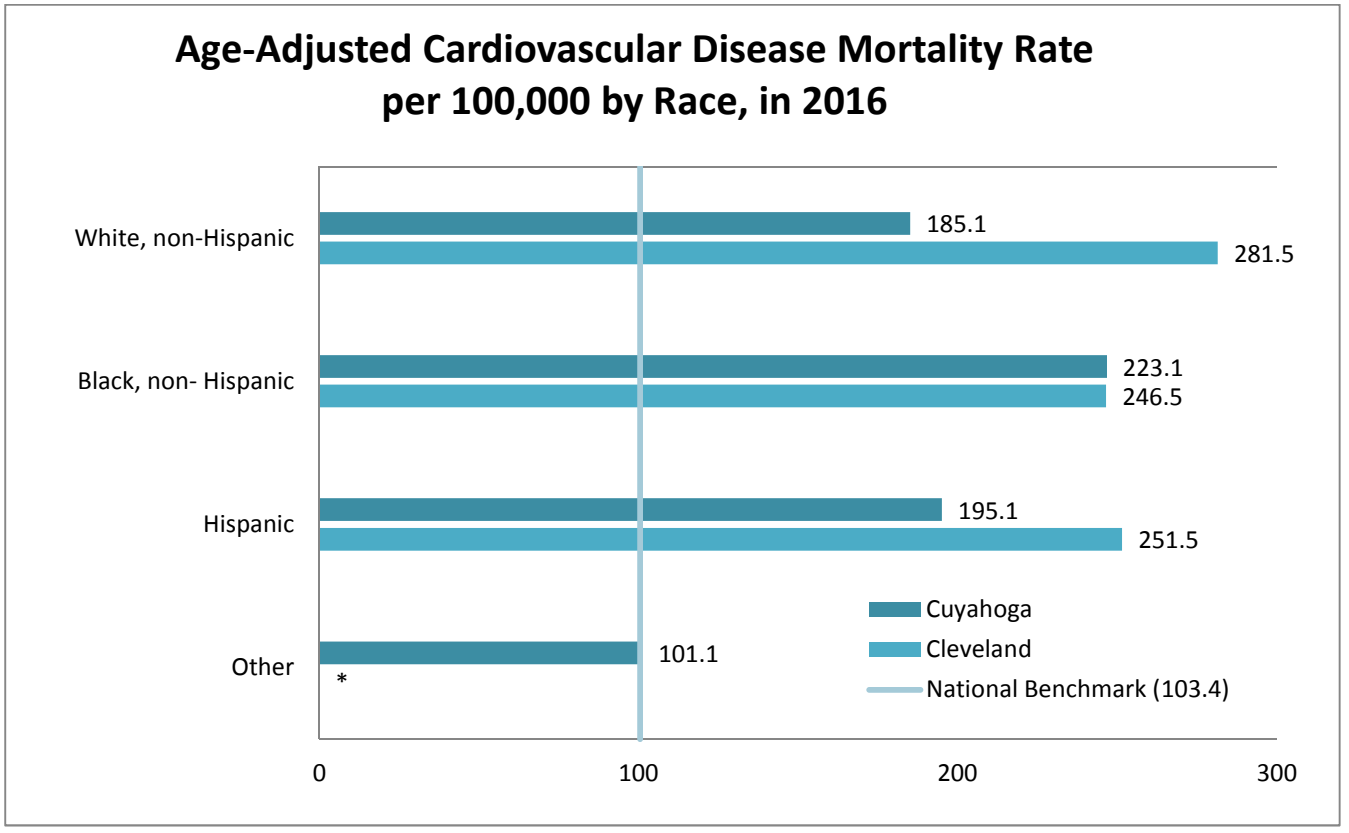
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is age-specific and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

Summary

Across demographic groups (i.e. gender and race/ethnicity), the cardiovascular mortality rate was higher for the city of Cleveland compared to Cuyahoga County overall. The greatest racial/ethnic disparity was within the White, non-Hispanic population where the cardiovascular mortality rate for the city of Cleveland was 52% higher compared to the county overall. Also, Cuyahoga County (199.8) and the city of Cleveland (255.1) both have higher mortality rates for cardiovascular disease compared to the state of Ohio (185.1)[3] and the nation (165.5)[4].

References

[1] Centers for Disease Control and Prevention. Achievements in public health, 1990 1999: Decline in deaths from heart disease and stroke--United States, 1990-1999. MMWR 1999;48(30):649-56.

[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[3] Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at http://wonder.cdc.gov/ucd-icd10.html on May 11, 2018.

[4] Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017.

Note: For additional information about this indicator please see the *Technical Guide.*

Death, Illness, and Injury: Years of Potential Life Lost

Understanding the number of years of potential life lost before age 75 (YPLL) is a health outcome indicator that can help health agencies plan programs to reduce premature death.[1] The indicator measures the total number of years "lost" in a population because of death before the age of 75. The measure is adjusted as a rate or years per 100,000 across the population.

Years of Potential Life Lost, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Number of Years of Potential Life Lost (per 100,000 population)	9,365.4	13,367.4	5,300[b]

Does not meet the national benchmark. Requires a closer look.

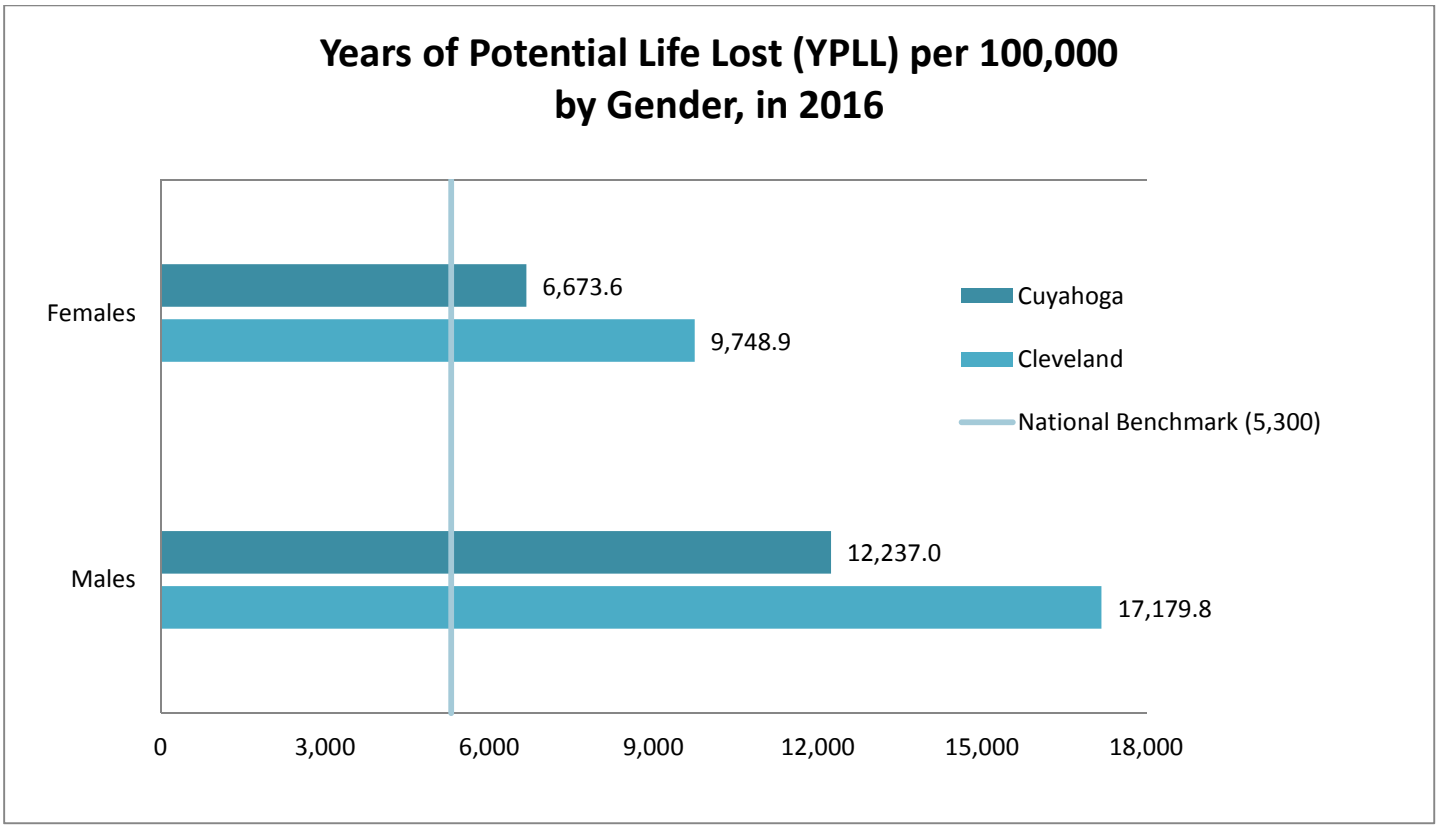
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

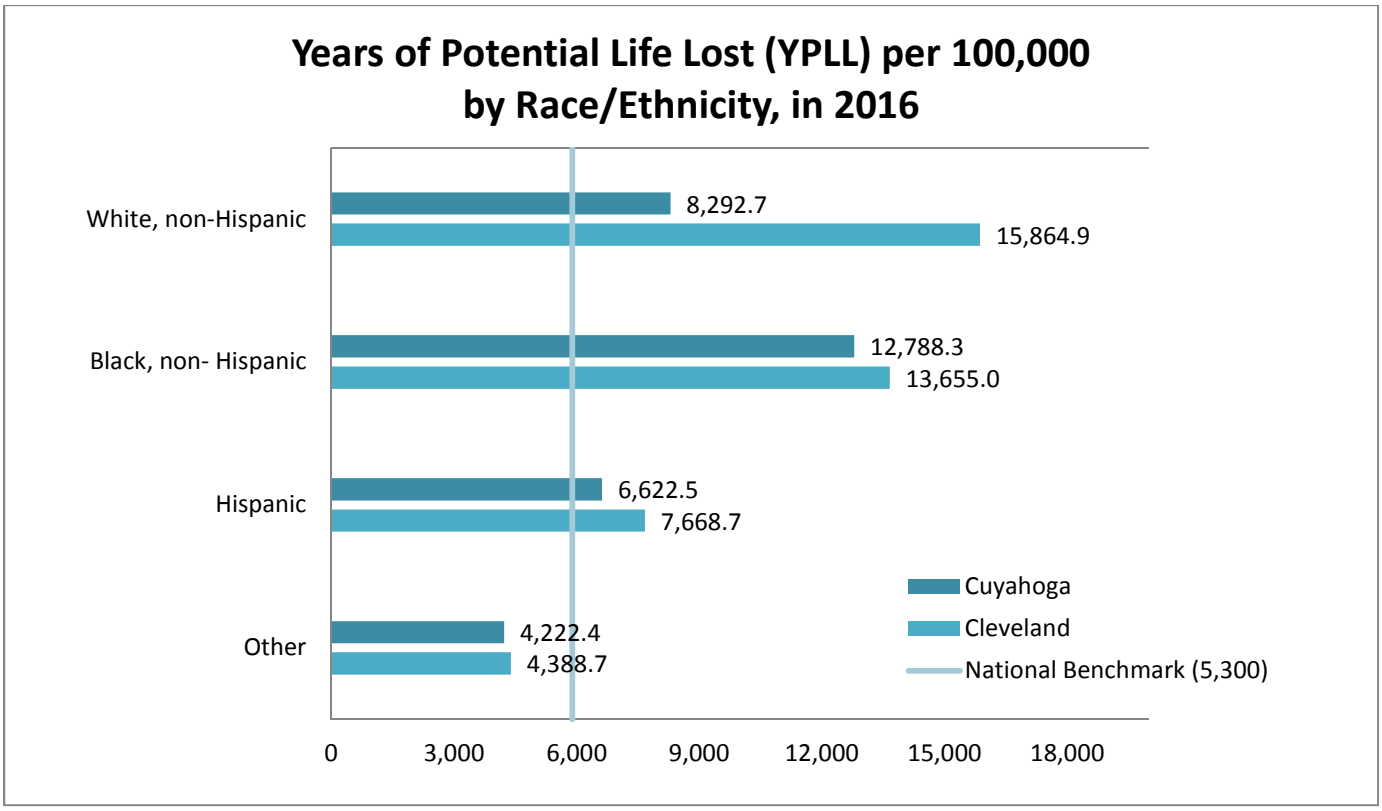
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Age-specific information is not traditionally calculated for this indicator.





Summary

Across demographic groups (i.e. gender and race/ethnicity), the city of Cleveland had a higher rate of years of potential life lost compared to Cuyahoga County overall. The greatest racial/ethnic disparity was within the White, non-Hispanic population where years of potential life lost was almost double for the city of Cleveland (15,864.9) compared to the county overall (8,292.7). Overall, YPLL rates in the city of Cleveland and Cuyahoga County significantly exceed the national benchmark.

References

[1] McDonnell S, Vossberg K, Hopkins RS, Mittan B. Using YPLL in health planning. Public Health Rep. 1998;113:55-61.
[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

Note: For additional information about this indicator please see the *Technical Guide.*

Death, Illness, and Injury: Health Status

A general measure of health-related quality of life in a population is self-reported health status.[1] This measure is based on survey responses to the question: *"In general, would you say that your health is excellent, very good, good, fair, or poor?"* This question is asked as part of the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey. BRFSS data are representative of the total non-institutionalized U.S. population over 18 years of age living in households with a land-line telephone.[2]

Percentage of Adults Reporting their General Health Status as "Fair" or "Poor": Cuyahoga County[2] and the City of Cleveland[3] Compared to the National Benchmark

Indicator	Cuyahoga County 2016[3]	City of Cleveland 2014[4]	National Benchmark*
Percent of respondents reporting their health status as fair or poor	16.0%	28.7%	12.0%[b]

Does not meet the national benchmark. Requires a closer look.

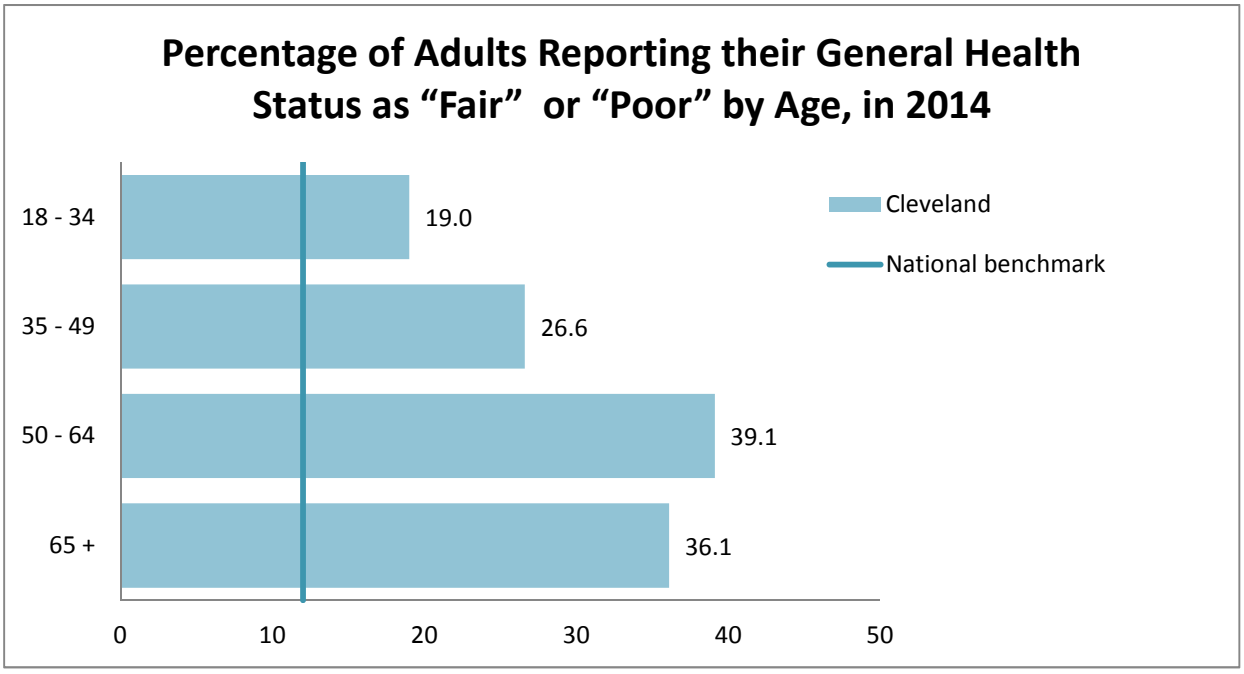
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

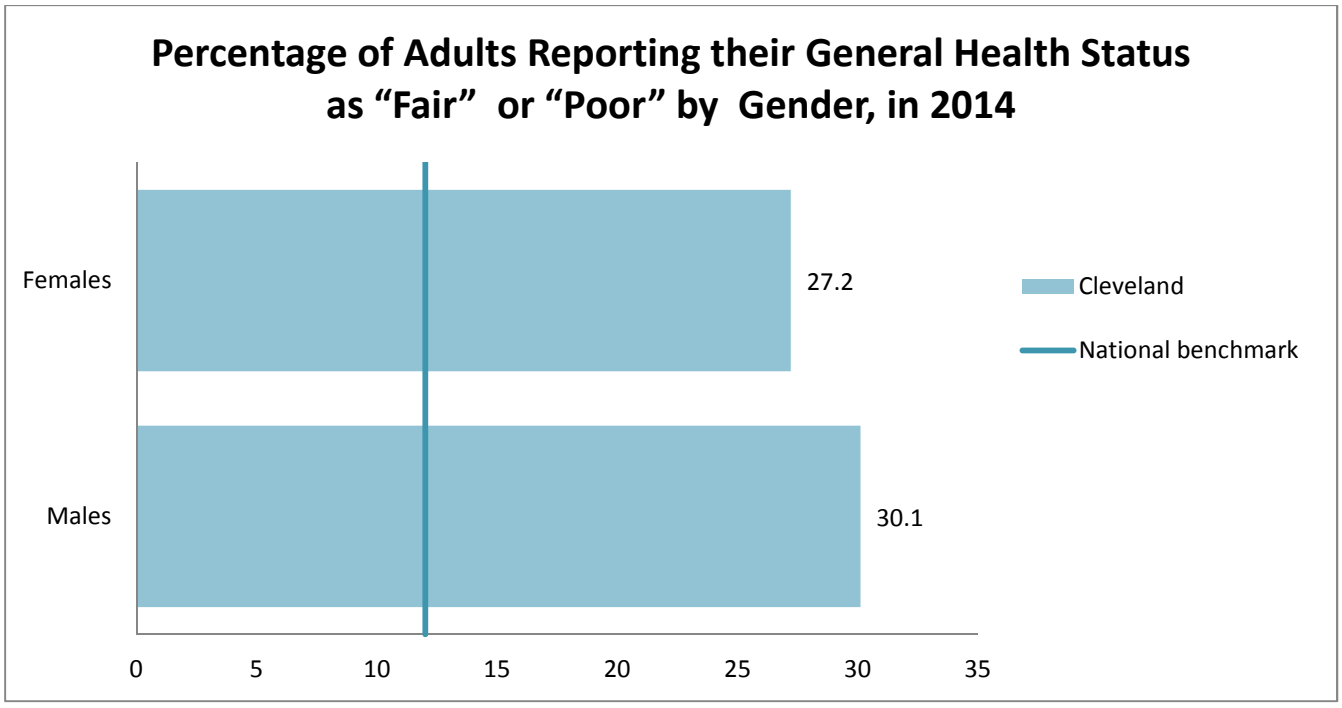
[a] Benchmark is based on *Healthy People 2020* Goal.

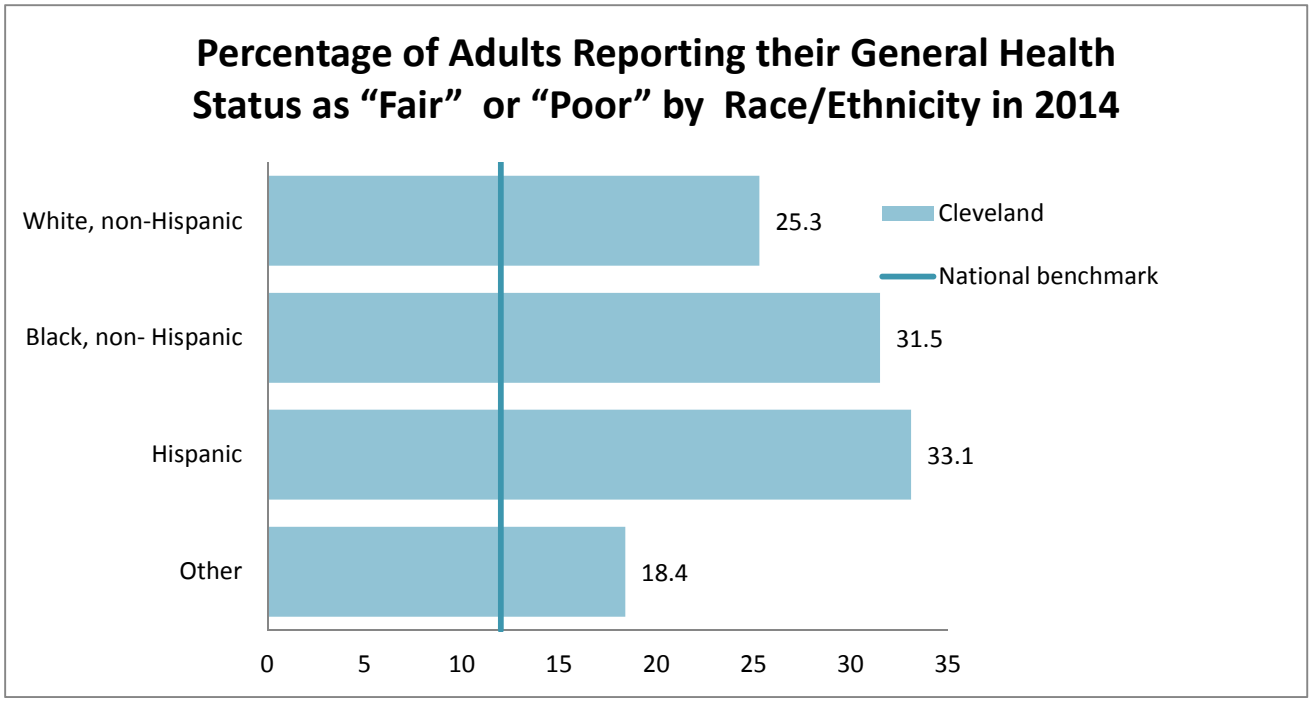
[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Information by age, gender, and race/ethnicity is not available for Cuyahoga County overall for this indicator.







Summary

The percentage of adults living in Cuyahoga County who reported their general health status as "fair" or "poor" was similar to the state of Ohio rate (17.0%) and higher than the national benchmark (12.0%).[3] Nearly one out of every six people in the county and more than one out of four people in the city are reporting that their overall health-related quality of life is "fair" or "poor."

Also, within the city of Cleveland, there are differences by age, gender, and race/ethnicity. Specifically, older residents, males, Hispanics, and Black, non-Hispanic adults were more likely to rate their general health status as "fair" or "poor" compared to other demographic groups.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2010.

[3] University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018.

[4] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report.

Note: For additional information about this indicator please see the *Technical Guide.*

Death, Illness, and Injury: Sick Days

The average number of poor physical health days within the past month is based on responses to the question: "*Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good*?" This question is asked as part of the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS), a random-digit dial survey.[1] BRFSS data are representative of the total non-institutionalized U.S. population over 18 years of age living in households with a land-line telephone. Both physical and mental health can impact a person's overall quality of life.[2]

Average Number of Poor Physical Health Days Within the Past Month: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County 2016[2]	City of Cleveland 2014[3]	National Benchmark*
Average number of sick days within the past month	3.7	5.0	3.0[b]

Does not meet the national benchmark. Requires a closer look.

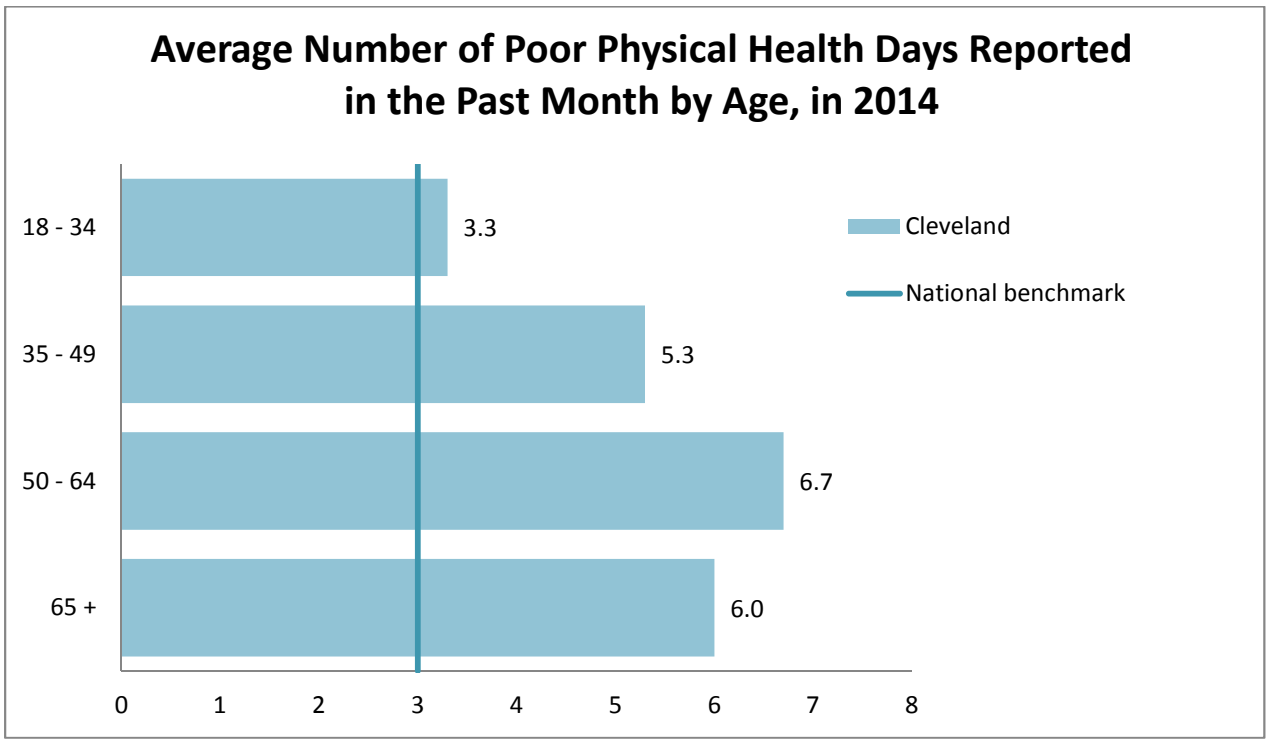
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

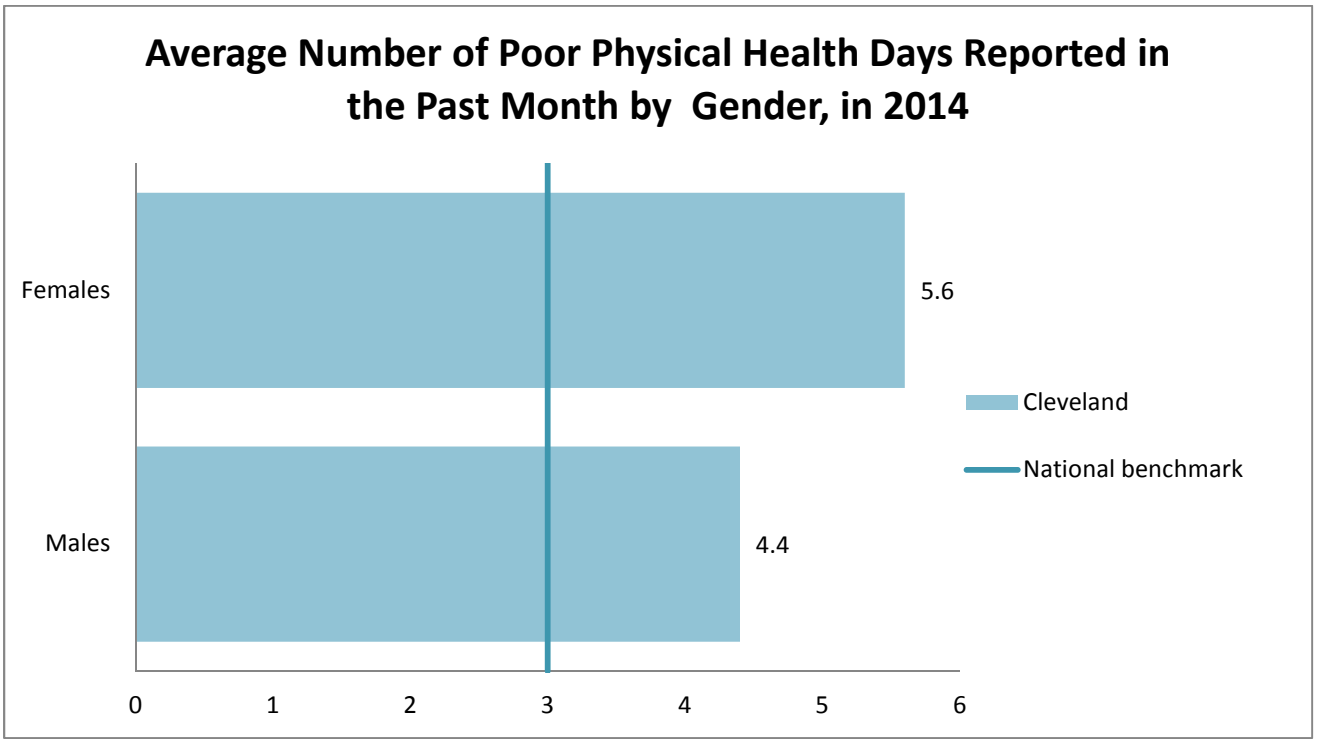
[a] Benchmark is based on *Healthy People 2020* Goal.

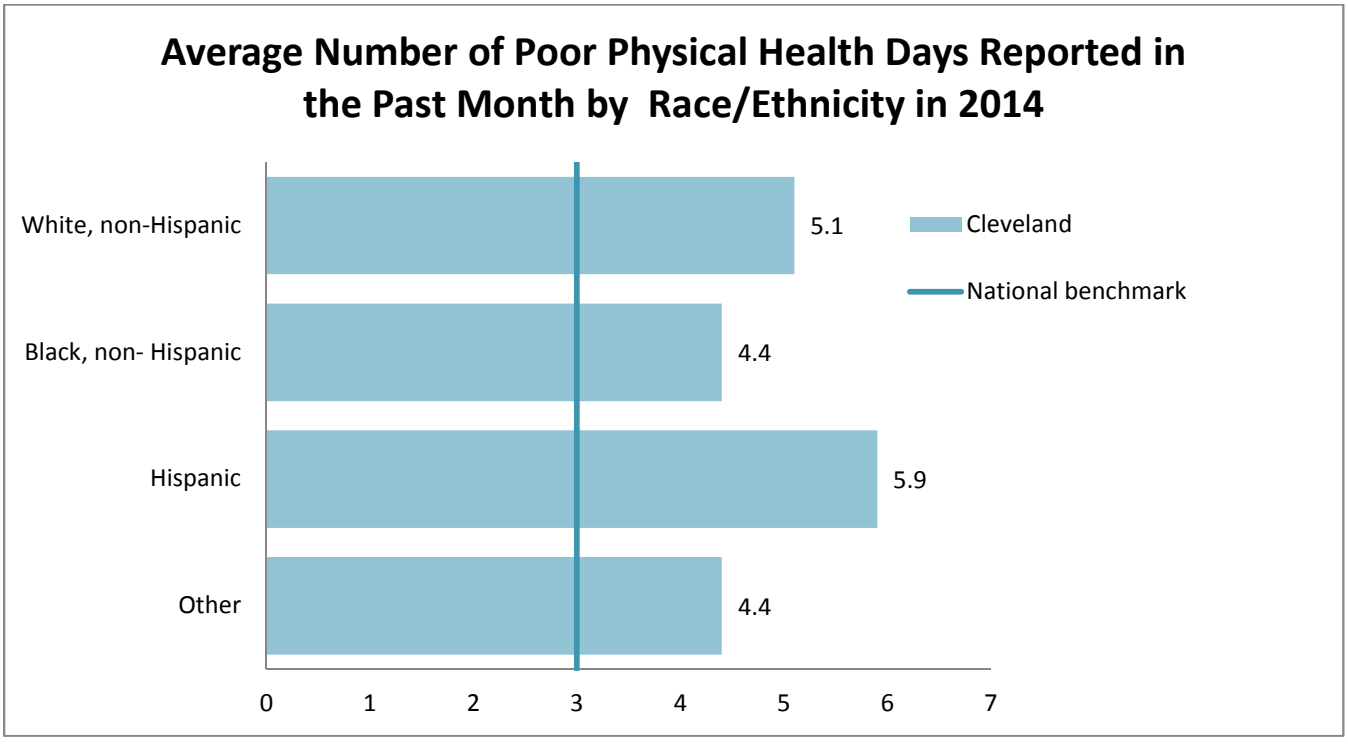
[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Note: Information by age, gender, and race/ethnicity is not available for Cuyahoga County overall for this indicator.




Average Number of Poor Physical Health Days Reported in the Past Month by Gender, in 2014
Females
Males
5.6
4.4
Cleveland
National benchmark
0
1
2
3
4
5
6


Average Number of Poor Physical Health Days Reported in the Past Month by Race/Ethnicity in 2014
White, non-Hispanic
Black, non- Hispanic
Hispanic
Other
5.1
4.4
5.9
4.4
Cleveland
National benchmark
0
1
2
3
4
5
6
7

Summary

The number of poor physical health days reported by people living in Cuyahoga County overall (3.7 days) and the city of Cleveland (5.0) are higher than the national benchmark (3.0 days). This information suggests that Cuyahoga County residents are reporting that their physical health is negatively impacted approximately one out of every eight days during the month while physical health is negatively impacted for city of Cleveland residents one out of every six days during the month. Compared to the state rate (4.0 days), Cuyahoga County's rate is slightly better, but the city of Cleveland's rate is worse. Within the city of Cleveland, a higher number of poor physical health days are reported among older people, females, Hispanics and White, non-Hispanics.

References

[1] Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2010.

[2] University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018.

[3] Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report.

Note: For additional information about this indicator please see the *Technical Guide.*

K. Communicable Disease: At-A-Glance Summary

This category includes infections that are usually passed between individuals by sharing infectious instruments or materials or through contact. Vaccinating vulnerable populations, such as children, and using protective measures such as condoms for sexually-transmitted diseases like HIV, can help prevent infections.[1]

Summary of the *Communicable Disease* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Incidence of HIV infections[2,3]**	2016	15.2	NA	NA
Percentage of children with up-to-date* 4:3:1:3:3:1:4 vaccination series by *24 months of age*[4]**	2016	76.0%	48.0%	80%[a+]
Percentage of Medicare beneficiaries immunized for influenza[5]****	2017-2018	48.9%	48.0%	70%[a+]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[a+] Benchmark is not directly comparable for this indicator

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** Rate is per 100,000 population and uses the 2010 population data for the denominator.

*** Up to Date 4:3:1:3:3:1:4 defined as receiving 4 or more doses of DTaP, 3 or more doses of Polio, 1 or more doses of MMR, Hib full series (3 or 4 doses, depending on product type received), 3 or more doses of HepB, 1 or more doses of Varicella, and 4 or more doses of PCV

**** This indicator has changed compared to the 2013 Cuyahoga County Community Health Status Assessment and is no longer directly comparable.

Summary

Across all indicators in this category, Cuyahoga County overall and the city of Cleveland are not achieving goals set through national benchmarks, where applicable.

References

[1] National Association of County and City Health Officials. Mobilizing for Action through Planning and Partnerships (MAPP). Community Health Status Assessment, List of Core Indicators. Accessible at https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments Accessed April 23, 2018.

[2] Ohio Department of Health. (June 2017). New Diagnoses of HIV Infection Reported in Cuyahoga County. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health-statistics---disease---hiv-aids/2016/county2016/Cuyahoga2016.pdf?la=en. Accessed on April 28, 2018

[3] Ohio Department of Health. (June 2017). HIV Infection in Ohio-2016. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health-statistics---disease---hiv-aids/2016/OhioHIVSummary2016.pdf?la=en. Accessed on April 28, 2018

[4] Average of Immunization Action Plan Program Provider Assessments conducted in Cuyahoga County in 2016 (Cuyahoga County Data does not include City of Cleveland results)

[5] Health and Human Services. National Vaccine Program Office. Flu Vaccination Claims Rates by Geographic Areas. Available at https://www.hhs.gov/nvpo/about/resources/interactive-mapping-tool-tracking-flu-vaccinations/index.html. Accessed on April 29, 2018

Communicable Disease: Incidence of HIV Infections

HIV incidence represents the number of people whose infections are newly diagnosed each year. People who get tested and learn they are infected with HIV can take steps to improve their health and reduce the risk of transmitting it to others.[1] The CDC estimated that one in seven of the 1,122,900 people living with HIV were unaware of their infected status.[2] The indicator is the number of new HIV infections reported each year per 100,000 population. Currently, the *Healthy People 2020* goal for reducing the number of new HIV infections among adolescents and adults is 36,450 people.[1] Therefore, there is no comparable Healthy People goal for this indicator.

New HIV Infections per 100,000 population, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland	National Benchmark*
Incidence of new HIV infections (per 100,000 population)	15.2	Not Available	NA

☆ Meets the national benchmark.

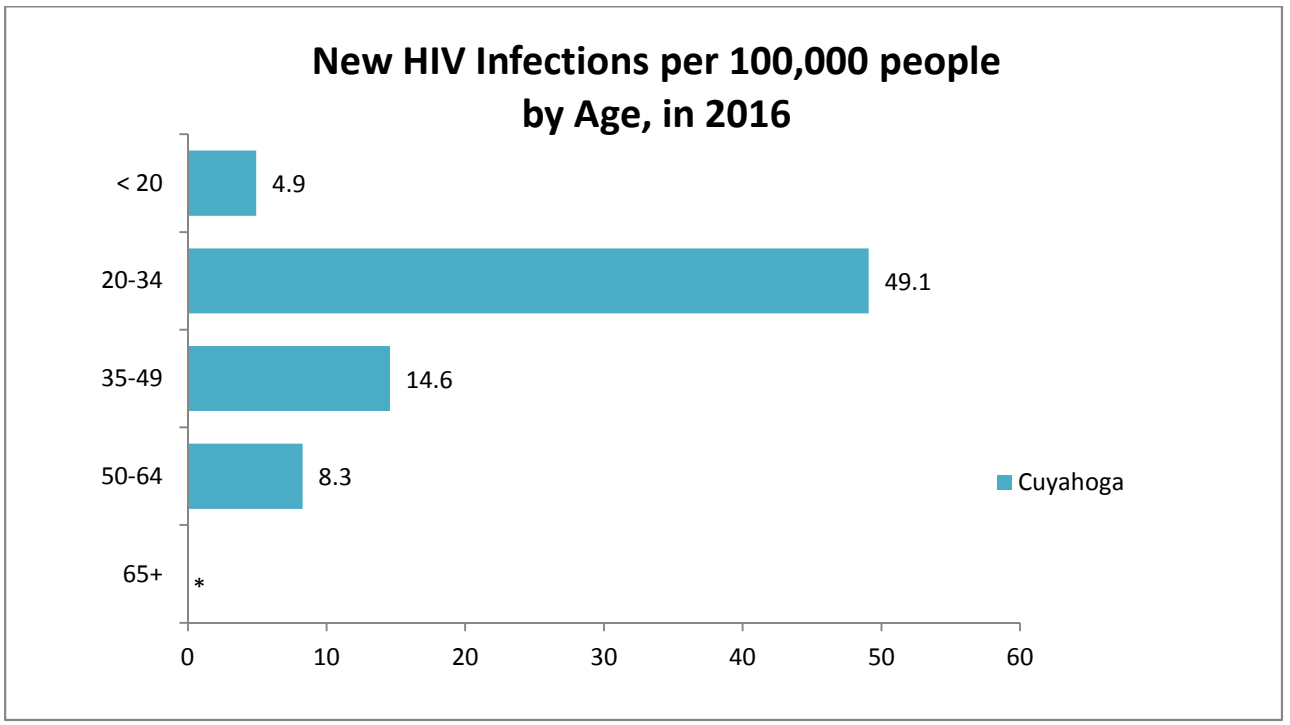
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

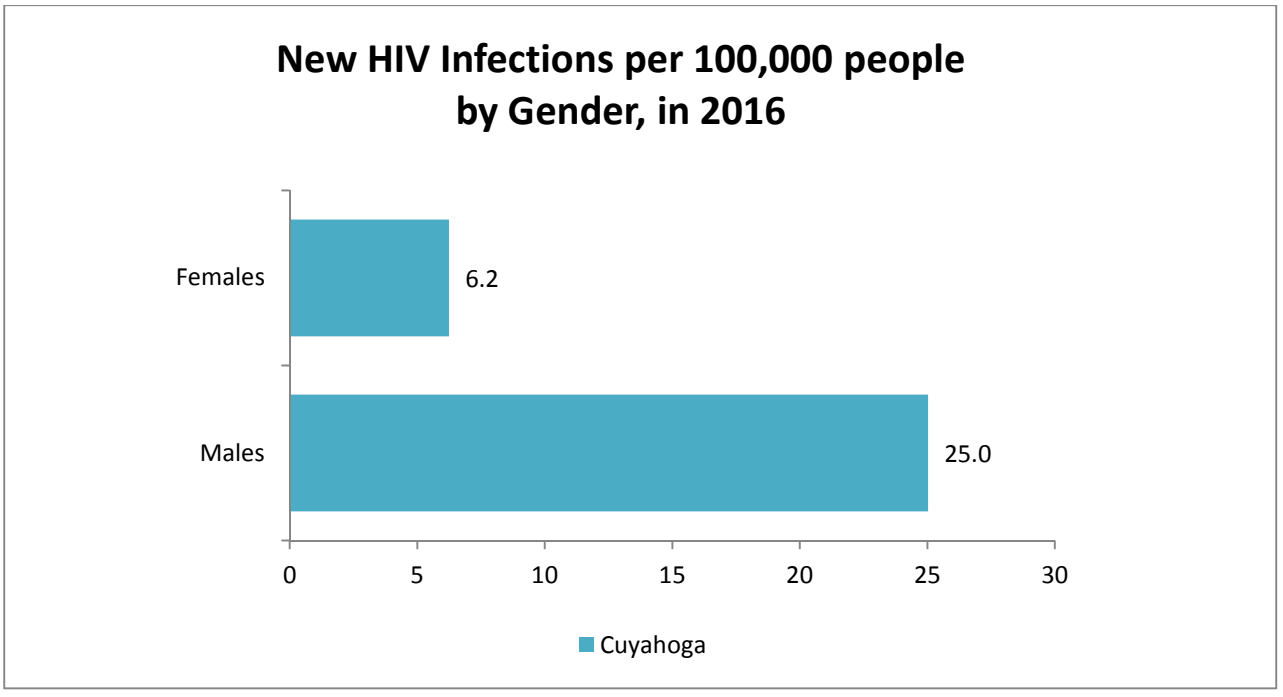
[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

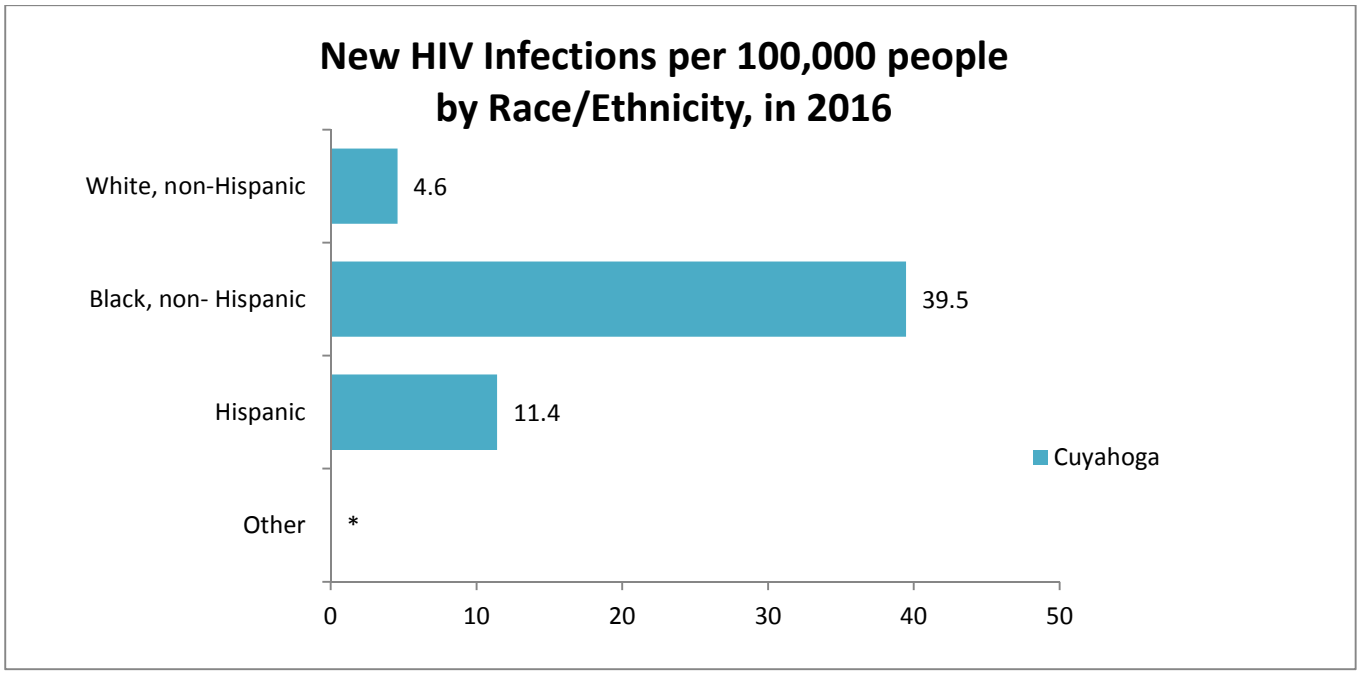
NA National benchmark was not identified.



Note: Rate is age-specific and uses the 2016 population estimates for the denominator.



Note: Rate is gender-specific and uses the 2016 population estimates for the denominator.



Note: Rate is race/ethnicity specific and uses the 2016 population estimates for the denominator.

Summary

When compared to the state of Ohio (8.5 per 100,000 population),[4] Cuyahoga County has a higher incidence of new HIV infections. The highest incidence rates for new HIV infection in the county are among people ages 20-34, males, and Black non-Hispanics. Nationally, adults in the 20-29 age range had the most HIV diagnoses in 2016.[2] That same year, the CDC reported 39,782 new HIV diagnoses across the U.S., which equals an annual incidence rate of 12.3 per 100,000 population.[5] The annual HIV incidence rate for Cuyahoga County exceeds both the state and national rates in 2016.

References

[1] Healthy People 2020. HIV Available at https://www.healthypeople.gov/2020/topics-objectives/topic/hiv. Accessed on May 5th, 2018.

[2] CDC. HIV in the United States: At a Glance. Available at https://www.cdc.gov/hiv/pdf/statistics/overview/cdc-hiv-us-ataglance.pdf. Accessed on April 28, 2018

[3] Ohio Department of Health. (June 2017). New Diagnoses of HIV Infection Reported in Cuyahoga County. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health-statistics---disease---hiv-aids/2016/county2016/Cuyahoga2016.pdf?la=en. Accessed on April 28, 2018

[4] Ohio Department of Health. (June 2017). HIV Infection in Ohio-2016. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health-statistics---disease---hiv-aids/2016/OhioHIVSummary2016.pdf?la=en. Accessed on April 28, 2018

[5] CDC. HIV Surveillance Report. Diagnoses of HIV Infection in the United States and Dependent Areas, 2016. (2016) Volume 29. Available at https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2016-vol-28.pdf. Accessed on April 28, 2018

Note: For additional information about this indicator please see the *Technical Guide.*

Communicable Disease: Childhood Vaccinations

Immunizations are important in preventing diseases, especially among children. This measure is the percentage of children who received vaccinations by 24 months as recommended by the Advisory Committee on Immunization Practices (ACIP).[1] One vaccination series was evaluated for this measure. The series is defined as receiving: 4 or more doses of diphtheria, tetanus and pertussis (DTaP); 3 or more doses of Polio; 1 or more doses of measles, mumps and rubella (MMR); Haemophilus influenza type b (Hib full series - 3 or 4 doses, depending on product type received); 3 or more doses of HepB; 1 or more doses of Varicella; and 4 or more doses of Pneumococcal Conjugate vaccine (PCV).[2]

Percentage of Children with Up-To-Date Childhood Immunizations, 2016: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland	National Benchmark*
Percentage of Children with Up-To-Date 4:3:1:3:3:1:4 Vaccination Series by *24 Months of Age*	76.0%	48.0%	80%[a+]

☆ Meets the national benchmark.

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[a+] Benchmark is not directly comparable for this indicator

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

Summary

The percentage of children in the city of Cleveland up-to-date with recommended vaccinations was approximately 30% lower than in Cuyahoga County overall. When looking at the 4:3:1:3:3:1:4 vaccination series at 24 months of age, both Cuyahoga County overall and the city of Cleveland were significantly lower than the national benchmark. Important to note is that the national benchmark measures vaccinations for children ages 19 to 35 months compared to the county and city rates which measure vaccinations by 24 months of age, therefore they are not directly comparable. Similarly, the state vaccination rate (68%), is not directly comparable as it also measures vaccinations for children 19 to 35 months.[4]

References

[1] Centers for Disease Control and Prevention. Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, United States, 2018. Available at https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html. Accessed on April 29, 2018.

[2] Centers for Disease Control and Prevention. Technical Notes for NIS Surveillance Tables. 2016. Available at https://www.cdc.gov/vaccines/imz-managers/coverage/nis/child/tech-notes.html. Accessed on May 1, 2018.

[3] Average of Immunization Action Plan Program Provider Assessments conducted in Cuyahoga County in 2016

[4] Ohio Department of Health. Ohio Immunization Coverage Rates, 2009-2016. 2017. Available at https://www.odh.ohio.gov/en/odhprograms/bid/immunization/immform. Accessed on April 29, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Communicable Disease: Influenza Vaccinations

Influenza is one of the top causes of illness and death in this country. Additionally, it carries a significant financial cost due to the consequences associated with the illness.[1] This indicator specifically looks at influenza immunization among people with Medicare coverage. Information on influenza immunization for Medicare beneficiaries is obtained from the U.S. Department of Health and Human Services' National Vaccine Program Office and is based on claims data.[2]

Influenza Vaccination Claims Rates Among Medicare Beneficiaries for the 2017-2018 Flu Season: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland	National Benchmark*
Percentage of Medicare beneficiaries immunized in the 2017-2018 flu season for influenza**	48.9%	48.8%	70%[a+]

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[a+] Benchmark is not directly comparable for this indicator

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** This indicator has changed compared to the 2013 assessment and is no longer directly comparable.

Note: Information by gender and race/ethnicity is not available for this indicator.

Summary

Cuyahoga County had similar rates of influenza vaccination, based on claims data, compared to the state of Ohio (48.8%) and the nation (46.0).[2] The national benchmark is not directly comparable for this indicator because it is based on the percent of noninstitutionalized adults aged 18 years and older whereas county and city rates are based on Medicare influenza vaccination claims data.

References

[1] Healthy People 2020. Immunization and Infectious Diseases. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=23. Accessed on April 29, 2018

[2] Health and Human Services. National Vaccine Program Office. Flu Vaccination Claims Rates by Geographic Areas. Available at https://www.hhs.gov/nvpo/about/resources/interactive-mapping-tool-tracking-flu-vaccinations/index.html. Accessed on April 29, 2018

Note: For additional information about this indicator please see the *Technical Guide.*

L. Sentinel Events: At-A-Glance Summary

According to the National Association of County and City Health Officials, sentinel events are defined as "those cases of unnecessary disease, disability, or untimely death that could be avoided if appropriate and timely medical care or preventive services were provided." Included in these preventable outcomes are late-stage cancer diagnoses, vaccine-preventable illness, and unexpected syndromes or infections. Keeping track of these events is important as they may signal health system problems such as lack of primary care and/or screening, inadequate vaccine coverage, a bioterrorist event, or the introduction of globally transmitted infections.[1]

Summary of the *Sentinel Events* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Rate of Gun-Related Deaths[2](per 100,000 population)**	2016	18.5	31.2	9.3[a]
Rate of Drug-Induced Deaths[2] (per 100,000 population)**	2016	44.9	73.8	11.3[a]
Rate of Work-Related-Injury Deaths[2] (per 100,000 population)**	2016	***	***	NA
Percent of Female Breast Cancer Cases Diagnosed at Late Stage[3]	2010-2014	29.7%	35.0%	NA
Percent of Cervical Cancer Cases Diagnosed at Late Stage[3]	2010-2014	55.1%	63.5%	NA
Number of Anthrax Cases[4]	2016	0.0	0.0	NA
Number of Smallpox Cases[4]	2016	0.0	0.0	NA

Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator. Rate is per 100,000 population.

*** Rates are not presented when there are less than 20 cases total for the time period due to instability.

Summary

The rate of gun-related deaths in the city of Cleveland is close to twice the rate for Cuyahoga County overall. The rate of drug-related deaths and the percent of cervical and breast cancers diagnosed at a late-stage are

higher for residents of the city of Cleveland compared to Cuyahoga County overall. Both the city of Cleveland and Cuyahoga County overall are not meeting the national benchmarks for gun-related deaths and drug-induced deaths.

References

[1] National Association of County and City Health Officials. Community Health Status Assessment Core Indicator Lists. Available at https://www.naccho.org/uploads/downloadable-resources/Programs/Public-Health-Infrastructure/Worksheet-CHSA-Indicator-List.pdf. Accessed on May 1, 2018.
[2] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).
[3] Cuyahoga County Board of Health using data provided by the Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). July 2017.
[4] Cuyahoga County Board of Health (CCBH) using data obtained through the Ohio Disease Reporting System (ODRS).

Sentinel Events: Gun-Related Death Rate

Preventing injury and violence is critically important as injuries and violence are linked to lifelong negative physical, emotional, and social consequences, with the impact extending beyond the person immediately affected.[1] Unintentional injuries and injuries caused by acts of violence are among the top 15 causes of death among Americans of all ages and are the leading cause of death for Americans ages 1 to 44. Regardless of sex, race/ethnicity or socioeconomic status, both unintentional injuries and injuries attributable to acts of violence are a leading cause of disability.[1] This indicator looks specifically at deaths caused by firearms/guns. The *Healthy People 2020* goal is to reduce gun-related deaths to 9.3 deaths per 100,000 population, from the 2007 baseline of 10.3 deaths per 100,000.[2]

Rate of Gun-related Deaths, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Rate of Gun-Related Deaths (per 100,000 population)	18.5	31.2	9.3[a]

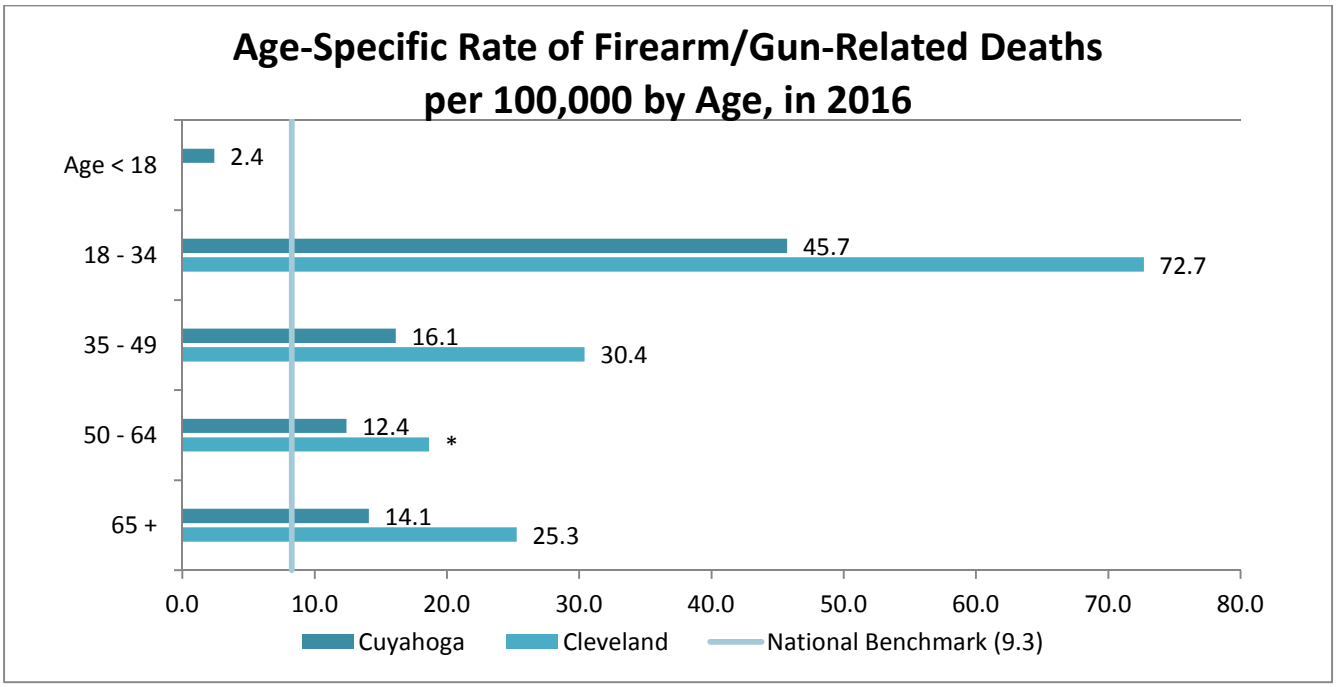
Does not meet the national benchmark. Requires a closer look.

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

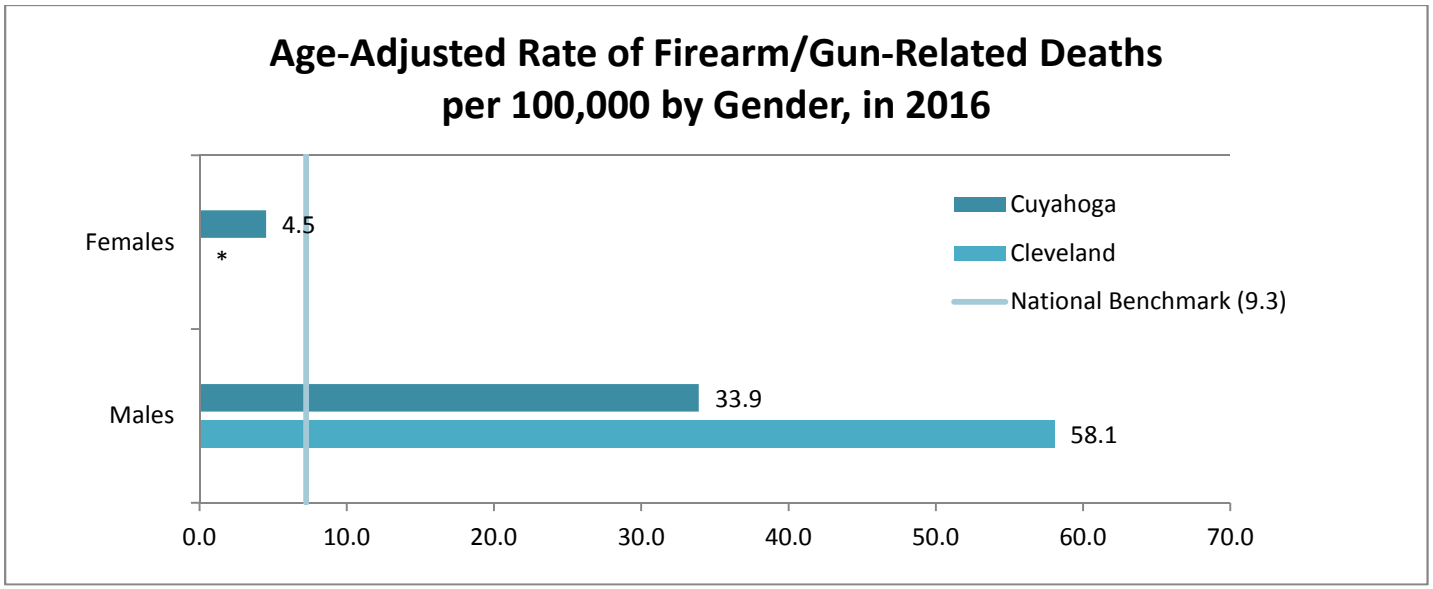
[b] Benchmark is based on *County Health Rankings* project.

NA National benchmark was not identified.

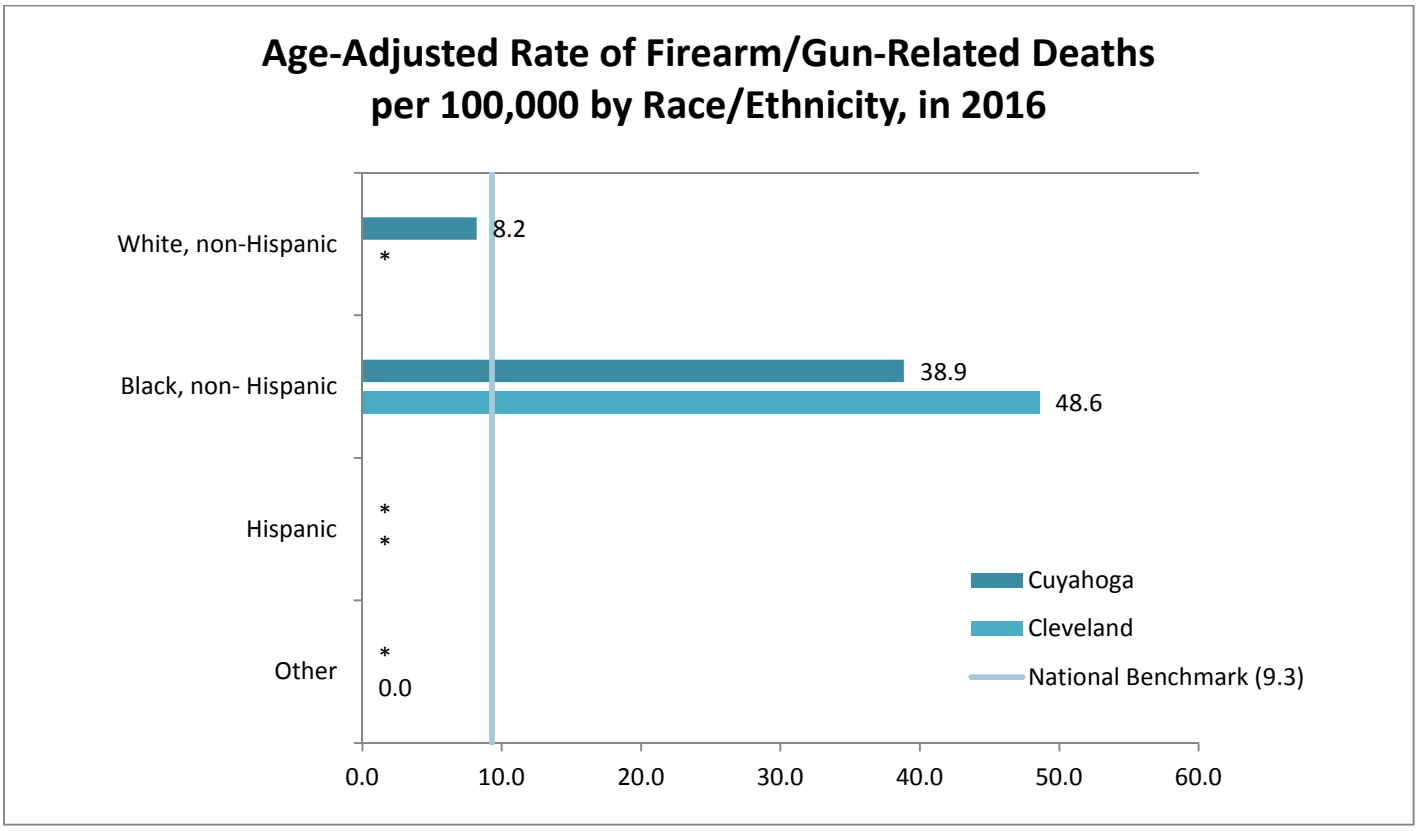


Note: Rate uses the 2010 population data for the denominator.

*Rates are not presented when there are less than 5 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 20 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 20 cases total for the time period due to instability.

Summary

The firearm/gun-related death rates for both Cuyahoga County overall (18.2) and the city of Cleveland (31.2) were higher than the rate for the state of Ohio (12.9) and the national rate (11.3), which were all higher than the national benchmark of 9.3.[2-5] The rate of gun-related deaths in the city of Cleveland is close to twice the

rate for Cuyahoga County overall. Firearm/gun-related death rates in the county overall and the city of Cleveland were highest among people aged 18-34. In this age group, there was a rate of 72.7 firearm/gun-related deaths per 100,000 in Cuyahoga County in 2016. Important to note is the significantly higher firearm/gun-related death rates among young individuals ages 18 to 34, males and Black, non-Hispanic residents.

References

[1] Healthy People 2020. Violence Prevention. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=24. Accessed on April 29, 2018.
[2] Healthy People 2020. Injury and Violence Prevention Objectives. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/injury-and-violence-prevention/objectives. Accessed on May 2, 2018.
[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).
[4] National Centers for Health Statistics. Centers for Disease Control and Prevention. FastStats. Firearm Mortality by State. Available at www.cdc.gov/nchs/fastats/injury Accessed April 27, 2018
[5] National Centers for Health Statistics. Centers for Disease Control and Prevention. FastStats. Available at www.cdc.gov/nchs/fastats/injury Accessed April 27, 2018

Note: For additional information about this indicator please see the *Technical Guide.*

Sentinel Events: Drug-Induced Death Rate

All deaths for which drugs are the underlying cause comprise this indicator. Drugs include illicit drugs (i.e. cocaine and heroin), and legally prescribed drugs or over-the-counter drugs. Deaths from medical conditions resulting from chronic drug use and deaths attributable to acute poisoning by drugs (drug overdoses) are included here. The majority of drug-induced deaths are unintentional drug poisoning deaths.[1] The *Healthy People 2020* goal is to reduce drug overdose deaths to 11.3 deaths per 100,000 population.[2]

Rate of Drug-Induced Deaths, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Rate of Drug-Induced Deaths (per 100,000 population)**	44.9	73.8	11.3[a]

Does not meet the national benchmark. Requires a closer look.

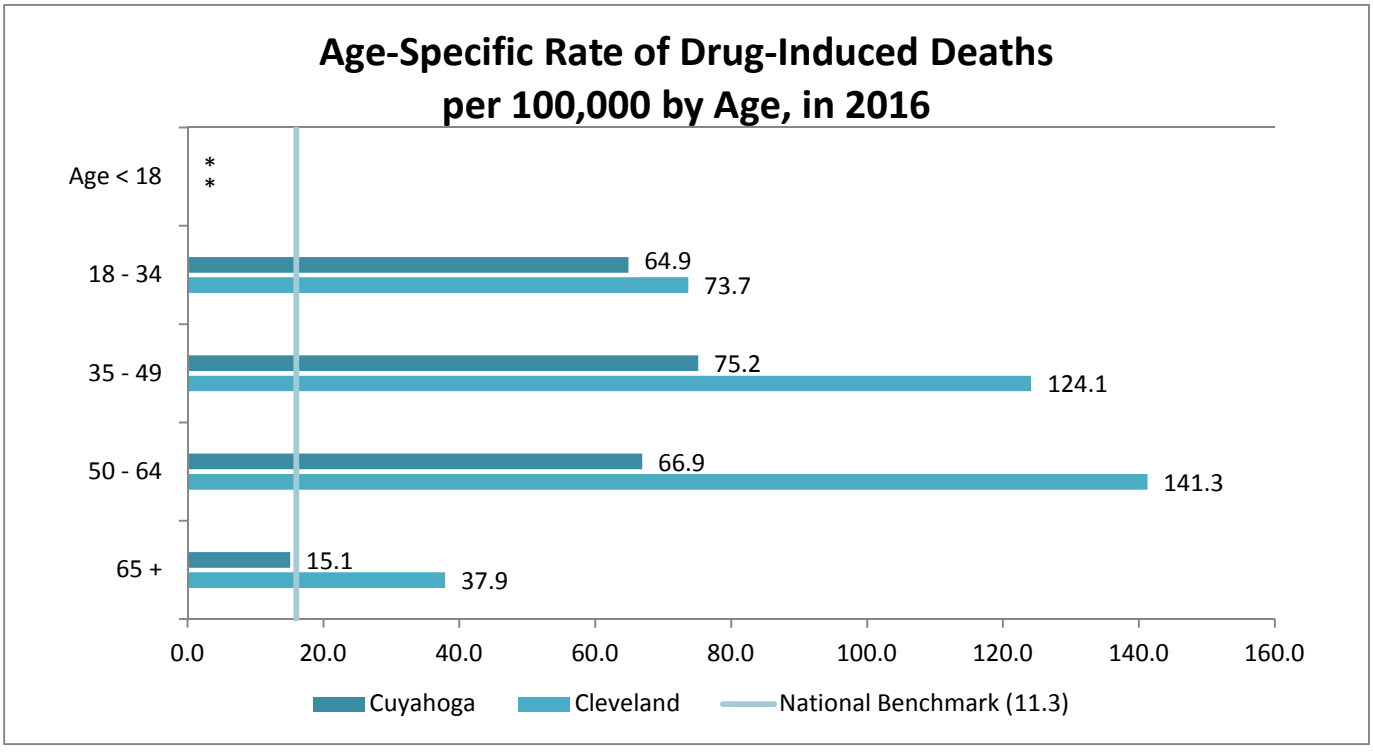
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

[b] Benchmark is based on *County Health Rankings* project.

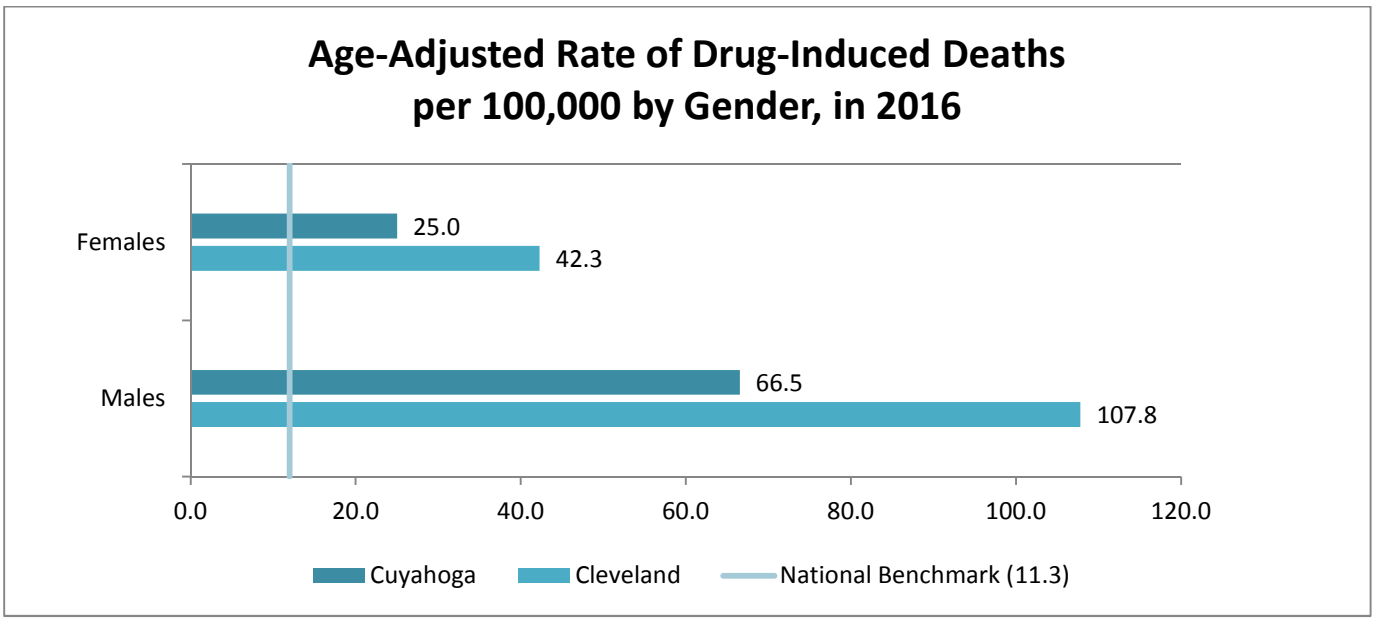
NA National benchmark was not identified.

** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

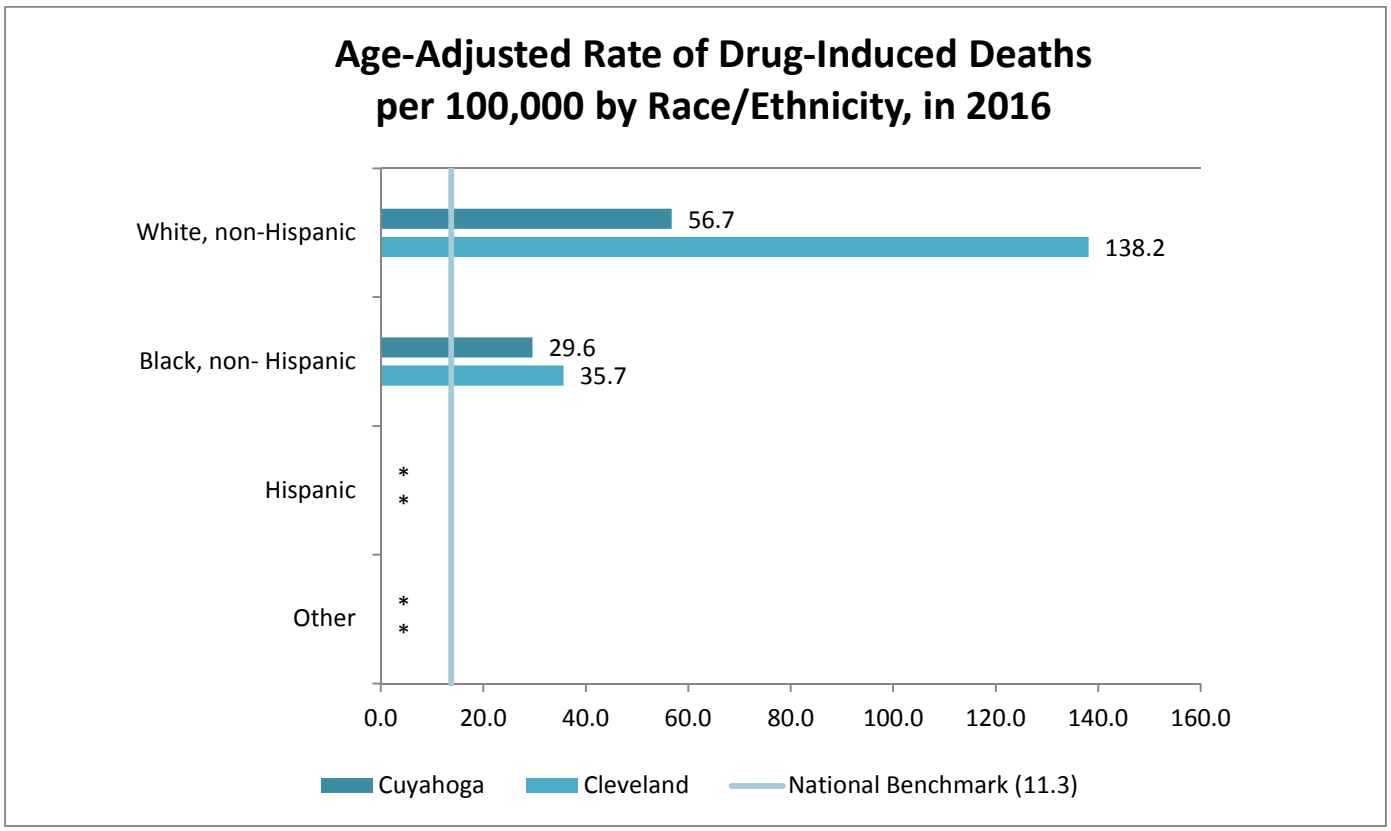


Note: Rate uses the 2010 population data for the denominator.

*Rates are not presented when there are less than 5 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 20 cases total for the time period due to instability.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 20 cases total for the time period due to instability.

Summary

Throughout the nation, the state, and especially locally, the number of opioid-related emergency room visits and deaths represent a current public health epidemic. The drug-induced death rates in both Cuyahoga County overall and the city of Cleveland were higher than the national benchmark.[4] Furthermore, rates were more than twice as high for males compared to females in both the city of Cleveland and Cuyahoga County overall. The age-adjusted drug-induced death rate for the city of Cleveland was more than 4.5 times the rate of the nation.[5] Males and White, non-Hispanic individuals had higher rates of drug-induced deaths.

References

[1] Centers for Disease Control and Prevention. Drug-Induced Death- United States, 1999-2010. MMWR 2013; 62(Suppl 3):161-163.

[2] Office of Disease Prevention and Health Promotion. SA-12 Reduce Drug-Induced Deaths. 2018. Available at https://www.healthypeople.gov/node/5197/data_details. Accessed on April 29, 2018.

[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).

[4] Healthy People 2020. Substance Abuse. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives. Accessed on May 7, 2018.

[5] National Centers for Health Statistics. Centers for Disease Control and Prevention. FastStats. Available at www.cdc.gov/nchs/fastats/injury Accessed April 27, 2018

Note: For additional information about this indicator please see the *Technical Guide.*

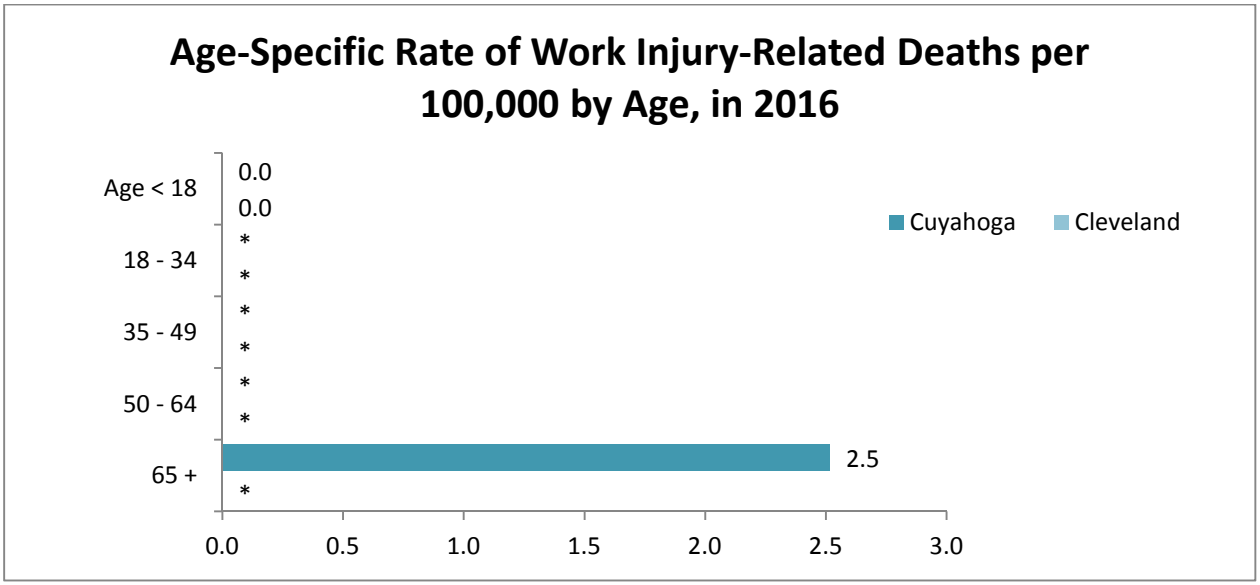
Sentinel Events: Work-Related Death Rate

Preventing injuries is critical as they have long-term social, mental and physical health consequences, including premature death. For Americans ages 1 to 44, injuries are the leading cause of death. Regardless of sex, race/ethnicity, or socioeconomic status, injuries are a leading cause of disability.[1] This indicator looks specifically at deaths caused by work-related injuries. Thanks to passage of the *Occupational Safety and Health Act,* workplaces have become much safer. However, every day more than 12 workers die on the job, as reported in 2012.[2]

Rate of Work-Related Injury Deaths, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Rate of Work Related Injury Deaths (per 100,000 population)**	Data Not Sufficient***	Data Not Sufficient***	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.
*** Rate may be unstable and therefore not displayed (fewer than 20 deaths occurred in the time period).
Note: Information by gender, race/ethnicity, and other age groups are not displayed because of the small numbers of deaths that occurred, potentially causing rates to be unstable.



Note: Rate uses the 2010 population data for the denominator.
*Rates are not presented when there are less than 5 cases total for the time period due to instability.

Summary

In 2016, among those 65 years and older in Cuyahoga County, there was a rate of 2.5 work-related deaths per 100,000 population. Rates for age-adjusted overall deaths for the county and the city of Cleveland were not obtained as there were too few cases. The state of Ohio had an overall age-adjusted rate of 3.1 work-related deaths per 100,000 population in 2016.[4] This rate was lower than the nation, which had a rate of 3.6 work-related deaths per 100,000 population in 2016.[5]

References

[1] Healthy People 2020. Violence Prevention. Available at http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=24. Accessed on February 8, 2012.
[2] Occupational Safety and Health Administration. Injury and Illness Prevention Programs White Paper. (2012). Available at https://www.osha.gov/dsg/InjuryIllnessPreventionProgramsWhitePaper.html. Accessed on May 1, 2018.
[3] Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).
[4] Bureau of Labor Statistics. Injuries, Illnesses and Fatalities, 2016. Available at hhps://www.bls.gov Accessed April 27, 2018
[5] Bureau of Labor Statistics. National Census of Fatal Occupational Injuries, 2016. Available at hhps://www.bls.gov Accessed April 27, 2018

Note: For additional information about this indicator please see the *Technical Guide.*

Sentinel Events: Late-Stage Female Breast and Cervical Cancer Rates

This indicator measures the number of new invasive female breast and cervical cancer cases that have been diagnosed in the late stages. A cancer's stage at diagnosis indicates the degree to which the cancer has spread, and is important for understanding survival rates. Early stage cancers are cancers diagnosed in the *in situ* ("tumor that has not invaded or penetrated surrounding tissue") or localized ("invasive malignant tumor that is confined to the organ in which it originated") stages.[1]

Late-stage cancers are cancers diagnosed in the regional ("invasive malignant tumor that has spread by direct extension to adjacent organs or tissues and/or has spread to regional lymph nodes") or distant ("invasive malignant tumor that has spread by direct extension beyond adjacent organs or tissues and/or metastasized to distant lymph nodes or tissues") stages.

Screening can be conducted for breast and cervical cancer by mammography and Pap smears, with or without human papilloma virus (HPV) testing. These measures allow for cancer to be detected early while it can be treated more effectively.[2] Furthermore, understanding how many new cancer cases are being diagnosed at late stages (such as regional or distant stage where treatment may be less effective compared to cancer diagnosed at earlier stages) helps evaluate screening programs.[3] The *Healthy People 2020* goal is to reduce late-stage breast cancer diagnosis to 42.2 new cases per 100,000 population.

Percent of Female Breast and Cervical Cancer Cases Diagnosed at Late Stage (Regional or Distant), 2010-2014: Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Percent of Female Breast Cancer Cases Diagnosed at Late Stage (regional or distant)	29.7%	35.0%	NA
Percent of Cervical Cancer Cases Diagnosed at Late Stage (regional or distant)	55.1%	63.5%	NA

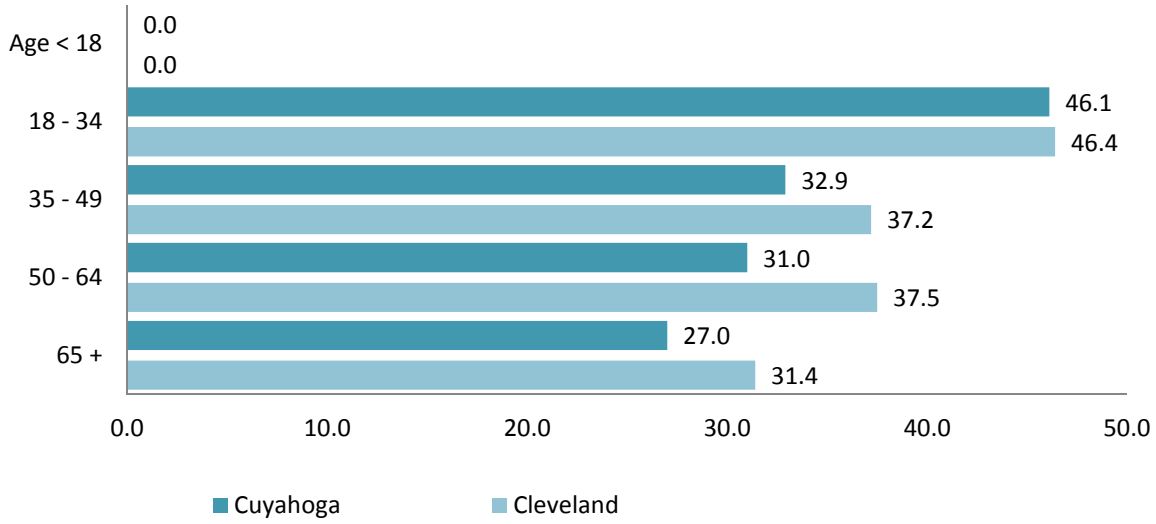
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:

[a] Benchmark is based on *Healthy People 2020* Goal.

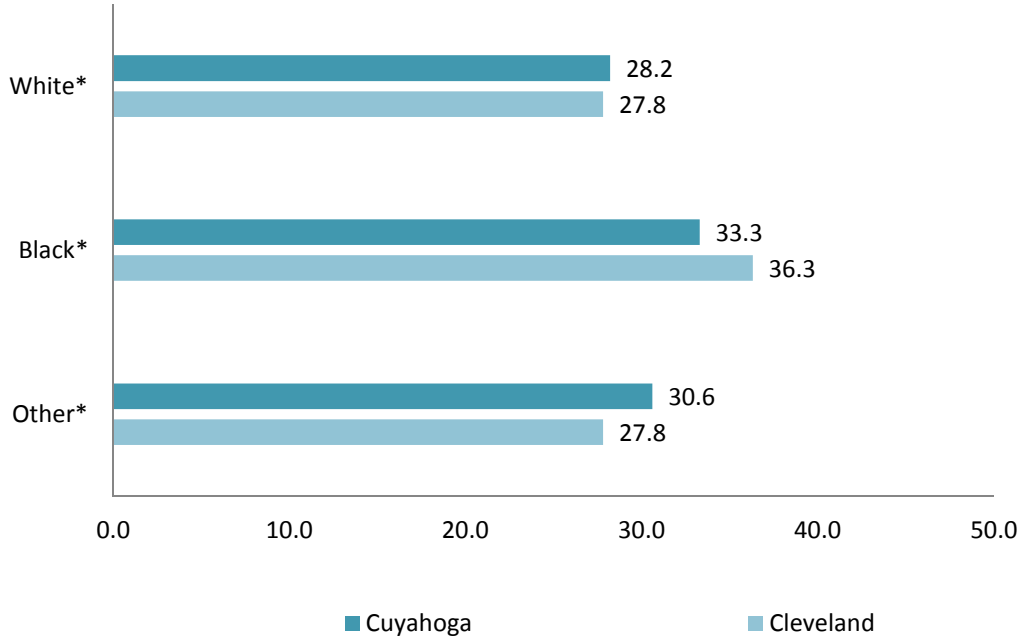
[b] Benchmark is based on *County Health Rankings* project.

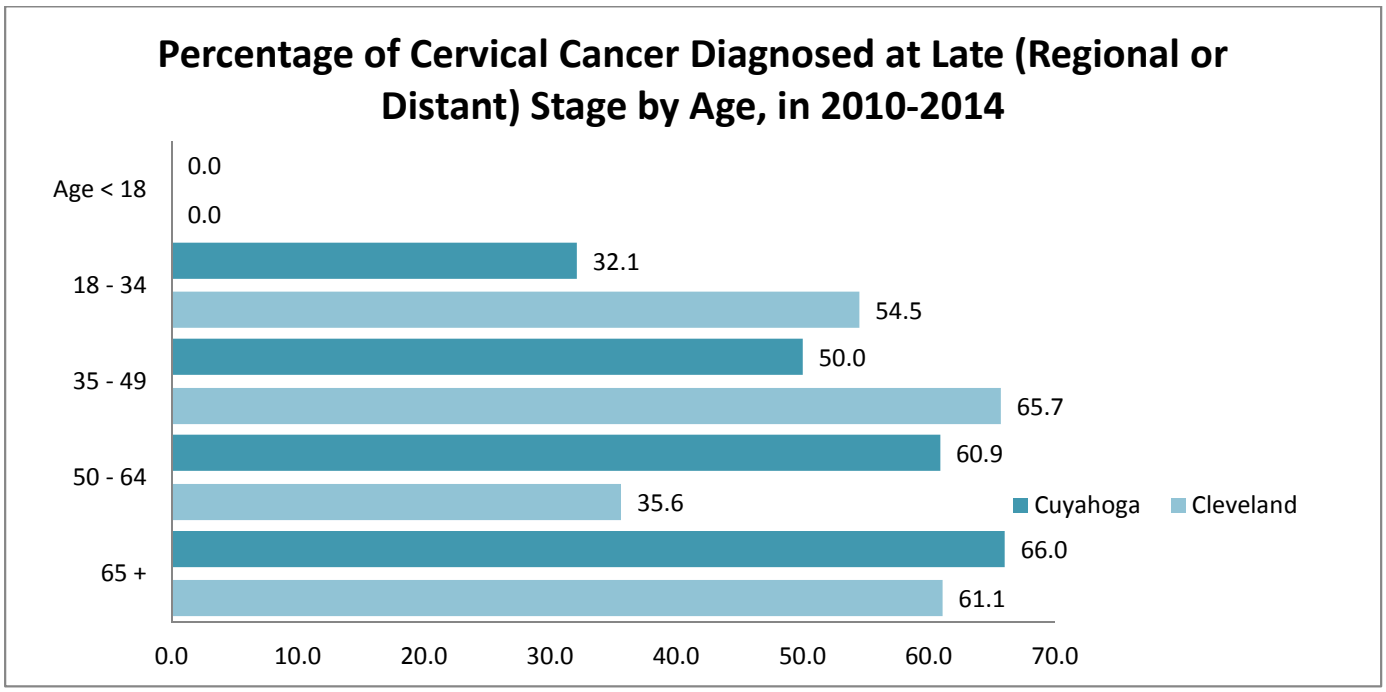
NA National benchmark was not identified.

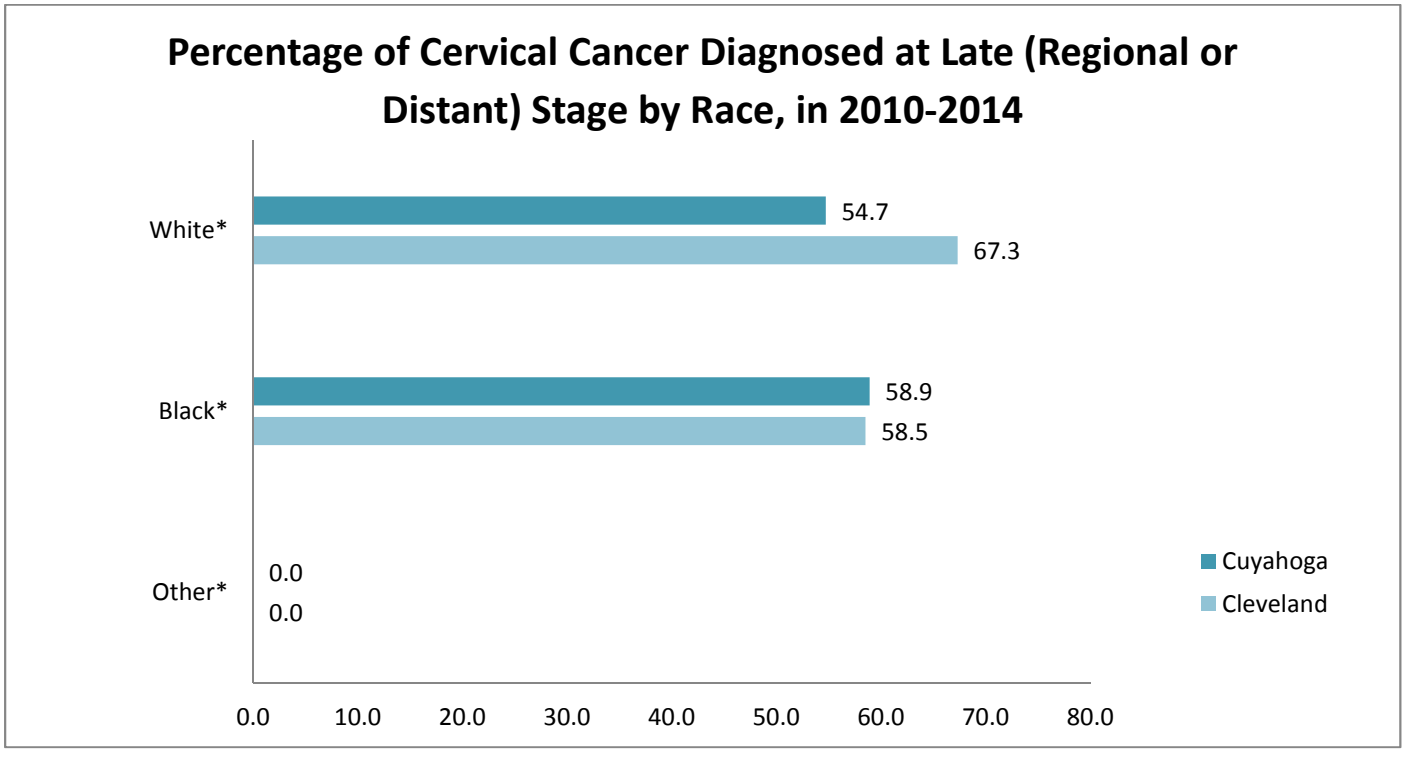
Percentage of Female Breast Cancer Diagnosed at Late (Regional or Distant) Stage by Age, in 2010-2014



Percentage of Female Breast Cancer Diagnosed at Late (Regional or Distant) Stage by Race in 2010-2014




Percentage of Cervical Cancer Diagnosed at Late (Regional or Distant) Stage by Age, in 2010-2014
Age < 18
18 - 34
35 - 49
50 - 64
65 +
0.0
0.0
32.1
54.5
50.0
65.7
60.9
35.6
66.0
61.1
Cuyahoga
Cleveland
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0


Percentage of Cervical Cancer Diagnosed at Late (Regional or Distant) Stage by Race, in 2010-2014
White*
Black*
Other*
54.7
67.3
58.9
58.5
0.0
0.0
Cuyahoga
Cleveland
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0

Summary

The percentage of female breast cancers diagnosed at late stages (i.e. regional or distant) are higher for both Cuyahoga County overall and the city of Cleveland compared to the state of Ohio and the nation. National percentages for late stage breast cancer diagnosis were 28.9% and 27.5% respectively.[4] Note that younger women ages 18 to 34 and Black, non-Hispanic women are more likely to have breast cancer diagnosed at a late stage.

Approximately one out of two cases of cervical cancer was diagnosed at late stages in Cuyahoga County overall compared to two out of three for the city of Cleveland. The percentage of late-stage cervical cancer diagnoses is 51.7% for the state of Ohio and 51.0% for the nation.[4] HPV vaccination can significantly reduce the risk of cervical cancer.

References

[1] Cuyahoga County Board of Health using data provided by the Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). July 2017.

[2] Healthy People 2020. Cancer. Available at https://www.healthypeople.gov/2020/topics-objectives/topic/cancer/objectives. Accessed on April 16, 2018.

[3] *Stage at Diagnosis for Selected Cancer Sites in Ohio*. Ohio Cancer Incidence Surveillance System, Ohio Department of Health and The Ohio State University, Columbus, Ohio, March 2012.

[4] Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). Cuyahoga County Cancer Profile, 2017. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/opi/cancer-incidence-surveillance-system-ociss/cuyahoga.pdf?la=en Accessed on April 16, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Sentinel Events: Anthrax and Smallpox Cases

This section covers two agents, anthrax and smallpox, that may be used in a bioterrorism event. A bioterrorism attack involves "the deliberate release of viruses, bacteria, or other germs (agents) used to cause illness or death in people, animals, or plants. These agents are typically found in nature, but it is possible that they could be changed to increase their ability to cause disease, make them resistant to current medicines, or to increase their ability to be spread into the environment."[1] These indicators show the number of cases of disease that have occurred as a result of being exposed to anthrax and smallpox per 100,000 population. Although there is no national benchmark established for this indicator, there should be no cases of anthrax or smallpox occurring in Cuyahoga County.

Number of Anthrax and Smallpox Cases, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[2]	City of Cleveland[2]	National Benchmark*
Number of Anthrax Cases (per 100,000 population)	0.0	0.0	NA
Number of Smallpox Cases (per 100,000 population)	0.0	0.0	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.

Summary

Given that the anthrax bacterium and the smallpox virus do not naturally occur in this area of the country, we would not expect to see any cases. If cases did appear, this could be an indication that an act of terrorism had occurred and the proper federal authorities would assist the local community with an investigation.

References

[1] Centers for Disease Control and Prevention. Bioterrorism Overview. Accessible at https://emergency.cdc.gov/bioterrorism/pdf/bioterrorism_overview.pdf. Accessed on April 30, 2018.
[2] Cuyahoga County Board of Health (CCBH) using data obtained through the Ohio Disease Reporting System (ODRS).

Note: For additional information about this indicator please see the *Technical Guide.*

M. Emerging Health Concerns: At-A-Glance Summary

This is a new category created by the local planning committee coordinating the 2018 assessment. It is intended to draw attention to health concerns that have arisen since the previous assessment, but is not meant to be a comprehensive list of all health concerns that have emerged between assessment time periods.

The number of unintentional opioid-related deaths began to rise significantly from 2015 to 2016 and has continued to increase since that time.[1] Deaths only represent the "tip of the iceberg," as many more people are using opioid-based substances that do not result in fatality.

Although Zika virus disease in humans was first recognized in 1952, it became a nationally notifiable condition in 2016. Some of the most severe consequences are birth defects suffered by children born to women infected by Zika. [2]

Summary of the *Emerging Health Concerns* Indicators:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Time Period	Cuyahoga County	City of Cleveland	National Benchmark*
Rate of Unintentional Opioid-Related Deaths (per 100,000 population)**	2016	38.2	61.8	NA
Incidence of Zika infections (per 100,000 population)***	2016	1.4	1.5	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator. Rate is per 100,000 population.
*** Rate expressed as per 100,000 population using the 2010 census as the denominator.

Summary

For unintentional opioid-related deaths, the overall Cuyahoga County rate was slightly higher than the state of Ohio (32.9) and almost three times as high as the national rate (13.3).[2] The city of Cleveland opioid-related mortality rate was significantly higher than the county, state and the nation.

While the number of Zika virus cases is low for the county and the state compared to other parts of the nation, the virus can cause devastating complications for those who are infected. It is for this reason that people should be educated on steps that can be taken to prevent or reduce the risk of transmission for this infection.

References

[1] United States Drug Enforcement Administration, Fentanyl FAQs. Available at https://www.dea.gov/druginfo/fentanyl-faq.shtml. Accessed March 20, 2018.
[2] Centers for Disease Control and Prevention, Zika virus. Accessible at https://www.cdc.gov/zika/about/index.html. Accessed March 20, 2018.

Emerging Health Concerns: Opioid Abuse

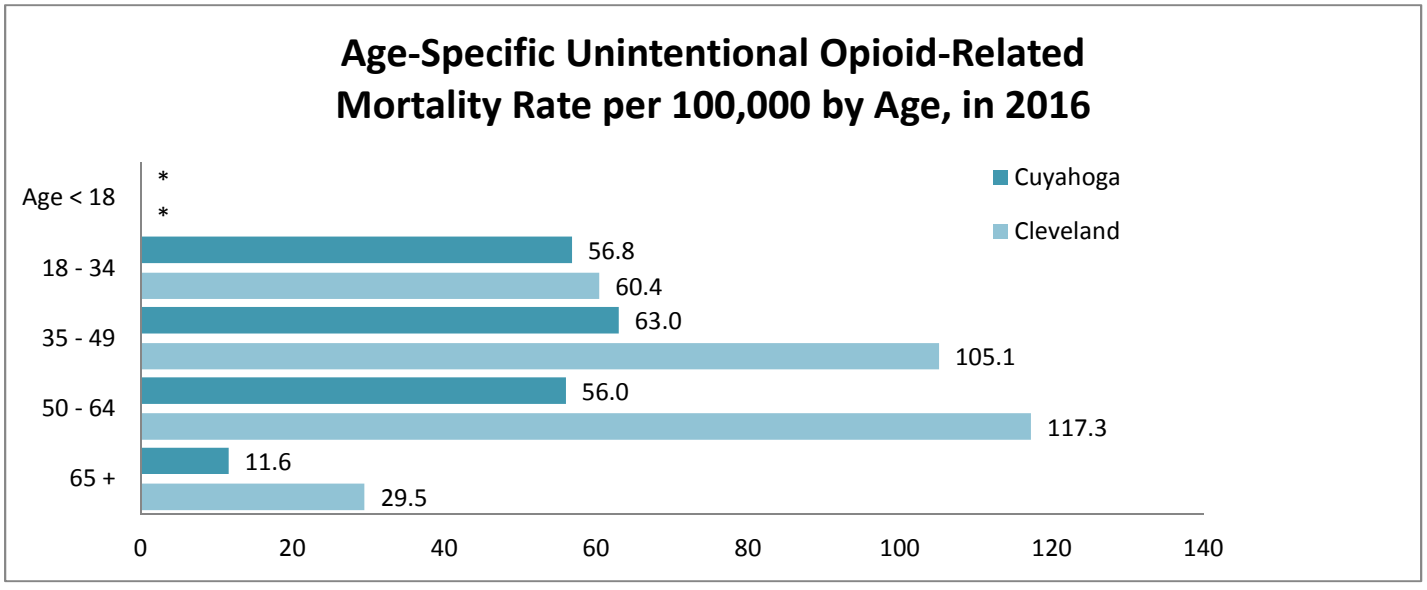
Unintentional drug overdoses are one of the leading causes of injury-related death in the U.S. In 2016, almost 89 people died each day due to an unintentional drug overdose.[1] Frequently, drug overdose deaths involve prescription drugs (such as opioids or benzodiazepines) or heroin, however, there has been a recent increase in the use of stronger synthetic opioids such as fentanyl and carfentanil. Fentanyl can be 30 to 50 times more potent than heroin and carfentanil can be 100 times stronger than fentanyl.[2]

Several policies have been enacted to reduce the number of opioid deaths in Ohio including: increasing law enforcement, decreasing the use and availability of pain medications, and expanding access to Naloxone.[3] In Cuyahoga County, the Opiate Task Force (CCOTF) was formed in 2010 to "raise public awareness, promote community action, and provide education related to the dangers and devastating effects of drug abuse."[4] This indicator measures the number of unintentional overdose deaths due to opioids (including synthetic opioids).

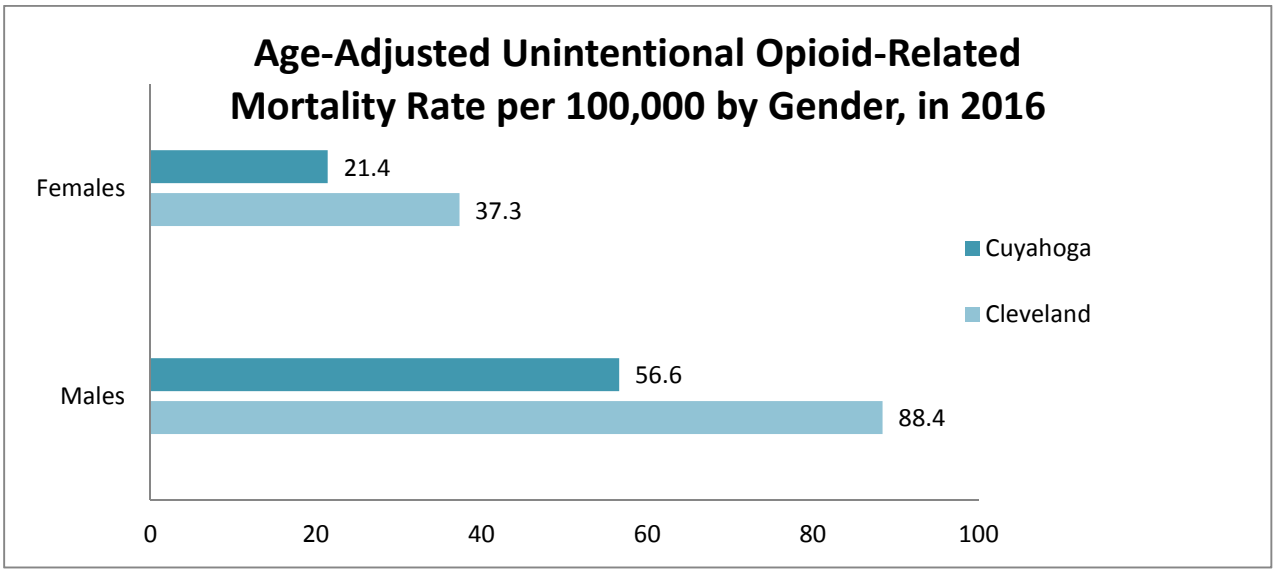
Unintentional Opioid-Related Deaths, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[5]	City of Cleveland[5]	National Benchmark*
Rate of Unintentional Opioid-Related Deaths (per 100,000 population)**	38.2	61.8	NA

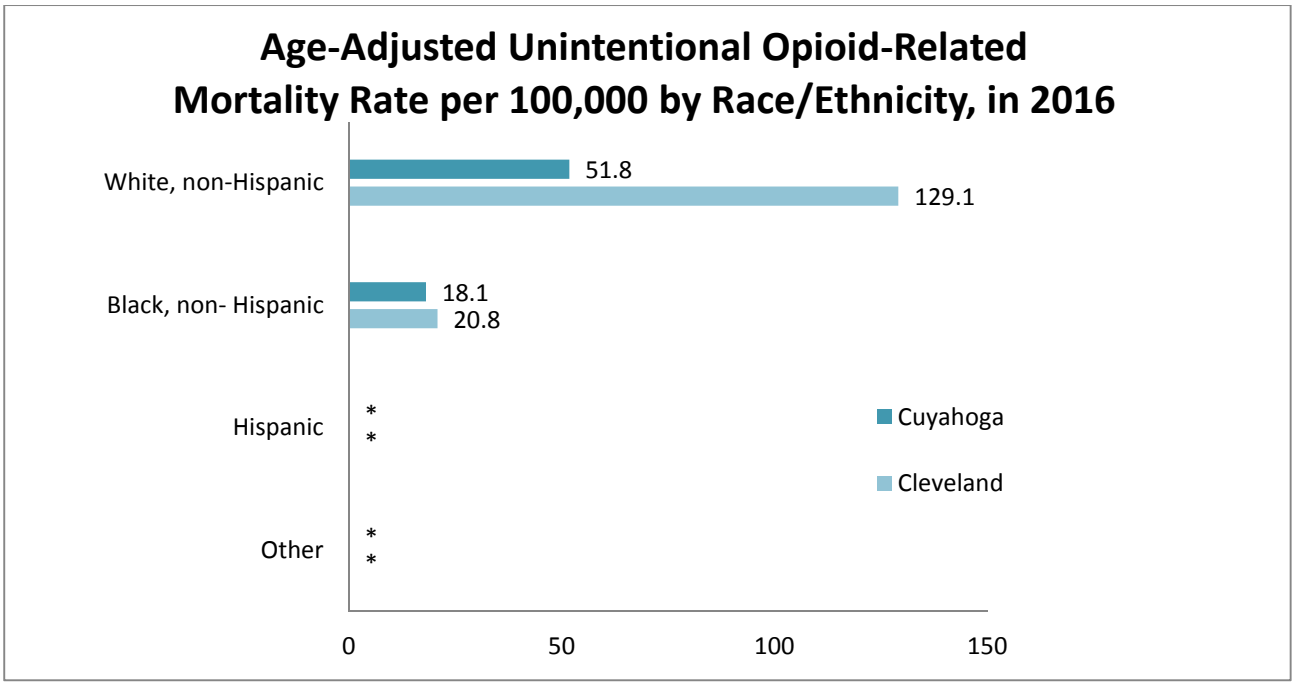
* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is age-specific and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.



Note: Rate is direct age-adjusted to the 2000 U.S. standard population and uses the 2010 population data for the denominator.

Summary

Across all demographic groups (i.e. age, gender, and race/ethnicity), unintentional opioid-related mortality rates were higher for the city of Cleveland compared to Cuyahoga County overall. However, differences were minimal among 18 to 34 year olds and Black, non-Hispanics. The White, non-Hispanic population had rates that were three (Cuyahoga County overall) to six times (city of Cleveland) higher than Black, non-Hispanics.

Also, unintentional opioid-related mortality rates for males were approximately one-and-a-half times higher than for females. The county rate was slightly higher than the state of Ohio (32.9) and almost three times as high as the national rate (13.3)[6], where the city of Cleveland mortality rate was significantly higher than the county, state and nation. Preliminary data from 2017 (not shown) suggest that unintentional opioid-related mortality rates remain a local, state, and national public health epidemic.

References

[1] Centers for Disease Control and Prevention, Drug Overdose. Available at https://www.cdc.gov/drugoverdose/data/analysis.html. Accessed March 20, 2018.

[2] United States Drug Enforcement Administration, Fentanyl FAQs. Available at https://www.dea.gov/druginfo/fentanyl-faq.shtml. Accessed March 20, 2018.

[3] Ohio Department of Health, "Combatting the opiate crisis in Ohio." Available at http://mha.ohio.gov/Portals/0/assets/Initiatives/GCOAT/Combatting-the-Opiate-Crisis.pdf. Accessed March 20, 2018.

[4] Cuyahoga County Opiate Task Force. Available at http://opiatecollaborative.cuyahogacounty.us/. Accessed March 20, 2018.

[5] Cuyahoga County Board of Heath (CCBH) using data obtained from the Cuyahoga County Medical Examiner's Office.

[6] Seth P, Scholl L, Rudd RA, Bacon S. Overdose Deaths Involving Opioids, Cocaine, and Psychostimulants — United States, 2015–2016. MMWR Morb Mortal Wkly Rep 2018;67:349–358. Available at: http://dx.doi.org/10.15585/mmwr.mm6712a1. Accessed May 13, 2018.

Note: For additional information about this indicator please see the *Technical Guide.*

Emerging Health Concerns: Zika virus

Although Zika virus disease in humans was first recognized in 1952, it became a nationally notifiable condition in 2016. The virus is transmitted by *Aedes* mosquitoes, and can cause devastating complications for those who are infected by it.[1] Infection can be caused by mosquito bites, but the virus can also be transmitted through sexual intercourse or to a fetus by their mother. Some of the most severe consequences are birth defects suffered by children born to women infected by Zika. However, many people who are infected by Zika will have no symptoms or only mild symptoms.[2] Zika has been transmitted in the continental United States by mosquitos.[1] However, no known cases have been diagnosed as a result of a person being bitten in Ohio by an infected mosquito. This indicator is the number of new Zika virus infections reported each year per 100,000 population.

New Zika Virus Infections, 2016:
Cuyahoga County and the City of Cleveland Compared to the National Benchmark

Indicator	Cuyahoga County[3]	City of Cleveland[3]	National Benchmark*
Incidence of Zika infections (per 100,000 population)**	1.4	1.5	NA

* National benchmarks were identified in the *Healthy People 2020* initiative or the *County Health Rankings* project where:
[a] Benchmark is based on *Healthy People 2020* Goal.
[b] Benchmark is based on *County Health Rankings* project.
NA National benchmark was not identified.
** Rate expressed as per 100,000 population using the 2010 census as the denominator.
Note: For additional information about this indicator please see the *Technical Guide.*

Summary

In 2016, there were 18 cases of Zika virus disease in Cuyahoga County overall (four in the city of Cleveland). None of the cases was a result of the individual being bitten in Ohio by an infected mosquito. Approximately two-thirds of the cases were female (n=14) with a majority of the cases being individuals 18 to 34 years old (n=10) and 50 to 64 years old (n=6). Racial/ethnic differences could not be assessed due to a high percent of cases missing information. In the state of Ohio there were 83 cases and there were 5,168 cases in the nation.[4]

References
[1] Centers for Disease Control and Prevention, Zika virus. Accessible at https://www.cdc.gov/zika/about/index.html. Accessed March 20, 2018.
[2] Centers for Disease Control and Prevention, Zika virus. Accessible at https://www.cdc.gov/zika/about/overview.html. Accessed March 20, 2018.
[3] Cuyahoga County Board of Health (CCBH) using data obtained through the Ohio Disease Reporting System (ODRS).
[4] Centers for Disease Control and Prevention, Zika virus. Accessible at https://www.cdc.gov/zika/reporting/2016-case-counts.html. Accessed May 13, 2018.

6. Summary of Indicators: Disparities At-A-Glance

This section examines data discussed in the *County Profile: Key Indicators* section by specifically looking at disparities based on age, gender and/or race/ethnicity. Gaining a more complete understanding of where health disparities exist is crucial if inequities are to be addressed. There are two different analyses provided in this section:

- An analysis of hospital diagnostic data by race/ethnicity.
- A table providing a brief overview of the indicators by category and noting the type of disparity that exists.

Hospital Diagnostic Data: Race/Ethnicity Analysis

Throughout this report, many examples of health outcomes that vary based on a person's race and/or ethnicity have been shown. Another way to look at equity issues is to examine hospital diagnostic data to see if there are any differences in patient diagnosis patterns based on race or ethnicity. In order to do this properly we isolated patient diagnoses within payer group categories. This essentially created groups of people who are similar in terms of their socioeconomic status. Given that poverty is strongly related to poor health outcomes, data were examined separately for those with the following types of health insurance coverage: Medicaid, Medicare or commercial insurance.

First, the incidence of ACS cases does not differ by race within Medicaid or Medicare beneficiary groups. Blacks, Whites and Hispanics show similar levels of ACS cases. Among those with commercial health insurance, however, we do see a difference. In 2016, hospitalized Blacks had an ACS incidence of 11.0%, compared to an ACS incidence of 8.0% for Whites. Individuals of Hispanic descent had an ACS incidence of 8.8%, closer to that of Whites than of Blacks.

Examination of the incidence of the more common primary diagnoses categories showed no notable difference based on race/ethnicity within the payer patient groups of Medicare, Medicaid and commercial health insurance. There was one exception: childhood asthma. Among inpatient Medicaid beneficiaries, Black (4.3%) and Hispanic (3.3%) children were significantly more likely to have an asthma diagnosis compared to their White counterparts (1.3%). This pattern was also true among children with commercial health insurance who were hospitalized. White patients (0.8%) had the lowest levels of asthma diagnoses while levels were higher for Hispanic children (1.5%) and even more so for Black children (3.3%). The causes of childhood asthma are not completely understood, but risk factors include indoor air pollutants (cigarette smoke), housing structural irritants (mold, dust mites) and outdoor air pollution common in urban areas. Black and Hispanic children are more likely to be hospitalized for asthma compared to White children.

Indicators: Age, Gender, and/or Race/Ethnicity Disparities

Socioeconomic Indicators						
Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Percent of Population Unemployed	7.6%	13.9%	5.7%	5.8%	Not Available	A,G,R/E
Percent of Population Without Health Insurance	4.9%	7.4%	5.6%	8.6%	Not Available	A,G,R/E
Average Life Expectancy	76.5	72.2	Not Available	78.7	Not Available	G, R/E
High School Graduation Rate	89.5%	81.0%	89.6%	87.4%	Not Available	A,G,R/E
Percent of Total Residents Below Poverty Level	18.1%	35.0%	14.6%	14.0%	Not Available	A,G,R/E

Health Resource Availability

Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Preventable Hospital Stays: Rate per 1,000 Medicare Enrollees	53	Not Available	57	Not Available	35	Not Available
Ratio of Licensed Primary Care Physicians	900:1	Not Available	1,310:1	Not Available	1,030:1	Not Available
Population Without a Regular Source of Primary care – Including Dental Services				Not Available		
Percent of Children who Visited a Doctor in the Past Year				Not Available		
Medicaid Physician Availability: Ratio				Not Available		

Quality of Life Indicators

Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Homicide Rate (per 100,000 population)	14.2	28.3	6.5	6.1	5.5	A,G,R/E
Percent of Population Living in Food Desert Areas	35.6%	60.7%	Not Available	Not Available	Not Available	A,R/E (No data available for G)
Percentage of Population with Access to Exercise Opportunities	96.0%	Not Available	85.0%	Not Available	91.0%	Not Available
Proportion of Persons Satisfied with the Quality of Life in the Community				Not Available		
Proportion of Residents Planning to Stay in the Community/Neighborhood for the Next Five Years				Not Available		

Behavioral Risk Factors

Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Percent of Obese Adult Residents	30.0%	35.0%	32.0%*	29.9%*	30.5%	A,G,R/E
Percent of Obese Adolescents in 9th-12th Grade	15.5%	Not Available	Not Available	Not Available	Not Available	G,R/E
Percent of Current Cigarette Use Among Adults	21.0%	35.2%	23.0%*	15.5%*	12.0%	A,G,R/E
Percent of Current Cigarette Use Among Adolescents in 9th-12th Grade	6.2%	Not Available	Not Available	Not Available	16.0%	R/E (No data available for G)
Percent of Current Cigar Use Among Adolescents in 9th-12th Grade	13.1%	Not Available	Not Available	Not Available	8.0%	Not Available
Percent of Adults Consuming 5 or More Fruits and Vegetables Per Day	Not Available	16.9%	21.0%*	23.4%*	Not Available	Not Available
Percent of Adolescents in 9th-12th Grade Consuming 5 or More Fruits and Vegetables Per Day	19.5%	Not Available	Not Available	Not Available	Not Available	No data available for G
Rate of Illegal Drug Use (per 100,000 population)	Not Available	713.7	Not Available	Not Available	Not Available	Not Available
Percent Insufficient Physical Activity	24.0%	58.1%*	26.0%	Not Available	32.6%	Not Available

*Indicates data source and/or time frame of data is different than Cuyahoga County or the city of Cleveland. For additional information please see the *Technical Guide.*

Environmental Health Indicators						
Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Percentage of Children Less Than Six Years Old with Blood Lead Levels ≥ 5 ug/dL	8.2%	12.4%	2.0%	3.3%*	0.0%	Not Available
Percentage of Children Less Than Six Years Old with Blood Lead Levels ≥ 10 ug/dL	2.5%	3.7%	0.8%	0.5%*	0.0%	Not Available
Average Daily Density of Fine Particulate Matter (<2.5 micrometers)	12.9	Not available	11.3	Not available	6.7	Not Available
Number of Houses Built Prior to 1950	245,426	138,512	1,387,889	24,174,640	Not Available	Not Available
Percentage of Houses Built Prior to 1950	39.7%	65.2%	26.9%	17.8%	Not Available	Not Available
Percentage of Residents Reporting Smoking Inside Home within the Past Week	Not available	34.4%*	Not available	Not available	Not Available	A,R/E
Foodborne Disease caused by Campylobacteriosis (per 100,000 population)	17.3	15.6	16.9	12.8	8.5	Data not sufficient
Foodborne Disease caused by E. coli O157:H7 (per 100,000 population)	0.9	**	0.7	1.0	0.6	Data not sufficient
Foodborne Disease caused by Hemolytic Uremic Syndrome (HUS) (per 100,000 population)	0.0	0.0	0.1	Not Available	1.0	Data not sufficient
Foodborne Disease caused by Listeriosis (per 100,000 population)	0.5	0.0	0.3	0.2	0.2	Data not sufficient
Foodborne Disease caused by Salmonellosis (per 100,000 population)	12.0	12.6	13.2	15.7	11.4	Data not sufficient
Foodborne Disease caused by Vibriosis (per 100,000 population)	0.0	0.0	0.1	0.4	0.2	Data not sufficient
Foodborne Disease caused by Yersiniosis (per 100,000 population)	0.6	**	0.5	0.3	0.3	Data not sufficient

*Indicates data source and/or time frame of data is different than Cuyahoga County or the City of Cleveland. For additional information please see the *Technical Guide.*

**Rate may be unstable because there were fewer than five cases.

Social and Mental Health Indicators						
Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Rate of Child Abuse and Neglect among Children (per 1,000 children)	7.3	13.9	Not Available	9.1	8.5	Not Available
Violent Crime Rate (per 100,000 population)	589.0	1,631.3	290.0	Not Available	62.0	Not Available
Suicide Rate (per 100,000 population)	12.2	12.2	14.1	13.0*	10.2	A, G, R/E
Domestic Violence Rate	Not Available	1,569.8	Not Available	Not Available	Not Available	Not Available
Average Number of Poor Mental Health Days within the Past Month	3.7 days	6.2 days	4.3 days	Not Available	3.1 days	Not Available

*Indicates data source and/or time frame of data is different than Cuyahoga County or the City of Cleveland. For additional information please see the *Technical Guide.*

Maternal and Child Health Indicators						
Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Birth Rate Among Adolescents Females 10-14 Years Old (per 1,000)	0.3	0.5	Not Available	Not Available	Not Available	R/E (A,G not applicable)
Birth Rate Among Adolescents 15-17 Years Old (per 1,000)	7.9	16.2	Not Available	9.9*	36.2	R/E (A,G not applicable)
Premature Births per 100 Live Births	11.9	14.5	10.3	9.6	9.4	R/E (A,G not applicable)
Percent of Women Receiving Prenatal Care in First Trimester	69.9%	61.9%	74.4%	77.1%	77.9%	R/E (A,G not applicable)
Percent of Mothers Who Smoked during Pregnancy	9.1%	14.3%	16.9%	7.2%	1.4%	R/E (A,G not applicable)
Infant (birth to 1 year) Mortality Rate (per 1,000 live births)	8.7	12.0	7.4	5.9*	6.0	R/E (A,G not applicable
Neonatal (birth to 28 days) Mortality Rate (per 1,000 live births)	6.1	7.4	5.2	3.9*	4.1	R/E (A,G not applicable)
Post-neonatal (1 month to 1 year) Mortality Rate (per 1,000 live births)	2.6	4.6	2.3	2.0*	2.0	R/E (A,G not applicable)
Death Rate for Children 1-4 Years Old (per 100,000 children)	16.6	31.1	Not Available	24.9	26.5	Data not sufficient
Death Rate for Children 5-9 Years Old (per 100,000 children)	9.1	**	Not Available	Not Available	12.3	Data not sufficient
Death Rate for Children 10-14 Years Old (per 100,000 children)	8.4	**	Not Available	Not Available	15.2	Data not sufficient
Death Rate for Children 1-14 Years Old (per 100,000 children)	10.9	17.4	Not Available	Not Available	Not Available	A,G,R/E

*Indicates data source and/or time frame of data is different than Cuyahoga County or the City of Cleveland. For additional information please see the *Technical Guide.*

**Rate may be unstable because there were fewer than five cases.

Death, Illness, and Injury Indicators

Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Mortality Rate for All Causes (per 100,000 populations)	836.9	1,063.2	832.3	728.8	Not Available	A,G,R/E
Mortality Rate for All Cancer Types (per 100,000 population)	185.0	226.2	155.8	173.4	160.6	A,G,R/E
Mortality Rate for Cardiovascular Disease (per 100,000 population)	199.8	255.1	185.1	165.5	100.8	A,G,R/E
Number of Years of Potential Life Lost (YPLL)	9,365.4	13,367.4	Not Available	Not Available	5,300	G,R/E (A not applicable)
Percent of Respondents Reporting their Health Status as Fair or Poor	16.0%	28.7%*	17.0%	Not Available	12.0%	A,G,R/E
Average Number of Sick Days Within the Past Month	3.7 days	5.0* days	4.0 days	Not Available	3.0 days	A,G,R/E

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Communicable Disease Indicators

Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Incidence of HIV (per 100,000 population)	15.2	Not Available	8.5	12.3	Not Available	A,G,R/E
Percentage of Children with Up-To-Date 4:3:1:3:3:1:4 Vaccination Series by *24 Months of Age*	76.0%	48.0%	68.0%	Not Available	80.0%	Not Available
Percentage of Medicare Beneficiaries Immunized in the 2017-2018 Flu Season for Influenza	48.9%	48.8%	48.8%	46.0%	70.0%	Not Available

Sentinel Events						
Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Rate of Gun-related Deaths (per 100,000 population)	18.5	31.2	12.9	11.3	9.3	A,G,R/E
Rate of Drug-induced Deaths (per 100,000 population)	44.9	73.8	Not available	16.3*	11.3	A,G,R/E
Rate of Work-Related Injury Deaths (per 100,000 population)	**	**	3.1	3.6	Not Available	A (G,R/E data not sufficient)
Percent of Female Breast Cancer Cases Diagnosed at Late Stage	29.7%	35.0%	28.9%	27.5%	41.0%	A,R/E (G not applicable)
Percent of Cervical Cancer Cases Diagnosed at Late Stage	55.1%	63.5%	51.7%	51.0%	Not Available	A,R/E (G not applicable)
Number of Anthrax Cases	0.0	0.0	Not available	Not available	Not Available	Data not sufficient
Number of Smallpox Cases	0.0	0.0	Not available	Not available	Not Available	Data not sufficient

*Indicates data source and/or time frame of data is different than Cuyahoga County or the City of Cleveland. For additional information please see the *Technical Guide.*

**Rate may be unstable because there were fewer than five cases.

Emerging Health Concerns						
Indicator Name	Cuyahoga County	City of Cleveland	Ohio	Nation	National Benchmark	Disparity A=age G=gender R/E=race/ethnicity
Rate of Unintentional Opioid-Related Deaths (per 100,000 population)	38.2	61.8	32.9	13.3	Not available	A,G,R/E
Incidence of Zika infections (per 100,000 population)	1.4	1.5	0.7	1.6	Not available	A,G (R/E data not sufficient)

7. UH Hospital-Specific Findings

Hospital inpatient data for the eight University Hospitals facilities that are located within Cuyahoga County are presented in this section. An evaluation of the impact of the strategies each hospital has been developing to address their identified priority health needs is also provided in this section.

UH Ahuja Medical Center

Inpatient Discharges, 2016, All Ages, University Hospitals Ahuja Medical Center
By Age Group and County of Residence

	Age											
	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	1	0.0%	281	5.2%	525	9.7%	1,309	24.1%	3,308	61.0%	5,424 (63% of total)	100%
Non-Residents of Cuyahoga County	1	0.0%	171	5.3%	319	9.9%	915	28.5%	1,803	56.2%	3,209	100%
Total Discharges, 2016	2	0.0%	452	5.2%	844	9.8%	2,224	25.8%	5,111	59.2%	8,633	100%

- In 2016, 63% of all inpatients discharged from University Hospitals Ahuja Medical Center were residents of Cuyahoga County.
- UH Ahuja's patient population in 2016 was heavily dominated by those aged 50 and over: 25.8% were 50 to 64 years old and 59.2% were aged 65 and over.

Inpatient Discharges, 2016, All Ages, University Hospitals Ahuja Medical Center By Residential Zip Code

Zip Code	Municipality	#	%
44122	Shaker Heights/Beachwood	811	9.4%
44128	Warrensville Heights	600	7.0%
44124	Mayfield Heights-Pepper Pike	449	5.2%
44146	Bedford	445	5.2%
44087	Twinsburg	345	4.0%
44139	Solon	344	4.0%
44120	Cleveland-Buckeye-Shaker	328	3.8%
44118	Cleveland Hts/University Hts	294	3.4%
44022	Chagrin Falls	274	3.2%
44202	Reminderville/Aurora	271	3.1%
44121	South Euclid	249	2.9%
44067	Northfield/Sagamore Hills	226	2.6%
44056	Macedonia	212	2.5%
44105	Cleveland-Kinsman	205	2.4%
44137	Maple Heights	200	2.3%
44143	Highland Heights	198	2.3%
44023	Bainbridge/Auburn	185	2.1%
44241	Streetsboro	164	1.9%
44236	Hudson	160	1.9%
44266	Ravenna	119	1.4%
44125	Garfield Heights	116	1.3%
44060	Mentor	98	1.1%
44077	Painesville	85	1.0%
44094	Willoughby	79	0.9%
44112	East Cleveland	77	0.9%
44104	Cleveland-Kinsman	68	0.8%
44224	Stow	68	0.8%
44255	Mantua	56	0.6%
44108	Cleveland-Glenville	54	0.6%
44092	Wickliffe	53	0.6%
44095	Willowick/Eastlake	52	0.6%
44240	Kent	50	0.6%
44106	Cleveland-University Circle	49	0.6%
44110	Cleveland-Collinwood	47	0.5%
44123	Euclid	46	0.5%
44131	Independence	42	0.5%
44132	Euclid	42	0.5%
44103	Cleveland-Hough	39	0.5%
44130	Middleburg Heights	39	0.5%
All Other Zips		1,394	16.1%
	Total:	**8,633**	**100%**

- UH Ahuja draws patients from a large number of different zip codes given the size of its annual patient census.

Inpatient Discharges, 2016, All Ages, University Hospitals Ahuja Medical Center
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	8,633	
Diseases of the circulatory system	2,042	23.7%
Diseases of the musculoskeletal system and connective tissue	1,221	14.1%
Diseases of the digestive system	1,131	13.1%
Diseases of the respiratory system	785	9.1%
Infectious and parasitic diseases	703	8.1%
Diseases of the genitourinary system	532	6.2%
Endocrine, nutritional and metabolic diseases	329	3.8%
Symptoms, signs, and ill-defined conditions	322	3.7%
Cancers (neoplasms)	296	3.4%
Injury	257	3.0%
Diseases of the skin and subcutaneous tissue	225	2.6%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	178	2.1%
Diseases of the nervous system and sense organs	150	1.7%
Mental and behavioral disorders	91	1.1%
Poisoning	42	0.5%
Complications of pregnancy, childbirth, and the puerperium	9	0.1%
Diseases of the ear and mastoid process	8	0.1%
Congenital anomalies	6	0.1%
Diseases of the eye and adnexa	1	0.0%
Other	304	3.5%

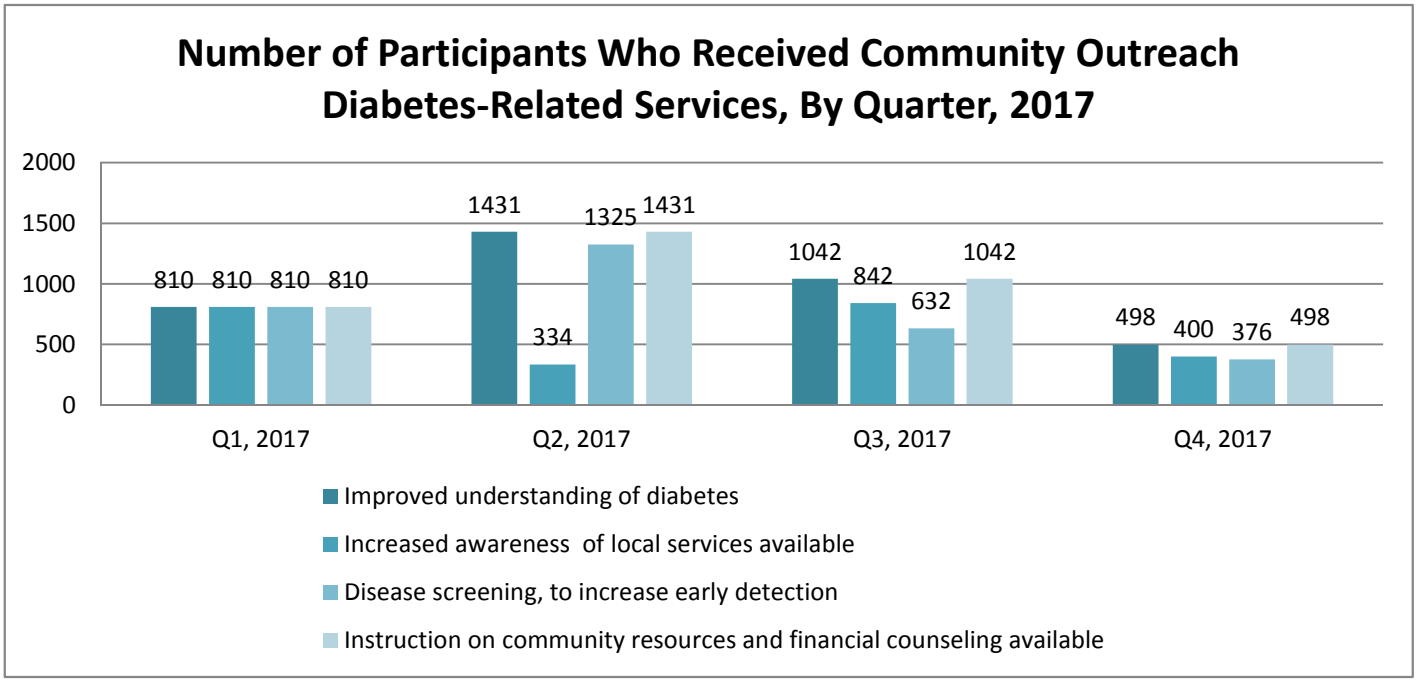
- Above we show the major disease categories associated with the primary diagnoses for all discharged patients in 2016 (for patients of all ages). Diseases of the circulatory system were the most common (23.7%), and in this way, UH Ahuja is similar to other UH community hospitals. What is unique about UH Ahuja, though, is its large proportion of patients in 2016 with diseases of the musculoskeletal system and connective tissue (14.1%). These conditions were almost exclusively arthritis (osteoarthritis).

2015 UH Ahuja CHNA Implementation Plan: Impact Assessment

Upon review of UH Ahuja's 2015 Community Health Needs Assessment, hospital leadership isolated three top priority community health needs, all related to decreasing hospital admission/readmission rates for the more common chronic diseases: 1) **diabetes**; 2) **cardiovascular disease**; and 3) **respiratory diseases**. After pinpointing the top priorities, strategies and tactics were created to lend the hospital's staff expertise and resources to combat each community health issue. UH Ahuja's multi-pronged approach and outcomes are outlined below.

1. Decrease Hospitalization and Improve Self-Management for Diabetes

a. Dozens of events (health fairs, screening events, talks given by health care experts) were held throughout the hospital's service area. The hospital also created written educational pieces for wide distribution throughout the community. Events were held in community centers, YMCAs, senior centers, churches and major employer sites. The hospital continues to aggressively seek community partners that welcome hospital staff offering information and screening services to constituents, members and employees. These events accomplished four things: 1) increased community member knowledge and understanding of diabetes; 2) increased awareness levels of local services available to combat diabetes and/or provide support to patients and their families; 3) increased early detection of disease in participants; and 4) a more complete understanding of available resources and financial counseling services for patients identified as showing signs of diabetes; this has been shown to increase patient compliance in seeking follow-up care.

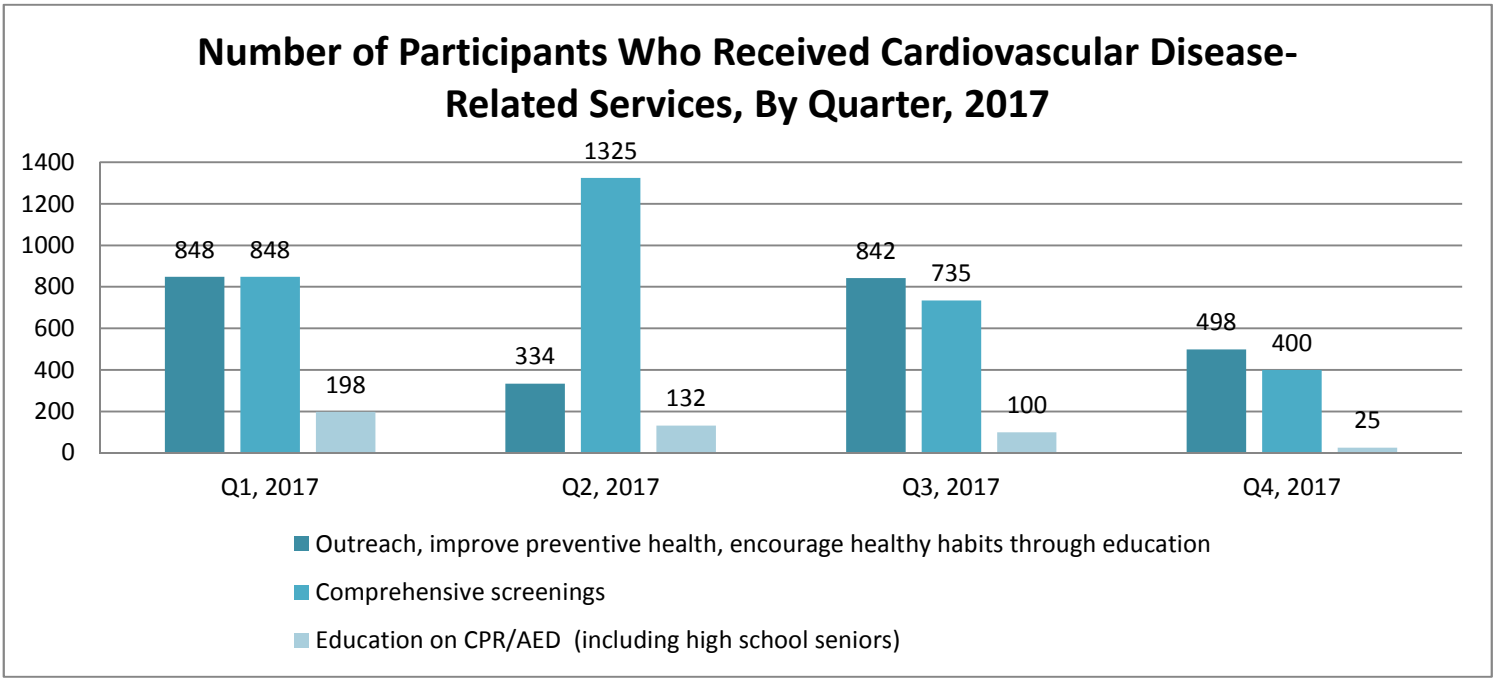


- Several thousand community members were administered educational and screening services related to diabetes in 2017.

b. UH Ahuja leadership found its most successful events were those held in conjunction with community partners. In 2017, staff identified 19 (far exceeding its goal of 10) new community partners (employers, government, agencies, health care providers, etc.) to more efficiently and effectively extend care management, community outreach and health education services to community members. The development of new partnerships that would enhance connections with the community's underserved members (socioeconomically disadvantaged, senior citizens) were the highest priority.

2. Cardiovascular Disease

a. In the realm of cardiovascular disease, UH Ahuja community outreach staff also focused on community-based events, leveraging partnerships with organizations that enhanced their ability to reach vulnerable populations. Through educational events, health fairs, screening events, and talks, health care professionals promoted the importance of lifestyle choices, monitoring and controlling early signs of cardiovascular disease, and provided additional education and counseling for those with positive screening results. Written materials were produced and distributed to all event participants.



- Thousands of community members benefitted from the dozens of events held throughout UH Ahuja's service area in 2017. Events included a mix of preventive health strategies and healthy habits education, multiple health screenings for cardiovascular disease, and education/training on CPR/AED (including for high school seniors).

b. In addition to widespread community outreach events, UH Ahuja organized the Big Heart Health event for community leadership, held in September 2017, which included 98 participants.

3. Respiratory Disease

a. Review of available information and data demonstrated a gap in health care services for those afflicted with respiratory disease. A Pulmonology Clinic was added in early 2017 to provide specialized care for respiratory patients with a goal of decreasing the hospital readmission rates for those patients. By the end of 2017, over 2,000 pulmonary patients received specialized care, and this is expected to continue into 2018. Readmission rates for respiratory disease patients will be examined in 2018 and 2019, with a goal of reducing them to below national levels.

UH Beachwood Rehabilitation Hospital

The unique parallel efforts launched by staff members of UH Beachwood Rehabilitation Hospital throughout 2016 and 2017 are described here. UH Beachwood Rehabilitation Hospital also shared the goals of improving patient outcomes for cardiovascular issues after acute episodes due to complications from diabetes and heart disease (strokes, amputation, etc.) and other traumas. UH Beachwood Rehabilitation Hospital's inpatient education and community outreach efforts worked in concert with those of UH Ahuja's.

- UH Beachwood Rehabilitation Hospital staff also sought relationships with community partners interested in having hospital staff bring their knowledge and screening services to their sites for constituents, members or employees. A total of 10 new relationships *per quarter* were established in 2017.

- UH Beachwood Rehabilitation Hospital staff also participated in UH Ahuja screening events by offering their specific screenings based on their educational specialties. Approximately 1,000 community members received one-on-one risk testing and counseling from rehabilitation specialists provided by UH Beachwood Rehabilitation Hospital.

- Patients discharged from UH Beachwood Rehabilitation Hospital received regular phone calls from staff members to assess progress and reinforce awareness of community-based services available to patients in order to continue recovery and adjust to life at home. Several hundred discharged patients received this service throughout 2017.

- In 2017, staff obtained stroke certification and began offering support groups for stroke patients and their families. In 2017, almost 200 patients participated in specialized support groups after discharge. These groups have grown to include stroke, Parkinson's Disease and other brain injury patients. These support groups keep patients and their families connected to their treatment teams and continuously aware of all community-based services available to them.

UH Bedford Medical Center

Inpatient Discharges, 2016, All Ages, University Hospitals Bedford Medical Center By Age Group and County of Residence

	Age											
	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	1	0.1%	123	6.8%	233	12.9%	405	22.3%	1,051	58.0%	1,813 (80% of total)	100%
Non-Residents of Cuyahoga County	0	0.0%	36	8.1%	57	12.8%	98	22.1%	253	57.0%	444	100%
Total Discharges, 2016	1	0.0%	159	7.0%	290	12.8%	503	22.3%	1,304	57.8%	2,257	100%

- In 2016, 80% of all inpatients discharged from University Hospitals Bedford Medical Center were Cuyahoga County residents.
- UH Bedford Medical Center's inpatients in 2016 included adults of all ages, but were concentrated among those aged 50-64 (22.3%) and 65 and older (57.8%).

Inpatient Discharges, 2016, All Ages, University Hospitals Bedford Medical Center By Residential Zip Code

Zip Code	Municipality	#	%
44146	Bedford	991	43.9%
44137	Maple Heights	267	11.8%
44067	Northfield/Sagamore Hills	141	6.2%
44128	Warrensville Heights	104	4.6%
44139	Solon	88	3.9%
44125	Garfield Heights	80	3.5%
44087	Twinsburg	61	2.7%
44105	Cuyahoga Hts/Newburgh Hts	44	1.9%
44241	Streetsboro	43	1.9%
44056	Macedonia	43	1.9%
44120	Cleveland-Buckeye-Shaker	39	1.7%
44202	Aurora/Reminderville	36	1.6%
44122	Shaker Heights/Beachwood	17	0.8%
44106	Cleveland-University Circle	14	0.6%
44236	Strongsville	12	0.53%
All Other Zips		277	12.3%
	Total:	**2,257**	**100%**

Inpatient Discharges, 2016, All Ages, University Hospitals Bedford Medical Center
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	**2,257**	
Diseases of the circulatory system	477	21.1%
Infectious and parasitic diseases	305	13.5%
Diseases of the respiratory system	298	13.2%
Diseases of the digestive system	243	10.8%
Diseases of the genitourinary system	168	7.4%
Endocrine, nutritional and metabolic diseases	137	6.1%
Symptoms, signs, and ill-defined conditions	93	4.1%
Diseases of the musculoskeletal system and connective tissue	85	3.8%
Diseases of the nervous system and sense organs	85	3.8%
Diseases of the skin and subcutaneous tissue	79	3.5%
Injury	62	2.7%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	52	2.3%
Poisoning	51	2.3%
Cancers (neoplasms)	36	1.6%
Mental and behavioral disorders	33	1.5%
Complications of pregnancy, childbirth, and the puerperium	3	0.1%
Other	50	2.2%

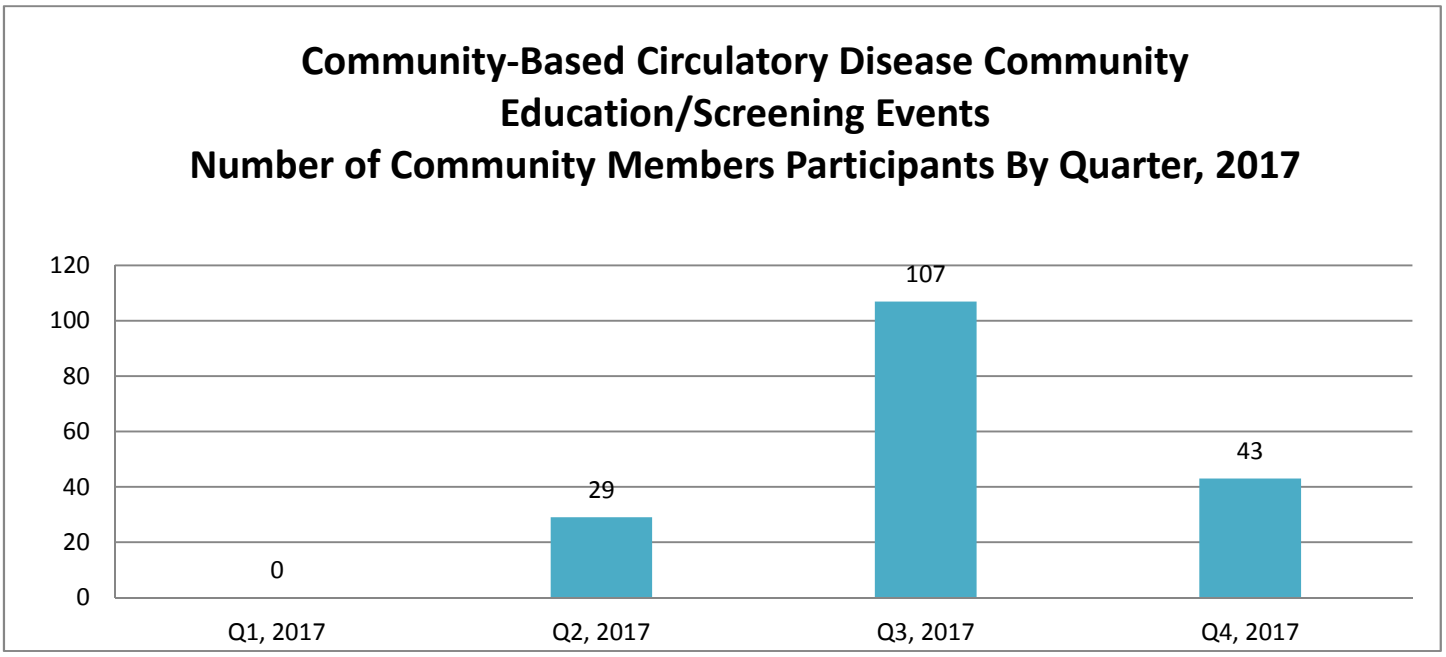
- Above we show the major disease categories associated with the primary diagnoses for all discharged patients in 2016 (for patients of all ages). Diseases of the circulatory system were the most common (21.1%), and in this way, UH Bedford Medical Center is similar to other UH community hospitals. A major difference for UH Bedford is the high proportion of hospitalizations due to infectious diseases (13.5%), the second most common primary diagnosis. Closer examination of the data shows that the great majority of those cases (91.0%) were sepsis cases. Sepsis is a medical emergency, defined by a large immune system response to an infection.

2015 UH Bedford CHNA Implementation Plan: Impact Assessment

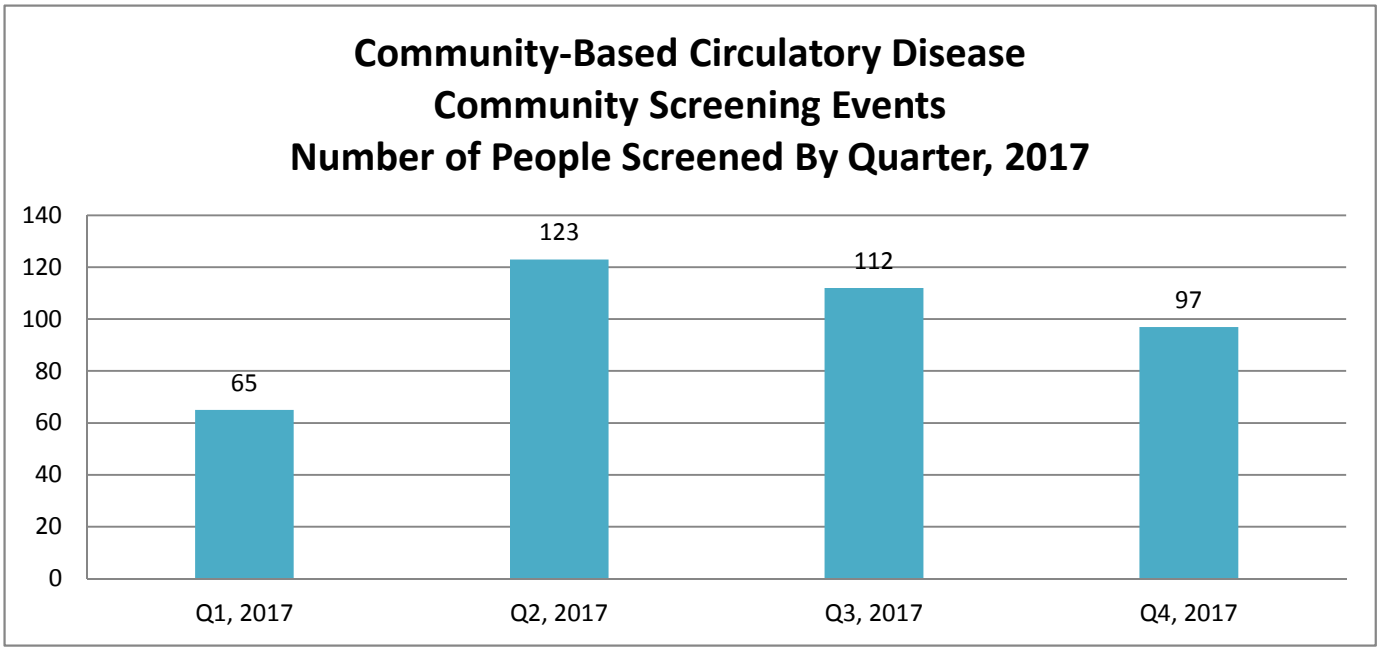
Upon review of the 2015 UH Bedford Medical Center Community Health Needs Assessment, hospital leadership isolated three top priority community health needs: 1) **heart disease**; 2) **respiratory disease**; and, 3) **diabetes**. After pinpointing the top priorities, action plans were created to lend the hospital's staff expertise and resources to combat each community health issue. The overall approach was early detection through free screenings, accompanied by health education regarding chronic disease management. Below we outline what actions were taken and provide an assessment of the impact of those actions.

1. Heart Disease

The most common disease category for this hospital, as well as for all Cuyahoga County residents hospitalized in 2013, diseases of the circulatory system, are chronic illnesses highly impacted by lifestyle. Hence, UH Bedford Medical Center's focus on combating heart disease was centered around increasing community member awareness of the high incidence of heart disease in the community, how important lifestyle choices are in minimizing risk of heart disease, and most ardently, increasing direct community outreach in terms of screening for early signs of heart disease. UH Bedford did this in a very strategic and targeted way. The community outreach health care professional focused on partnering with community-based organizations and local employers to reach people.



a. The hospital hosted health fairs, seminars given by hospital staff, "Heart Day" events, and improved targeted communications for those events. These events leverage the hospital staff's credibility as the authority on health care issues within the community to engage with those at high risk for heart disease. A total of 179 people participated in these events which began in the second quarter of 2017.



b. While UH Bedford Medical Center is a relatively small community hospital, it provided no-cost screenings, including high-level tests, (e.g. carotid ultrasounds) for almost 400 people in 2017. Participants received multiple screening types at events, covering initial signs of heart disease and stroke risk.

   These programs were deemed successful as they built momentum during 2017 and are expected to continue and grow through 2018 and 2019.

c. Also in 2017, the hospital began an initiative to examine the root causes for readmissions due to acute myocardial infarction and heart failure. Data have been collected to determine the root causes and programs to address this issue were anticipated for 2018.

2. Respiratory Disease

a. Chronic respiratory disease, in particular COPD, was shown to be highly associated with hospitalization rates. COPD and pneumonia were very common secondary diagnoses for inpatients in 2013. Deeper investigation into this issue identified the need for additional pulmonology specialist care. Hence, in 2017 a pulmonologist was added.

b. Early detection of chronic respiratory disease is important in establishing a habit of self-care, which improves quality of life, minimizes hospitalizations and increases life span. During the second and third quarters of 2017, the hospital began a program of no-cost, community-based screenings targeting populations most likely to be at high risk. By the end of 2017, 42 high-risk community members were screened and referred to a specialist when appropriate. This program is expected to increase its size in 2018.

c. Along with being the most common respiratory disease among adults, asthma was identified as a common and very debilitating condition for younger community members. The program design for screening most vulnerable populations and referral to specialist care began in late 2017, with the launch of the program planned for 2018.

3. Diabetes

Because diabetes is also among the chronic diseases most likely to result in frequent hospitalizations, an increased focus on community education and support for diabetic patients and their family members began prior to 2016. Support groups meet regularly and are led by a diabetes education specialist who focuses on disease management, diet, and the importance of careful, regular monitoring of the disease. In 2017, this program was being re-designed to be more accessible and at no-cost to community members and focus on those activities that have been shown to improve patient disease stabilization.

UH Cleveland Medical Center

Inpatient Discharges, 2016, All Ages, University Hospitals Cleveland Medical Center By Age Group and County of Residence

	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	3,575	14.9 %	5,503	23.0 %	3,135	13.1 %	4,966	20.7 %	6,778	28.3 %	23,957 (66% of total)	100 %
Non-Residents of Cuyahoga County	646	5.2%	1,654	13.4 %	1,780	14.4 %	3,502	28.4 %	4,757	38.6 %	12,339	100 %
Total Discharges, 2016	**4,221**	**11.6 %**	**7,157**	**19.7 %**	**4,915**	**13.5 %**	**8,468**	**23.3 %**	**11,535**	**31.8 %**	**36,296**	**100 %**

- In 2016, 66% of all inpatients discharged from University Hospitals Cleveland Medical Center were residents of Cuyahoga County.

Inpatient Discharges, 2016, All Ages, University Hospitals Cleveland Medical Center By Residential Zip Code

Zip Code		# of Discharges	% of All Discharges
44112	East Cleveland	1,914	5%
44108	Cleveland-Glenville	1,717	5%
44106	Cleveland-University Circle	1,426	4%
44120	Cleveland-Buckeye-Shaker	1,357	4%
44118	Cleveland Hts/University Hts	1,325	4%
44104	Cleveland-Kinsman	1,167	3%
44103	Cleveland-Hough	1,033	3%
44121	South Euclid	1,030	3%
44105	Cleveland-Kinsman	1,000	3%
44110	Cleveland-Collinwood	985	3%
44128	Warrensville Heights	808	2%
44122	Shaker Heights/Beachwood	732	2%
44146	Bedford	690	2%
44035	Elyria	585	2%
44137	Maple Heights	585	2%

Zip Code		# of Discharges	% of All Discharges
44143	Highland Heights	576	2%
44124	Mayfield Heights-Pepper Pike	541	1.5%
44077	Painesville	474	1.3%
44123	Euclid	440	1.2%
44060	Mentor	412	1.1%
44125	Garfield Heights	410	1.1%
44130	Middleburg Heights	410	1.1%
44117	Euclid	408	1.1%
44132	Euclid	400	1.1%
44134	Parma	338	0.9%
44102	Cleveland- Ohio City	322	0.9%
44115	Cleveland-Central	319	0.9%
44094	Willoughby	307	0.8%
44266	Chesterland/Gates Mills	296	0.8%
44095	Willowick/Eastlake	274	0.8%
44004	Ashtabula	255	0.7%
44109	Cleveland-Tremont	255	0.7%
44119	Cleveland-Pawnee &E. 185th	251	0.7%
44087	Twinsburg	245	0.7%
44041	Geneva	240	0.7%
44129	Parma	240	0.7%
44057	Madison	235	0.6%
44067	Northfield/Sagamore Hills	228	0.6%
44092	Wickliffe	225	0.6%
44145	Westlake	218	0.6%
44024	Chardon	213	0.6%
44133	North Royalton	213	0.6%
44139	Solon	203	0.6%
All other zips		10,991	32.0%
	Total:	**36,296**	**100%**

- Above we show the zip codes (and their main municipality) with at least 0.5% of discharges in 2016. The most common zip codes for discharged patients were 44112 (East Cleveland, 5%); 44108 (Glenville in Cleveland, 5%); 44106 (University Circle in Cleveland, 4%); 44120 (Cleveland-Buckeye-Shaker in Cleveland, 4%); and 44118 (Cleveland Heights/University Heights, 4%). Note that no zip code was the home of more than 5% of 2016 discharged patients.

Inpatient Discharges, 2016, All Ages, University Hospitals Cleveland Medical Center
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	**36,296**	**100%**
Diseases of the circulatory system	5,245	14.5%
Complications of pregnancy, childbirth, and the puerperium	4,491	12.4%*
Cancers (neoplasms)	3,075	8.5%
Diseases of the digestive system	2,868	7.9%
Diseases of the musculoskeletal system and connective tissue	2,036	5.6%
Injury	1,709	4.7%
Diseases of the respiratory system	1,669	4.6%
Mental and behavioral disorders	1,469	4.0%
Diseases of the nervous system and sense organs	1,291	3.6%
Infectious and parasitic diseases	1,190	3.3%
Endocrine, nutritional and metabolic diseases	1,119	3.1%
Diseases of the genitourinary system	1,100	3.0%
Symptoms, signs, and ill-defined conditions	1,032	2.8%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	946	2.6%
Diseases of the skin and subcutaneous tissue	455	1.3%
Poisoning	201	0.6%
Certain conditions originating in the perinatal period	73	0.2%
Congenital anomalies	67	0.2%
Diseases of the eye and adnexa	59	0.2%
Diseases of the ear and mastoid process	29	0.1%
Other (includes uneventful childbirth and newborns)	6,165	17.0%
No information available	7	0.0%

*See text below

- Above we show the major disease categories associated with the primary diagnoses for all discharged patients in 2016 (for patients of all ages). Diseases of the circulatory system were the most common (14.5%), and complications due to pregnancy, delivery or the neonatal period were the most second common. *Approximately 21% of the inpatients discharged in 2016 were newborns or their mothers. Of these, 12.4% had a complication as a primary diagnosis. However, the clear majority of these complications were minor.

- About one-in-ten of those discharged from UH Cleveland Medical Center in 2016 were hospitalized due to a cancer (or benign neoplasm) diagnosis. Almost as many (7.9%) were hospitalized due to a digestive system issue.

2015 CHNA Implementation Plan: Impact Assessment

Upon review of the 2015 UH Cleveland Medical Center Community Health Needs Assessment, leadership isolated six top priority community health needs: 1) **high cancer mortality rates**; 2) **barriers to care for cancer**; 3) **tobacco use;** 4) **poor health literacy rates among cancer patients;** 5) **high incidence of cardiovascular disease;** and 6) **inappropriate emergency room use**.

UH Cleveland Medical Center is the largest medical center in the UH system. Located in the region's urban core, with its focus on advanced and specialized care, it has a very large service area, spanning all of Northeast Ohio. Its reputation and experience with advanced care provides it with a unique and critical role in preventive and community health. With that, hospital leadership prioritized the community health needs based on the scope and depth of those needs and the hospital's ability to impact each. The identified community health needs required a multi-faceted plan that was designed in 2015, launched in 2016 and measured/evaluated in 2017. Each of priority is described below.

1. High Cancer Mortality Rates
   a. UH Cleveland Medical Center outreach specialists identified the zip codes in Cuyahoga County that had the highest cancer rates (or the highest incidence of late-stage diagnoses). Those zip codes also had an above-average proportion of socioeconomically disadvantaged community members. **Ten screening events** were held throughout 2017, which offered screenings for breast, colon, lung and cervical cancers. This highly successful program is expected to continue through 2018.

   b. One hundred high-risk patients without economic means for breast cancer screenings were identified; these targeted screenings served those patients who previously had not received any screenings or mammograms

   c. UH Seidman Cancer Center staff observed that a lack of their own understanding of what types of no-cost services were available to patients was a barrier to some patients receiving care. In late 2017, a total of 83 Cancer Center staff members participated in an in-service to help staff better identify economic vulnerabilities in patients and ensure they obtain the information they need to access no-cost services.

2. Reduce Barriers to Cancer Care

   a. Examination of this issue identified navigation/care coordination as a way to improve more vulnerable patients' adherence to treatment protocols and follow-up monitoring. In 2017, nurse patient navigators were added to all ambulatory care sites, and over 3,000 patients benefitted from care coordination. There is still a need for navigators in underserved areas for colorectal cancer. Additionally, it was discovered that insufficient health insurance was a major barrier for addressing breast cancer based on diagnostic tests that may not be covered by certain types of insurance.

   b. In that same vein, it was determined that important needs that are ancillary to cancer treatment often have a significant impact on patient compliance and ultimate success. To combat that, Cancer Center staff intervened in several specific ongoing barriers to care and addressed the following for

patients in 2017: transportation, insurance, parking fees, unwieldy distance between treatment sites and care, and cancer support services (Gathering Place, wig salons, etc.).

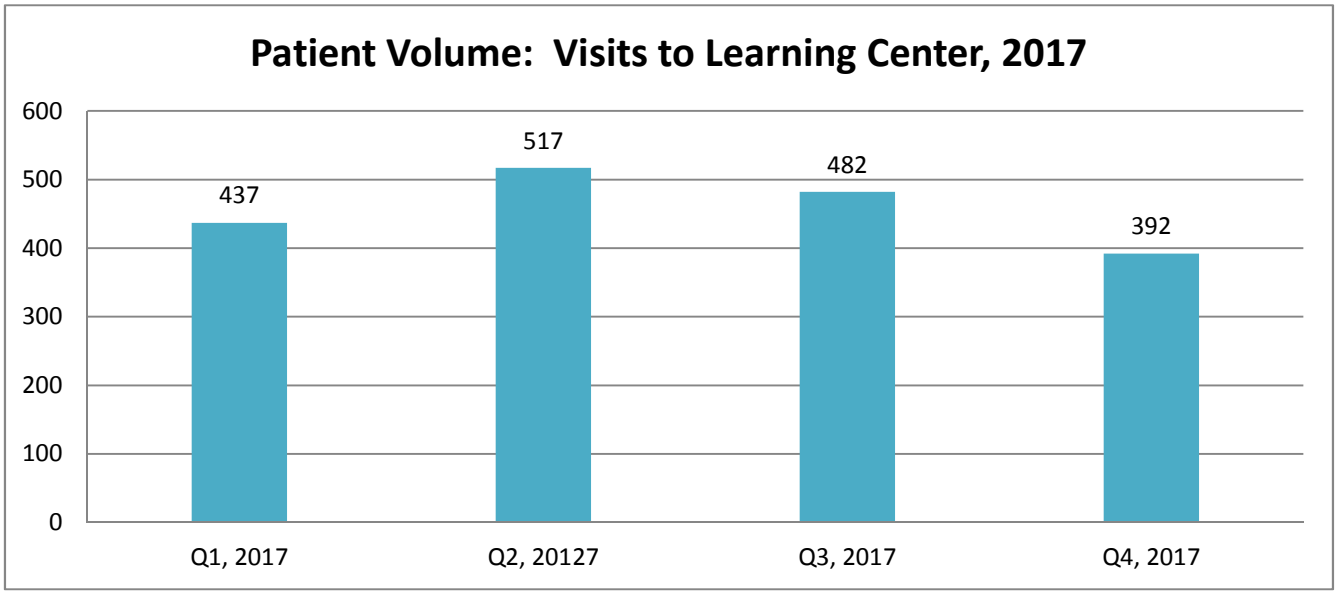
3. Tobacco Use

a. While tobacco use has been declining in Northeast Ohio (especially in Cuyahoga County) overall for the past several years, tobacco use has not changed significantly among low-income community members. Hence, incidence of smoking-related diseases remains high in our area. COPD is among the more common primary respiratory disease diagnoses for those hospitalized and lung cancer remains among the top causes of cancer deaths. UH Cleveland Medical Center adopted successful smoking cessations programs and engaged in a large awareness and communications campaign within their facilities to promote these programs. They also initiated a 'Quit Line' for patients.

b. While non-patients cannot yet participate in these programs, staff refer those who contact the Cancer Center to local no-cost programs.

c. Finally, Seidman Cancer Center participated in the *Healthy Cleveland, Breathe Free Committee* initiatives (Tobacco 21, Great American Smokeout). This 16-member coalition of leading health care and other community-focused institutions formed in 2017. Its challenge is to reduce smoking in our area. To do this, its activities are designed to raise awareness about the impacts of tobacco use on health and air quality, connect citizens with resources to quit, develop and promote policies that reduce tobacco use among citizens, and educate the community on those policies and their health implications.

4. Poor Health Literacy Rates Among Cancer Patients

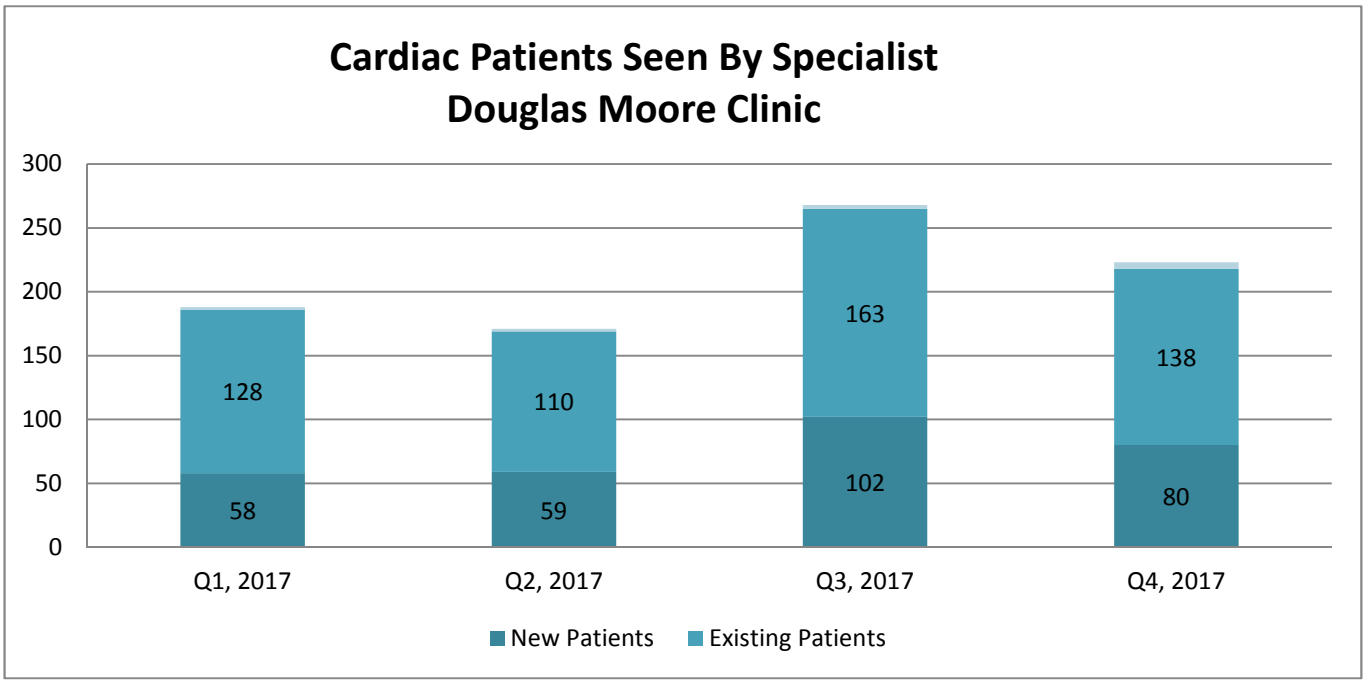


a. Inspection of the root causes of poor patient compliance revealed a low level of health literacy among a sizable proportion of cancer patients at UH Seidman Cancer Center. Patients did not have a strong resource at UH Seidman to learn more about disease courses, treatments, and effective ways to navigate insurance coverage. Cancer Center staff re-examined the health literacy materials

in the Center's Learning Center, and materials were re-tooled to focus on the issues that most impact patients, written in a clear, concise, culturally sensitive way. Over 1,800 patients and caregivers obtained information from the Learning Center in 2017.

5. High Rates of Cardiovascular Disease

Cardiovascular disease was the most common primary diagnosis for hospital admission in Cuyahoga County in 2013 and again in 2016. UH Cleveland Medical Center focused on this issue by improving access to specialist care for vulnerable populations.



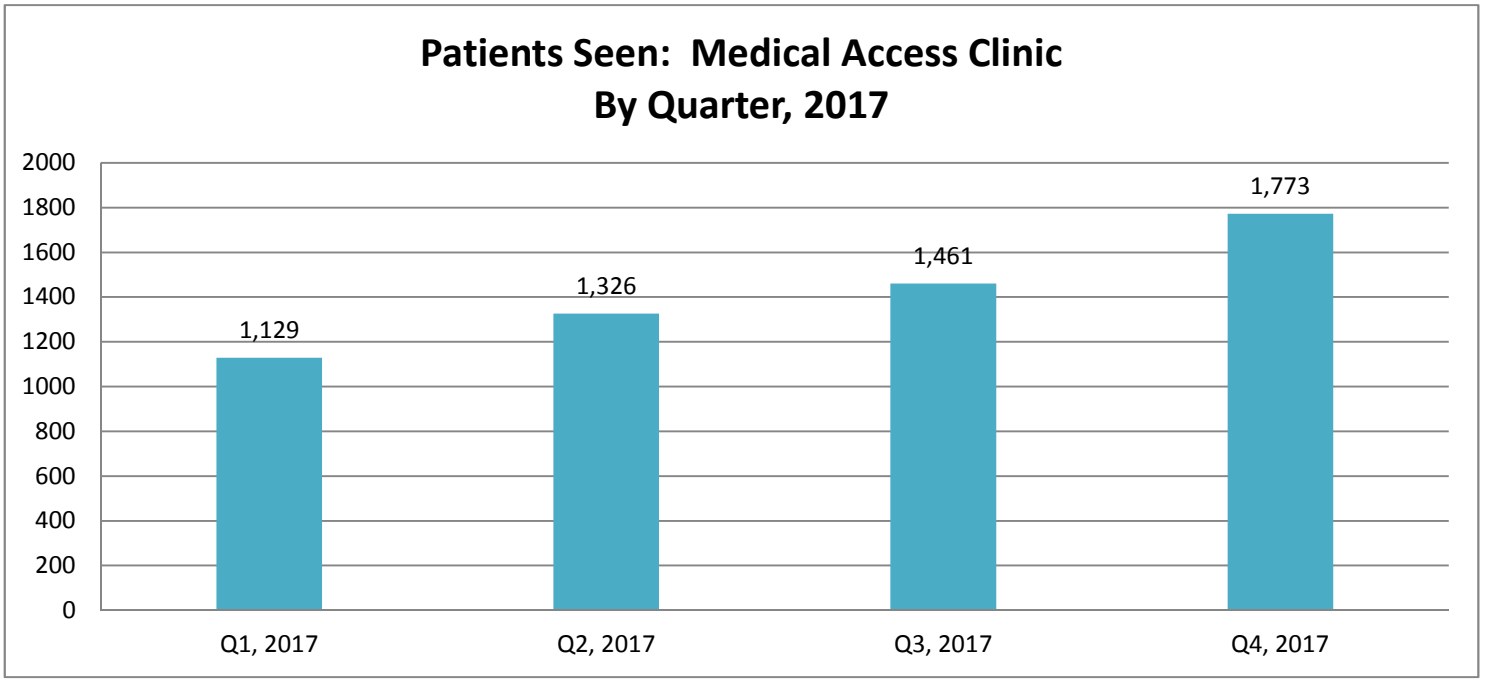
a. Douglas Moore Clinic: In 2016, the clinic **dedicated a cardiology/heart failure specialist to the underserved population** in Cuyahoga County. From 2016 to 2017, the number of cardiac patients cared for by a cardiac/heart failure specialist in the Douglas Moore Clinic grew dramatically. By 2017, between 169 and 265 cardiac patients were seen by the cardiologist each quarter. The number of <u>new</u> cardiac patients at the Clinic remained strong throughout 2017 (minimum of 58 new patients each quarter).

b. UH Cleveland Medical Center pursued two targeted outreach efforts through its participation in the American Heart Association's Go Red for Women events in 2016 and 2017 in order to proactively educate community members on heart disease. Approximately 900 people participated in this event in 2017, and there was moderate participation in other events such as weekly Healthy Eating Nutrition Classes, a weekly Heart Failure Education & Nutrition Series, CPR presentations and hands-only CPR instructions, and cardiovascular biometric screenings.

c. Through the Neurological Institute at UH Cleveland Medical Center, 350 medically underserved community members were screened for stroke risk. A four-day screening and education event was held at UH Cleveland Medical Center in an effort to reach people at elevated risk. Each individual's medical history was reviewed, personal risk factors were identified, a blood

pressure assessment was performed, body mass index (BMI) was calculated, and each individual was counseled on stroke prevention strategies and provided with stroke education.

6. High Frequency of Inappropriate Emergency Department Use



a. By 2017, almost 6,000 patients were seen by UH Cleveland Medical Center's Medical Access Clinic. Initially, the clinic was started to divert patients from the emergency department who presented with non-emergent issues. It was discovered that many of these patients lacked a primary care provider. Therefore, in 2017 ongoing primary care was offered to patients, and this resulted in the large increase in patient volume.

b. The Medical Access Clinic has three noteworthy patient-centered features: 1) all patients are seen by a nurse during their visits and are provided initial or reinforcing health education; 2) the clinic has extended hours (evening, etc.) to accommodate patients with work schedules that create barriers to accessing primary care; 3) mental health assessments are routinely conducted to identify patients who could benefit from mental/behavior health assistance. Patients identified as needing mental/behavioral health care are referred to a nearby partnering mental health agency for care.

UH Parma Medical Center

Inpatient Discharges, 2016, All Ages, University Hospitals Parma Medical Center
By Age Group and County of Residence

	Age											
	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	437	4.3%	698	6.9%	672	6.7%	1,994	19.8%	6,256	62.2%	10,057 (92% of total)	100%
Non-Residents of Cuyahoga County	59	6.7%	88	10.1%	92	10.5%	194	22.2%	442	50.5%	875	100%
Total Discharges, 2016	**496**	**4.5%**	**786**	**7.2%**	**764**	**7.0%**	**2,188**	**20.0%**	**6,698**	**61.3%**	**10,932**	**100%**

- In 2016, 92% of all inpatients discharged from University Hospitals Parma Medical Center were residents of Cuyahoga County.
- UH Parma Medical Center inpatients in 2016 encompassed all age groups, including children. However, most (81.3%) were age 50 and older.

Inpatient Discharges, 2016, All Ages, University Hospitals Parma Medical Center
By Residential Zip Code

Zip Code	Municipality	#	%
44134	Parma	2,141	19.6%
44130	Middleburg Heights	1,775	16.2%
44129	Parma	1,661	15.2%
44133	North Royalton	918	8.4%
44131	Independence	735	6.7%
44144	Cleveland-Brooklyn	490	4.5%
44147	Broadview Heights	477	4.4%
44109	Cleveland-Tremont	360	3.3%
44141	Brecksville	210	1.9%
44125	Garfield Heights	128	1.2%
44142	Brook Park	124	1.1%
44136	Strongsville	118	1.1%
44212	Brunswick	118	1.1%
44102	Cleveland- Ohio City	86	0.8%
44111	Cleveland-Lorain & W. 130th	81	0.7%
44067	Northfield/Sagamore Hills	79	0.7%
44805	Ashland	79	0.7%
44135	Cleveland-Riverside	67	0.6%
44105	Cleveland-Kinsman	60	0.55%
44256	Medina	59	0.54%
All Other Zips		1,166	10.7%
	Total:	**10.932**	**100%**

Inpatient Discharges, 2016, All Ages, University Hospitals Parma Medical Center
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	**10,932**	
Diseases of the circulatory system	2,245	20.5%
Diseases of the respiratory system	1,288	11.8%
Diseases of the digestive system	1,042	9.5%
Diseases of the musculoskeletal system and connective tissue	897	8.2%
Infectious and parasitic diseases	897	8.2%
Diseases of the genitourinary system	653	6.0%
Complications of pregnancy, childbirth, and the puerperium	504	4.6%
Injury	424	3.9%
Endocrine, nutritional and metabolic diseases	415	3.8%
Mental and behavioral disorders	401	3.7%
Diseases of the skin and subcutaneous tissue	352	3.2%
Cancers (neoplasms)	282	2.6%
Symptoms, signs, and ill-defined conditions	224	2.0%
Diseases of the nervous system and sense organs	204	1.9%
Poisoning	135	1.2%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	124	1.1%
Certain conditions originating in the perinatal period	6	0.1%
Congenital anomalies	6	0.1%
Diseases of the ear and mastoid process	6	0.1%
Diseases of the eye and adnexa	2	0.0%
Other	825	7.5%

- Major disease categories associated with primary diagnoses for all discharged patients in 2016 (for patients of all ages) are shown above. Diseases of the circulatory (20.5%), respiratory (11.8%) and digestive (9.5%) systems were the most common.

2015 UH Parma CHNA Implementation Plan: Impact Assessment

Upon review of the 2015 UH Parma Medical Center Community Health Needs Assessment, hospital leadership isolated four top priority community health needs: 1) **increase access to primary care;** 2) **reduce chronic disease incidence in the hospital's service areas**; 3) **address lifestyle barriers in the hospital's service areas**; and 4) **address access to care barriers**. After pinpointing the top priorities, strategies and tactics were created to lend the hospital's staff expertise and resources to combat each community health issue. UH Parma's approach to these issues included changes in hospital-based programs and outreach efforts. Their efforts, progress and outcomes are outlined below.

1. Increase Access to Primary Care

Upon review of the specific challenges related to primary care in Parma and all of UH Parma Medical Center's service areas, hospital leadership concluded that leveraging its medical education capacity, and in particular its residency program, would work to both provide primary care and address the growing problem of a lack of primary care physicians in the region. The Family Medicine Clinic was launched in 2017 and allows "walk-in" patients who are unable to access primary care. Operational for the last two quarters of 2017, a total of 216 patients received primary care services. This clinic is expected to grow in 2018 as awareness increases and will include the development and promotion of best practices for primary care in its mission.

2. Reduce Chronic Disease Incidence

UH Parma's efforts to reduce chronic disease incidence relied on external outreach to community members. Through dozens of partnerships (locations where events were held), more than 300 different events were held throughout 2017. More than 8,000 community members received basic chronic disease prevention and management information, counseling was offered (through literature and one-on-one discussions with health care providers), and screenings for multiple health conditions were conducted. A total of 336 different events were held – equivalent to almost an event every day of the year. Event locations were sought to reach the community's most vulnerable residents (low income, areas with high incidence of chronic diseases, and senior citizens). Community partners were engaged in the multi-pronged effort to educate the community on the importance of lifestyle choices and regular medical screenings in order to minimize the risk of chronic diseases. The goal was to bring the information and resources geographically closest to those who most need them.

3. Address Lifestyle Barriers

a. At the almost-daily events held throughout the community in 2017, resources on chronic stress, obesity, diabetes, digestive health, primary care and cancer were provided to those who could benefit from the information. The goal was to emphasize how lifestyle choices impact overall health and play a role in the risk of developing or effectively managing a chronic disease. Strategies to minimize risk through healthy lifestyle choices were also provided.

b. A specific goal was to increase health literacy among those with chronic diseases. Specifically, diabetes education literature and classes pertaining to health and wellness were mailed directly to 20,000 at-risk community members to increase the community's understanding of health and wellness.

4. Address Access to Care Barriers

Hospital staff identified four main barriers to care which were impacting the health status of a significant number of community members. These barriers were especially concentrated among low-income populations and senior citizens. To improve access to care, the following programs were launched in 2016 and 2017:

a. Hospital-provided transportation. In 2017, the hospital provided a total of 4,585 transports to medical care for community members. Due to the very high cost of this program, at the end of 2017 the hospital began to seek alternative existing community resources to provide transportation in a more efficient and cost-effective way. Results of that effort are being monitored in 2018.

b. Hospital staff provided in-kind donations of services to community members with no ability to pay through the Parma Health Ministries.

c. Hospital staff and facilities were used to prepare and deliver 2,757 meals to community members through the Meals on Wheels program in 2017. The number of meals prepared grew by 30% by the end of 2017.

d. UH Parma's service area includes a significant proportion of immigrant residents. In order to meet their health care needs, the hospital increased its use of the video interpreting program (MARTTI) from 1,193 minutes in the first quarter of 2017 to 1,842 minutes in the last quarter of 2017. This successful program is being institutionalized in 2018 and will no longer be monitored as part of the Community Health Needs Assessment process.

e. There is a particular need for inpatient medical stabilization for older community members with mental/behavior health issues. A 12-bed unit is dedicated to the needs of these particularly vulnerable community members. There were 56 to 91 patients discharged each quarter from this unit, for a total of 314 patients in 2017.

UH Rainbow Babies & Children's Hospital

Inpatient Discharges, 2016, All Ages, University Hospitals Cleveland Rainbow Babies & Children's Hospital
By Age Group and County of Residence

	Age											
	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	4,804	96.0%	189	3.8%	8	0.2%	5	0.1%	0	0.0%	5,006 (55% of total)	100%
Non-Residents of Cuyahoga County	3,788	90.7%	360	8.6%	20	0.5%	10	0.2%	0	0.0%	4,178	100%
Total Discharges, 2016	**8,592**	**93.6%**	**549**	**6.0%**	**28**	**0.3%**	**15**	**0.2%**	**0**	**0.0%**	**9,184**	**100%**

- In 2016, 55% of all inpatients discharged from Rainbow Babies & Children's Hospital were residents of Cuyahoga County.
- As expected since this is a pediatric hospital, a great majority of discharges from Rainbow Babies & Children's Hospital in 2016 were patients under age 18 (93.6%).

Inpatient Discharges, 2016, Rainbow Babies & Children's Hospital By Residential Zip Code

Zip Code	Municipality	#	%
44035	Elyria	375	4.1%
44104	Cleveland-Kinsman	303	3.3%
44108	Cleveland-Glenville	269	2.9%
44052	Lorain	245	2.7%
44105	Cleveland-Kinsman	238	2.6%
44128	Warrensville Heights	219	2.4%
44106	Cleveland-University Circle	216	2.4%
44118	Cleveland Hts/University Hts	216	2.4%
44112	East Cleveland	208	2.3%
44120	Cleveland-Buckeye-Shaker	196	2.1%
44077	Painesville	190	2.1%
44121	South Euclid	178	1.9%
44110	Cleveland-Collinwood	169	1.8%
44137	Maple Heights	159	1.7%
44004	Ashtabula	157	1.7%
44055	Lorain	153	1.7%
44060	Mentor	146	1.6%
44103	Cleveland-Hough	144	1.6%
44115	Cleveland-Central	140	1.5%
44011	Avon	48	0.52%
44135	Cleveland-Riverside	48	0.52%
44256	Medina	50	0.54%
44030	Conneaut	51	0.6%
44117	Euclid	52	0.6%
44138	Olmsted Falls	54	0.6%
44139	Solon	55	0.6%
44145	Westlake	57	0.6%
44001	Cleveland-Central	60	0.7%
44024	Chardon	60	0.7%
44092	Wickliffe	60	0.7%
44111	Cleveland-Lorain & W. 130th	60	0.7%
44107	Lakewood	61	0.7%
44070	North Olmsted	62	0.7%
44012	Avon Lake	69	0.8%
44119	Cleveland-Pawnee &E. 185th	73	0.8%
44041	Geneva	78	0.8%
44102	Cleveland – Detroit Shoreway	79	0.9%
44143	Highland Heights	82	0.9%
44133	North Royalton	83	0.9%

Zip Code	Municipality	#	%
44053	Lorain	89	1.0%
44094	Willoughby	91	1.0%
44132	Euclid	92	1.0%
44062	Middlefield	93	1.0%
44123	Euclid	97	1.1%
44134	Parma	98	1.1%
44095	Willowick/Eastlake	99	1.1%
44124	Mayfield Heights-Pepper Pike	100	1.1%
44129	Parma	100	1.1%
44109	Cleveland-Tremont	101	1.1%
44212	Brunswick	101	1.1%
44870	Sandusky	105	1.1%
44057	Madison	116	1.3%
44146	Bedford	119	1.3%
44122	Shaker Heights/Beachwood	121	1.3%
44039	North Ridgeville	124	1.4%
44130	Middleburg Heights	132	1.4%
44125	Garfield Heights	136	1.5%
All Other Zips		2107	27%
	Total:	**9,184**	**100%**

- Rainbow Babies & Children's Hospital patients in 2016 were residents of a wide variety of communities throughout Northeast Ohio. At most, any zip code was the home area for 4.1% of patients.

Inpatient Discharges, 2016, All Ages, University Hospitals Rainbow Babies & Children's Hospital
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	**9,184**	
Diseases of the respiratory system	2,037	22.2%
Certain conditions originating in the perinatal period	1,241	13.5%
Diseases of the digestive system	825	9.0%
Endocrine, nutritional and metabolic diseases	701	7.6%
Diseases of the nervous system and sense organs	632	6.9%
Mental and behavioral disorders	475	5.2%
Symptoms, signs, and ill-defined conditions	445	4.8%
Infectious and parasitic diseases	349	3.8%
Injury	349	3.8%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	306	3.3%
Diseases of the skin and subcutaneous tissue	278	3.0%
Congenital anomalies	242	2.6%
Diseases of the musculoskeletal system and connective tissue	212	2.3%
Diseases of the genitourinary system	205	2.2%
Poisoning	199	2.2%
Diseases of the circulatory system	106	1.2%
Cancers (neoplasms)	82	0.9%
Diseases of the ear and mastoid process	34	0.4%
Diseases of the eye and adnexa	28	0.3%
Complications of pregnancy, childbirth, and the puerperium	15	0.2%
Other	423	4.6%

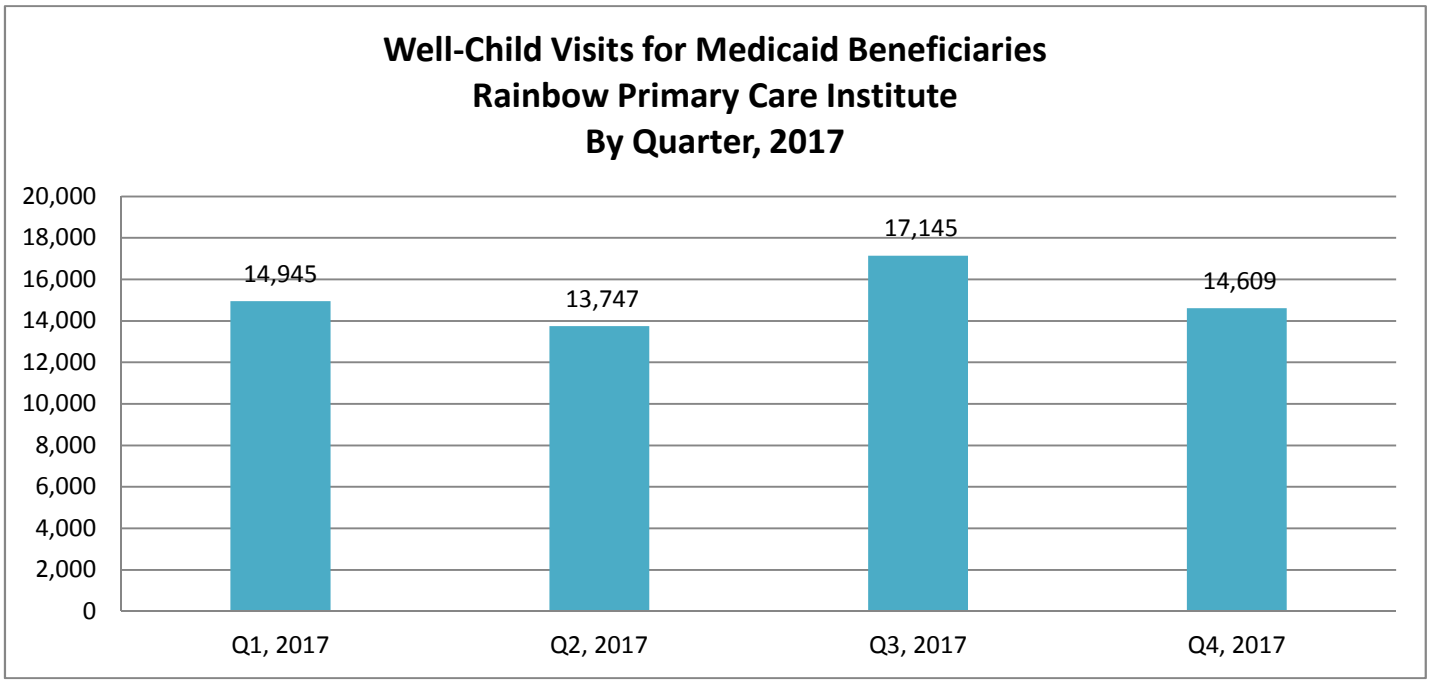
- Above we show the major disease categories associated with the primary diagnoses for all discharged patients in 2016. Diseases of the respiratory system and conditions associated with the perinatal period were the most common diagnoses. Conditions requiring hospitalizations for children are very different than those for adults. Few children were hospitalized because of circulatory system issues, for example, while that is the most common reason for hospitalizations among adults. Respiratory conditions, however, are common for both adults and children. For adults, COPD and pneumonia are the dominant respiratory conditions, while for children, asthma is the dominant respiratory condition.

2015 UH Rainbow Babies & Children's Hospital Implementation Plan: Impact Assessment

Review of the 2015 Rainbow Babies & Children's Hospital Community Health Needs Assessment revealed several community health needs that this children's hospital was particularly well-equipped to help address. Hospital leadership isolated three top priority community pediatric health needs: 1) **access to primary care**; 2) **access to dental care**; and, 3) **high infant mortality and poor infant health**. After pinpointing the top priorities, action plans were created to lend hospital staff expertise and resources to combat the more vexing health

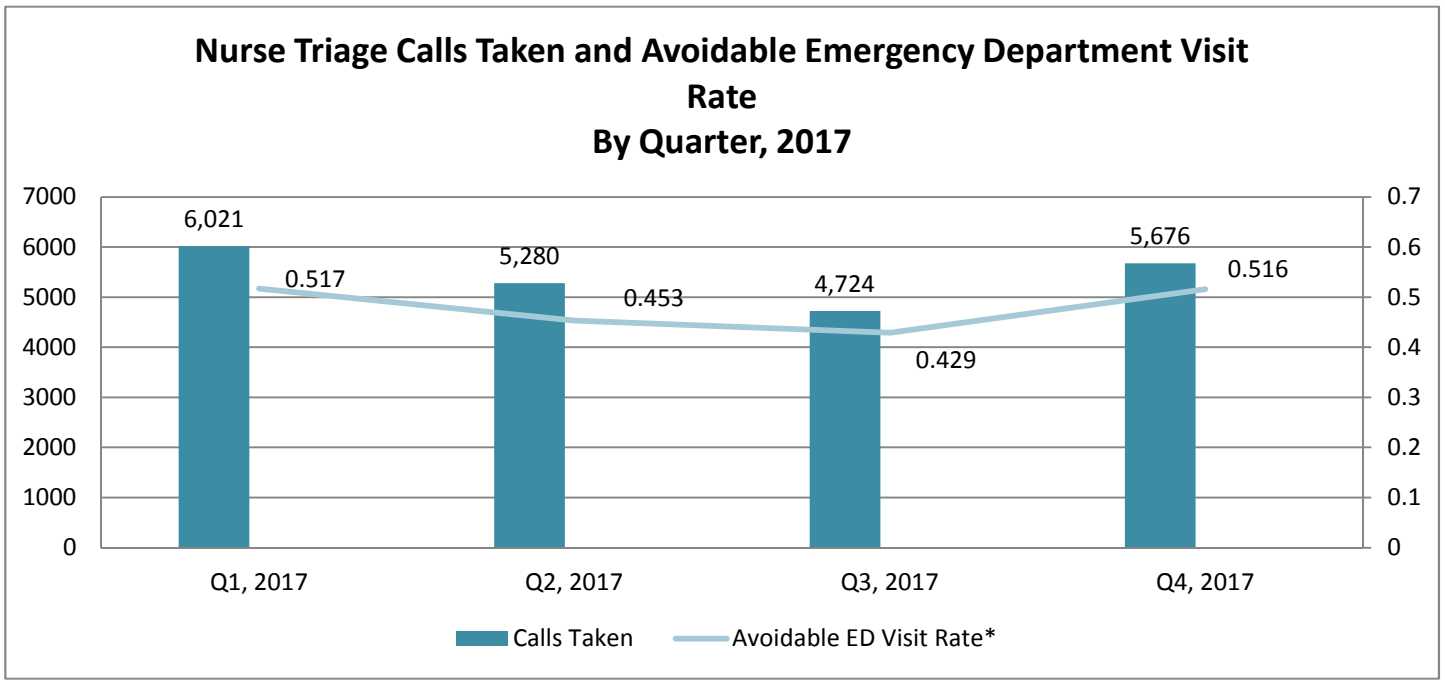
issues facing families in our community. Actions taken and an assessment of the success of those actions are outlined below.

1. Access to Quality Primary Care



a. The hospital focused its resources and attention on Medicaid beneficiaries without a primary care physician. In 2017, more than 60,000 well-child visits were provided to Medicaid beneficiaries within the Rainbow Primary Care Institute. The number of children receiving care started and finished strong in 2017.

b. Telehealth services improve access to care for non-emergent conditions. In order to maximize the appropriate use of telehealth services (and minimize use of services like the emergency department for non-emergent issues), UH Rainbow provided a nurse triage service to divert patents to telehealth when an in-person visit was not needed.

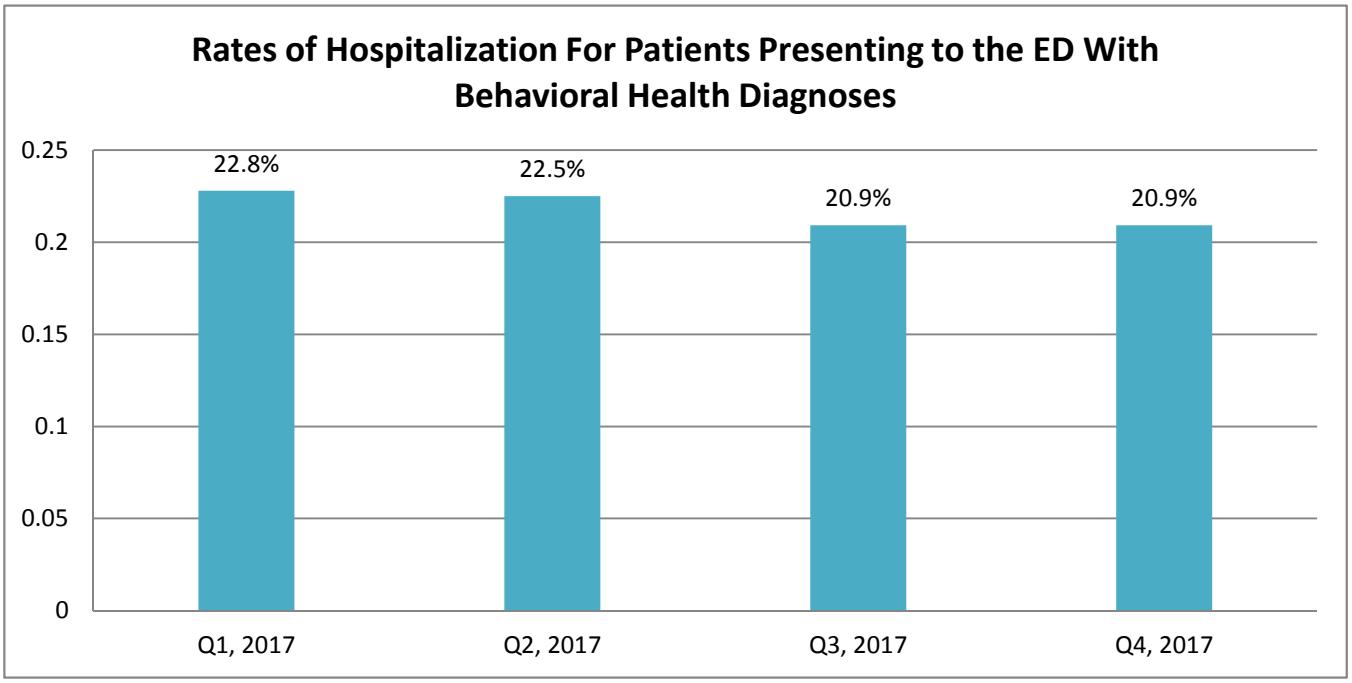


*# of Avoidable ED Visits/1,000; Based on MCP ICD10 Criteria

- In 2017, almost 22,000 calls were fielded by nurses. As shown above, the number of calls fielded each quarter was high, but variable; it ranged from a low of 4,724 in the third quarter of 2017 to a high of 6,021 in the first quarter of 2017. Here we also show the 'avoidable emergency department visit rate' (expressed as a ratio per 1,000 patients). These mirrored each other and non-emergent emergency department visits and nurse triage calls both peaked during the colder months.

c. In recognition of the need for *integrated* medical and mental health services, UH Rainbow set a goal to increase the number of patients receiving integrated behavioral health services. In 2017, a total of 1,963 unique patients received integrated care.

d. In that same light, UH Rainbow set a goal to decrease hospitalization of patients presenting to the Marcy R. Horvitz Pediatric Emergency Center with behavioral health diagnoses through the improved utilization of integrated health care.



- The incidence of patients presenting to the emergency department with behavioral health diagnoses decreased by 8.2% (or 1.9 percentage points) from the first quarter of 2017 to the fourth quarter of 2017.

e. To maximize awareness and understanding of the integrated medical/behavioral health program, the "Health Leads" program was launched to inform and educate system-referring physicians. From that, we see a steady increase (172%) in the number of referrals to this program from the first quarter of 2017 (224) to the fourth quarter of 2017 (663). In 2017, there were a total of 2,191 referrals to this new program which appears to be driving hospitalization rates down for these patients.

2. Access to Dental Care for Children

Poor dental health can lead to serious medical issues if not addressed. Because adults within vulnerable populations often do not have dental insurance, a relationship with a family dentist is not very common. Therefore, many children in our community do not obtain dental care for the first several years of their lives. UH Rainbow addressed this large gap in care in our community via targeted services.

a. Located on UH Rainbow's campus, the Irving and Jeanne Tapper Dental Center is staffed with pediatric dentists, residents and staff trained to work exclusively with children. Staff also provide dental care for children with special health care or behavioral issues. UH Rainbow also operates a mobile dental unit (the Ronald McDonald Care Mobile), which brings dental care directly into communities to meet the dental health needs of children in areas with limited access to pediatric dental practices, or a limited number of providers that will accept children with Medicaid insurance. Early and regular dental care sets young people up for a healthier childhood and adulthood. UH

Rainbow's goal was to increase the number of at-risk children receiving care at the Tapper Dental Center. In 2017, the number of pediatric patients seen grew, on average, by 47% each quarter. Through 2017, more than 6,000 pediatric patients received dental care.

- In 2018, Tapper Dental Center is pursuing the goal of adding capacity to care for mothers of young children and pregnant women on Medicaid. This is so that mothers of young children and babies begin dental care early for their children and maintain their own dental health.

b. To ensure that the focus remains on patients who are members of vulnerable populations, Tapper Dental Center set a goal of maintaining a minimum of 80% of patients being Medicaid beneficiaries. This goal was met in each quarter of 2017.

c. Tapper Dental Center ensures its connection to the most vulnerable members of our community via its partnership with targeted schools, preschools, and community agencies. In 2017, a total of 116 new organizations were added as partners.

d. Pediatric medical practices (Rainbow Primary Care Institute) were also engaged in improving the dental health of their patients. A goal was set to increase the proportion of patients who received at least two preventative fluoride varnish applications before their third birthday. However, efforts to increase this did not have an impact, and the proportion of patients receiving these treatments remained stable at about 40% throughout 2017.

3. Reduce Infant Mortality and Improve Infant Health

Infant mortality is higher in Cuyahoga County than most other counties in Ohio, and Ohio ranks among the weaker states on this important health measure. There is a very large racial gap that is of grave concern; efforts to address this community health issue have been consolidated in the First Year Cleveland (FYC) initiative, of which UH Rainbow is a major sponsor and medical advisor. First Year Cleveland is a coordinated effort for several strategies and tactics to reduce infant mortality in our community. In addition to financially supporting FYC, UH Rainbow provides additional efforts to combat infant mortality:

a. UH McDonald Women's Hospital, which is adjacent to UH Rainbow, is a partner in increasing the number of prenatal care visits that use a 'centering' approach. This type of care engages pregnant women in their own prenatal care by providing prenatal visits in a group setting, establishing a natural support group among the new mothers. The efficacy of Centering Pregnancy programs in impacting the causes of infant mortality has been demonstrated in peer review studies. During each quarter of 2017, the number of pregnant moms using a centering approach increased. By the end of 2017, 340 moms participated in this program with 900 prenatal visits accomplished using the centering approach.

b. Encouraging safe sleep is another tool to reduce infant mortality. First responders from fire and EMT services are often in a situation where they might see unsafe sleep conditions for infants as they respond to calls for service in homes. UH Rainbow focused on training first responders to recognize these signs, and in 2017, 300 first responders within eight different safety forces were trained and provided with tools to intervene (educational materials and pack-and-plays).

c. Another strategy related to safe sleep required system modification. A goal for 2017 was to design a clinically based safe sleep education program, including results measurement within the electronic medical records system. Infrastructure for this was completed in 2017 and this service will launch in 2018.

d. UH Rainbow's final safe sleep goal was to ensure that all pediatric practices and services within UH Rainbow display or distribute safe sleep information for families of infants. This goal was met by the end of 2017. Additionally, the proportion of patients with documented confirmation of safe sleep screening increased from 64% in the first quarter of 2017 to 72% in the last quarter.

UH Richmond Medical Center

Inpatient Discharges, 2016, All Ages, University Hospitals Richmond Medical Center
By Age Group and County of Residence

	Age											
	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	0	0.0%	139	6.5%	246	11.4%	669	31.1%	1,099	51.0%	2,153 (79% of total)	100%
Non-Residents of Cuyahoga County	0	0.0%	43	7.4%	79	13.6%	127	21.9%	330	57.0%	579	100%
Total Discharges, 2016	**0**	**0.0%**	**182**	**6.7%**	**325**	**11.9%**	**796**	**29.1%**	**1,429**	**52.3%**	**2,732**	**100%**

- In 2016, 79% of all inpatients discharged from University Hospitals Richmond Medical Center were residents of Cuyahoga County.
- A majority of discharges from UH Richmond Medical Center in 2016 were aged 65 and older (52.3%). Few patients discharged from the hospital (6.7%) were younger adults (aged 18-34).

Inpatient Discharges, 2016, All Ages, University Hospitals Richmond Medical Center
By Residential Zip Code

Zip Code	Municipality	#	%
44143	Highland Heights	536	19.6%
44117	Euclid	334	12.2%
44132	Euclid	249	9.1%
44123	Euclid	203	7.4%
44092	Wickliffe	179	6.6%
44112	East Cleveland	126	4.6%
44119	Cleveland-Pawnee &E. 185th	114	4.2%
44110	Cleveland-Collinwood	104	3.8%
44094	Willoughby	92	3.4%
44121	South Euclid	92	3.4%
44060	Mentor	86	3.1%
44095	Willowick/Eastlake	79	2.9%
44124	Mayfield Heights-Pepper Pike	62	2.3%
44108	Cleveland-Glenville	56	2.0%
44118	Cleveland Hts/University Hts	40	1.5%
44106	Cleveland-University Circle	32	1.2%
44122	Shaker Heights/Beachwood	26	1.0%
44077	Painesville	24	0.9%
44146	Bedford	24	0.9%
44103	Cleveland-Hough	22	0.8%
44128	Warrensville Heights	21	0.8%
44120	Cleveland-Buckeye-Shaker	18	0.7%
All Other Zips		213	8%
	Total:	**2,732**	**100%**

Inpatient Discharges, 2016, All Ages, University Hospitals Richmond Medical Center
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	**2,732**	
Diseases of the circulatory system	570	20.9%
Diseases of the respiratory system	424	15.5%
Infectious and parasitic diseases	376	13.8%
Diseases of the digestive system	295	10.8%
Diseases of the musculoskeletal system and connective tissue	164	6.0%
Endocrine, nutritional and metabolic diseases	162	5.9%
Diseases of the genitourinary system	160	5.9%
Symptoms, signs, and ill-defined conditions	108	4.0%
Diseases of the skin and subcutaneous tissue	78	2.9%
Injury	75	2.7%
Diseases of the nervous system and sense organs	69	2.5%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	54	2.0%
Mental and behavioral disorders	42	1.5%
Poisoning	31	1.1%
Cancers (neoplasms)	25	0.9%
Diseases of the ear and mastoid process	3	0.1%
Complications of pregnancy, childbirth, and the puerperium	1	0.0%
Diseases of the eye and adnexa	1	0.0%
Other	94	3.4%

- Above we show the major disease categories associated with the primary diagnoses for all patients discharged from UH Richmond in 2016 (for patients of all ages). Diseases of the circulatory system were the most common (20.9%), and diseases of the respiratory system were the second most common (15.5%).

2015 UH Richmond CHNA Implementation Plan: Impact Assessment

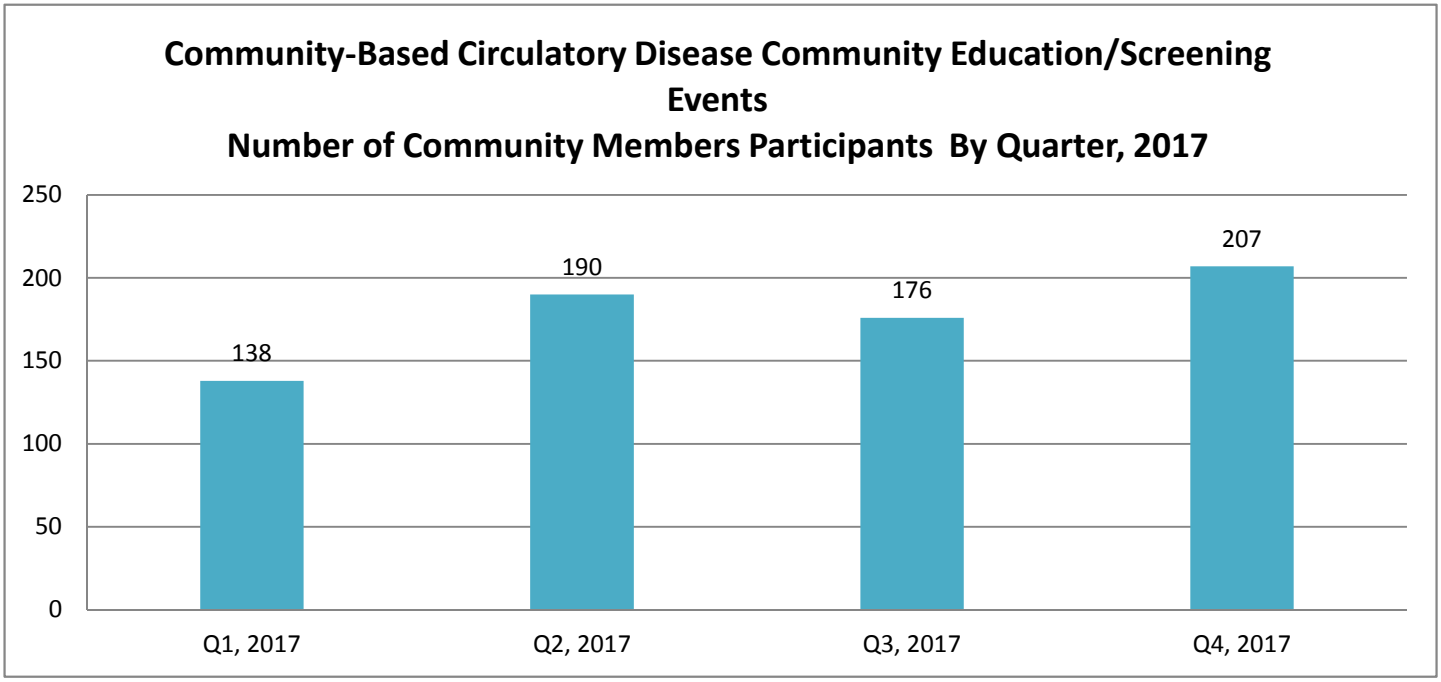
Upon review of the 2015 UH Richmond Medical Center Community Health Needs Assessment, hospital leadership isolated three top priority community health needs: 1) **heart disease**; 2) **respiratory disease**; and, 3) **diabetes**. After pinpointing the top priorities, action plans were created to lend the hospital's staff expertise and resources to combat each community health issue. The overall approach was early detection through free screenings, accompanied by health education regarding chronic disease management. Below we outline what actions were taken and provide an assessment of the impact of those actions.

Before describing the implementation activities and their outcomes, it is important to highlight the role of the Residents' Clinic developed by UH Richmond Medical Center. This clinic, which is staffed by physician residents, receives patients mainly via referral from the emergency department. Patients who present at the emergency department without an emergent issue, and who are identified as not having a primary care provider, are seen by residents with the intent of easing access to primary care. This also has the added benefit of providing primary care training for the residents who otherwise likely would not receive this training during their specialist residency program.

1. Heart Disease

The most common disease category for this hospital, as well as for all Cuyahoga County residents hospitalized in 2013, diseases of the circulatory system, are chronic illnesses highly impacted by lifestyle. Hence, UH Richmond Medical Center's focus on combating heart disease was centered around increasing community member awareness of the high incidence of heart disease in the community, how important lifestyle choices are in minimizing risk of heart disease, and most ardently, increasing direct community outreach in terms of screening for early signs of heart disease. UH Richmond did this in a very strategic and targeted way. The community outreach health care professionals focused on partnering with community-based organizations and local employers to maximize the hospital's resources and reach as many people as possible, especially more vulnerable community members.

a. The hospital hosted health fairs, seminars given by hospital staff, and "Heart Day" events, and improved targeted communications for those events. These events leverage the hospital staff's credibility as the authority on health care issues within the community to engage with those at high risk for heart disease. Over 300 higher-risk people participated in these events, which began in the second quarter of 2017.



b. While UH Richmond Medical Center is a relatively small community hospital, it provided no-cost screenings, including high-level tests, (e.g. carotid ultrasounds) for over 700 people in 2017. Participants received multiple screening types at events, covering initial signs of heart disease and stroke risk. The number of participants each quarter increased by 50% from the first to the last quarter of 2017.

These programs were deemed successful as they built momentum during 2017 and are expected to continue to grow through 2018 and 2019.

c. Also in 2017, the hospital began an initiative to examine the root causes for readmissions due to acute myocardial infarction and heart failure. Data have been collected to determine root causes and programs to address this issue are launching in 2018.

2. Respiratory Disease

a. Chronic respiratory disease, in particular COPD, was also found to be have high hospitalization rates. COPD and pneumonia were very common secondary diagnoses for inpatients in 2013. Deeper investigation into this issue identified the need for additional pulmonology specialist care. Hence, in 2017 a pulmonologist was added.

b. Early detection of chronic respiratory disease is important in establishing a habit of self-care that improves quality of life, minimizes hospitalizations and increases life span. During the third and fourth quarters of 2017, the hospital began a program of no-cost, community-based screenings targeting populations most likely to be at high risk. By the end of 2017, 48 high-risk community

members were screened and referred to a specialist when appropriate. This program is expected to increase its size in 2018.

c. Along with being the most common respiratory disease among adults, asthma was identified as a common and very debilitating condition for younger community members. In late 2017, hospital staff designed a program to screen within the most vulnerable populations and offer referrals to specialists. This program is launching in 2018.

3. Diabetes

a. As diabetes is among the chronic diseases most likely to result in frequent hospitalizations, an increased focus in 2016 on community education and support for diabetic patients and their family members began. Support groups met regularly and were led by a diabetes education specialist who focuses on disease management, diet, and the importance of careful, regular monitoring of the disease. A total of 108 diabetic patients benefitted from this program in 2017. By late 2017, this program was being re-designed to be more accessible (no-cost) to community members and focus on those activities that have been shown to improve patient disease stabilization.

UH St. John Medical Center

Inpatient Discharges, 2016, All Ages, St. John Medical Center
By Age Group and County of Residenc

	Age											
	< 18		18-34		35-49		50-64		65 and older		Total	
	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total	#	% of Row Total
Cuyahoga County Residents	410	6.8%	551	9.2%	504	8.4%	1,179	19.7%	3,342	55.8%	5,986 (56% of total)	100%
Non-Residents of Cuyahoga County	479	10.1%	631	13.3%	532	11.3%	966	20.4%	2,119	44.8%	4,727	100%
Total Discharges, 2016	**889**	**8.3%**	**1,182**	**11.0%**	**1,036**	**9.7%**	**2,145**	**20.0%**	**5,461**	**51.0%**	**10,713**	**100%**

- In 2016, 56% of all inpatients discharged from St. John Medical Center were residents of Cuyahoga County.
- Patients spanned all age groups, but a slight majority were age 65 and over (51%).

Inpatient Discharges, 2016, All Ages, St. John Medical Center
By Residential Zip Code

Zip Code	Municipality	#	%
44145	Westlake	1858	17.4%
44039	North Ridgeville	1388	13.0%
44070	North Olmsted	1297	12.1%
44012	Avon Lake	632	5.9%
44011	Avon	521	4.9%
44035	Elyria	490	4.6%
44138	Olmsted Falls	462	4.3%
44140	Bay Village	408	3.8%
44116	Rocky River	361	3.4%
44107	Lakewood	306	2.9%
44054	Sheffield Lake	292	2.7%
44126	Cleveland-Fairview Park	213	2.0%
44052	Lorain	182	1.7%
44111	Cleveland-Lorain & W. 130th	181	1.7%
44135	Cleveland-Riverside	160	1.5%
44055	Lorain	150	1.4%
44044	Grafton	135	1.3%
44053	Lorain	110	1.0%
44001	Amherst	104	1.0%
44102	Cleveland- Ohio City	96	0.9%
44017	Berea	73	0.7%
44028	Columbia Station/Grafton	73	0.7%
44130	Middleburg Heights	68	0.6%
44109	Cleveland-Tremont	67	0.6%
44129	Parma	55	0.51%
All other Zips		1,024	9.6%
	Total:	**10,713**	**100%**

Inpatient Discharges, 2016, All Ages, St. John Medical Center
Primary Diagnosis: Major Disease Categories

	Count	Col %
Total	**10,713**	
Diseases of the circulatory system	1,826	17.0%
Diseases of the digestive system	1,230	11.5%
Diseases of the respiratory system	958	8.9%
Complications of pregnancy, childbirth, and the puerperium*	900	8.4%*
Diseases of the musculoskeletal system and connective tissue	886	8.3%
Infectious and parasitic diseases	785	7.3%
Diseases of the genitourinary system	615	5.7%
Injury	458	4.3%
Cancers (neoplasms)	334	3.1%
Diseases of the skin and subcutaneous tissue	313	2.9%
Symptoms, signs, and ill-defined conditions	302	2.8%
Endocrine, nutritional and metabolic diseases	292	2.7%
Diseases of the nervous system and sense organs	191	1.8%
Mental and behavioral disorders	161	1.5%
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	112	1.0%
Poisoning	91	0.8%
Diseases of the ear and mastoid process	15	0.1%
Congenital anomalies	5	0.0%
Certain conditions originating in the perinatal period	2	0.0%
Diseases of the eye and adnexa	2	0.0%
Other (includes newborns and their mothers)	1235	11.5%

*See text below

- Above we show the major disease categories associated with the primary diagnoses for all discharged patients in 2016 (for patients of all ages). Diseases of the circulatory (17.0%), digestive (11.5%) and respiratory (8.9%) systems were the most common. Note that complications due to pregnancy, delivery or the neonatal period were among the most common diagnoses. *Approximately 14% of inpatients discharged in 2016 were newborns or their mothers. Of these, 8.4% had a complication as a primary diagnosis. However, the vast majority of these complications were minor.

2015 UH St. John CHNA Implementation Plan: Impact Assessment

Upon review of the 2015 UH St. John Community Health Needs Assessment, hospital leadership isolated two top priority community health needs: 1) **diabetes**; and 2) **heroin/opiate abuse and addiction.** After pinpointing the top priorities, action plans were created to lend hospital staff expertise and resources to combat each community health issue. The overall approach was to bring health care professionals *out* to

community members. Below we outline what actions were taken and an assessment of the impact of those actions.

1. Diabetes

a. An overall goal for the hospital was to reduce readmissions for Type 2 diabetic patients by 10% in 2017. The strategy to achieve this goal was to identify those patients at discharge and seek their participation in a disease self-management and exercise class. However, after review of the types of patients who could likely benefit from a program like this, it was determined that almost all of them were not in a situation where they could actively participate (long-term care patients, etc.). The program was re-branded in late 2017 to instead focus on developing a relationship with newly diagnosed diabetics to help them establish good disease management strategies. The hospital seeks community partners as a way to directly reach the most vulnerable community members.

   Due to other initiatives instituted by the hospital in 2016 and 2017, there was an overall reduction of diabetic readmissions in 2017 (-13.9%).

b. A second initiative to combat diabetes in the community focused on increasing awareness of all diabetes-related services through a comprehensive community outreach strategy. This included a direct mailing of a resource catalogue to 35,000 households, a roundtable discussion of health care professionals (attended by 52 professionals and community members), and a hospital-based Diabetes Education Day event (attended by 35).

c. Increased early detection of diabetes via screening events was implemented throughout 2017. More than 1,000 community members were screened during more than one dozen community-based events. Eleven percent (11%) were identified as showing positive signs of diabetes and were referred for follow-up with a specialist. A registered nurse was present at all screenings to review results with participants and extend diabetes education to all.

d. Improved behavioral lifestyle choices was a focus for diabetic community members through 2017. The hospital resourced and promoted several community-based walking programs. A total of 548 community members participated in the walking activities; some were 'one-time' events (5K walks, etc.), but most were programs lasting several months that included group walks a few times per week.

2. Heroin and Opiate Use & Abuse

   The overall goal to address heroin and opiate use and abuse was to increase awareness and understanding of the problem by providing education for community members, hospital staff, and other health care providers. The hospital addressed this problem using several approaches. For the most part, efforts aimed to develop a high level of expertise on opioid addiction among hospital staff, both to better handle opioid addiction directly within hospital walls, and also to be a driver of community awareness and education via outreach efforts.

a. UH St. John held community-based events where both community members and health care providers could increase their understanding of the scope and nature of heroin/opiate

addiction. Events were held at area schools, community centers and health care sites; they included experts on addiction and opioid abuse treatment and overdose prevention, emergency first responders, and treatment facility/recovery house staff members. All events (screening events, chronic disease support groups, etc.) managed by the hospital now also include materials on heroin/opiate abuse education. Finally, a hospital staff member is a member of the Cuyahoga County Opiate Task Force, which links the hospital to widespread initiatives focusing on this issue.

b. Training on the need for and use of the Ohio Automated Rx Reporting System (OARRS) continued throughout 2017 and all appropriate staff members were trained. An OARRS System icon was added to the home screen of computer systems as a reminder to use the system before prescribing opiates and to facilitate basic access to it.

c. Internal training to increase staff's ability to recognize opioid abuse in patients, properly address an opioid overdose, and understand available treatment options and programs was provided. Part of that effort resulted in an increase in the number of staff authorized to prescribe Suboxone. Overdose patients began meeting with a social worker to review treatment options upon discharge; with that, a database of overdose patients was developed to track patient outcomes.

   The hospital is exploring establishing a Suboxone clinic at or near the hospital to add to the number of community sources for outpatient medically assisted addiction treatment. These types of resources are considered to be in short supply in Cuyahoga County.

8. Community Health Priorities

Top Health Needs

Community voice, community stakeholder, hospital, and secondary data provided throughout this report help to elucidate the health status of Cuyahoga County residents and areas ripe for improvement in the upcoming community health improvement plan. Collectively, these data illuminate the stark reality that community residents living in some neighborhoods in Greater Cleveland do not have equitable opportunities to reach their full potential as a result of conditions impacting health. The list that follows shows the top 13 health issues identified through the 2018 Cuyahoga County Community Health Assessment:

Quality of Life

- Poverty
- Food insecurity

Chronic Disease

- Lead poisoning
- Cardiovascular disease
- Childhood asthma
- Diabetes

Behavioral Health

- Flu vaccination rates
- Tobacco use/COPD
- Lack of physical activity

Mental Health and Addiction

- Suicide/mental health
- Homicide/violence/safety
- Opioids/substance use disorders

Maternal/Child Health

- Infant mortality

Many of the top health and safety concerns for Cuyahoga County were selected based on Cuyahoga County comparing unfavorably to peer counties and unfavorably to national benchmark goals, such as cardiovascular disease and suicide rates. Some of the top health needs were chosen because certain population groups in Cuyahoga County experience these conditions at high rates, such as infant mortality and childhood asthma. Poverty was selected given that many inequities in access to care and health outcomes are based on socioeconomic status.

Prioritization Process

The process of prioritizing the top five health needs that will be the focus of the community health improvement plan involved several steps. Steering Committee members met by conference call in May 2018 and together determined a set of criteria to guide the selection of priority health needs. These included: (1) magnitude of the problem, (2) severity of the problem, and (3) magnitude of the health disparity. Tie-breaker

criteria that were chosen included: (4) ability to measure outcomes, (5) existing resources available to address the problem, and (6) alignment with the State Health Assessment/State Health Improvement Plan.

In July 2018, a team of leaders from the hospital and public health sectors in Cuyahoga County, who represent the broad interests of the community, met to select the health needs that will guide the focus of the one-year community health improvement plan. This team of individuals, shown below, work closely with the community, have an in-depth understanding of community health issues, and have grounding in health equity concepts:

- Brian Adams, University Hospitals Bedford/Richmond Medical Centers
- Terry Allan, Cuyahoga County Board of Health
- Jeffrey Beers, University Hospitals Ahuja Medical Center
- Elyse Bierut, University Hospitals
- Pamela Brys, University Hospitals Ahuja Medical Center
- Vetella Camper, University Hospitals Bedford/Richmond Medical Centers
- Chesley Cheatham, University Hospitals Cleveland Medical Center
- Lorice Dakdduk, University Hospitals Beachwood Rehabilitation Hospital
- Kelly Durell, University Hospitals, Center for Lifelong Learning
- Breanne Evancho, University Hospitals Cleveland Medical Center
- Paul Forthofer, University Hospitals St. John Medical Center
- Merle Gordon, Cleveland Department of Public Health
- Martha Halko, Cuyahoga County Board of Health
- Becky Karns, Cuyahoga County Board of Health
- Rachel Kelch, University Hospitals St. John Medical Center
- Mary Kiczek, University Hospitals St. John Medical Center
- LouAnn Marx, University Hospitals Ahuja Medical Center
- Adam Nation, Cleveland Department of Public Health
- Sharon Nichols, University Hospitals Parma Medical Center
- Danielle Price, University Hospitals
- Lori Robinson, University Hospitals Bedford/Richmond Medical Centers
- Robyn Strosaker, University Hospitals Cleveland Medical Center
- Mary Beth Talerico, University Hospitals Parma Medical Center
- Onyinyechi Ukwuoma, University Hospitals, Pediatric Fellow
- Kathryn Wesolowski, University Hospitals Rainbow Babies & Children's Hospital

A two-step process to arrive at the final prioritized list of health needs was led by Cypress Research Group and The Center for Health Affairs. The first step involved assignment of priority points by each voting participant to eliminate five health needs from the initial list of 13, to arrive at eight health needs. For this, each individual was provided with 100 points to distribute as they wanted among the list of 13 health needs (i.e. an individual could give all 100 points to one health need, distribute points evenly among the 13 health needs, etc.). The more points given to a health need, the more important a health need was considered to be. Weighting was used to ensure that public health stakeholders received a combined 50% of the vote and hospital stakeholders received a combined 50% of the vote.

The eight health needs that received the highest number of weighted votes were included in the second round of voting. The second round of voting involved each public health entity or hospital required to conduct a community health assessment in 2018 (Cleveland Department of Public Health, Cuyahoga County Board of Health, UH Ahuja Medical Center, UH Beachwood Rehabilitation Hospital, UH Bedford Medical Center, UH Cleveland Medical Center, UH Parma Medical Center, UH Rainbow Babies & Children's Hospital, UH Richmond Medical Center and UH St. John Medical Center) rating each of the eight remaining health issues using the established voting criteria described above. Each of the eight hospitals, the Cleveland Department of Public Health and the Cuyahoga County Board of Health were asked to record their ratings for each health issue on each of the three criteria: magnitude, severity, and health disparity of each problem using a prepared rating scale grid. Weighting was again applied to the compiled rating scale results to ensure that public health stakeholders received a combined 50% of the vote and hospital stakeholders received a combined 50% of the vote.

Prioritized List of Health Needs

After reviewing community voice, community stakeholder, hospital, and secondary data for Cuyahoga County, and using the established criteria to guide their decisions, five priority health needs were selected for the 2018 Cuyahoga County Community Health Assessment. There is strong alignment between the selected health priorities and state population health priorities. In no particular order:

1. **Poverty (i.e., healthy homes, food insecurity)**
2. **Opioids/Substance Use Disorders / Mental and Behavioral Health**
3. **Infant Mortality**
4. **Homicides / Violence / Safety**
5. **Chronic Disease Management and Prevention (cancer, diabetes, COPD, asthma, cardiovascular disease, healthy eating/active living)**

Resources Available to Address Community Health Priorities

Poor health status results when a complex interaction of challenging social, economic, environmental and behavioral factors combined with a lack of access to care is present. Addressing these "root" causes is an important way to improve a community's quality of life and to reduce mortality and morbidity. Numerous organizations work to improve the health status of our community via myriad services. Below is the list of community-based resources, organized by the five prioritized health needs, that the Cleveland Department of Health, Cuyahoga County Board of Health and the eight University Hospitals located within Cuyahoga County partner with to respond to the identified priority health needs.

1. Poverty (i.e. healthy homes, food insecurity)

Antioch Baptist Church
Boys & Girls Clubs of Cleveland
Breakthrough Schools
Case Western Reserve University
Centers for Families and Children
Children's Museum of Cleveland
Citizens Leadership Academy
Cuyahoga Metropolitan Housing Authority
Greater Cleveland Food Bank
Greater Cleveland Neighborhood Centers Association
Cuyahoga County Board of Health- Creating Healthy Communities
Cuyahoga County Board of Health- Farm to School
Cuyahoga County Board of Health- Healthy Homes Program
Cuyahoga County Invest in Children
Cuyahoga County Jobs and Family Services
Cuyahoga County Juvenile Court
Environmental Health Watch
Fatima Family Center
Food Pantries: Oakwood Village, City of Bedford, City of Solon, City of Bedford Heights, Light of Hearts Villa, Mt. Zion Fellowship, Church of the Resurrection, Hunger Network of Greater Cleveland – South Haven Church of Christ, St. Vincent De Paul Society
Friendly Inn Settlement House, Inc.
Health Improvement Partnership - Cuyahoga
Healthy Fathering Collaborative
Healthy Homes Advisory Committee
HUD Office of Lead Hazard Control and Healthy Homes
Lexington-Bell Community Center
LGBT Center of Greater Cleveland
MidTown Cleveland Inc.
Neighborhood Connection, Inc.
Neighborhood Progress Inc.
Parma Area Family Collaborative
Parma City School District

Parma Community/Business/Schools
Rainey Institute
Sodexo
St. Clair Superior Development Corporation Ag/re/culture Initiative
Towards Employment
United Way 211
Vel's Purple Oasis

2. Infant Mortality

Bedford Primary Care – Parent Educational Series (Childcare Centers)
Birthing Beautiful Communities
Case Western Reserve University
Centers for Families and Children
Children's Museum of Cleveland
Cuyahoga County Invest in Children
Cuyahoga Metropolitan Housing Authority
Cuyahoga County Child Fatality Review Board
Fatima Family Center
First Year Cleveland
Friendly Inn Settlement House
Healthy Fathering Collaborative
Lexington Bell Community Center
May Dugan Center
Merrick House
Neighborhood Connection, Inc.
Northeast Ohio Neighborhood Health Services (NEON)
Ohio Equity Insitute
Ohio Guidestone
Rainey Institute
St. Clair Superior Development Corporation Ag/re/culture Initiative
University Hospitals

3. Opioids/substance use disorders/mental and behavioral health

Alcohol, Drug Addiction and Mental Health Services Board of Cuyahoga County
Behavioral Health RoundTable of Cuyahoga County
City of Westlake Police & Fire Department
Cleveland Drug Court
Cleveland Suboxone Clinic
Cuyahoga County Opiate Task Force
FrontLine Service
Front Steps
Lakewood Elks- Drug Awareness Program

Matt Talbot
Narcotics Anonymous
Northeast Ohio Hospital Opioid Consortium
Oakview Behavioral Health
Police and fire departments of cities under UH medical direction
Project DAWN MetroHealth Medical Center
Signature Health
Smart Recovery
Stella Maris
The LCADA Way
UH Recovery Services
U.S. Attorney's Office Northern District Heroin and Opioid Task Force
Westshore Enforcement Bureau

4. Homicides/violence/safety

Applewood Centers, Inc.
Boys & Girls Club of Cleveland -Cleveland Peacemakers Alliance
Bright Beginnings of Cuyahoga County
City of Bedford Police & Fire Department
City of Richmond Heights Police & Fire Department
Cleveland Mayor's Office on Youth Opportunity, Prevention & Intervention
Cleveland Police Department
Cleveland Rape Crisis Center
Cleveland Violence Interruption
Domestic Violence and Child Advocacy Center
Educational Service Center of Northeast Ohio
University Hospitals Department of Psychiatry
YWCA of Greater Cleveland

5. Chronic disease management and prevention (i.e. cancer, diabetes, COPD, asthma, cardiovascular disease, healthy eating/active living)

Alzheimer's Association
American Cancer Society
American Diabetes Association
American Heart Association
American Lung Association
Arden Courts – Memory Care Community – The Dementia Toolbox Series
Avon, Avon Lake Fire Departments

Bay Village City Schools
Boys & Girls Clubs of Cleveland
Breakthrough Schools
Case Comprehensive Cancer Center
Case Western Reserve University
Centers for Families and Children
Children's Museum of Cleveland
Cleveland Metropolitan School District
Colon Cancer Alliance
Community Partnership on Aging
Cornerstone of Hope
Crohn's and Colitis Foundation
Crossroads Hospice
Crocker Park
Cuyahoga Community College
Cuyahoga County Board of Health- Breast and Cervical Cancer Project
Cuyahoga County Board of Health- Creating Healthy Communities
Cuyahoga County Board of Health- Farm to School
Cuyahoga County Board of Health- Racial and Ethnic Approaches to Community Health
Cuyahoga County Invest in Children
Cuyahoga County Library – Parma Branches
Cuyahoga Metropolitan Housing Authority
Diabetes Association
Digital Literacy
Douglas Moore Health Center
Environmental Health Watch
Extended care facilities: A Place for Mom, Arden Courts, Avon Oaks, Avon Place, Brookdale/Westlake Village, Emerald Village, Gardens at Westlake, Hanson Services, Home Instead Senior Care, Huntington Woods, Independence Village, Lifecare Center of Westlake, O'Neill Healthcare, Our House Inc., Rae Ann Skilled Nursing and Rehabilitation Centers, Riverview Point Care, Rose Senior Living, The Lutheran Home, The Normandy, The Villa Camillus, The Woods on French Creek
Fairhill Partners
Far West Center
Fatima Family Center
Friendly Inn Settlement House, Inc.
Gathering Place
Great Northern Mall
Health Improvement Partnership - Cuyahoga
Healthy Fathering Collaborative
Heinen's Diabetes Educator
Lakewood Initiative
Lakewood Library
Lexington-Bell Community Center
LGBT Center of Greater Cleveland
Life Share

Mandel Jewish Community Center
Massage Heights
Meals on Wheels
Medical Access Clinic
Neighborhood Connection, Inc.
North Coast Ministries
North Olmsted School PTA
North Royalton YMCA
Ohio Library for the Blind
Parma City School District
POO Pourri
Porter Library
RAD-Richard Assaf Dermatology
Rainey Institute
Senior Centers: Avon, Avon Lake, Bay Village, Brooklyn, Brooklyn Heights, Broadview Heights, Lakewood, North Olmsted, North Ridgeville, North Royalton, Parma, Parma Heights, Rocky River, Seven Hills, Westlake
St. Clair Superior Development Corporation Ag/re/culture Initiative
UH Parma- Local government – cities in UH Parma service area
United Way 211
Veterans Administration
Westlake City Schools
Westlake Food Pantry
Westlake Recreation Center
Western Reserve Hospice
Westshore YMCA
WHO Organization

9. Appendix

A. HIP-Cuyahoga Collaborating Agencies within Cuyahoga County Jurisdiction

- Better Health Partnership*
- Case Western Reserve University School of Medicine*
- Cleveland Clinic
- Cleveland Department of Public Health
- Cuyahoga County Board of Health*
- Cypress Research Group
- MetroHealth
- PolicyBridge*
- Prevention Research Center for Healthy Neighborhoods*
- Southwest General Hospital
- St. Vincent Charity Medical Center
- The Center for Health Affairs
- University Hospitals

*Indicates current HIP-Cuyahoga backbone and anchor organizations

B. Qualifications of Consulting Companies

The Center for Health Affairs, Cleveland, Ohio
The Center for Health Affairs is the leading advocate for Northeast Ohio hospitals. With a rich history as the Northeast Ohio hospital association, dating back to 1916, The Center serves as the collective voice of 36 hospitals spanning nine counties.

The Center recognizes the importance of analyzing the top health needs in each community while ensuring hospitals are compliant with IRS regulations governing nonprofit hospitals. Since 2010, The Center has helped hospitals fulfill the CHNA requirements contained within the Affordable Care Act. More recently, The Center has helped hospitals coordinate their community health planning efforts with those of public health departments to ensure alignment with state population health guidance. Beyond helping hospitals with the completion of timely CHNA reports, The Center spearheads the Northeast Ohio CHNA Roundtable, which brings member hospitals and other essential stakeholders together to spur opportunities for shared learning and collaboration in the region.

The Center's contribution to the 2018 Cuyahoga County Community Health Assessment - which included qualitative research, writing report narrative, project management, and co-leading planning meetings - was led by The Center's community outreach director and overseen by The Center's senior vice president of member services. The Center engaged Cypress Research Group to provide expertise in hospital data analysis, statistical methods, and evaluation of hospital program impact.

More information about The Center for Health Affairs and its involvement in CHNAs can be found at www.chanet.org.

Cypress Research Group, Cleveland, Ohio
Founded in 1997, Cypress Research Group focuses on quantitative analysis of primary and secondary market and industry data. Industry specialties include health care, hi-tech and higher education. Since 2002, Cypress Research Group has partnered with The Center for Health Affairs to conduct a range of studies including building forecast models for nurses and most recently to analyze data for community health assessments.

The 2018 Cuyahoga County Community Health Assessment was directed by the company's president and supported by the work of associates and research analysts. The company's president, as well as all associates and research analysts, hold graduate degrees in relevant fields.

C. Community Leader Interview Guide

1) Briefly describe the services your organization offers, and the population you serve.
2) Are your services targeted toward a particular geographical area (city, ZIP code, school, etc.)? Are they county-wide?
    a. Why do you use your particular service area? Geographical or otherwise?
3) Is there capacity within your organization to serve additional clients? If not, what are the biggest barrier(s) impacting your ability to increase capacity?
4) In your opinion, what is the biggest issue or concern facing the people *served by your agency*?
   In surrounding counties? Particular age groups (0 – 17, 18 – 44, 45 – 65, 65+)?
   (Note: If not health care related, what is biggest health care related issue or concern?)
5) Please discuss the kinds of problems that the people served by your agency (by community agencies) have in accessing health care, mental and behavioral health, and/or social services for themselves and/or their families?
   (Prompt: In answering this question you may wish to consider the following problems – language barriers, transportation, no health insurance, lack of information on available resources, delays in getting needed care, economic constraints, and/or dissatisfaction with treatment.)
6) Please share any trends seen in the following areas (and where, geographically they are occurring):
   a. Demographic – changes in the size, age, racial/ethnic diversity, or other characteristics of the population (particularly those who are "vulnerable")
   b. Economic variables – their impact on health
   c. Provider community – public health, FQHCs, physicians, hospitals (who is taking care of the poor?)
   d. Health status/public health indicators (what illnesses/needs/issues are getting worse or better? Why?)
   e. Access to care – why?
   f. Specifically, access to preventive care
7) If you were to prioritize, what would you say are the top 3 issues *impacting your community* in order of greatest need?
8) What are the community organizations/assets that are or could be working to address these needs?
9) What role do you see the hospital(s) in your area currently playing to help address the community health issues faced by the low-income people who live here?
   What role do you think the hospitals in your area should play?
10) What role do you see public health departments currently playing to help address the community health issues faced by the low-income people who live here?
    What role do you think public health should play?
11) From your perspective, what are the assets in Greater Cleveland/Cuyahoga County?
12) If you had a magic wand and unlimited resources to make the city/county healthier, what specific initiative(s) would you recommend to address the most pressing access or health status problems in the community? Why?
13) Does your agency or organization create or support greater equity in Cuyahoga? If yes, how? Equity being defined as providing all people w/ fair opportunities to achieve their full potential.
14) Do you think structural racism impacts populations in Cuyahoga County? If so, how? Structural racism being defined as racial bias across and within society. The cumulative and compounded effects of an array of factors such as public policies, institutional practices, cultural representations, and other norms that work in various, often reinforcing ways, to perpetuate racial inequity.

D. Technical Guide

The technical guide provides detailed information for each of the indicators included in the 2018 assessment including the definition, data sources and calculations used. It is important to note that many of the calculations used the actual 2010 U.S. Census data for the denominator as opposed to the 2016 population estimates. This was done because of the variation that often occurs through the estimation process especially within population subgroups with respect to age, sex, and/or race/ethnicity. We do acknowledge that based on the 2016 estimates, there have been increases in the following population subgroups: Black, non-Hispanic, Hispanic, 18-34 years old; and 65 and older compared to 2010 data. Therefore, in some instances, the indicator values may be slightly higher/lower in these population subgroups.

Socioeconomic Indicators			
Indicator	**Definition**	**Source of Indicator Data**	**Indicator Numerator**
		Source of Indicator Definition	**Indicator Denominator**
Percent of population unemployed	The percent of the civilian labor force, age 16 and older, that is unemployed but seeking work	U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S2301 and B23001. Available at http://factfinder2.census.gov. Accessed on April 21 and April 27, 2018. *Ohio and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Individuals who are 16 and older that are unemployed in 2016
		U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S2301 and B23001. Available at http://factfinder2.census.gov. Accessed on April 21 and April 27, 2018.	Population 16 years of age and older in 2016
Percent of population without health insurance	The estimated percent of the population that has no health insurance coverage	U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S2701 and B27001. Available at http://factfinder2.census.gov. Accessed on April 21 and April 27, 2018. *Ohio and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Uninsured individuals in 2016
		U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S2701 and B27001. Available at http://factfinder2.census.gov. Accessed on April 21 and April 27, 2018.	Civilian noninstitutionalized population in 2016

Average life expectancy	The average number of years that a baby born in a particular year is expected to live if current age-specific mortality trends continue to apply	Cuyahoga County Board of Heath (CCBH) using 2016 Vital Statistics provided by the Ohio Department of Health (ODH) and U.S. Census Bureau. Age Groups and Sex: 2010. 2010 Census Summary File 1. Tables QT-P1. Available at http://factfinder2.census.gov. Accessed on June 13, 2012. *National Rate:* Arias E, Heron M, Xu JQ. United States life tables, 2014. National vital statistics reports; vol 66 no 4. Hyattsville, MD: National Center for Health Statistics. 2017.	The number of deaths within specified age groups in 2016. The calculation was performed using a customized application developed by Matt Beyer, Epidemiologist, Alameda County Public Health Department, California.
		Community Health Status Indicators Project Working Group. Data Sources, Definitions, and Notes for CHSI2009. Department of Health and Human Services, Washington. DC: 2009. Available at http://communityhealth.hhs.gov. Accessed on June 27, 2012.	Number of people in each age group in 2010
Percent of total residents below poverty level	The percentage of individuals living below the poverty level	U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S1701. Available at http://factfinder2.census.gov. Accessed on April 30, 2018.	Individuals living below the poverty level in 2016
		U.S. Census Bureau. American Community Survey, 2016, 1- Year Estimate, Table S1701. Available at http://factfinder2.census.gov. Accessed on April 30, 2018.	Population for whom poverty status is determined in 2016
High school graduation rate	The percentage of individuals who graduated high school (includes equivalency)	U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S1501 and B15001. Available at http://factfinder2.census.gov. Accessed on April 21 and April 30, 2018.	Individuals who graduated high school (includes equivalency) in 2016
		U.S. Census Bureau. American Community Survey, 2016, 1-Year Estimate, Tables S1501 and B15001. Available at http://factfinder2.census.gov. Accessed on April 21 and April 30, 2018. *Ohio and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Population 18 years and older in 2016 for whom educational status is determined

Health Resource Availability Indicators

Indicator	Definition	Source of Indicator Data Source of Indicator Definition	Indicator Numerator Indicator Denominator
Preventable hospital stays	The hospital discharge rate for ambulatory care-sensitive conditions per 1,000 Medicare	University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on	Numerator counts are based on ICD-9-CM diagnosis codes. Surgical

	enrollees	March 19, 2018.	codes are usually excluded to ensure that the admission was for a medical condition.
		University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	The hospital discharge rate for ambulatory care-sensitive conditions per 1,000 fee-for-service Medicare enrollees.
Licensed primary care physicians	Primary care physicians include practicing physicians specializing in general practice medicine, family medicine, internal medicine, pediatrics, and obstetrics/gynecology. The measure represents the population per one provider	University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Number of physicians in primary care (general practice, family, internal medicine, obstetrics and gynecology, or pediatrics) in 2015
		University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	U. S. Census Bureau's population estimates for Cuyahoga County
Proportion of population without a regular source of primary care – including dental services	Number of persons who report that they have a usual primary care provider	NO DATA AVAILABLE	
Percent of children who visited a doctor in the past year	Number of persons aged 17 years and under who report having a specific source of primary care	NO DATA AVAILABLE	
Medicaid physician availability: ratio		NO DATA AVAILABLE	

Quality of Life Indicators

Indicator	Definition	Source of Indicator Data	Indicator Numerator
		Source of Indicator Definition	Indicator Denominator
Percentage of People Living in Food Desert Areas	The number of people living in a food desert, generally described as an area "with limited access to affordable and nutritious food, particularly in low-income areas", or areas "distant from mainstream grocery stores."	Cuyahoga County Planning Commission. Cuyahoga County Assessment: Supermarket Access in Cuyahoga County 2017. Presentation October 18, 2017.	Population who are both low income and live greater than one-half mile from a supermarket or grocery store
		Cuyahoga County Planning Commission. Cuyahoga County Assessment: Supermarket Access in Cuyahoga County 2017. Presentation October 18, 2017.	2010 U.S. Census

Crime activity-homicides	The number of deaths due to homicides. Homicide consists of murder and non-negligent manslaughter, defined as the willful killing of one human being by another. Not included in the counts for this offense are deaths caused by negligence, suicide, or accident; justifiable homicides; and attempts to murder or assaults to murder, which are classified as aggravated assaults	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018. *National Rate:* Homicide deaths. Healthy People 2020. Injury and Violence. Available at https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Injury-and-Violence/data#homicides. Accessed on March 9, 2018.	Ohio Department of Health. Leading Causes of Death ICD 113 cause groups. Number of deaths due to homicides using ICD-10 codes: X85-Y09,Y87 and cause grouping 47 in 2016 direct age-adjusted to the U.S. 2000 standard population
		Ohio Department of Health. Leading Causes of Death ICD 113 cause groups. Number of deaths due to homicides using ICD-10 codes: X85-Y09,Y87 and cause grouping 47 in 2016 direct age-adjusted to the U.S. 2000 standard population	Per 100,000 population
Access to parks/recreational activities	Locations for physical activity are defined as parks or recreational facilities. Parks include local, state, and national parks. Recreational facilities include businesses identified by the Standard Industry Classification codes and include a wide variety of facilities including gyms, community centers, YMCAs, dance studios and pools. Individuals who: • reside in a census block within a half mile of a park or • in urban census blocks: reside within one mile of a recreational facility or • in rural census blocks: reside within three miles of a recreational facility are considered to have adequate access for opportunities for physical activity.	University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Percentage of population with adequate access to locations for physical activity
		University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	
Proportion of persons satisfied with the quality of life in the community		NO DATA AVAILABLE	
Proportion of residents planning to stay in the community/neighborhood for the next five years		NO DATA AVAILABLE	

Behavioral Risk Factor Indicators			
Indicator	**Definition**	**Source of Indicator Data** **Source of Indicator Definition**	**Indicator Numerator** **Indicator Denominator**
Percent of obese residents	Percentage of adults that report a BMI ≥= 30	*Cuyahoga County, State, and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018. *City of Cleveland Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. *9th-12th Grade Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Case Western Reserve University. 2017 YRBS: County Demographic Prevalence. Available at http://www.prchn.org/Downloads/2017%20County%20Demographic%20Prevalence.pdf. Accessed on April 18, 2018. *Cuyahoga County School Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2017 Cuyahoga County Middle School Youth Risk Behavior Survey Report. Available at http://www.prchn.org/. Accessed on March 19, 2018	Number of sample respondents aged 18 years and older (or in 7th and 8th grade) with computed BMI equal to or greater than 30.0
		Ohio Rate: University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018. *National Rate:* Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online]. 2015. [accessed May 11, 2018]. URL: https://www.cdc.gov/brfss/brfssprevalence/.	Total number of sample respondents with valid responses for height and weight
Rate of tobacco use	The estimated percent of the adult population that currently smokes every day or "most days" and has smoked at least 100 cigarettes in their lifetime	*Cuyahoga County, State, and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018. *City of Cleveland Rate:* Prevention Research Center for Healthy	Number of sample respondents who have smoked at least 100 cigarettes in lifetime and who now report smoking cigarettes every day or most days in 2016 for

		Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. *9th-12th Grade Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Case Western Reserve University. 2017 YRBS: County Demographic Prevalence. Available at http://www.prchn.org/Downloads/2017%20County%20Demographic%20Prevalence.pdf. Accessed on April 18, 2018. *Ohio Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018. *National Rate*: 5Centers for Disease Control and Prevention. Current Cigarette Smoking Among Adults in the United States. Available at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm Accessed on April 18, 2018.	Cuyahoga County and 2014 for the City of Cleveland
		University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Number of adults aged 18 years and older with valid responses for tobacco use in 2016 for Cuyahoga County and 2014 for the City of Cleveland
Percent of residents with inadequate nutritional intake	Adults that report eating 5 or more servings of fruits/vegetables per day	*State and National Rate:* Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online]. 2015. [accessed Apr 18, 2018]. URL: https://www.cdc.gov/brfss/brfssprevalence/ *City of Cleveland Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. *9th-12th Grade Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Case Western Reserve University. 2017 YRBS: County Demographic Prevalence. Available at http://www.prchn.org/Downloads/2017%20County%20Demographic%20Prevalence.pdf. Accessed on April 18, 2018. *Cuyahoga County School Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western	Number of sample respondents aged 18 and older (or in 9^{th}-12^{th} grade) who report eating 5 or more servings of fruits/vegetables per day in 2017 for Cuyahoga County, 2014 for the City of Cleveland and 2009 for the state and nation.

		Reserve University. 2017 Cuyahoga County Middle School Youth Risk Behavior Survey Report. Available at http://www.prchn.org/. Accessed on March 19, 2018	
		Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2010.	Total number of sample respondents aged 18 and older (or in 9th-12th grade) with valid responses to fruits/vegetables consumption questions in 2017 for Cuyahoga County, 2014 for the City of Cleveland and 2009 for the state and nation.
Rate of illegal drug use	Illicit drugs consist of any illegal substance including marijuana, cocaine, heroin, etc.	NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu).	Number of illicit drug arrests in 2014
		NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu).	Per 100,000 population (denominator calculated by NEOCANDO based on linear extrapolation of 2010 US Census data)
Percent of residents with sufficient physical activity	Percentage of adults age 20 and over reporting no leisure-time physical activity	*Cuyahoga County, State, and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 12, 2018. *City of Cleveland Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2009 Local Behavior Risk Factor Surveillance System Report.	Percentage of adults age 20 and over reporting no leisure-time physical activity
		Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2009.	Total number of sample respondents aged 18+ with valid responses to physical activity questions
Environmental Health Indicators			
Indicator	**Definition**	**Source of Indicator Data**	**Indicator Numerator**
		Source of Indicator Definition	**Indicator Denominator**
Percent of children under 6 years of age	Number of children less than 72 months old with blood lead levels	Cuyahoga County Board of Health (CCBH) using data provided by the Ohio Department of	Number of children less than 72 months old with

(less than 72 months old) that are tested and have blood lead levels exceeding 5 ug/dL and exceeding 10 ug/dL	(BLLs) 5 or more ug/dL and 10 or more µg/dL	Health's Childhood Lead Poisoning Prevention Program. *Ohio Rate:* Ohio Lead Advisory Council Annual Report 2016. Ohio Department of Health. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/eh/lead-poisoning---children/2017/2016-Annual-Report.pdf Accessed on March 13, 2018. *National Rate:* Number of Children Tested and Confirmed EBLLs by State, Year, and BLL Group, Children <72 months old. Centers for Disease Control National Surveillance Data (1997-2015). Available at https://www.cdc.gov/nceh/lead/data/national.htm Accessed on March 13, 2018.	blood lead levels (BLLs) 5 or more ug/dL and 10 or more µg/dL in 2015
		Cuyahoga County Board of Health (CCBH) using data originally provided by the Ohio Department of Health's Childhood Lead Poisoning Prevention Program.	Total number of children less than 72 months old tested for elevated blood lead levels in 2015
Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5).	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5).	University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018.	The average daily density of fine particulate matter in micrograms per cubic meter. Fine particulate matter is defined as particles of air pollutants with an aerodynamic diameter less than 2.5 micrometers
		University of Wisconsin Population Health Institute. County Health Rankings 2012. Available at www.countyhealthrankings.org. Accessed on March 13, 2018.	
Number and proportion of houses built before 1950	Number and proportion of houses built before 1950 (risk for lead-based paint exposure)	U.S. Census Bureau. American Community Survey, 2016, 1- Year Estimates, Table B25034. Available at http://factfinder2.census.gov. Accessed on April, 24, 2018.	Number of houses built prior to 1949
		Centers for Disease Control and Prevention (CDC). Exposure and Risk. Childhood Lead Poisoning. Available at http://ephtracking.cdc.gov/showChildhoodLeadRisk.action. Accessed on March 13, 2018.	Total housing units built 1949 or earlier
Smoking inside of home within the past week	Percent of people who have smoked inside their homes within the past week	Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on March 12, 2018.	Number of people from sampled population who have said yes to smoking inside of home within the past week "During past 7 days, how many days did anyone smoke inside your home?" in 2014 for City of Cleveland

		Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on March 12, 2018.	Total sampled population in 2014 for City of Cleveland
Foodborne disease: rate per total population	Rate of infections caused by key pathogens transmitted commonly through food Diseases reported for this indicator follow the case definitions for infectious conditions under public health surveillance published in MMWR 1997; 46 (RR-10) List of diseases included in this indicator • Campylobacteriosis with a case status of "Confirmed" or "Probable" • E. coli O157:H7 with a case status of "Confirmed" or "Probable" • Listerisosis with a case status of "Confirmed" • Hemolytic uremic syndrome (HUS) with a case status of "Confirmed" or "Probable" • Salmonellosis with a case status of "Confirmed" or "Probable" • Vibriosis with a case status of "Confirmed" or "Probable". • Yersiniosis with a case status "Confirmed", "Probable" , or "Suspected"	*City of Cleveland and Cuyahoga County Rate:* Cuyahoga County Board of Heath (CCBH) using data obtained from the Ohio Disease Reporting System (ODRS). *National Benchmark Rate:* Food Safety Objectives. Office of Disease Prevention and Health Promotion. Available at https://www.healthypeople.gov/2020/data-search/Search-the-Data#topic-area=3526. Accessed January 30, 2018. *Ohio Rate:* Ohio Department of Health. 2016 Annual Summary of Infectious Diseases, Ohio. Available at https://www.odh.ohio.gov/en/healthstats/disease/idann/idsum16/16idsum. Accessed April 24, 2018. *National Rates:* Foodborne Disease Active Surveillance Network. FoodNet 2015 Surveillance Report (Final Data). Centers for Disease Control and Prevention. Available at https://www.cdc.gov/foodnet/pdfs/FoodNet-Annual-Report-2015-508c.pdf. Accessed April 24, 2018. Listeriosis- Morbidity and Mortality Weekly Report. Summary of Notifiable Infectious Diseases and Conditions-United States 2015. Weekly. August 11, 2017, 64(53);1-143. Available at https://www.cdc.gov/mmwr/volumes/64/wr/mm6453a1.htm?s_cid=mm6453a1_w Accessed April 24, 2018.	Number of cases for each foodborne disease in 2016
		Case Definition for Infectious Conditions under Public Health Surveillance. Morbidity and Mortality Weekly Report (MMWR). Centers for Disease Control and Prevention. May 02, 1997/46(4410);1-55.	Rate per 100,000 total population in 2016

Social and Mental Health Indicators			
Indicator	**Definition**	**Source of Indicator Data** **Source of Indicator Definition**	**Indicator Numerator** **Indicator Denominator**
Rate of confirmed cases of child abuse and neglect among children	Children with substantiated child maltreatment including children who are investigated for maltreatment and abuse and/or neglect is confirmed	NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu). *National Rate:* U.S. Department of Health and Human Services. Administration for Children and Families. Children's Bureau. Child Maltreatment 2016. Available at http://www.acf.hhs.gov/ Accessed April 26, 2018.	NEOCANDO Numerator: Number of children with substantiated child maltreatment in 2012
		NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu).	Per 1,000 Population aged <18 years of age
Violent Crime rate	Number of violent crimes	*Cuyahoga County and Ohio Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018. *City of Cleveland Rate*: NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu). *National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Number of violent crimes (including homicide, rape, robbery and aggravated assault) in 2014 for the City of Cleveland and 2012-2014 for Cuyahoga, Ohio and nation
		Cuyahoga County and Ohio Rate: University of Wisconsin Population Health Institute. County Health Rankings 2017. Available at www.countyhealthrankings.org. Accessed on March 13, 2018. *City of Cleveland Rate*: NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu).	Per 100,000 population
Suicide rate	Number of deaths due to suicide	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH) *Ohio Rate:* Ohio Selected Causes of Death (113 Categories). 2016. Ohio Department of Health (ODH). Available at http://publicapps.odh.ohio.gov/EDW/DataBrowser/Browse/Mortality. Accessed on April 4, 2018. *National Rate:* Suicide deaths. The National Institute of Mental	Number of deaths due to suicide using ICD-10 codes X60-X84, Y87.0, X72-74, X60-X71, X75-X84 in 2010 direct age-adjusted to the U.S. 2000 standard population. Number of deaths due to suicide (ICD-10 codes *U03, X60-X84, Y87.0).

		Health Information Resource Center. Available at https://www.nimh.nih.gov/health/statistics/suicide.shtml Accessed on April 4, 2018.	Age-adjusted death rates were calculated using the direct method and the 2000 standard population
		International Classification of Disease Tenth Revision (ICD-10) codes. ICD 113 Selected Causes of Death.	Per 100,000 population in 2010
Domestic violence rate	Number non-aggravated domestic violence cases	NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu).	Number non-aggravated domestic violence cases in 2014
		NEO CANDO system, Center on Urban Poverty and Social Change. MSASS. Case Western Reserve University (http://neocando.case.edu).	Per 100,000 population
Number of adults that reported the average number of days (within the past 30 days) in which their mental health was not good	Average number of reported mentally unhealthy days per month	*Cleveland Rate*: Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2014 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on March 13, 2018. *Ohio and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Average number of reported mentally unhealthy days in the past 30 days for the time period of 2014 (City of Cleveland)
		Centers for Disease Control (CDC) Behavioral Risk Factor Surveillance System (BRFSS).	Total Sampled Population

Maternal and Child Health Indicators

Indicator	**Definition**	**Source of Indicator Data** **Source of Indicator Definition**	**Indicator Numerator** **Indicator Denominator**
Proportion of births to adolescents per total live births	Rate of births to adolescents in age groups 10-14 years old, and 15-17 years old	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* NA *National Rate:* Continued Declines in Teen Births in the United States, 2015. National Center for Health Statistics. Available at https://www.cdc.gov/nchs/data/databriefs/db259.pdf. Accessed on April 30, 2018. *National Benchmark*: Healthy People 2020. 2020 Leading Health Indicator Topics, Reproductive and Sexual Health. Available at http://healthypeople.gov/2020/lhi/reproductiveHealth.aspx?tab=determinants. Accessed on April 30, 2018.	Number of births to females in age groups 10-14 years old, and 15-17 years old in 2016
		Cuyahoga County Board of Heath (CCBH)	Per 1,000 females in the same age groups in 2016

Premature birth rate	Percent of all live births that are born before 37 weeks gestation	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio and National Rate:* March of Dimes. Prematurity Campaign. 2016 Premature Birth Report Card. Available at http://www.marchofdimes.com/materials/premature-birth-report-card-ohio.pdf Accessed on April 30, 2018.	Number of premature births with a reported gestation period of less than 37 completed weeks in 2016
		Cuyahoga County Board of Heath (CCBH)	Per 1,000 live births in 2010
Receipt of prenatal care in the first trimester	Number of females receiving prenatal care in first trimester (first three months of pregnancy)	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* March of Dimes. PeriStats. Ohio. Quick Facts. Prenatal Care. Available at www.marchofdiems.org/peristats. Accessed on April 30, 2018. *National Rate:* Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2016. National Vital Statistics Reports; vol 67 no 1. Hyattsville, MD: National Center for Health Statistics. 2018.	Number of females receiving prenatal care in first trimester (first three months of pregnancy)
		Health Indicators Warehouse. National Center for Health Statistics. Available at http://www.healthindicators.gov/. Accessed on June 28, 2012.	Total number of females receiving prenatal care in first trimester
Percent of mothers who smoked during pregnancy	The number of women with a recent live birth who report smoking at any time during pregnancy	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Department of Health. Ohio Partners for Smoke Free Families (OPSFF): A perinatal smoking cessation program. Available at www.odh.gov/odhprograms/psmok/presmoke1.aspx. Accessed on April 30, 2018. *National Rate:* Martin JA, Hamilton BE, Osterman MJK, Driscoll AK, Drake P. Births: Final data for 2016. National Vital Statistics Reports; vol 67 no 1. Hyattsville, MD: National Center for Health Statistics. 2018.	Number of women who self-reported smoking at any time during pregnancy on the birth certificate in 2016
		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).	Total number of females who self-reported smoking status at during pregnancy on the birth certificate in 2016
Infant mortality rate	Rate of infant deaths to infants less than one year old	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Department of Health. 2016 Ohio Infant Mortality Data: General Findings. Available at www.odh.ohio.gov. Accessed on April	Number of deaths of infants less than one year of age in 2016

		30, 2018. *National Rate:* NA	
		Cuyahoga County Board of Heath (CCBH).	Per 1,000 live births in 2010
Neonatal mortality rate	Rate of neonatal deaths to infants less than 28 days old	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Department of Health. 2016 Ohio Infant Mortality Data: General Findings. Available at www.odh.ohio.gov. Accessed on April 30, 2018. *National Rate:* NA	Number of deaths of infants less than 28 days old in 2016
		Cuyahoga County Board of Heath (CCBH).	Per 1,000 live births in 2010
Postneonatal mortality rate	Rate of postneonatal deaths to infants between 28 days old and 1 year	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Department of Health. 2016 Ohio Infant Mortality Data: General Findings. Available at www.odh.ohio.gov. Accessed on April 30, 2018. *National Rate:*NA	Number of deaths of infants aged 28 days to less than 1 year in 2016
		Cuyahoga County Board of Heath (CCBH).	Per 1,000 live births in 2010
Child mortality rate	Rate of deaths to children ages 1 to 14 total and in age groups of 1-4 years old, 5-9 years old, 10-14 years old	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *National Rate:* Child Health. National Center for Health Statistics. https://www.cdc.gov/nchs/fastats/child-health.htm Accessed on April 30, 2018.	Number of deaths to children ages 1 to 14 total and in age groups of 1-4 years old, 5-9 years old, 10-14 years old in 2016
		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH)	Per 100,000 children in the same age groupings in 2010
Death, Illness, and Injury Indicators			
Indicator	**Definition**	**Source of Indicator Data**	**Indicator Numerator**
		Source of Indicator Definition	**Indicator Denominator**
Mortality rate for all causes	Death rate from all causes	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Selected Causes of Death (113 Categories).	Number of deaths from all causes in 2016 using Census Tract and direct age-adjusted to the U.S. 2000 standard population

		2016. Ohio Department of Health (ODH). Available at http://publicapps.odh.ohio.gov/EDW/DataBrowser/Browse/Mortality. Accessed on April 4, 2018. *National Rate:* Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017. Available at https://www.cdc.gov/nchs/products/databriefs/db293.htm. Accessed on April 4, 2018.	
		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).	Per 100,000 population in 2010
Mortality rate for all cancers	Death rate from all cancer types	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Selected Causes of Death (113 Categories). 2016. Ohio Department of Health (ODH). Available at http://publicapps.odh.ohio.gov/EDW/DataBrowser/Browse/Mortality. Accessed on April 4, 2018. *National Rate:* Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017. Available at https://www.cdc.gov/nchs/products/databriefs/db293.htm. Accessed on April 4, 2018.	Number of persons with cancer cause of death defined by ICD-10 mortality codes: C00-C97 in 2016 using Census Tract and direct age-adjusted to the U.S. 2000 standard population
		Statistics provided by the Ohio Department of Health (ODH).	Per100,000 population in 2010
Mortality rate for cardiovascular disease	Death rate from cardiovascular disease	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate:* Ohio Selected Causes of Death (113 Categories). 2016. Ohio Department of Health (ODH). Available at http://publicapps.odh.ohio.gov/EDW/DataBrowser/Browse/Mortality. Accessed on April 4, 2018. *National Rate:* Kochanek KD, Murphy SL, Xu JQ, Arias E. Mortality in the United States, 2016. NCHS Data Brief, no 293. Hyattsville, MD: National Center for Health Statistics. 2017. Available at https://www.cdc.gov/nchs/products/databriefs/db293.htm. Accessed on April 4, 2018.	Number of persons with heart disease cause of death defined by ICD-10 codes: I00-I78 in 2016 using Census Tract and direct age-adjusted to the U.S. 2000 standard population

		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).	Per100,000 population in 2010
Number of Years of Potential Life Lost (YPLL) in people <75 years of age	Years of potential life lost before age 75 rate	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio and National Rate:* University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on March 19, 2018.	Sum of life-years lost among persons dying before age 75 The number of deaths for each age group is multiplied by years of life lost, calculated as the difference between age 75 years and the midpoint of the age group. The calculation was performed using the information provided by the Working Group on Community Health Information Systems, Community Health Indicators—Definitions and Interpretations, Ottawa, Ontario: Canadian Institute for Health Information. Accessed at: http://www.apheo.ca/index.php?pid=190. on April 16, 2011 at 1:15pm.
		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).	Persons under age 75 (per 100,000 population
Percent of respondents reporting their health status as fair or poor	Number of survey responses that reported their health status as fair or poor to the question: "In general, would you say that your health is excellent, very good, good, fair, or poor?"	University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on April 4, 2018. *City of Cleveland Rate:* Prevention Research Center for Healthy Neighborhoods (PRCHN). Department of Epidemiology and Biostatistics. Case Western Reserve University. 2015 Local Behavior Risk Factor Surveillance System Report. Available at http://www.prchn.org/. Accessed on March 9, 2018.	Number of survey responses from sampled population who have reported their health status as fair or poor in 2015 for the City of Cleveland and for 2016 or Cuyahoga County, Ohio, and Nation
		University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on April 4, 2018.	Total sampled population
Average number of sick days within the past month	Number of survey responses from sampled population who answered the question "Now thinking about	University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on	Number of survey responses from sampled population who have

	your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?"	April 4, 2018.	reported average number of sick days within the past month during 2016
		University of Wisconsin Population Health Institute. County Health Rankings 2018. Available at www.countyhealthrankings.org. Accessed on April 4, 2018.	Total Sampled population
Communicable Disease Indicators			
Indicator	**Definition**	**Source of Indicator Data**	**Indicator Numerator**
		Source of Indicator Definition	**Indicator Denominator**
Incidence of HIV	Number of newly diagnosed HIV infections	*Cuyahoga and Ohio Rate:* Ohio Department of Health. New Diagnoses of HIV Infection Reported in Cuyahoga County as of June 30, 2017. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health-statistics---disease---hiv-aids/2016/county2016/Cuyahoga2016.pdf?la=en Accessed on April 4, 2018. *National Rate:* CDC. HIV Surveillance Report. Diagnoses of HIV Infection in the United States and Dependent Areas, 2016. (2016) Volume 29. Available at https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2016-vol-28.pdf. Accessed on April 28, 2018	Reported diagnoses of HIV infection in 2016 by disease status at initial diagnosis
			Per 100,000 population
Proportion of 2-year old children who have received all age-appropriate vaccines, as recommended by the Advisory Committee on Immunization Practices	Percentage of Children with Up-To-Date 4:3:1:3:3:1:4 Vaccination Series by 24 months of age	Cuyahoga County Board of Health Immunization Action Plan (IAP) Provider Program Assessments in 2016. *Ohio Rate:* Ohio Department of Health. Ohio Immunization Coverage Rates, 2009-2016. 2017. Available at https://www.odh.ohio.gov/en/odhprograms/bid/immunization/immform. Accessed on April 29, 2018.	Number of children who received the recommended vaccine series at the given age in 2016 Combined 7 vaccine series (4:3:1:3*:3:1): 4 or more doses of DTaP, 3 or more doses of Polio, 1 or more doses of MMR, Hib full series (3 or 4 doses, depending on product type received), 3 or more doses of HepB, 1 or more doses of Varicella, and 4 o more doses of PCV (In 2013 data, referred to as 4:3:1:4:3:1:4-FS)

		Cuyahoga County Board of Health Immunization Action Plan (IAP) Provider Program Assessments in 2016.	Number of children assessed for completion of the series by the given age in 2008
Flu Vaccination Claims Rates by Geographic Area	The percentage of older adults who report receiving a seasonal flu vaccine	Health and Human Services. National Vaccine Program Office. Flu Vaccination Claims Rates by Geographic Areas. Available at https://www.hhs.gov/nvpo/about/resources/interactive-mapping-tool-tracking-flu-vaccinations/index.html. Accessed on April 9, 2018	Flu vaccination claims data only for Medicare Fee-for-Service (FFS) beneficiaries, which includes two-thirds of Americans aged 65 and older as well as disabled Americans under age 65
		Health and Human Services. National Vaccine Program Office. Flu Vaccination Claims Rates by Geographic Areas. Available at https://www.hhs.gov/nvpo/about/resources/interactive-mapping-tool-tracking-flu-vaccinations/index.html. Accessed on April 9, 2018	Medicare Fee-for-Service (FFS) beneficiaries, which includes two-thirds of Americans aged 65 and older as well as disabled Americans under age 65
Sentinel Indicators			
Indicator	**Definition**	**Source of Indicator Data**	**Indicator Numerator**
		Source of Indicator Definition	**Indicator Denominator**
Rate of Gun-related Deaths	Number of firearm-related deaths	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *National Rate:* Health Indicators Warehouse. National Center for Health Statistics. Available at http://www.healthindicators.gov/. Accessed on June 28, 2012.	Number of firearm-related deaths using ICD-10 codes W32-W34, X72-X74, X93-X95. in 2010 using Census Tract direct age-adjusted to the U.S. 2000 standard population Health Indicators Warehouse Numerator: Number of firearm-related deaths (ICD-10 codes *U01.4, W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0)
		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).	Per 100,000 population in 2010
Rate of Drug-induced Deaths	Number of deaths due to drug-induced causes	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio Rate*: Centers for Disease Control and Prevention. Drug Overdose Death Data. Available at www.cdc.gov/drugoverdose/data/statedeaths Accessed April 27, 2018	Number of deaths due to drug-induced causes (ICD-10 codes D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.0-F11.5, F11.7-F11.9,

		National Rate: National Centers for Health Statistics. Centers for Disease Control and Prevention. FastStats. Available at www.cdc.gov/nchs/fastats/injury Accessed April 27,2018	F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19. 0-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, 62.0, G72.0, I95.2, J70.2-J70.4, L10.5, L27.0, L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R78.1-R78.5, X40-X44, X60-X64, X85, Y10-Y14) in 2010 using Census Tract direct age-adjusted to the U.S. 2000 standard population.
		Health Indicators Warehouse. National Center for Health Statistics. Available at http://www.healthindicators.gov/. Accessed on June 28, 2012.	Per 100,000 population in 2010
Number of deaths or death rate for work-related injuries	Number of work-related deaths	Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH). *Ohio and National Rate:* Bureau of Labor Statistics. National Census of Fatal Occupational Injuries, 2016. Available at hhps://www.bls.gov Accessed April 27, 2018	Number of deaths due to work-related injuries as defined by the Ohio Department of Health Mortality File Layout of 2007, in 2010 using Census Tract direct age-adjusted to the U.S. 2000 standard population.
		Cuyahoga County Board of Heath (CCBH) using Vital Statistics provided by the Ohio Department of Health (ODH).	Per 100,000 population in 2010
Percent of late stage breast cancer diagnoses	Late stage breast cancer to cancer diagnoses	*Cuyahoga Count and City of Cleveland Rate:* Cuyahoga County Board of Health using data provided by the Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). July 2017. *Ohio and National Rate:* Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). Cuyahoga County Cancer Profile, 2017. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/opi/cancer-incidence-surveillance-system-ociss/cuyahoga.pdf?la=en Accessed on April 16, 2018. *National Benchmark:* Healthy People 2020. Cancer. Available at	Number of females diagnosed with late stage breast cancer (regional or distant) 2010-2014

		https://www.healthypeople.gov/2020/topics-objectives/topic/cancer/objectives. Accessed on April 16, 2018.	
		Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). Stage at Diagnosis for Selected Cancer Sites in Ohio. July 2017.	Total number of females diagnosed with breast cancer (all stages) 2010-2014
Percent of late stage cervical cancer diagnoses	Late stage cervical cancer to cancer diagnoses	*Cuyahoga County and City of Cleveland Rate:* Cuyahoga County Board of Health using data provided by the Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). July 2017. *Ohio and National Rate:* Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). Cuyahoga County Cancer Profile, 2017. Available at https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/opi/cancer-incidence-surveillance-system-ociss/cuyahoga.pdf?la=en Accessed on April 16, 2018.	Number of females diagnosed with late stage cervical cancer (regional or distant) 2010-2014
		Ohio Cancer Incidence Surveillance System (OCISS). Ohio Department of Health (ODH). Stage at Diagnosis for Selected Cancer Sites in Ohio. July 2017.	Total number of females diagnosed with cervical cancer (all stages) 2010-2014
Cases of unexpected syndromes due to unusual toxins or infectious agents (i.e. smallpox, anthrax)	Number of smallpox or anthrax syndromes reported	Cuyahoga County Board of Health (CCBH) using data obtained through the Ohio Disease Reporting System (ODRS).	Number of smallpox or anthrax syndromes reported in 2016
		Cuyahoga County Board of Heath (CCBH).	Per 100,000 population in 2010

Emerging Health Concerns

Indicator	Definition	Source of Indicator Data Source of Indicator Definition	Indicator Numerator Indicator Denominator
Rate of unintentional overdose deaths due to opioids (including synthetic opioids)	Number of unintentional overdose deaths due to opioids (including synthetic opioids)	Cuyahoga County Board of Heath (CCBH) using data obtained from the Cuyahoga County Medical Examiner's Office. *Ohio Rate and National Rates:* Centers for Disease Control and Prevention. Seth P, Scholl L, Rudd RA, Bacon S. Overdose Deaths Involving Opioids, Cocaine, and Psychostimulants — United States, 2015–2016. MMWR Morb Mortal Wkly Rep 2018;67:349–358. Available at: http://dx.doi.org/10.15585/mmwr.mm6712a1. Accessed May 13, 2018.	Number of persons with cause of death determined to be an unintentional overdose death due to opioids (including synthetic opioids) direct age-adjusted to the U.S. 2000 standard population
		Cuyahoga County Medical Examiner's Office.	Per 100,000 population in 2010

Rate of new zika virus infections	Number of new zika virus disease cases	*City of Cleveland and Cuyahoga County Rate:* Cuyahoga County Board of Heath (CCBH) using data obtained from the Ohio Disease Reporting System (ODRS). *Ohio Rate and National Rates:* Centers for Disease Control and Prevention. 2016 Zika virus cases reported through ArboNET. Available at: https://www.cdc.gov/zika/reporting/2016-case-counts.html. Accessed May 13, 2018.	Total number of new confirmed and probable Zika virus disease cases reported in 2016
		Case Definition for Zika Virus Disease and Zika Virus Infection. 2016 Case Definition, Approved June 2016. Available at: https://wwwn.cdc.gov/nndss/conditions/zika-virus-disease-non-congenital/case-definition/2016/06/. Accessed May 13, 2018.	Per 100,000 population in 2010

E. ACS Conditions and ICD-10-CM Codes

These are the ICD-10 code schemes used to identify ACS cases:

Congenital syphilis [A50] (Secondary diagnosis for newborns only)

Immunization-related and preventable conditions [A33, A34, A35, A37, A80, G000, I01]; exclude ages 1-5 for Hemophilus meningitis [G002]

Grand mal status and other epileptic convulsions [G40]

Convulsions [R56] if age 0-5; [R56] if age >5

Severe ENT infections [H66, J02, J03, J06, J312]; Exclude otitis media cases [H66, H67 combined with C835]

Pulmonary tuberculosis [A150, A155, A159]; Other tuberculosis [A154, A156, A158, A17, A18, A19]

Chronic obstructive pulmonary disease [J20, J40, J41, J42, J43, J44, J47]; [J209 only with secondary diagnosis of J41, J42, J43, J44, J47]

Bacterial pneumonia [J13, J14, J153, J154, J157, J159, J16, J18]; not if other diagnosis of [D57] or patients < 2 months

Asthma [J45]

Congestive heart failure [I50, I110, J810]; not if procedure [02]

Hypertension [I10, I119]; not if procedure [02]

Angina [I20, I240, I248, I249]; not if procedure [0 or 1]

Cellulitis [L03, L04, L08, L88, L980]; not if procedure [0 or 1], include if [0H, 0J, 0W, OX is only surgical procedure]

Skin grafts with cellulitis [DRG 263, DRG 264]; exclude SNF/ICF admissions

Diabetes [E101, E131, E110, E130, E10641, E11641, E106, E116, E108, E118, E109, E119]

Hypoglycemia [E162]

Gastroenteritis [K529, K5289]

Kidney/urinary infection [N10, N11, N12]

Dehydration - volume depletion [E86]

Iron deficiency anemia [D501, D508, D509]

Nutritional deficiencies [E40, E41, E43, E550, E643]

Failure to thrive (infants only) [R6251, R6252, R620, R6250]

Pelvic inflammatory disease (women only) [N70, N73, if not 0UT]

Dental Conditions [K02, K03, K04, K05, K060, K061, K062, K08, K12, K13, M276, A690, K098]

We welcome comments and feedback on ways to improve this document in future editions.

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