Community Health Assessment

2017

Butler County, Ohio
City of Hamilton
City of Middletown

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A Message from the Health Commissioners

A community health assessment (CHA) is a systematic process of examining the health of a given population to identify key problems and assets, and ultimately improve the health of the community. While a community is any group of people who share common characteristics, for the purposes of this CHA, the community of interest was defined as residents of Butler County, Ohio. Butler County includes the cities of Hamilton and Middletown, and when available, data was extracted to provide further insight into the health of the residents of these two large cities.

Through an extensive process of planning and building community partnerships, new and existing data on multiple health status indicators was collected and analyzed by the CHA Advisory Committee between October 2016 and July 2017. Spearheaded by a coalition of the three local public health departments, community representatives were sought out for their expertise and backgrounds in a diverse array of sectors capable of affecting the health of the community. By the end of the process, the Advisory Committee included 43 community representatives from local government, hospital systems, medical and dental clinics, emergency management, law enforcement, education, non-profit organizations, churches, boards of health, governmental and non-governmental agencies targeting vulnerable populations (including children, the elderly, low-income, those with disabilities, those with mental health needs, those with addiction and recovery service needs), and concerned citizens.

The information collected and analyzed through the CHA process is necessary in order to inform community decision-making, prioritize health problems, and develop, implement, and evaluate community health improvement plans. What follows is a comprehensive snapshot of the current health of the community. Through the CHA, 12 community health problems were identified and prioritized from most significant to least significant: drug use, tobacco use, covering the cost of medical care, alcohol abuse, mental health issues, single-parent families, infant mortality, obesity, lung cancer, violent crime, hepatitis C virus, and bullying.

This assessment was made possible through the dedication of Committee members and the participation of community members. Thank you to everyone who took the time to share their expertise and perspectives!

For the health of our community,

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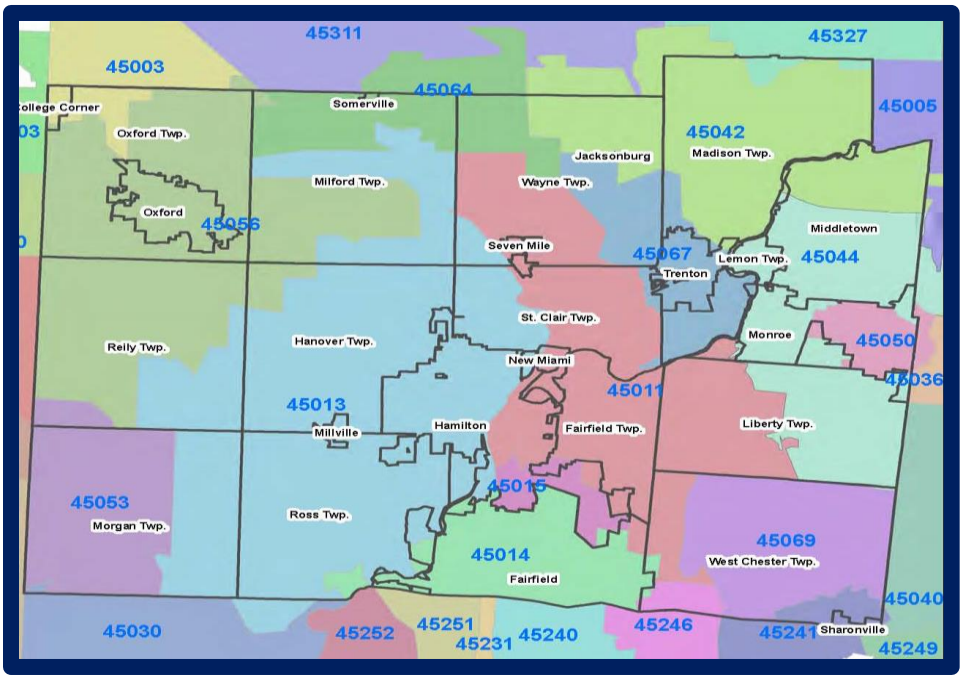
Introduction

Butler County is located in southwest Ohio, and is bordered by Montgomery County and Preble County to the north, Warren County to the east, Hamilton County to the south, and Indiana to the west. Butler County was formed in 1803 as one of the original eight counties in the state. The county has a total area of 467.3 square miles, the majority of which consists of valleys of the Great and Little Miami Rivers. The county includes a mixture of cities, villages, townships, census-designated places, as well as other unincorporated communities. The county seat is located in the city of Hamilton, approximately 40 miles south of Dayton and 30 miles north of Cincinnati. Out of 88 counties in Ohio, Butler County has the 7th highest population with an estimated 377,537 residents in 2016. Butler County has grown by 9,407 residents since the 2010 census, which is the second largest population increase among the 10 largest counties in Ohio.



Source: 2012, Butler County Auditor

Framework

The framework selected to guide this CHA was the Mobilizing for Action through Planning and Partnerships (MAPP) model. The MAPP model was chosen due to its strong ability to bring together diverse interests and collaboratively determine the most effective ways to improve community health. MAPP is a strategic approach that focuses on identifying and using resources wisely, taking into account the unique circumstances and needs of the community, and forming effective partnerships for strategic action. Developed by the National Association of County and City Health Officials (NACCHO), in cooperation with the Public Health Practice Program Office and the Centers for Disease Control and Prevention (CDC), the MAPP model is a widely used and well-tested method for guiding a community health assessment. The MAPP model includes six distinct phases, the first four of which will be described in this report.

Mobilizing for Action through Planning and Partnerships (MAPP)

Phase 1: Organize for Success and Partnership Development
Phase 2: Visioning
Phase 3: The Four Assessments
Phase 4: Identify Strategic Issues
Phase 5: Formulate Goals and Strategies
Phase 6: Action Cycle

Phase I. Organize for Success and Partnership Development

The first phase of the MAPP model was two-fold, organizing the planning process and developing partnerships. This phase set the foundation for the CHA by building commitment and participation from community stakeholders, and structured the process in an organized and efficient manner. The three local Health Commissioners met to initiate this phase in October 2016. Through their collaborative efforts, 17 individuals within the community were identified from a wide variety of sectors, who possessed unique insight and experience that would add great depth to the assessment. These individuals were contacted by the CHA Coordinator via telephone and e-mail, and the original Advisory Committee was formed in October 2016. The first full Committee meeting took place on November 10, 2016 at the Butler County Government Services Center. A total of 15 Committee members attended and participated in the first meeting. From that point on, Committee members recommended and discussed several additional community stakeholders who would be an asset to the Committee, and additional invitations via telephone, e-mail, and in-person were extended by the Coordinator and existing Committee members. By the end of the CHA process in July 2017, the Advisory Committee consisted of 43 members, representing diverse backgrounds and focus areas, with a wealth of insight and experience working within the community. A total of six in-person Committee-wide meetings were held, with additional collaboration accomplished through email, as well as telephone and online conference calls as needed.

Five Committee members also volunteered to serve on the Community Themes and Strengths Assessment Subcommittee. These members were Heather Wells, Jim Bolen, Cynthia Stever, Alicia Ritchie, and Angie Getz.

Phase II. Visioning

Once the Advisory Committee was assembled, the first task involved guiding the community through a collaborative, creative process that led to a shared community vision and common values statement. Providing focus, purpose, and direction, the vision statement and associated values guided the Committee throughout the CHA process.

The Advisory Committee met on November 10, 2016 to discuss the visioning process. A total of 15 Committee members were present and shared suggestions and opportunities to maximize community participation during this initial phase. Collectively, the Committee decided to utilize an online survey platform to collect perspectives from community members. The survey was designed to elicit qualitative data, and consisted of three open-ended questions.

Community Visioning Survey

1. How do you define a healthy community?
2. What community values promote a healthy neighborhood?
3. Who is responsible for keeping a community healthy?

The survey link was distributed throughout the community by e-mail, shared through organizational newsletters and social media, and posted on organizational webpages. The survey was open from November 16, 2016 until December 12, 2016, and a total of 134 Butler County residents participated. A thorough analysis of survey responses was conducted, and consistent themes, ideas, and values were identified. These perspectives were translated into a vision statement and associated community values, and adopted by the Advisory Committee on January 12, 2017.

Vision

A connected and healthy Butler County

Vision Statement

A healthy community is one in which members are connected to both physical resources and to each other. Necessary resources include access to quality primary, specialty, and preventative health care, as well as nutritious food and recreational opportunities. Connection to one another promotes a sense of belonging, supportive relationships, empowerment, and engagement. The well-being of a community is a reflection of physical, mental, emotional, spiritual, intellectual, and financial health. All members are responsible for the health of the community, and work in collaboration with one another, elected officials, first responders, the medical community, mental health and addiction treatment service providers, businesses, educators, government agencies, non-profit organizations, and the faith community. A connected community provides opportunity for all members to lead a healthy lifestyle and meet their full potential.

Community Values

Unity: A healthy community has a strong sense of unity among its members. A desire to belong and help one another is necessary for all to feel safe, connected, and invested.

Respect: Respect for all people and property is evident when community members feel valued and the physical environment is cared for and appears welcoming to others. Differences should be expected and embraced.

Healthy Lifestyle: Adequate opportunities to live a healthy lifestyle include access to comprehensive wellness and preventative health care, substance abuse prevention and treatment, nutritious foods, safe neighborhoods, parks, and trails, and recreational activities for all ages and physical abilities.

Kindness: Regular kind and caring interactions among members are essential in order to foster compassion and empathy.

Education: Access to health information and opportunities for education improves awareness of healthy behaviors, health promotion, and available resources.

Phase III. The Four Assessments

One of the most unique and beneficial aspects of following the MAPP model versus any other, is the use of four separate assessments. Each assessment has been designed to yield important information for improving the health of the community, but the values of the four MAPP assessments are multiplied by considering the findings as a whole. Utilizing all four assessments through the process allows for the most comprehensive understanding of the factors that affect the health of a community.[1]

The Four Assessments

1. Community Health Status Assessment
2. Community Themes and Strengths Assessment
3. Local Public Health System Assessment
4. Forces of Change Assessment

1. Community Health Status Assessment

The Community Health Status Assessment identifies the priority community health and quality of life issues. This assessment relied heavily on the collection and analysis of secondary data from local, regional, state, and federal sources. This assessment utilized the Ohio State Health Assessment conceptual framework as a guide to capture and evaluate all of the systems and environments that affect health. This framework is grounded in the fact that while access to quality health care is necessary for good health, there are multiple other factors which are also necessary.

The Community Health Status Assessment answers the questions:

How healthy are our residents?

What does the health status of our community look like?

"In addition to medical care, health is shaped by our behaviors and by the social, economic and physical environment. When combined, these non-medical factors like education, nutrition and air quality are estimated to be the most significant modifiable drivers of health outcomes" (p. 4).[2]

Also known as the social determinants of health, these factors must be addressed in order to promote good health for all. Considering the multiple factors necessary for health, clinical care accounts for a 20% influence on overall health, while the physical environment accounts for 10%, health behaviors are 30%, and the social and economic environment is 40%.[3] According to the Healthy People 2020 (HP 2020) topic area of Social Determinants of Health, advances are needed in health care, as well as non-medical fields such as education, childcare, housing, business, law, media, community planning, transportation, and agriculture in order to ensure all people have equal opportunity to make the choices that lead to good health.[4]

Methods

Data profiles were created by analyzing existing population-level data from local, regional, state, and federal sources on numerous metrics. For comparison, data of other Southwest Ohio counties, peer counties, the state, and the nation were included when available. To put the data into context, targets identified by the Ohio State Health Improvement Plan (SHIP), Healthy People 2020, and the National Prevention Strategies from the U.S. Surgeon General were included when available. Additionally, area hospital needs assessments and improvement plans were reviewed to identify the health issues which have already been prioritized for Butler County, and the efforts underway to address them.

Limitations

The data profiles were produced from existing data from a variety of sources, and each has its own limitations. While data was only selected from credible sources, many data sources relied heavily on self-reported behaviors, which have the potential for error. Additionally, changes in reporting, methodology, and analysis over time can impact the comparability of data from one source to another, or from one year to another. Lastly, while every effort was made to obtain the most recent data, there is often a time lag between when data is collected and when it is certified and released. Specifically, the majority of data utilized from the Ohio Department of Health (ODH) Ohio Public Health Data Warehouse was from 2015, since 2016 data was still considered partial and may be incomplete.

Results

Demographic Characteristics

In order to address and effectively solve health problems, it is important to first understand the context in which the issues exist. Of the 467.3 square miles within Butler County, 33.3% of the land is developed, 24.8% is made up of pasture and hay, 21% is cultivated crops, 18.7% is forest, 1.2% is open water and wetlands, and <1% is grasslands.[5] The two specific cities of focus for this report are Hamilton, which includes 16.6% of Butler County residents, and Middletown, which includes 12.2% of the population.[6] The current total population of Butler County is 377,537 people. Between 2010 and 2016, Butler County experienced an estimated 2.6% increase in population, and is projected to grow another 3.1% by 2020 (Figure 1). The state of Ohio grew by 0.7% for the same period, while the U.S. grew by 4.7%.[7] Of note, while the majority of age groups in Butler County are projected to grow at a fairly steady rate, the population of residents over the age of 65 is projected to increase from 11.5% in 2010 to 19.1% by 2030.[8]

Figure 1. Projected Population Growth of Butler County
Source: 2017, U.S. Census; 2013, Ohio Development Services Agency

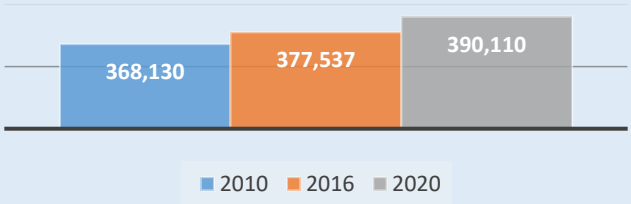


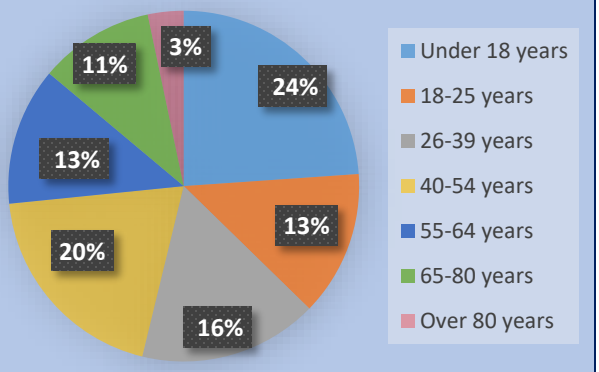
Table 1. Population by Geographic Residence of Butler County		
	2015	
West Chester Township	62,798	16.7%
Hamilton City	62,262	16.6%
Middletown City	45,953	12.2%
Fairfield City	42,672	11.4%
Liberty Township	38,438	10.2%
Oxford Township	24,418	6.5%
Fairfield Township	22,175	5.9%
Lemon Township	14,736	3.9%
Trenton City	12,612	3.4%
Madison Township	8,640	2.3%
Ross Township	8,628	2.3%
Hanover Township	8,506	2.3%
St. Clair Township	7,082	1.9%
Morgan Township	5,648	1.5%
Wayne Township	4,556	1.2%
Milford Township	3,641	<1%
Reily Township	2,694	<1%

Source: 2016, U.S. Census Subcounty Resident Population Estimates

The largest percentage of people in Butler County reside in West Chester Township, Hamilton city, Middletown city, and Fairfield city (Table 1).

Figure 2. Population by Age of Butler County

Source: 2015, ODH Ohio Public Health Data Warehouse



Butler County mirrors the gender composition of the state and nation, at 51% female and 49% male residents. The median age of Butler County residents is 36.4 years old. Approximately one quarter of residents are under 18, a third are between 18-39 years, a fifth are between 40-54 years, and another quarter are 55 years old and over (Figure 2).

The majority of Butler County residents are non-Hispanic white (85.3%) which is slightly higher than the state percentage of 79.5% and more than 20% higher than the U.S. percentage of 61.3%. The percentage of residents who are black is 7.1%, which is almost half of the percentage state and nationwide. The percentage of Hispanic residents is similar to that of the state, but significantly lower than the percentage nationwide (Table 2). The total minority rate among Butler County residents is approximately 17%.[9]

Table 2. Population Percentage by Race/Ethnicity			
	2015		
	Butler County	Ohio	U.S.
Non-Hispanic White	85.3	79.5	61.3
Black	7.1	12.8	13.3
American Indian/Alaska Native	<1	<1	1.3
Asian	2.9	2.2	5.7
Native Hawaiian/Pacific Islander	<1	<1	<1
Multi-race	3.0	2.2	2.6
Hispanic, any race	4.5	3.7	17.8

Source: 2015, U.S. Census American Community Survey 1-Year Estimate

Leading Causes of Death

The top 10 leading causes of death for Butler County residents from highest to lowest, was heart disease, cancer, unintentional injury, chronic lower respiratory diseases, cerebrovascular diseases, diabetes mellitus, Alzheimer's disease, kidney diseases, influenza and pneumonia, and suicide (Table 3). Heart disease and cancer were by far the leading causes of death in Butler County, which is consistent with the state, although the rates are lower for both in Butler County. Of the deaths caused by cancer, the majority were lung cancer, followed by colorectal, breast, pancreas, and prostate cancers. Unintentional injury was the third leading cause of death, which included motor vehicle accidents and drug overdose deaths. While the rates of heart disease and cancer have decreased over the past five years, the rate of unintentional injuries has almost doubled, from 41.6 per 100,000 in 2010 to 80.8 per 100,000 in 2015. This rate is significantly higher than the state rate of 55.8 per 100,000 deaths from unintentional injuries. Over the same period, the death rate from chronic lower respiratory diseases have decreased, deaths from diabetes mellitus have increased, and deaths from Alzheimer's disease have decreased (Figure 3).[10] The overall death rate for Butler County was 881.6 per 100,000 population.[11]

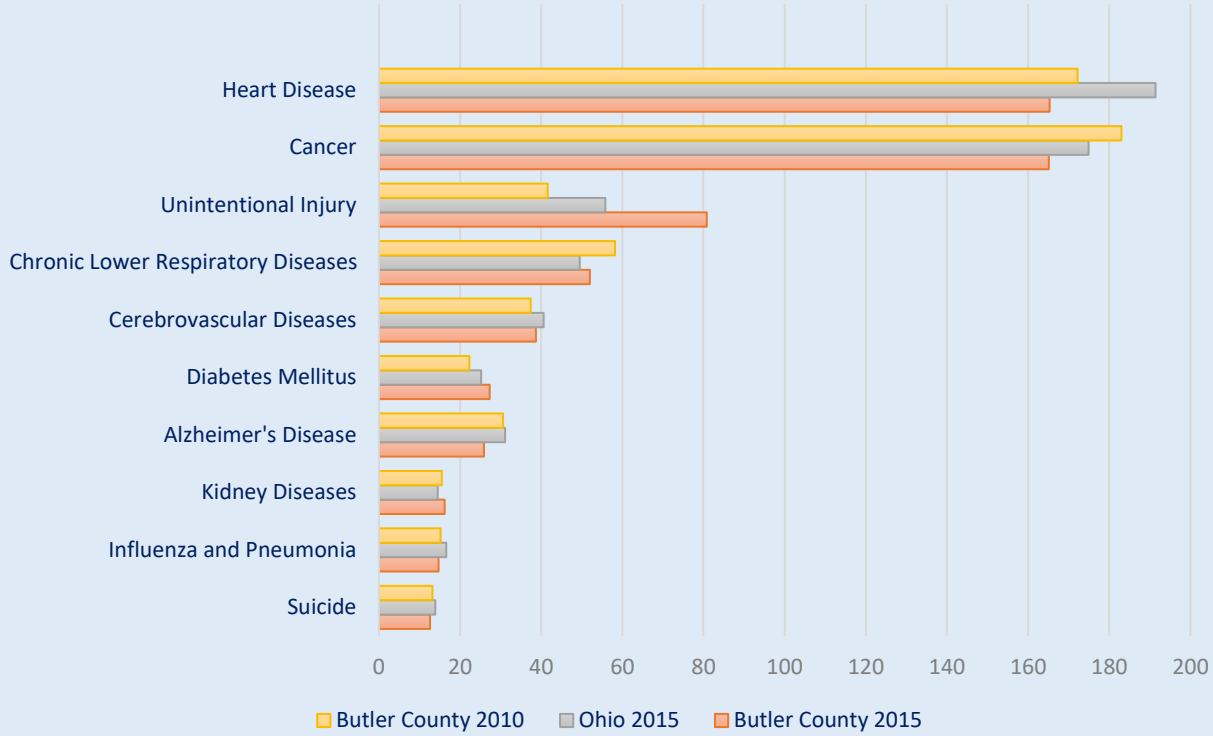
Table 3. Top 10 Leading Causes of Death in Butler County

	2015
1. Heart Disease	165.3
2. Cancer	165.1
3. Unintentional Injury	80.8
4. Chronic Lower Respiratory Diseases	52.0
5. Cerebrovascular Diseases	38.7
6. Diabetes Mellitus	27.3
7. Alzheimer's Disease	25.9
8. Kidney Diseases	16.2
9. Influenza and Pneumonia	14.7
10. Suicide	12.6

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted Rate per 100,000

Figure 3. Leading Causes of Death in Butler County in 2015, Compared to 2010 and Ohio

Source: 2010, 2015, ODH Ohio Public Health Data Warehouse



Population Health

Overall health and wellbeing

In 2014, 16% of Butler County residents reported poor or fair health, which is just slightly less than the state average of 17%. Residents reported an average of 3.7 physically unhealthy days and 4.0 mentally unhealthy days within the past 30 days, compared to 4.0 and 4.3 respectively, for the state. Further, the rate of frequent physical distress, or more than 14 days of poor physical health per month, was 11% for Butler County and 12% for the state. Similarly, the rate of frequent mental distress, or more than 14 days of poor mental health per month, was 11% for Butler County and 13% for the state.[12]

Child mortality

The total birth rate of Butler County was 60.2 per 1,000 women aged 15-44 years old.[13] The child mortality rate was 50 deaths per 100,000 for children under the age of 18 years old. This rate is lower than the state child mortality rate of 60 deaths per 100,000 children under 18.[14]

Infant mortality

Infant mortality is a type of mortality rate for children less than one year old, and is among the best indicators of the overall health of a community. The rate of infant mortality is often associated with factors such as maternal health, access to health care, the quality of health care available, socioeconomic conditions, and health policies. Between 2006 and 2015, the 10-year average annual infant mortality rate was 7.7 per 1,000 live births for Butler County and 7.5 for the state.[15] The annual infant mortality rate in Butler County has been declining the past four years, and is currently 6.9, which is below the state rate of 7.4, but above the national rate of 5.8 and Healthy People 2020 target of 6.0 (Table 4). Despite the recent decline, there remains a significant disparity in infant mortality by race and ethnicity, with minority infants experiencing a significantly higher mortality rate (Table 5). Specifically, the mortality rate for black infants is almost double the rate for white infants (Table 6). Even while the white infant mortality rate has dropped below the Healthy People 2020 target for the past two years, the black infant mortality rate remains well above the target.[16]

Table 4. Infant Mortality Rate

	2016*
Butler County	6.9
Ohio	7.4
U.S.	5.8
HP 2020 target	6.0

Source: 2016, ODH Ohio Public Health Data Warehouse; 2016, CIA World Factbook, per 1,000 live births; HP 2020
*provisional

Table 5. Infant Mortality Rate in Butler County by Race/Ethnicity

	Total	Non-Hispanic White	Non-Hispanic Black	Hispanic
2011	8.5	6.3	21.0	15.8
2012	8.4	8.2	16.2	2.8
2013	9.6	9.8	10.2	6.3
2014	8.8	8.6	6.8	11.5
2015	7.2	5.6	21.2	7.9
2016*	6.9	4.7	13.9	-

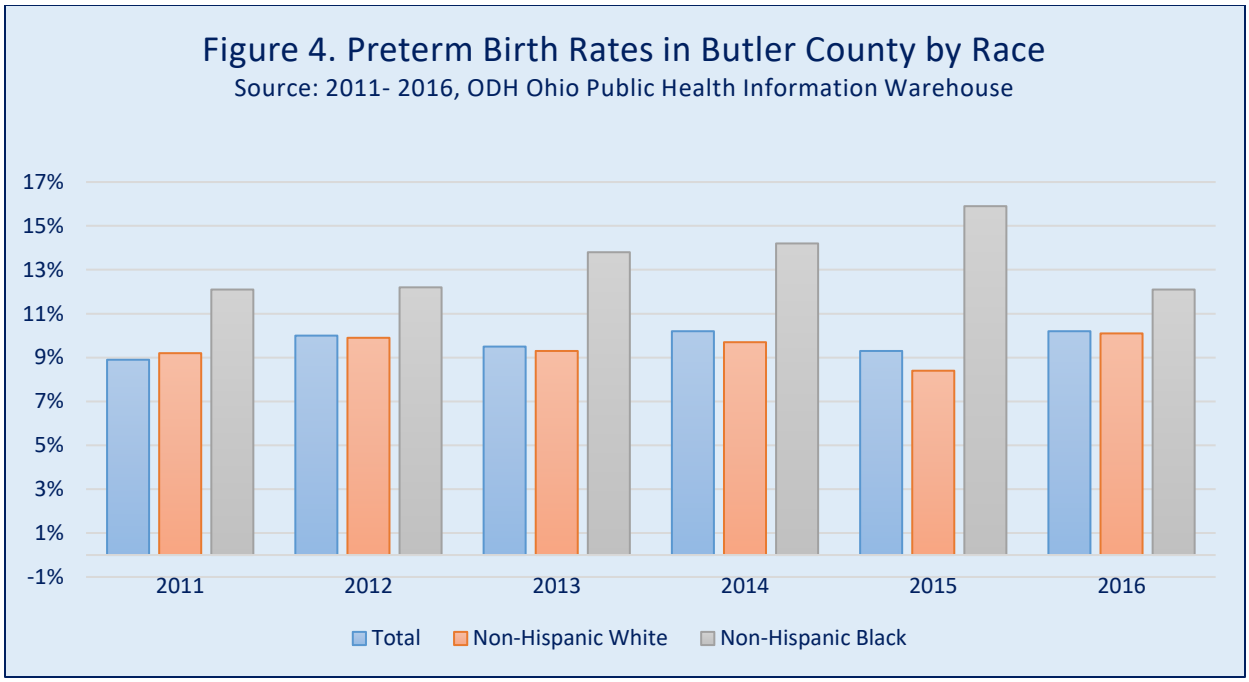
Source: 2017, Ohio Equity Institute; 2016, ODH Ohio Public Health Data Warehouse, per 1,000 live births
*provisional

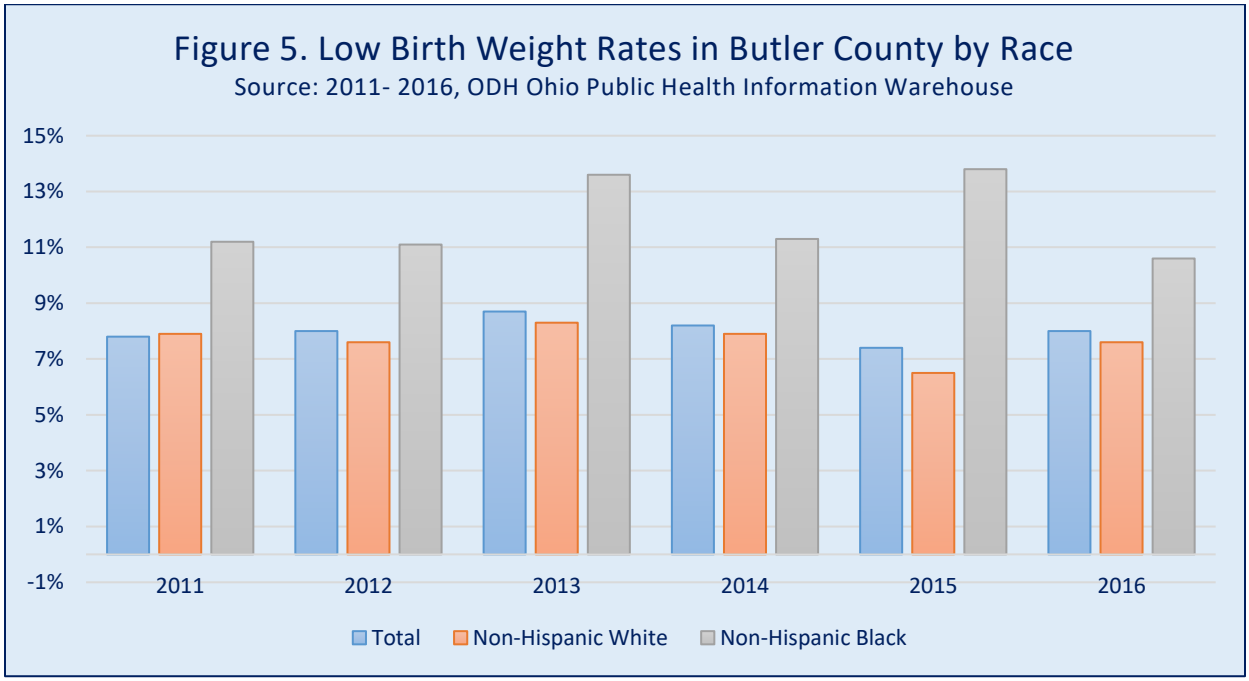
Preterm birth, defined as the birth of an infant before 37 weeks of gestation, is one of the greatest contributors to infant mortality. The earlier an infant is born, the higher the risk of morbidity and mortality. In 2016, the average preterm birth rate in Butler County was 10.7%, and 61% of infant deaths were preterm births. Low birth weight, or a weight less than 2,500 grams (5.5 pounds) at birth is also a major contributor to infant mortality and morbidity. In 2016, the average low birth weight rate in Butler County was 7.8%, and 43% of infant deaths were low birth weight infants. Similar to the rates of infant mortality, rates of preterm birth and low birth weight have a significant disparity by race and ethnicity, with non-Hispanic blacks experiencing higher rates than non-Hispanic whites (Figure 4 and 5).[17]

Table 6. Infant Mortality Rate Ratio in Butler County by Race, 2011-2015

Black	15
White	7.7
Ratio	1.95

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, per 1,000 live births





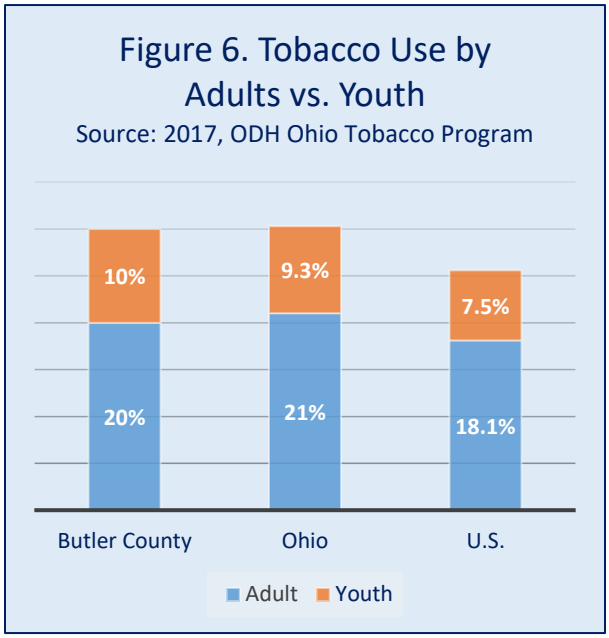
Health Behaviors

Behaviors, both positive and negative, can have a significant impact on the health of an individual. The majority of chronic diseases can be attributed to four unhealthy behaviors: poor nutrition, insufficient physical activity, tobacco use, and excessive alcohol use. Poor nutrition is characterized by less than five servings of fruits and vegetables daily, with high amounts of processed carbohydrates, sugar, and unhealthy fats. Insufficient physical activity is defined as less than 150 minutes of moderate, or 75 minutes of vigorous aerobic activity per week and

muscle strengthening activity less than two or more days per week. All tobacco use is harmful, and excessive alcohol use includes binge drinking, heavy drinking, and any drinking by pregnant women or people younger than the age of 21.[18]

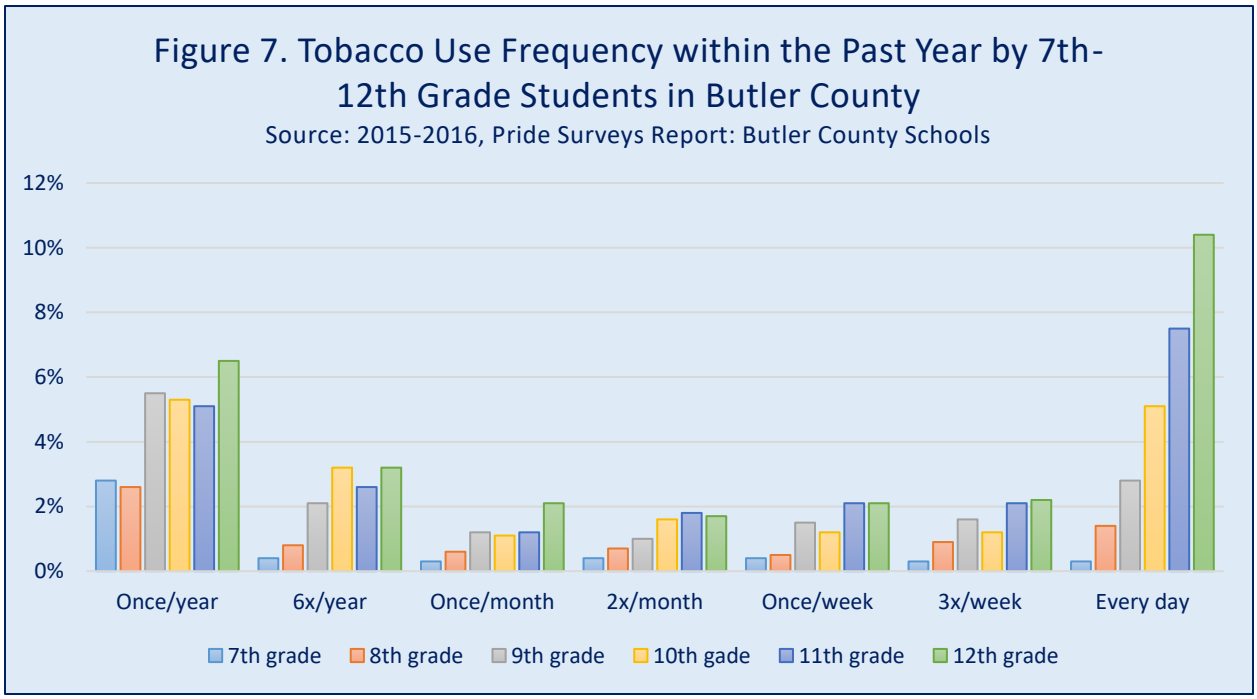
Tobacco use

In Butler County, 20% of adults and 10% of youth age 12-17 years old currently smoke, compared to 21% and 9.3% for the state, and 18.1% and 7.5% for the nation (Figure 6). Smoking during adolescence or during pregnancy are two primary areas of concern.[19]



Youth tobacco use

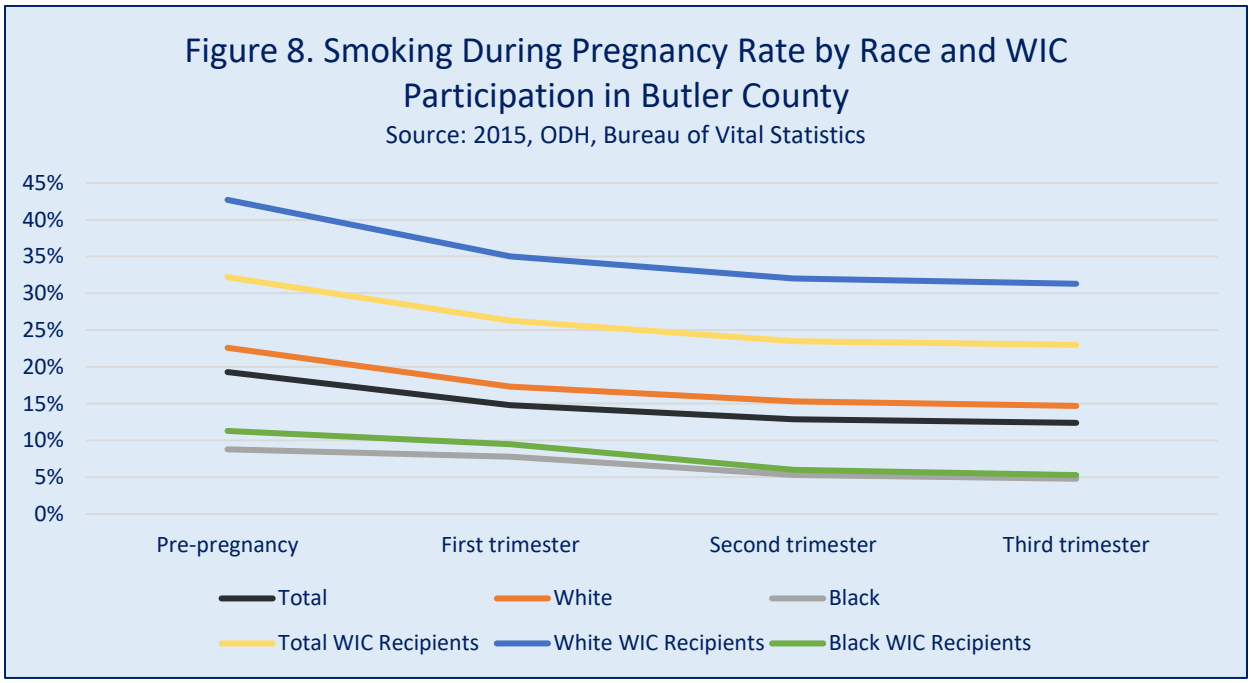
On average, 84.3% of youth in 7th-12th grade did not report any tobacco use within the past year. Of those that did report use, the frequency increased with age (Figure 7). When asked about types of tobacco products used in the past year, students reported using electronic vapor products (e-cigars, e-cigarettes, e-pipes, vaping pens, etc.) slightly more frequently than cigarettes. In the past 30 days, 14.6% of students used electronic vapor products compared to 9.2% who smoked part or all of a cigarette. When students were asked about the harmfulness of these products, 7.8% saw no harm and 5.5% saw some harm in using cigarettes, compared to 22.2% who saw no harm and 26.6% who saw some harm in using electronic vapor products. In regards to accessibility, 42.6% of students reported



that it was fairly or very easy to obtain cigarettes, and 40.4% reported that it was fairly or very easy to obtain electronic vapor products.[20]

Tobacco use during pregnancy

Smoking during pregnancy is associated with several adverse birth outcomes, including birth complications, premature birth, and low birth weight. Of the Butler County residents who gave birth in 2015, 19.3% of them were smoking prior to becoming pregnant. During pregnancy, 36.9% of smokers quit by the third trimester. While there was an overall decrease in pregnant women who continued to smoke through their entire pregnancy, there was a significant disparity based on race and income. Of the white women who were enrolled in the Women, Infants, and Children (WIC) program, a special supplemental nutrition program for low-income families, 42.7% smoked pre-pregnancy and only 27% quit by the third trimester. The prevalence of smoking pre-pregnancy was significantly lower in black women, regardless of WIC participation, and the quit rate was much higher, with 50% of black women not on WIC and 55.9% of black women on WIC quitting smoking by the third trimester.[21]



Excessive alcohol use

Excessive alcohol use is a leading lifestyle-related cause of death, and can increase the risk of health problems, such as injuries, violence, liver disease and cancer. Butler County is currently in the worst quartile of the state for alcohol dependence. While the statewide percentage of alcohol dependence was 6.94%, Butler County had an annual average between 6.98%-9.04%.[22] Additionally, in Butler County, 26% of adults engaged in binge drinking, defined as four or more drinks for women and five or more drinks for men, on one occasion. This was higher than the Healthy People 2020 target of 24.4%, and the state average of 19% (Table 7). Heavy drinking, or

consuming eight or more drinks per week for women and 15 or more drinks for men, was seen in 4% of Butler County residents.[23] Binge and heavy drinkers account for the majority of alcohol-impaired driving episodes. In Butler County, 41% of motor vehicle accident deaths involved alcohol, compared to 35% for the state.[24]

Table 7. Adult Binge Drinking	
	2013
Butler County	26.0%
Ohio	19.0%
HP 2020 target	24.4%

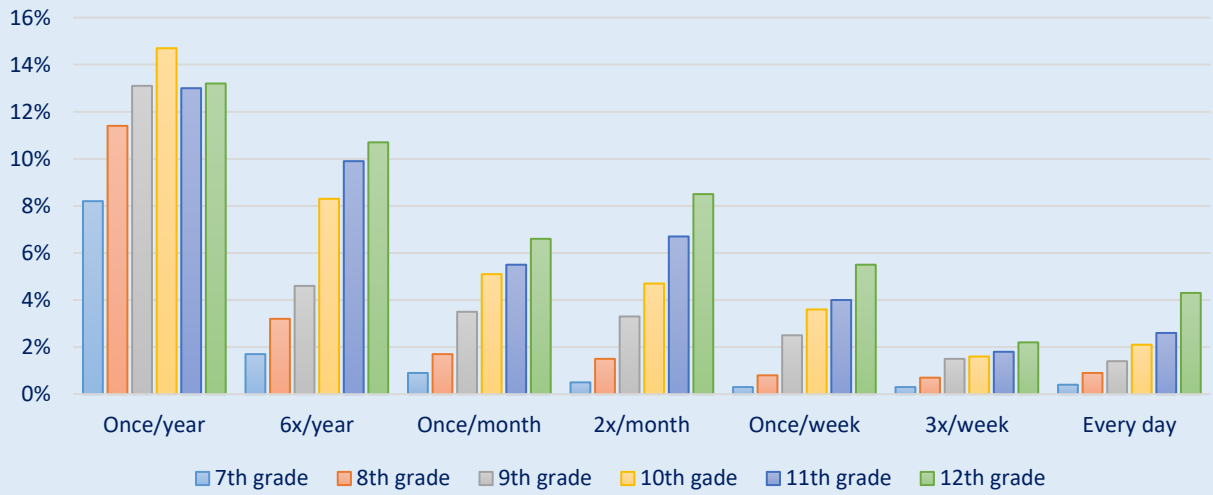
Source: 2015, Interact for Health; HP 2020

Youth alcohol use

Almost a third (32%) of youth in 7th-12th grade reported using alcohol within the past year, and the frequency of use increased with age (Figure 9). When students were asked if they had one or more alcoholic beverages within the past 30 days, 16.2% reported they had. 7.4% of students reported doing something they later regretted as a result of drinking, and beer and liquor were used at similar rates on average.[25]

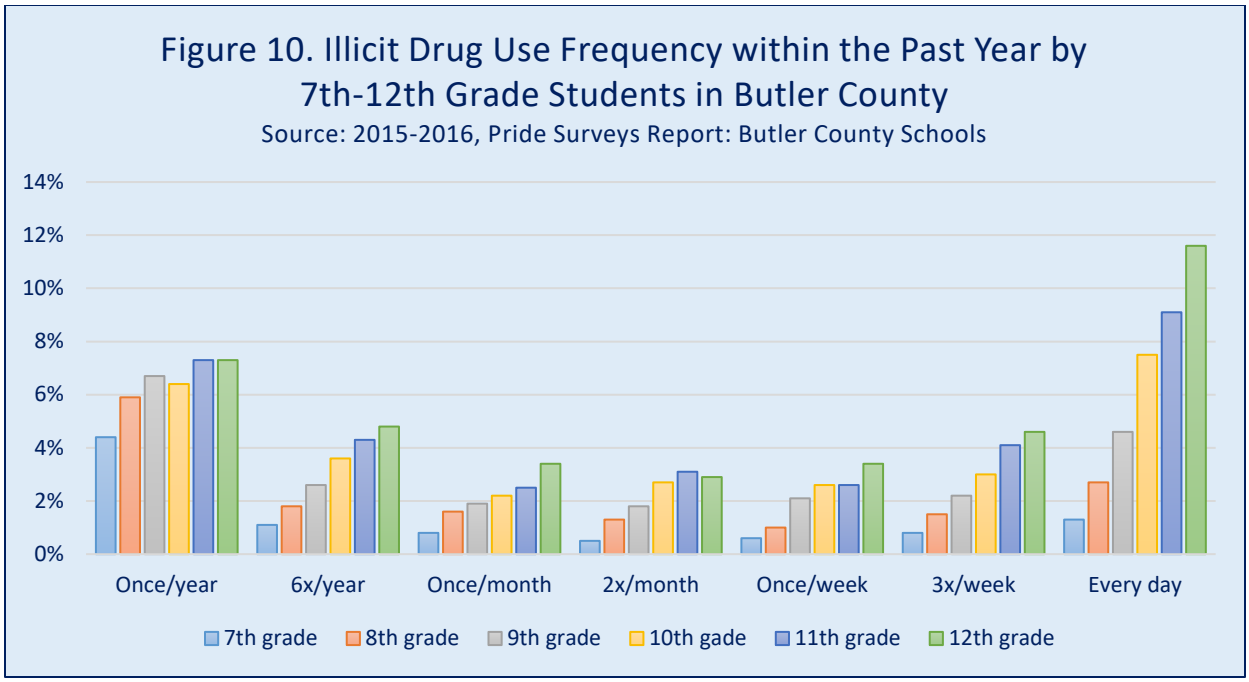
Figure 9. Alcohol Use Frequency within the Past Year by 7th-12th Grade Students in Butler County

Source: 2015-2016, Pride Surveys Report: Butler County Schools



Youth drug use

On average, 76.2% of 7th-12th grade students did not report any illicit drug use within the past year. Of those that did report use, the frequency increased with age (Figure 10). Marijuana was the most frequently used illicit drug, followed by prescription pain medication (Oxycontin, Vicodin, Percocet, etc.) and sleeping medication (Ambien, Restoril, etc.) not prescribed to them. Heroin and meth were the least used illicit drugs. When asked about drug use within the past 30 days, 13.4% reported marijuana use, 5.7% reported using prescription drugs not prescribed to them, and 3.5% reported other illicit drug use.[26]



Conditions and Diseases

Obesity

Obesity is directly related to poor nutrition and insufficient physical activity. Obesity is associated with some of the leading preventable chronic diseases, including heart disease, stroke, type 2 diabetes, and some cancers. Alternatively, healthy dietary and physical activity can lower the risk for heart disease, diabetes, and some cancers. Obesity is defined as a body mass index greater than or equal to 30 kg/m², and nationwide, 33.9% of adults have obesity. In Ohio, 34.1% of adults and 15.9% of adolescents were overweight, and 32.6% of adults and 13% of adolescents had obesity. This is a significant upward trend from only 11.3% of Ohioans with obesity in 1990, to 20.6% in 2000. In Butler County, 30.1% of adults had obesity. Of particular concern is the prevalence of overweight and obese children. Statewide, 15.8% of children age 2-4 years old enrolled in WIC were overweight, and 13% had obesity.[27] The prevalence is even higher for young children in Butler County, with 17.5% of children age 2-5 years old overweight, and 14.6% had obesity.[28] This is higher than the Healthy People 2020 target for childhood obesity (Table 8).

Table 8. Childhood Obesity, Age 2-5

	2015
Butler County	14.6%
Ohio	12.4%
HP 2020 target	9.4%

Source: 2015, Health Status Profile: Butler County; HP 2020

Diabetes mellitus

Diabetes mellitus is the sixth leading cause of death in Butler County. It is a condition where blood sugar control by the body is inadequate, either due to auto-immune pancreatic cell destruction (type 1), or an inability to respond to insulin correctly (type 2). Type 2 diabetes accounts for the vast majority of diabetes cases, between 90-95% nationwide.

Risk for type 2 diabetes include both genetic and lifestyle factors, specifically obesity, poor diet, inadequate physical activity, and tobacco use. Uncontrolled diabetes can lead to damage of multiple organs and systems, and can complicate other diseases. An indicator of the seriousness of diabetes in a community is the mortality rate. For Butler County, the diabetes mortality rate of 25.2 per 100,000 was well below the Healthy People target of 66.6 (Table 9).[29]

Table 9. Diabetes Death Rate, 2011-2015	
Butler County	25.2
Ohio	25.8
HP 2020 target	66.6

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

Cancer

Cancer is the second leading cause of death in Butler County, the state, and the nation. The lifetime risk of developing cancer is 40% for men and 33% for women. While everyone is at risk, specific risk factors include age, gender, genetics, and behaviors such as tobacco use, excessive alcohol intake, poor diet, inadequate physical activity, and unprotected sun exposure.[30] In Butler County, the incidence rate of all sites/types of cancer is slightly higher than the statewide rate (Table 10). The mortality rate from all sites/types of cancer was 180.1 per 100,000, approximately the same as the state rate, but higher than the Healthy People 2020 target of 161.4 (Table 11).

Table 10. Cancer Incidence Rates, All Sites/Types, 2009-2013	
Butler County	462.4
Ohio	459.9

Source: 2016, ODH Cancer in Ohio, Age-adjusted per 100,000

Table 11. Cancer Death Rate, All Sites/Types, 2011-2015	
Butler County	180.1
Ohio	179.3
HP 2020 target	161.4

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

From 2010-2014, the leading site/type of cancer incidence in Butler County was lung cancer at 16%, followed by breast (female), prostate, colorectal, and bladder cancers. Together, these five sites/types accounted for 56% of all new cancer cases. During this same period, the leading sites/types of cancer mortality in Butler County was again lung cancer at 31.1%, followed by colorectal, breast, pancreas, and prostate cancers. Together, these five sites/types accounted for 57% of all cancer deaths (Table 12).[31] When the mortality rates for each type of cancer were compared to the statewide rate and the Healthy People 2020 targets, lung cancer remained the highest at 55.6 per 100,000, compared to 51.6 for the state and 45.5 for the HP 2020 target (Table 13). While lung cancer was responsible for the highest of all cancer incidence and mortality in Butler County, it was also the site/type most frequently diagnosed at the late stage. From 2009-2013, 74% of new lung cancer cases were diagnosed at a late stage, and only 16% were diagnosed at an early stage, with the remaining 10% either unstaged or the data was

Table 12. Percentage of Leading Cancer Deaths by Site/Type in Butler County, 2010-2014	
Lung	31.1
Colorectal	8.3
Breast	7.3
Pancreas	6.2
Prostate	4.1

Source: 2017, ODH Butler County Cancer Profile

missing.[32] Additionally, there was a lung cancer incidence rate disparity based on race. Blacks experienced a higher lung cancer incidence rate than whites, a rate of 77.1 per 100,000 for blacks compared to 63.6 for whites.[33]

Table 13. Cancer Death Rate by Site/Type in Butler County, 2010-2014					
	Lung	Colorectal	Breast	Pancreas	Prostate
Butler County	56.5	15.4	24.1	11.4	19.2
Ohio	52.7	16.3	23.0	11.4	19.9
U.S.	44.7	14.8	21.2	10.9	20.1
HP 2020 target	45.5	14.5	20.7	n/a	21.8

Source: 2017, ODH Butler County Cancer Profile, Age-adjusted per 100,000; HP 2020

Heart disease

Table 14. Heart Disease Death Rate, 2011-2015	
Butler County	161.6
Ohio	188.4

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000

Heart disease, which includes coronary heart disease, myocardial infarction, and heart failure, is the leading cause of death in Butler County, the state, and the nation. The cause of heart disease is a complex set of risk factors, including genetics, environment, clinical risk factors, and unhealthy behaviors. Risk for developing heart disease can be lowered through healthy diet, physical activity, not using tobacco, and controlling high blood pressure and diabetes.[34] In Butler County, the mortality rate from heart disease was lower than the state rate. The Healthy People 2020 target is only for coronary heart disease, so a direct comparison could not be made to the mortality rate of heart disease in Butler County (Table 14).

Cerebrovascular disease

Table 15. Cerebrovascular Disease Death Rate	
	2015
Butler County	38.7
Ohio	40.6
HP 2020 target	34.8

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

Cerebrovascular disease death most frequently results from a stroke. A stroke occurs when blood flow to the brain is reduced or blocked. Risk factors include genetics, environment, clinical risk factors, and unhealthy behaviors. Reduction of risk includes controlling high blood pressure, cholesterol, and diabetes, not using tobacco, healthy diet, and adequate physical activity.[35] In Butler County, the mortality rate was slightly lower than the state rate, but still higher than the Healthy People 2020 target (Table 15).

Kidney Disease

Table 16. Kidney Disease Death Rate	
	2015
Butler County	16.2
Ohio	14.5

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000

Kidney disease includes nephritis, nephrotic syndrome, and nephrosis. Kidney disease occurs when the kidney is damaged and can no longer filter blood as it should. Most often, kidney damage occurs gradually, often due to diabetes or high blood pressure. Nationwide, 2% of the population is diagnosed with kidney disease and the U.S. mortality rate is 15.1 per 100,000. The rate

among Butler County residents is slightly higher than both the state and nation.[36] Currently, there is no Healthy People 2020 target for this indicator (Table 16).

Chronic lower respiratory disease

Chronic lower respiratory disease (CLRD) is a group of diseases characterized by shortness of breath caused by airway obstruction, and is the fourth leading cause of death in Butler County. It includes chronic bronchitis, emphysema, asthma, and some chronic obstructive pulmonary diseases. The leading risk factors for most types of CLRD is tobacco use, with less frequent risk factors being air pollution and genetics.[37] The mortality rate from CLRD was 52 per 100,000 in Butler County residents, slightly higher than the state rate (Table 17). The Healthy People 2020 target related to CLRD is for asthma and COPD only, so a direct comparison could not be made to the mortality rate of CLRD in Butler County.

Table 17. Chronic Lower Respiratory Disease Death Rate

	2015
Butler County	52.0
Ohio	49.5

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000

Alzheimer's disease

Alzheimer's disease is the only cause of death in the top 10 leading causes that cannot currently be prevented, slowed, or cured. It is a degenerative brain disease, and the most common cause of dementia. The mortality rate due to Alzheimer's is 29.5 per 100,000, which is slightly above the state rate (Table 18). It is projected that by 2025, there will be an increase in the incidence of Alzheimer's throughout Ohio by 19%, which is estimated to increase Medicaid costs related to Alzheimer's for the state by 27.2%.[38]

Table 18. Alzheimer's Disease Death Rate, 2011-2015

Butler County	29.5
Ohio	28.2

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000

Unintentional injuries

Accidents, or unintentional injuries, are the third leading cause of death in Butler County. This is a broad category that includes death caused by drug overdoses and motor vehicle accidents, as well as falls, drownings, and accidental discharge of a firearm. The overall mortality rate from accidents has increased significantly over recent years in Butler County to 80.8 per 100,000, which is much higher than the state and national rates, as well as the Healthy People 2020 target (Table 19). While the mortality rate from motor vehicle accidents is lower than the state rate and Healthy People 2020 target (Table 20), the mortality rate from accidental drug poisoning, or unintentional drug overdose, is significantly higher (Table 21).

Table 19. Accident (Unintentional Injury) Death Rate

	2015
Butler County	80.8
Ohio	55.8
U.S.	63.9
HP 2020 target	53.7

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

Table 20. Motor Vehicle Accident Death Rate

	2015
Butler County	8.9
Ohio	10.4
HP 2020 target	12.4

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

Drug overdose deaths

Butler County, the state, and the nation are currently in an opioid epidemic. Opioids, which include heroin, fentanyl, and prescription drugs, are the driving factor behind unintentional drug overdoses. In 2015, 84.9% of drug overdoses involved opioids, compared to 79.8% in 2014. Unintentional drug overdose continued as the leading cause of injury-related death in Ohio, a trend which began in 2007.

Table 21. Drug Overdose Death Rate, 2010-2015	
Butler County	33.2
Ohio	19.2

Source: 2010-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000

Table 22. Annual Drug-Induced Cause of Death Rate	
	2015
Butler County	58.9
Ohio	30.9
U.S.	16.3
HP 2020 target	13.2

Source: 2015, CDC WONDER Online Database, Underlying Cause of Death, Age-adjusted per 100,000; HP 2020

Ohio saw a statistically significant increase in the rate of drug overdose deaths from 2014 to 2015, by an increase of 20.5%. Prescription and illicit opioids were the main driver of drug overdose deaths, with heroin involved in 46.7% of all overdose deaths, and prescription opioids responsible for 21.9% of overdose deaths in 2015. Recently, there has been a significant rise in fentanyl-related overdose deaths, with the rate doubling from 2014 to 2015. Fentanyl is a synthetic narcotic, and in prescription form, it is between 30-50 times more potent than heroin, and 50-100 times more potent than morphine. In 2015, Butler County had the third highest amount of fentanyl-related unintentional overdose deaths in the state. The annual number of overdose deaths has increased sharply throughout Butler County, from 23 in 2003, to 59 in 2010, to 195 in 2015 (Figure 11).[39] The drug-induced mortality rate for Butler County was almost twice that of the state, and almost four and a half times the Healthy People 2020 target of 13.2 per 100,000 (Table 22, Figure 12).

Figure 11. Number of Annual Unintentional Drug Overdose Deaths in Butler County, 2003-2015

Source: 2015, ODH Ohio Drug Overdose Data

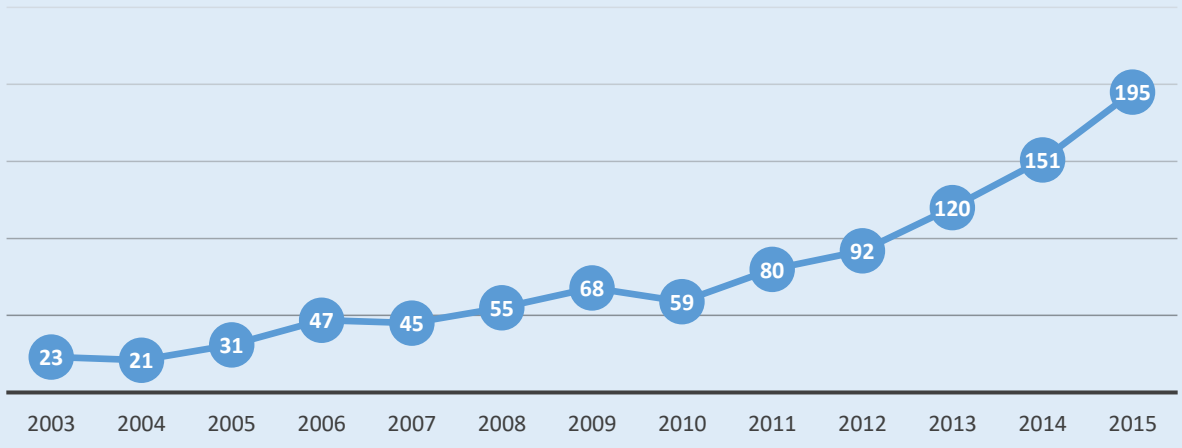
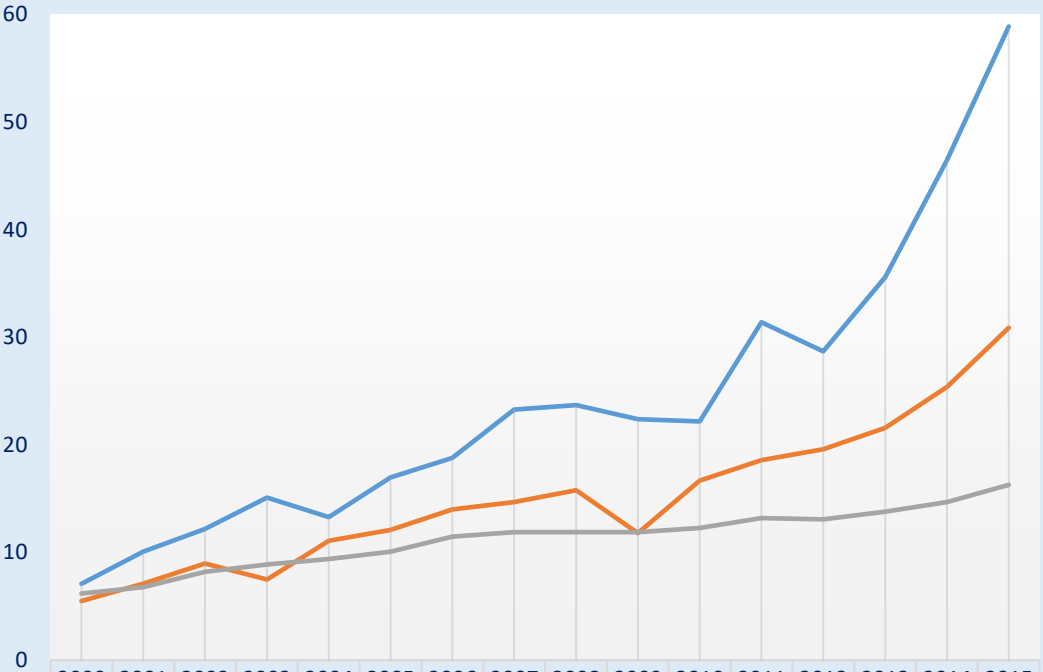


Figure 12. Annual Drug-Induced Underlying Cause of Death Rate

Source: 1999-2015, CDC WONDER Online Database, Underlying Cause of Death, Age-adjusted per 100,000



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Butler County	7.1	10.1	12.2	15.1	13.3	17	18.8	23.3	23.7	22.4	22.2	31.4	28.7	35.6	46.5	58.9
Ohio	5.5	7.1	9	7.5	11.1	12.1	14	14.7	15.8	11.8	16.7	18.6	19.6	21.6	25.4	30.9
U.S.	6.2	6.8	8.2	8.9	9.4	10.1	11.5	11.9	11.9	11.9	12.3	13.2	13.1	13.8	14.7	16.3

Intentional injury

Table 23. Suicide Death Rate, 2011-2015	
Butler County	11.9
Ohio	12.8
HP 2020 target	10.2

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

Suicide, or intentional injury resulting in death, is the tenth leading cause of death in Butler County. A combination of individual, relationship, community, and societal factors contribute to the risk of suicide. Protective factors to prevent suicide include effective clinical care for mental, physical, and substance abuse disorders, access to a variety of clinical interventions and support, family and community support, support from ongoing medical and mental health care relationships, skills in problem solving, conflict resolution, and nonviolent ways of handling situations, and cultural or religious beliefs that discourage suicide and support instincts for self-preservation.[40] On average, three Ohioans die every day from suicide. The mortality rate in Butler County is 11.9 per 100,000, slightly lower than the state rate, but still higher than the Healthy People 2020 target of 10.2 (Table 23).

The mortality rate of suicide within the county was highest among residents 55-64 years old, at 22.9 per 100,000. The next highest age group was 45-54 year olds, followed by 25-34 year olds, and 35-44 year olds. Butler County residents age 15-24 and 65-74 years old were approximately tied for the age group with the lowest mortality rate (Table 24). The rate of youth suicide (age 15-24 years) in Butler County was slightly lower than the statewide rate of 11.3 per 100,000. While the suicide mortality rate is lower among youth when compared to other age groups, it is the second leading cause of death in those age 10-24 years old.[41]

Table 24. Total Number and Rate of Suicide by Age in Butler County, 2010-2015

	Death Count	Death Rate
0-4 years	0	-
5-14 years	2	-
15-24 years	39	10.9
25-34 years	44	16.5
35-44 years	43	15.3
45-54 years	56	17.7
55-64 years	63	22.9
65-74 years	17	10.8
75-85 years	9	-
85+ years	6	-

Source: 2010-2015, ODH Ohio Public Health Data Warehouse, per 100,000

Public Health and Prevention

Preventive Services

Flu vaccination

Table 25. Influenza and Pneumonia Death Rate

	2015
Butler County	14.7
Ohio	16.6

Source: 2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000

While preventable with vaccination, influenza (combined with pneumonia) was the ninth leading cause of death in Butler County. Statewide, for the 2015-2016 flu season, the incidence of confirmed influenza-associated hospitalizations was 3,691. In Butler County there were 94 hospitalizations, for a rate of 25.53 per 100,000.[42] The rate of mortality from influenza and pneumonia was 14.7 per 100,000, which was slightly lower than the state rate (Table 25). There is not currently a Healthy People 2020 target related to this indicator.

Hepatitis C virus

Hepatitis C virus (HCV) is a leading cause of chronic liver disease, cirrhosis, and need for liver transplantation. HCV is associated with more deaths nationwide than 60 other infectious diseases combined. Despite preventive measures and treatment availability, new HCV infections have increased in recent years due to an increase in injection drug use. Nationally, from 2010 to 2015, HCV incidence increased by 294%.[43] Within Ohio, the reported rates of acute hepatitis C increased by 1000% between 2011 and 2015. However, the majority of people infected with HCV do not know it since they do not have symptoms, so actual rates are likely much higher.[44] In

Table 26. Reported Acute Hepatitis C Virus Rate

	2010	2016
Butler County	0.0	1.9
Ohio	0.1	2.2
HP 2020 target		0.25

Source: 2010, 2016, ODH Reportable Infectious Diseases, per 100,000; HP 2020

2010, there were zero acute cases of HCV and 129 cases of chronic HCV in Butler County, compared to 7 cases of acute HCV and 840 cases of chronic HCV in 2016.[45] This translates to a rate of acute HCV infection from zero in 2010, to 1.9 per 100,000 in 2016 (Table 26). This rate was slightly lower than the state incidence rate, but higher than the Healthy People 2020 target.

Prenatal care

Prenatal care that starts early and continues regularly throughout a pregnancy reduces the risk of complications to the mother and infant. Between January and March of 2017, the percentage of pregnant women who received prenatal care within the first three months of pregnancy was 68%, an increase of almost 10% since 2015. While this percentage of women receiving care early in their pregnancy has been improving, it is still under the Healthy People 2020 target of 77.9% (Table 27). Of those Butler County residents that started prenatal care later in their pregnancy, 21.3% started in the second trimester, 3.7% in the third trimester, and 1.1% did not have any prenatal care.[46]

Table 27. Prenatal Care in the First Trimester

	2016
Butler County	67.4%
HP 2020 target	77.9%

Source: 2017, OEI Quarterly Report; HP 2020

Teenage birth rate

The teen birth rate has been decreasing over recent years, and was at 17.6 per 1,000 females age 15-19 years old in Butler County. This is lower than the state and national rates, and significantly lower than the Healthy People 2020 target of 36.2 per 1,000 for females age 15-17, and 104.6 per 1,000 for those 18-19 years old.[47]

Access to Health Care

Health insurance

Access to quality medical, dental, and mental health care is critical to promote wellness and prevent disease. 81% of Butler County residents reported a usual and appropriate source of health care, and 75% of residents had a routine visit with a health care provider within the past 12 months.[48] There is a direct connection between access to health care and the ability to cover the costs associated, typically by health insurance. While there is uncertainty facing health care policy on a state and national level, the current rate of insured Butler County residents is at 92.5% for those birth to age 64. The amount of insured children is slightly higher at 95.8%, and that of adults age 18-64 is slightly lower at 91.1%.[49] On average, the percentage of uninsured children in Butler County was 5%, and uninsured adults was 12.5%. Overall, 33% of births in the county were to mothers on Medicaid, and 40.7% of children throughout the county were enrolled in Medicaid.[50] The total population that was enrolled in Medicaid was 22% of the county.[51] The Healthy People 2020 target is 100% health insurance coverage.

Within the county, there was a large barrier to dental care, with 39% of residents reporting they did not get, or delayed getting dental care in the past 12 months.[52] Access to mental health care

can vary by insurance or ability to pay, but the average wait time in the county was between zero and 15 days for mental health and counseling services.[53]

Health care system and workforce

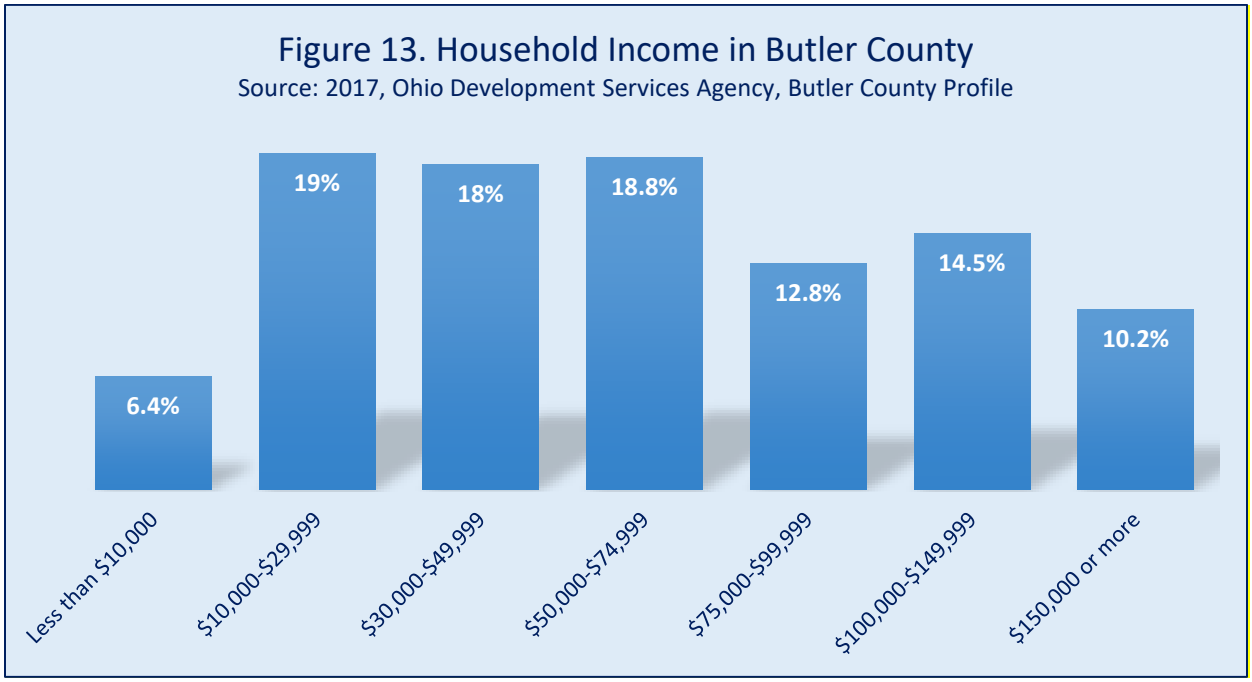
There are currently 509 Physicians registered throughout Butler County. There are seven hospitals, with a total of 807 hospital beds available. There are 24 licensed nursing homes, with a total of 2,273 beds available. There are 21 licensed residential care facilities, with a total of 1,669 beds available.[54] There are seven Federally Qualified Health Centers providing primary care services in underserved areas. Three are located in Hamilton, including one school-based clinic, two are in Middletown, one is in Oxford, and a second school-based clinic is in Fairfield. There is also one mobile dental van for the county.[55] One of the Middletown clinics is a designated Health Professional Shortage Area (HPSA) for primary care, dental care, and mental health care providers. Additionally, the low income population in Middletown and East Hamilton have HPSA designation for dental care.[56]

Social and Economic Environment

Median household income

Adjusted for inflation, the median household income of Butler County residents has declined 8.8% in the past decade, from $62,490 in 2004 to $56,998 in 2014. The state had a similar decrease, from $54,362 to $48,849 during the same period.[57] Currently, the median household income of Butler County residents is $57,540, which is higher than the Ohio median of $49,429 and the U.S. median of $53,889.[58] Approximately one quarter of residents make less than $30,000, while one quarter make more than $100,000 (Figure 13).

Figure 13. Household Income in Butler County
Source: 2017, Ohio Development Services Agency, Butler County Profile



Poverty

Compared to the state and nation, Butler County has a lower percentage of residents in poverty, but the upward trend is similar. Between 2000 and 2015, the poverty level of residents rose from 7.2% to 14.4% (Figure 14).[59] 13.6% of residents are below 100% federal poverty level,[60] and three cities within Butler County have a significantly higher percentage of the population below 100% poverty. In Hamilton 22.5% of residents are below 100% poverty, 23.9% of Middletown residents, and 48.3% of Oxford residents.[61] Overall for Butler County families, 90.4% have an income above the poverty level (Table 28).

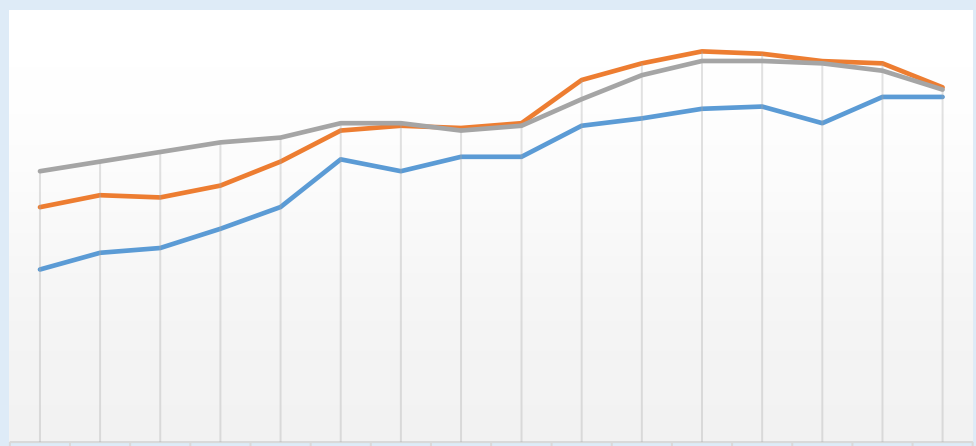
Table 28. Poverty of Families in Butler County

	2016
Family income above poverty level	90.4%
Family income below poverty level	9.6%

Source: 2016, Ohio Development Services Agency

Figure 14. Percentage of Persons in Poverty in Butler County

Source: 2017, Ohio Development Services Agency, The Ohio Poverty Report



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Butler County	7.2	7.9	8.1	8.9	9.8	11.8	11.3	11.9	11.9	13.2	13.5	13.9	14	13.3	14.4	14.4
Ohio	9.8	10.3	10.2	10.7	11.7	13	13.2	13.1	13.3	15.1	15.8	16.3	16.2	15.9	15.8	14.8
U.S.	11.3	11.7	12.1	12.5	12.7	13.3	13.3	13	13.2	14.3	15.3	15.9	15.9	15.8	15.5	14.7

Education

There are 86 public and 14 non-public school buildings and a total of 62,012 students in Butler County. The high school graduation rate was 87.7%. There is one four-year public university, Miami University, located in Oxford, with branches in Hamilton, Middletown, and West Chester.[62] 36.2% of residents had an associate degree or higher (Figure 15).

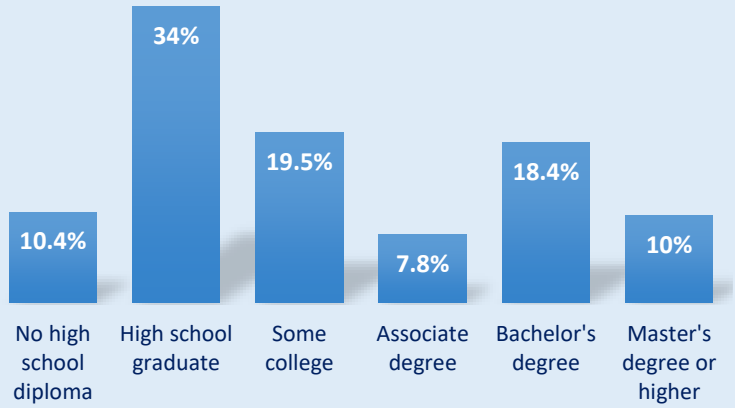
Lack of a high school diploma (10.4% of residents) is a barrier to employment, while those with at least a Bachelor's degree (28.4% of residents) are generally the most viable in the labor market.

Employment

Butler County is served by rail lines, interstate highways, two nearby international airports, and high-speed fiber-optics data communications, making it a hospitable environment for job growth. The average weekly wage in Butler County rose 6.5% from 2015 to 2016, an increase to $905. This percentage increase in the average weekly wage was 32nd highest in the state, and the actual wage was 11th highest in the state. The top ranked Butler County business was Performance Automotive Network of Fairfield. In 2016, multiple new businesses and business expansions took place in Hamilton, Fairfield, and Liberty Township, and several have plans for continued growth in the year ahead.[63] 79% of Butler County's working-age adults were employed or seeking work between 2010-2014.[64] The mean travel time to work in Butler County is 24.1 minutes.[65]

Figure 15. Educational Attainment in Butler County

Source: 2017, Ohio Development Services Agency, Butler County Profile

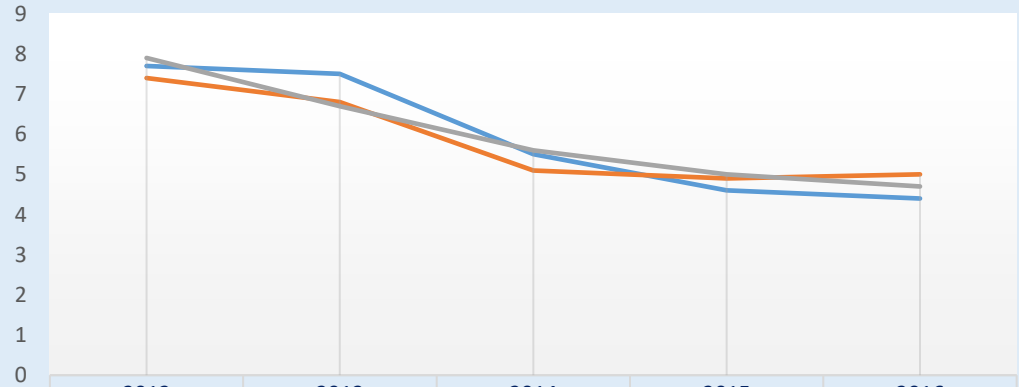


Unemployment

The unemployment rate has been decreasing steadily, and reached the lowest annual rate in more than 10 years at 4.4% in 2016 (Figure 16).

Figure 16. Rate of Unemployment Comparison

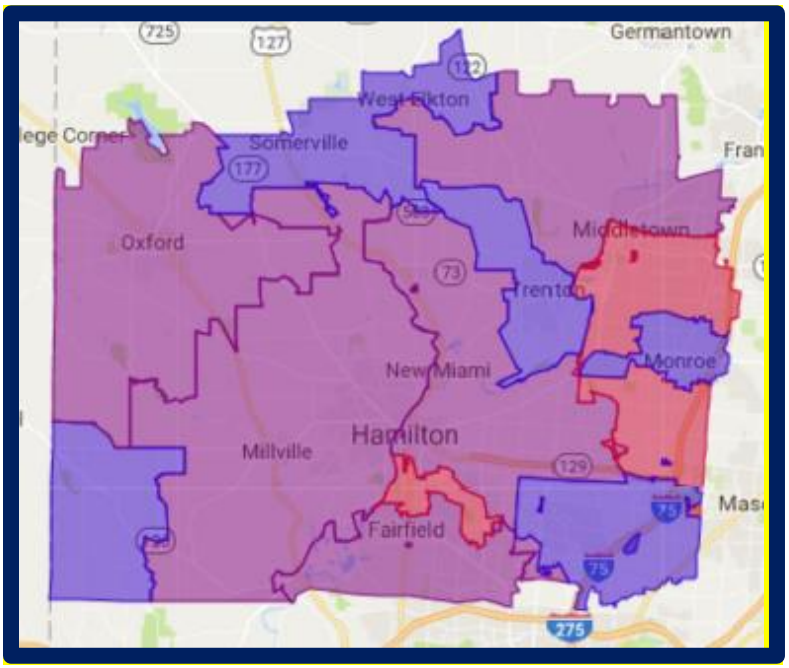
Source: 2012-2016, U.S. Department of Labor



	2012	2013	2014	2015	2016
Butler County	7.7	7.5	5.5	4.6	4.4
Ohio	7.4	6.8	5.1	4.9	5
U.S.	7.9	6.7	5.6	5	4.7

Socioeconomic disparities

Within Butler County, two zip codes were identified as high need communities. A Community Need Index (CNI) score is an average of five different barrier scores that measure various socioeconomic indicators, based on income, culture, education, insurance, and housing. A high CNI score (3.4 to 5.0) is an indicator of socioeconomic variation, barriers to care, and increased need for health care services. The median score for the county was 2.7, while the zip code of 45015 in Hamilton scored a 3.8 and the zip code of 45044 in Middletown scored a 3.6 (Table 29).[66]



Source: 2017, Dignity Health Community Need Index

Table 29. Community Need Index

Zip Code	City	CNI Score
45011	Hamilton	3.2
45013	Hamilton	2.8
45014	Fairfield	2.6
45015	Hamilton	3.8
45042	Middletown	3.0
45044	Middletown	3.6
45050	Monroe	2.0
45053	Okeana	1.8
45056	Oxford	2.8
45064	Somerville	1.8
45067	Trenton	2.2
45069	West Chester	2.0

Source: 2017, Dignity Health Community Need Index

Disability

3,596 people received services through the Butler County Board of Developmental Disabilities. This included 1,290 adults, 1,072 school-age children, and 1,234 infants and young children.[67]

Social associations

A lack of social support, contact with others, or involvement in community life is associated with an increase in morbidity and early mortality. Social support networks have been identified as predictors of healthy behaviors. In Butler County, the rate of social associations was 8.6 per 10,000, compared to an average of 11.4 for the state. Associations include membership in civic, political, religious, labor, business, or professional organizations, as well as fitness centers.[68]

Single-parent households

While the majority of children live within a two-parent household, rates have been steadily declining. Between 1960 and 2016, the number of children living in a two-parent household decreased from 88% to 69% nationwide. During that same time period, the percentage of

children living with only their mother almost tripled, from 8% to 23%.[69] Single-parent households increase the risk for adverse health outcomes, including substance abuse, depression, suicide, smoking, and excessive alcohol use, in both children and adults. Children are at a greater risk of severe morbidity and all-cause mortality than their peers in two-parent households, and adults report worse health and experience a higher mortality risk than parents living as couples. In Ohio, between 7% and 45% of children live in a household headed by a single parent, with an average of 35%. In Butler County the rate is slightly lower at 31%.[70]

Violent crime

Violent crimes are defined as offenses that involve face-to-face confrontation between the victim and perpetrator, including homicide, rape, robbery, and aggravated assault. High levels of violent crime compromise physical safety and psychological well-being. High crime rates can also deter residents from participating in healthy behaviors, such as physical activity outdoors. Additionally, exposure to crime and violence can increase stress levels, which may exacerbate hypertension and other stress-related disorders.[71] There were a total of 10,982 crimes reported in Butler County in 2016, including 799 violent crimes, 10,144 property crimes, and 39 arsons.[72] Statewide, there has been 7.6% increase in violent crime from the fourth quarter of 2015-2016.[73] The rate of violent crime in Butler County is 211.9 per 100,000, compared to 143.8 statewide (Table 30).

Table 30. Violent Crime Rate

	2016
Butler County	211.9
Ohio	143.8

Source: 2016 Ohio Development Services Agency; Ohio Department of Public Safety, per 100,000

The specific homicide mortality rate is another indicator of violent crime and community well-being. From 2011-2015, the homicide mortality rate was 3.1 per 100,000, which was lower than the state rate and Healthy People 2020 target (Table 31).

Table 31. Homicide Death Rate, 2011-2015

Butler County	3.1
Ohio	5.7
HP 2020 target	5.5

Source: 2011-2015, ODH Ohio Public Health Data Warehouse, Age-adjusted per 100,000; HP 2020

Bullying

Bullying can cause immediate physical, mental, and emotional harm, and is associated with an increase in negative long-term impact to health, finances, and social well-being. Those who are bullied have an increased risk of suicide and substance use.[74] For the school districts located within Butler County, there was an overall rate of 3.9 bullying-related discipline occurrences per 100 students. Incidents reported related to bullying included fighting, violence, harassment, intimidation, serious bodily injury, and unwelcome sexual conduct.[75] However, these bullying incidences were only the ones that occurred related to school, and received disciplinary action, and my not be an accurate reflection of the true rate. Statewide, 21% of students were bullied on school property, while 14% were bullied outside of school, and 14% were bullied electronically. 90% of Ohio schools currently attempt to increase student knowledge of violence prevention.[76]

Physical Environment

Housing

There are a total of 149,016 housing units, with 69.4% owner-occupied, 30.6% renter-occupied, and 9.6% vacant housing units in Butler County. The median housing unit year built was 1976, and the median value of owner-occupied housing was $157,200. The median monthly owner cost was $1,386, which was 21.1% of household income. The median gross rent was $817, which was 29.6% of household income.[77]

Air quality

There is a direct effect between elevated air pollution and negative health effects, including decreased lung function, chronic bronchitis, asthma, and other adverse pulmonary effects.[78] Air pollution is often measured as the average daily density of fine particulate matter in micrograms per cubic meter (PM2.5). In 2008, the level of PM2.5 in Butler County was 14.1, exceeding the national standard of 12.0. In 2011, the level dropped to 13.3, and the most recent data from 2012-2014 shows that the PM2.5 has decreased to 11.2, and is lower than the national standard.[79]

Lead toxicity

Nationwide, at least four million households have children living in them that are being exposed to harmful levels of lead. No safe lead level has been identified for children, and lead exposure can affect nearly every body system.[80] Only 0.81% of children in Butler County had elevated blood levels, compared to 3.03% of children statewide (Table 32).

Table 32. Children with Elevated Blood Lead Level

	2015
Butler County	0.81%
Ohio	3.03%

Source: 2015, Health Status Profile: Butler County

Food access and insecurity

Health and nutrition are closely related, and access to healthy food is essential for positive health outcomes. A healthy diet includes at least two servings of fruit and at least three servings of vegetables daily. 5.9% of low-income Butler County residents do not live close to a grocery store, which is more than 10 miles away for rural residents, and more than one mile away for urban residents.[81] While 81% of Butler County residents agreed that it was easy to buy healthy foods in their neighborhood, only 17% of adults reported eating the recommended daily amount of both fruits and vegetables.[82] Statewide, 41.6% of adults reported consuming fruit less than one time daily, and 26.3% consumed vegetables less than one time daily.[83]11% of the total population of Butler County was enrolled in the Supplemental Nutrition Assistance Program.[84]

Recreation access

Safe and accessible places for recreation can increase levels of physical activity. 42% of Butler County residents live within a half mile of a park, which is significantly higher than the U.S. median of 14%. The ratio of safe, accessible and affordable places for physical activity was 0.1 per 1,000.[85]

Discussion

The current health indicators available related to demographic characteristics, leading causes of death, population health factors, access to health care, public health and prevention, the social and economic environment, and the physical environment all provide valuable information on the health of Butler County. Through the analysis of 44 unique public health indicators, the current health status of the community was assessed in a comprehensive process, and compared to similar results at the state and national level, as well as previous years and standardized benchmarks. Utilizing the Healthy People 2020 targets to analyze the leading health indicators provides a clear assessment of where the health of the community is, and where it needs to be, and will serve as a guide to track the progress towards a healthier community.

Out of the 16 public health indicators that could be directly compared to Healthy People 2020 targets, Butler County is currently not meeting 12 of them. While there has been considerable improvements to the health of the community over time, significant public health challenges and health disparities remain.

Priority Health Objectives Needed for Butler County Residents to Achieve Healthy People 2020 Targets

- ↓ Decrease the infant mortality rate from 6.9 to 6.0
- ↓ Decrease the percentage of adult binge drinking from 26 to 24.4
- ↓ Decrease the percentage of childhood obesity from 14.6 to 9.4
- ↓ Decrease the cancer (all sites/types) mortality rate from 180.1 to 161.4
- ↓ Decrease the lung cancer mortality rate from 55.6 to 45.5
- ↓ Decrease the cerebrovascular disease mortality rate from 38.7 to 34.8
- ↓ Decrease the unintentional injury rate from 80.8 to 53.7
- ↓ Decrease the drug-induced mortality rate from 58.9 to 13.2
- ↓ Decrease the intentional injury rate from 11.9 to 10.2
- ↓ Decrease the acute hepatitis C rate from 1.9 to 0.25
- ↑ Increase the percentage of early entry into prenatal care from 67.4 to 77.9
- ↑ Increase the percentage of those with health insurance from 92.5 to 100

2. Community Themes and Strengths Assessment

The Community Themes and Strengths Assessment answers the questions:

What is important to our community?

How is quality of life perceived in our community?

What assets do we have that can be used to improve community health?

The Community Themes and Strengths (CT&S) Assessment provides a deeper understanding of the issues that residents feel are important. To determine these issues, the thoughts, opinions, and concerns of community members were gathered through the use of surveys and focus groups. The assessment was designed to specifically gather information related to the perception of health within the community, quality of life factors, health problems, and community assets. The assessment relied on active involvement from community members, and included a time of planning and preparation, implementation of data collection activities, compilation of the results, and thorough data analysis.

Methods

Data for the CT&S Assessment was primarily gathered through the use of a survey entitled "Butler County Community Health Survey 2017" (Appendix A). The survey was developed with the assistance of the CT&S Subcommittee, and reviewed and approved by the Advisory Committee. The survey was made available to the public from February to April 2017 in both paper and electronic formats. The link to the electronic version of the survey was shared through multiple avenues, including being posted on flyers hung throughout the community, sent via e-mail listservs, posted on websites, shared through social media, and included in newsletters. The paper version of the survey was made available to the community in both English and Spanish, and distributed through public locations such as government offices, agencies, libraries, non-profit organizations, community centers, and faith communities. Participation from vulnerable populations was promoted and additional qualitative data was collected through focus groups in April and May 2017. Overall, there were 1,647 respondents to the survey. Survey participation was limited to Butler County residents, so after excluding 24 respondents who reported a zip code outside of Butler County, the total number of participants was 1,624. This sample size from an estimated population of 377,537 residents of Butler County, provided a 95% confidence level that results were within a margin of error of 2.4. Additionally, there were 29 focus group participants for a total of 1,653 Butler County residents who participated in the CT&S Assessment. Advanced statistical analysis of survey responses was conducted by the Hamilton County Public Health Department, Epidemiologist Kevin Strobino.

1,653 Butler County residents participated in the CT&S Assessment

Limitations

The primary limitation of the survey was that it utilized convenience sampling to obtain data from the public. As such, only those members of the community who had access to the electronic or paper survey were able to participate. Because of this, caution should be used when generalizing the results to the entire community. Additionally, the response rate decreased as the survey progressed. The first three questions asking participants to rate the health of their community and their personal health had the highest response rate, 96.9% and 97.2% respectively. The next 16 questions had a response rate of approximately 90%. The final block of questions related to perceptions of health problems had a response rate of approximately 86%. Thus, as participants progressed through the survey from beginning to end, some choose to stop responding to questions. Also, in responding to the 26 questions regarding the degree to which a given topic is a problem within the community, on average, one fifth of respondents were "unsure" for each given topic.

Another important limitation to the generalizability of findings is that all participants were over the age of 18 years old, and the focus groups both had relatively small sample sizes. For these reasons, caution should be taken when comparing results to minors, or attributing the focus group findings to the community as a whole.

Results

Demographic Characteristics

Among the participants who reported a zip code, 638 (45.8%) reported a zip code within Hamilton City, 268 (19.3%) reported a zip code within Middletown City, and the remaining 486 (34.9%) reported a zip code elsewhere in Butler County. Additionally, 232 participants did not provide a zip code and were excluded from regional estimates, but were included among the overall totals for specific indicators.

Table 33. Population Profile by Race

	Butler County	Survey Sample
African American/Black	8.4%	10%
American Indian	<1%	<1%
Asian	3%	2%
Caucasian/White	86%	67.8%
Native Hawaiian or Pacific Islander	<1%	<1%
Other	-	1.5%
No Response	-	17.5%

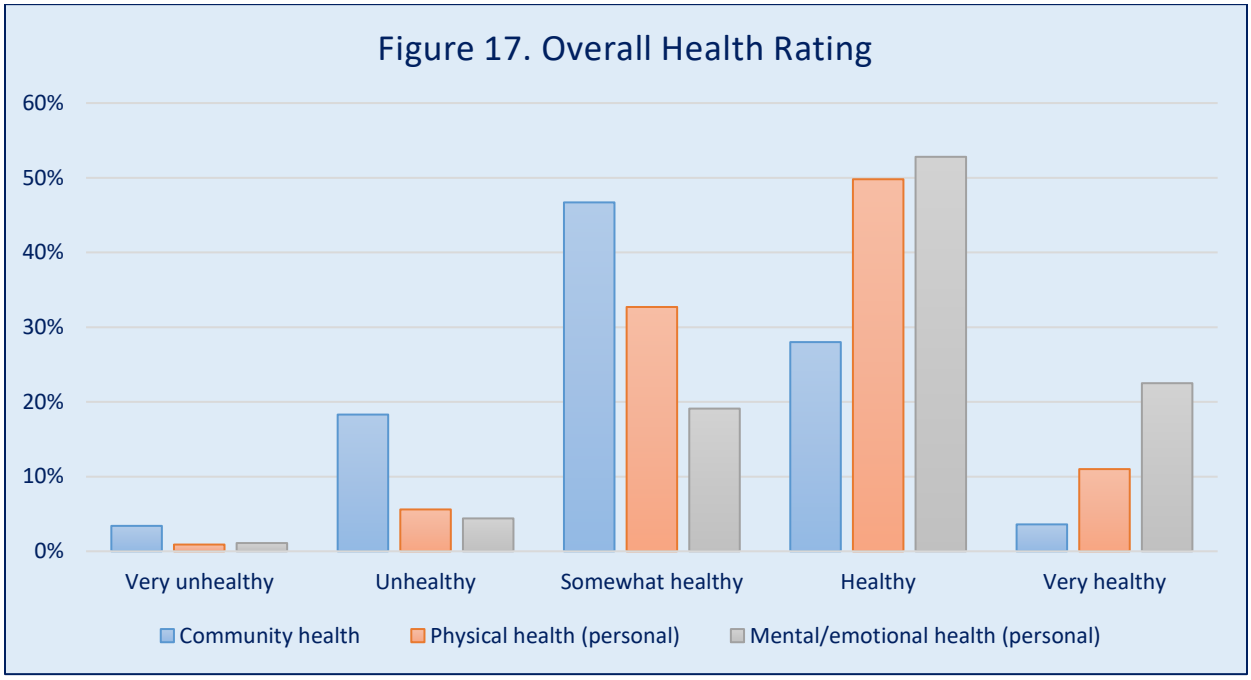
Source: 2016, U.S. Census Bureau

Compared to census data for the county, there was a much smaller number of male respondents (17.4%) compared to female respondents (65.4%), however 17% of respondents did not provide their gender. The highest level of participation across the county came from those between the ages of 26-39 years old (34.8%), which is higher than the county-wide population of 21.8% in this age group. Minority racial/ethnic groups were slightly over-represented with 10.6% of respondents being non-Hispanic black compared to 8.5% of the overall population, and 8.5% of respondents were Hispanic, compared to the rate of 4.6% overall. There was a fairly even spread of respondents based on income level, with the highest represented groups being those

earning less than $20,000 annual household income (22.3%) and those earning over $100,000 annual household income (22.2%). Respondents were generally well-educated with 51.3% possessing a college degree or higher, compared to 33.2% of the community-at-large. The majority of respondents reported private health insurance coverage (62.4%), consistent with 60.6% of the community-at-large. Respondents with Medicaid (23.8%) was consistent with the county rate of 22%, and those with Medicare (14.3%) was consistent with the county rate of 14% (Table 33).

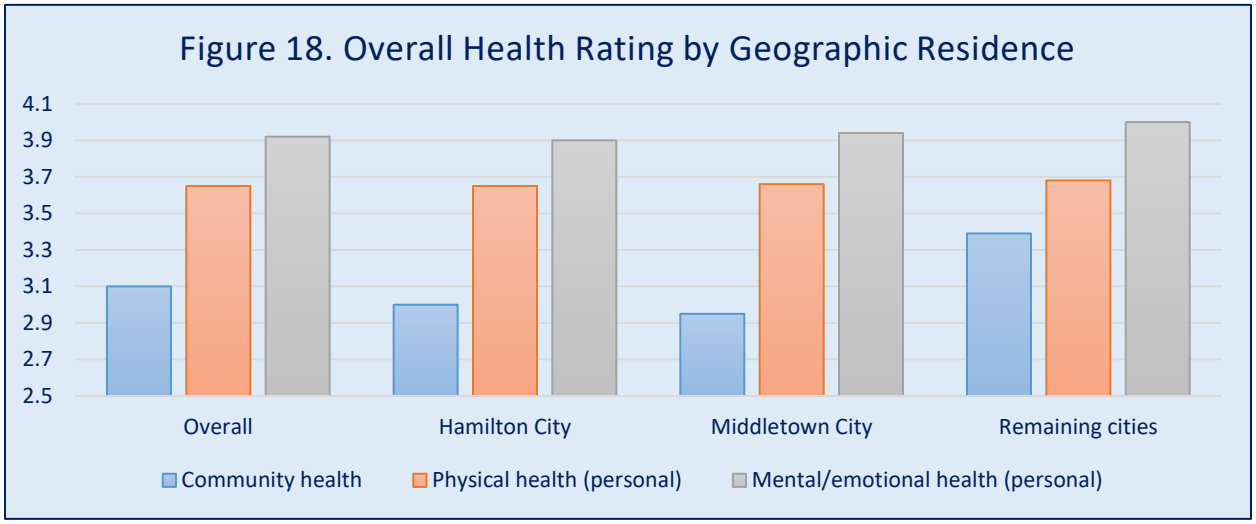
Perception of Health

Survey respondents were asked three questions rating the overall health of the community, as well as their personal physical and mental/emotional health. Respondents generally rated their personal health better than the health of the community, and were more likely to report healthier mental/emotional health than physical health (Figure 17).

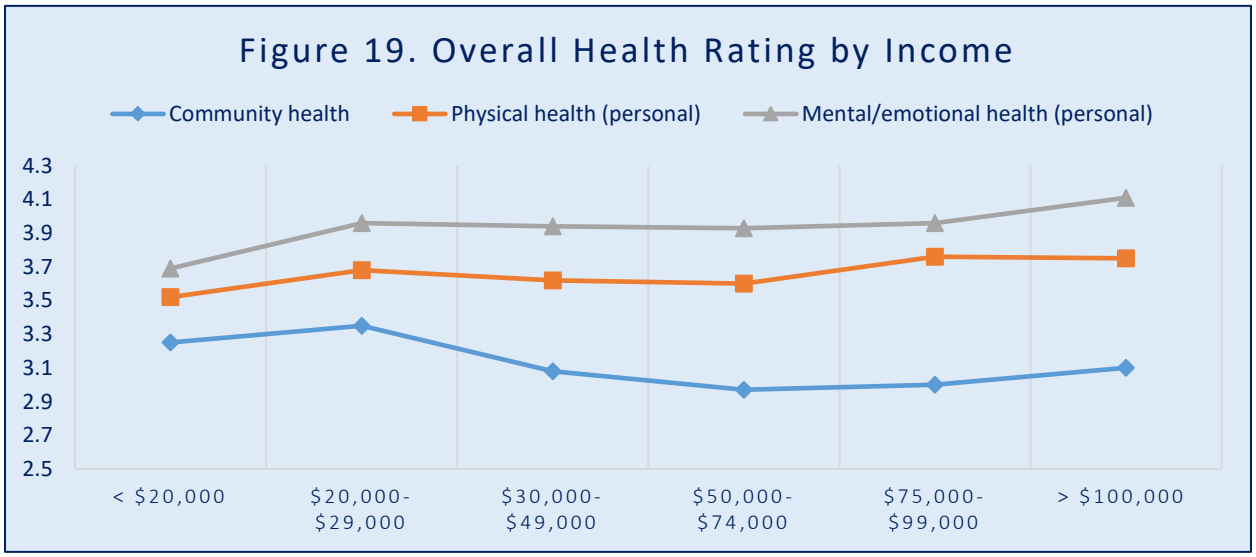


Responses to these questions were coded so that average responses across different demographic variables could be calculated. Possible responses were scored with a 1 for “very unhealthy,” 2 for “unhealthy,” 3 for “somewhat healthy,” 4 for “healthy,” and 5 for “very healthy.”

The average response value for these questions across all demographic variables is presented in Appendix C. Based on geographic residence, the overall health rating by residents of Hamilton and Middletown were very similar, with the rating from those residing in other Butler County cities being slightly higher (Figure 18).



Those both under 25 years old and over 65 years old rated the health of the community and their personal health slightly higher than those age 26-64. Interestingly, those that rated the health of the community the highest were those with the lowest income (less than $30,000), the lowest level of education (some high school), and those who had Medicaid or paid cash for their health care. Whereas those that rated their personal physical health the highest were those with the highest income (more than $75,000). Ratings for personal mental/emotional health were consistent among most income levels, with those making more than $100,000 rating it the highest (Figure 19).

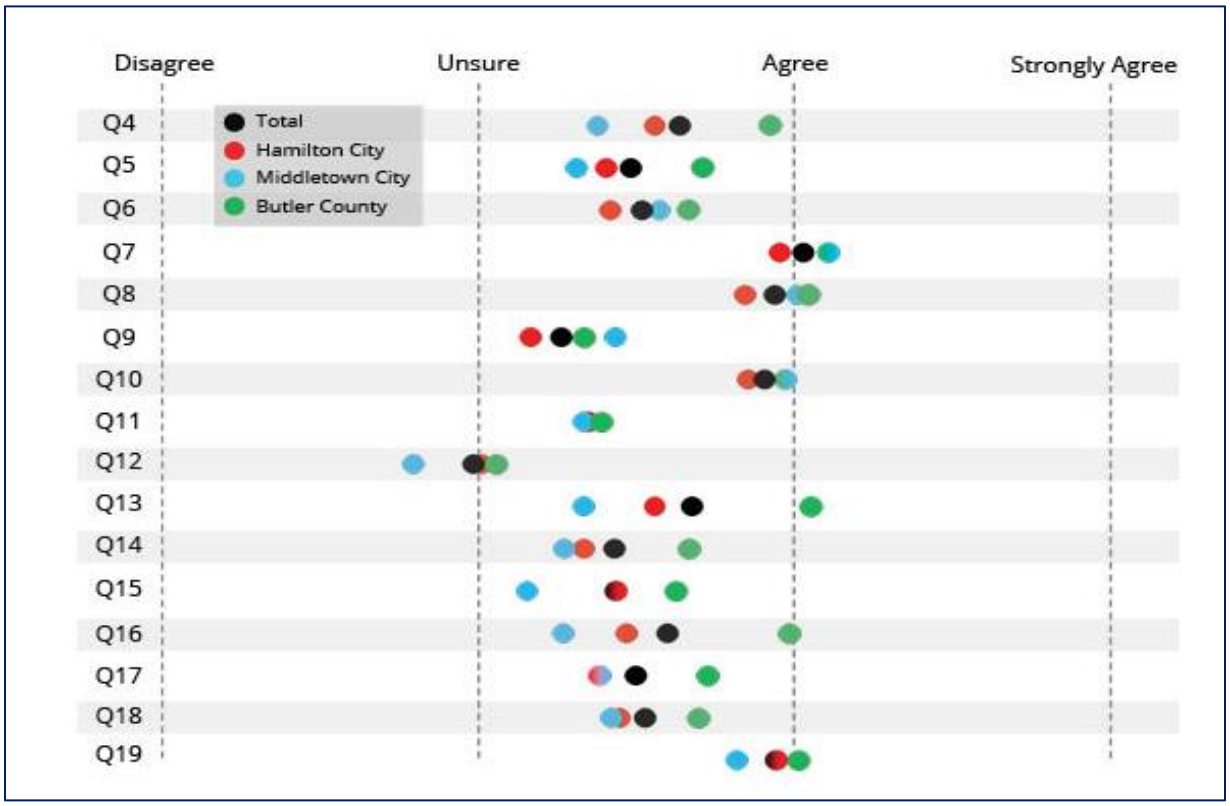


Quality of Life

Survey respondents were asked to rate their level of agreement with sixteen statements regarding quality of life indicators. Responses to these questions were coded so that averages across different demographic variables could be calculated. Responses were scored with a 1 for "strongly disagree," 2 for "disagree," 3 for "unsure," 4 for "agree," and 5 for "strongly agree." As such, higher value responses indicated stronger agreement and lower value responses

indicated stronger disagreement. Figure 20 presents the average responses from residents of Hamilton, Middletown, and other Butler County cities, compared to the total survey sample response average. The average response to this set of statements across certain demographic factors was also analyzed. Responses were calculated among the participants who selected a response to each statement, and none of the questions had a 100% response rate.

Figure 20. Overall Quality of Life by Geographic Residence



Overall, participants selected the "agree" response most often with every question except one. When asked about satisfaction with the substance abuse and addiction treatment services available (Q12), the response of "unsure" was the most frequently selected. The highest rated quality of life indicator was the response that participants have access to medical specialists if needed (Q7). This indicator was the highest rated across all demographics, except those 18-25 years old, Hispanic, or those who pay cash for health care. For these demographic groups, the highest rated quality of life indicator was belief that they could get medical care whenever needed (Q10), that the community was a good place to raise children (Q13), and the belief that working individually and with others that they could make the community a better place (Q19), respectively. The lowest rated quality of life indicator was in response to not having a problem covering costs of a medical visit, with almost a third (31.9%) of respondents choosing "disagree" and "strongly disagree."

Generally, quality of life was rated higher by residents of Butler County cities other than Hamilton and Middletown. This was especially evident in terms of being a good place to raise

children (Q13) and being a safe place to live (Q16). Conversely, while most respondents were unsure as to their satisfaction of substance abuse and addiction treatment services available (Q12), Middletown residents were less satisfied with the availability of these services, then they were unsure.

Most Important Factors

Survey respondents were asked to choose out of 20 factors, the three that were believed to be the most important factors for a healthy community. For analysis, only respondents who reported three or less issues (92.6%) were included. The top three most often selected factors were clearly ahead of the other choices and consistently chosen by nearly all demographic groups. These top factors were generally rated as first most important "low crime/safe neighborhood," second most important "good schools," and third most important "good place to raise children." The ordering of these top three factors varied slightly based on age, income, education, and health insurance. The one demographic that strayed from these top three factors was that of males, who instead choose "strong economy" more frequently as the third most important factor.

Most important factors for a healthy community:

1. Low crime/safe neighborhood
2. Good schools
3. Good place to raise children

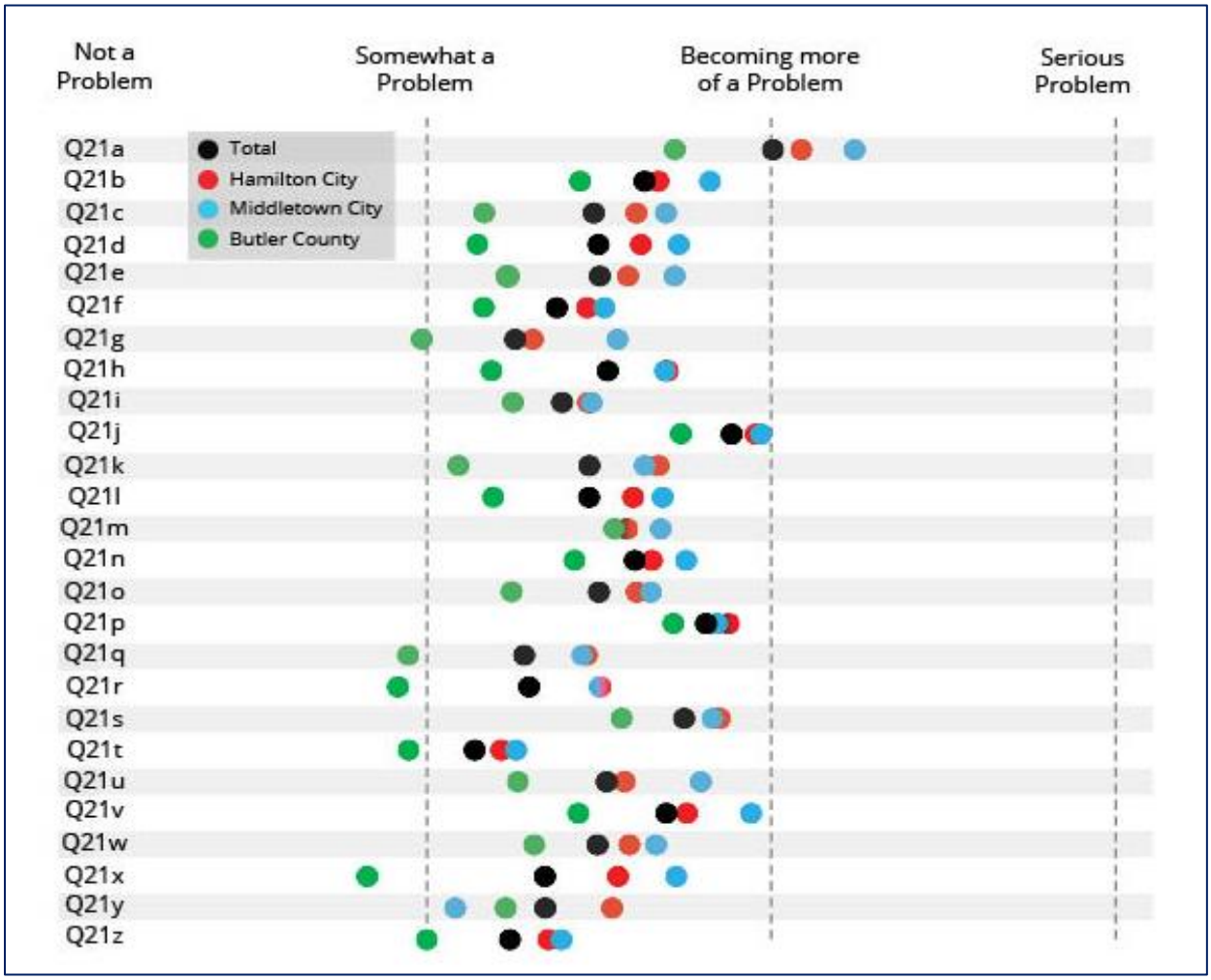
Health Problems

Survey respondents were asked to rate how problematic they believed twenty-six issues to be in their community. Responses to these questions were coded so that averages across different demographic variables could be calculated. Responses were scored with a 1 for "not a problem," 2 for "somewhat a problem," 3 for "becoming more of a problem," and 4 for "a serious problem." In essence, higher value responses were believed to be more of a problem and lower value responses were believed to be less of a problem. Participants were also given the option to choose "unsure" if desired.

The problems participants were asked to assess were: drug sales and/or use, alcohol abuse, tobacco use, crimes by adults (other than drug sales/use), crimes by teens (other than drug sales/use), domestic violence, guns or firearms, child abuse and neglect, reckless driving, obesity, homelessness, hunger, underage drinking, sexual activity of teens, teen pregnancy, bullying, lack of safe places for youth to play, school dropouts, mental health issues, infectious diseases, unemployment, single-parent families, racism and intolerance, vacant buildings, access to transportation, and elderly remaining safely in their own homes. Several of these problems were assessed in 2011 as part of the Community Needs Assessment by the Family and Children First Council. In general, between the problem assessment in 2011 and 2017, most problems decreased in severity. The largest shift noted was with the problem of unemployment, which was rated as serious by 48% of respondents in 2011, and only 19.4% of respondents in 2017.[86]

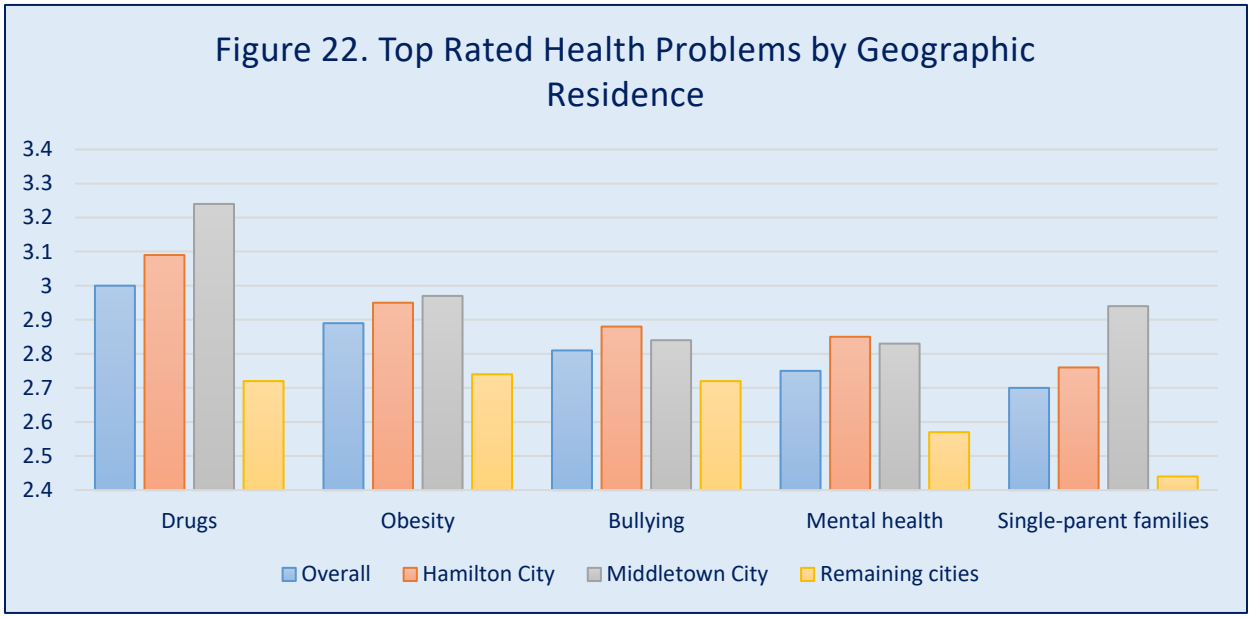
Figure 21 presents the average responses from residents of Hamilton, Middletown, and other Butler County cities, compared to the total survey sample response average. Responses were calculated among the individuals who recorded a response to each statement that was not "unsure." None of the questions had a 100% response rate. On average, 21.4% of respondents were "unsure" for each given topic. The top five topics that the highest number of respondents were unsure about were school dropouts (36.2%), infectious diseases (35.7%), teen pregnancy (32.4%), sexual activity of teens (32.3%), and domestic violence (28.6%). This creates an opportunity to increase and improve public awareness and education on these topics.

Figure 21. Overall Health Problem Rating by Geographic Residence

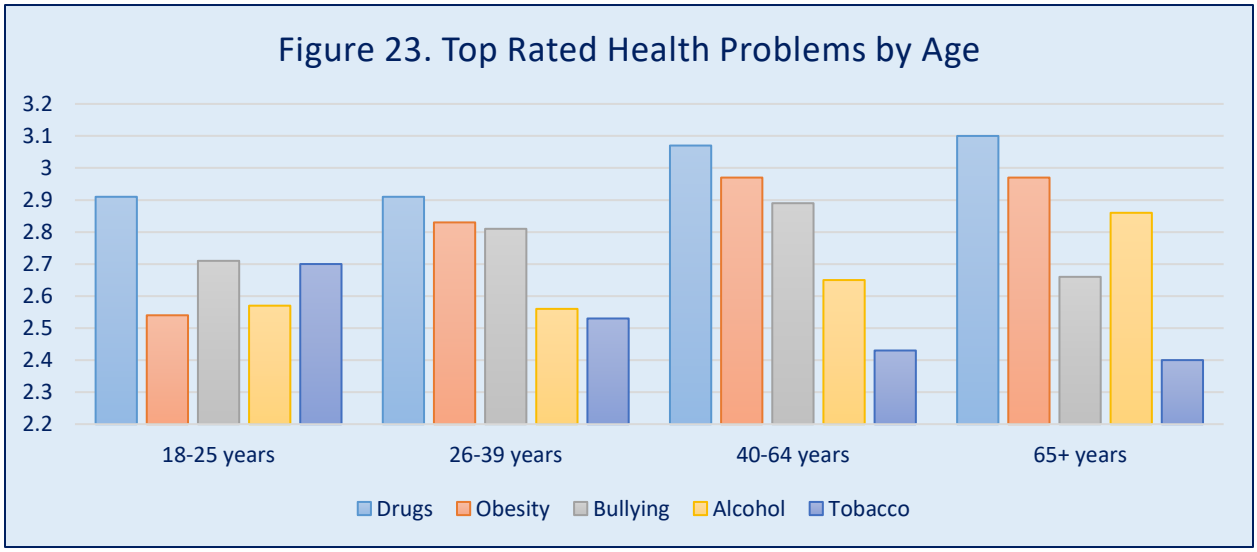


Generally, health topics were rated as less of a problem by residents of Butler County cities other than Hamilton and Middletown. More often, Middletown rated each topic as more of a problem then residents of other areas within Butler County. The one exception to this trend was on the topic of access to transportation, where Middletown residents rated this topic as less of a problem, and Hamilton residents rated it as more of a problem then surrounding areas.

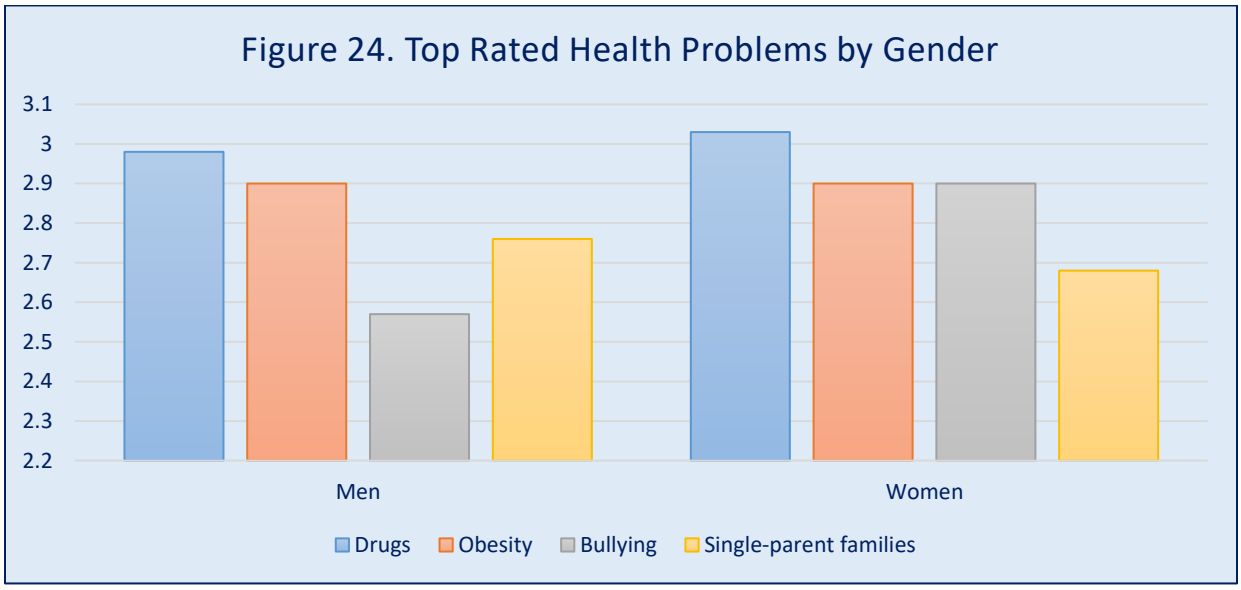
Overall, the topics most frequently rated as more of a problem were "drug sales and/or use" as first, "obesity" as second, "bullying" as third, "mental health issues" as fourth, and "single-parent families" as fifth. By geographic residence, the ranking of these top problems varied slightly (Figure 22). Residents of Hamilton and Middletown identified "drug sales and/or use" as the most problematic issue, followed by "obesity" and "bullying" in Hamilton, and "obesity" and "single-parent families" in Middletown. Residents of cities other than Hamilton and Middletown identified "obesity" as the most problematic issue, followed by "bullying" and "drug sales and/or use" as both second most problematic.



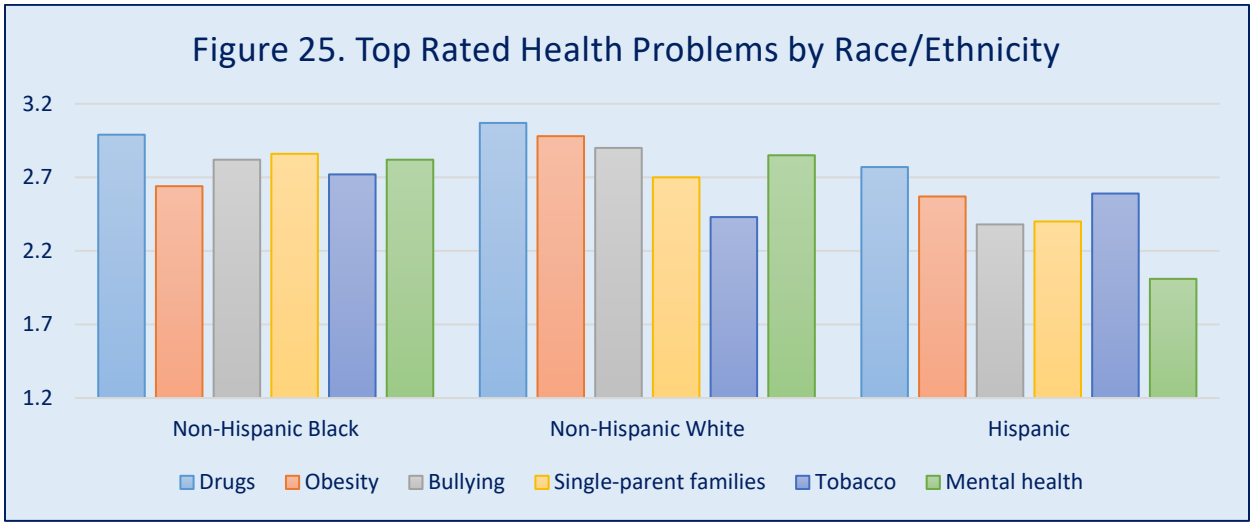
Based on age, the most frequently highest rated problems varied even more. In those over 65 years old, the problem of "alcohol abuse" made it into the top three, and "tobacco use" made it into the top three of those age 18-25 years old (Figure 23).



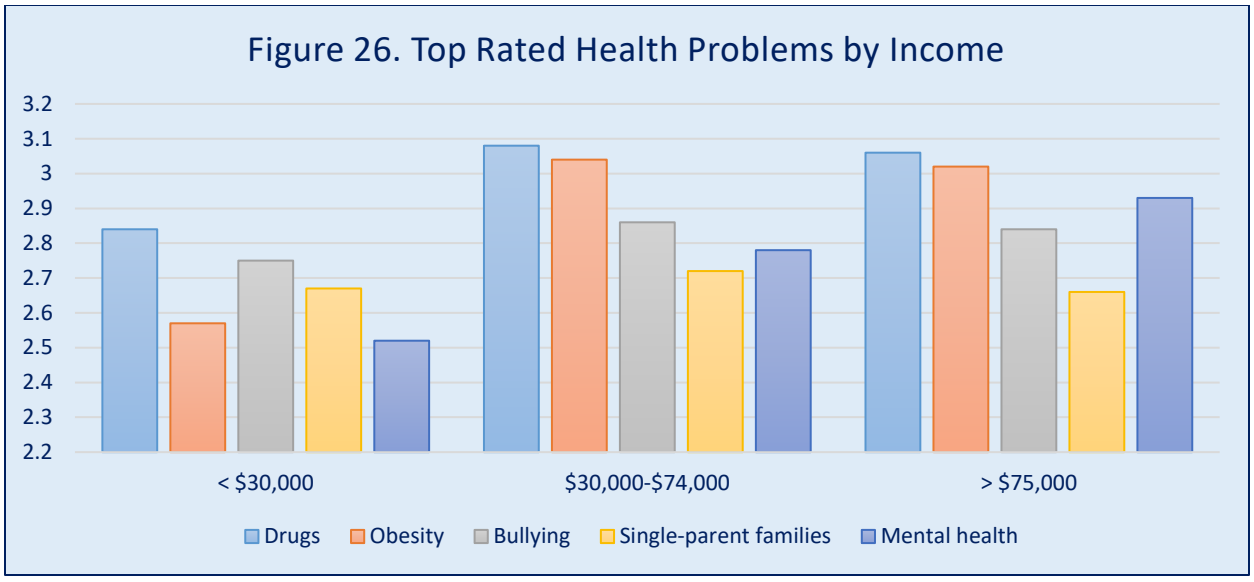
Based on gender, the top two most frequently chosen health problems of "drug sales and/or use" and "obesity" remained unchanged, but the third problem was "bullying" for women and "single-parent families" for men (Figure 24).



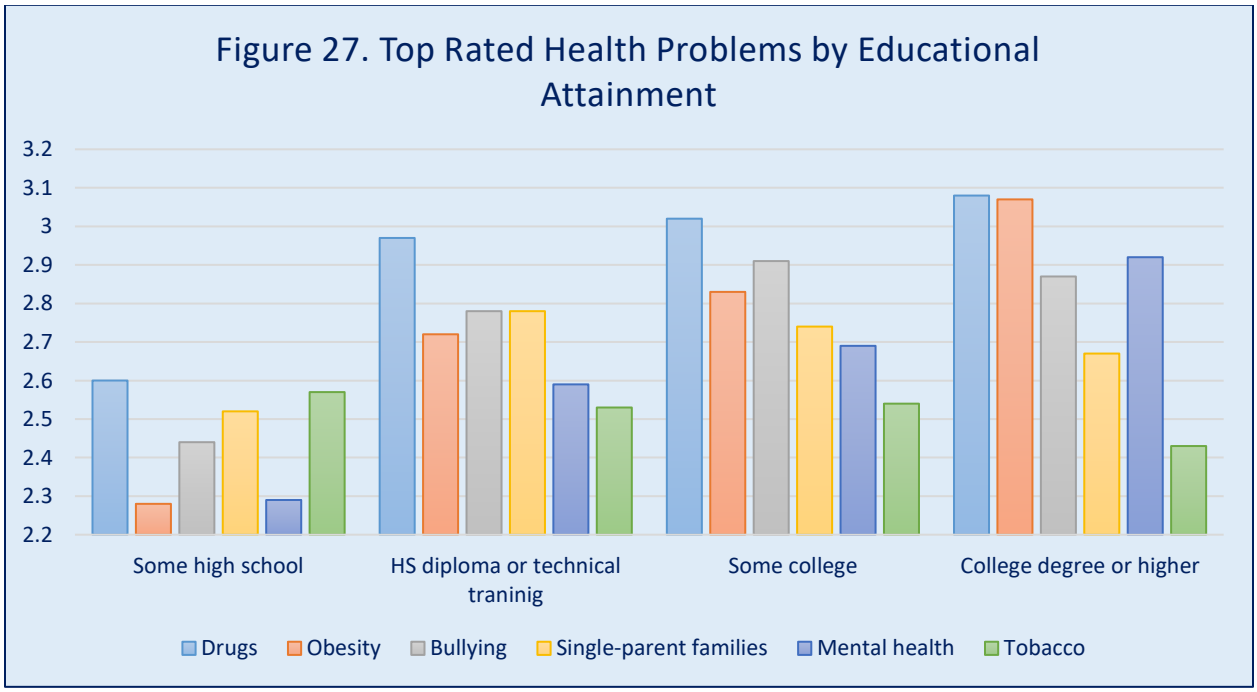
Based on race and ethnicity, the ranking of health problems varied slightly. For all race/ethnicities, "drug sales and/or use" was the highest rated problem, followed by "single-parent families," "mental health," and "bullying" for non-Hispanic blacks; "obesity" and "bullying" for non-Hispanic whites; and "tobacco use" and "obesity" for Hispanics (Figure 25).



Based on income level, the ranking of health problems varied slightly. For all income levels, "drug sales and/or use" was the highest rated problem, followed by "bullying" and "single-parent families" for those making less than $30,000; "obesity" and "bullying" for those making $30,000-$74,000; and "obesity" and "mental health" for those making more than $75,000 (Figure 26).

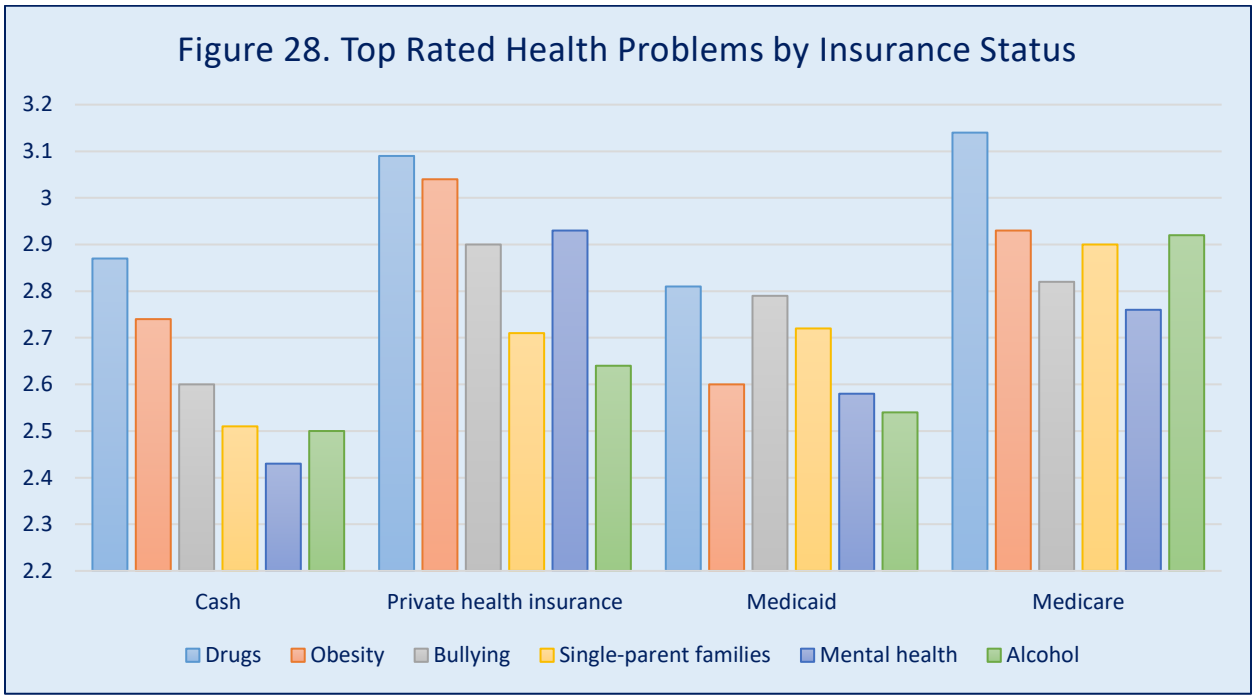


Based on education level, the ranking of health problems varied slightly. For all education levels, "drug sales and/or use" was the highest rated problem, followed by "tobacco use" and "single-parent families" for those with some high school; "bullying" and "single-parent families" for those with a high school diploma or technical training; "bullying" and "obesity" for those with some college; and "obesity" and "mental health" for those with a college degree or higher (Figure 27).



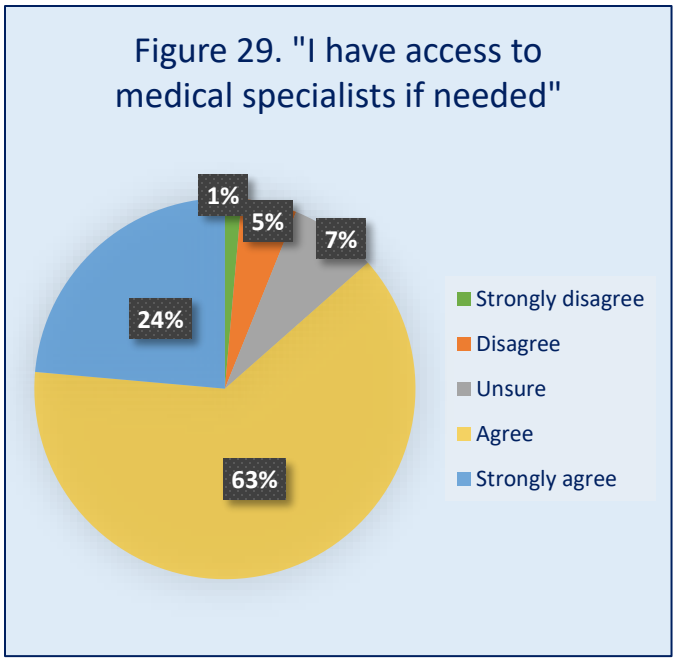
Based on health insurance status, the ranking of health problems varied slightly. For all respondents, "drug sales and/or use" remained the highest rated problem, followed by "obesity" and "bullying" for those who pay cash for health care expenses; "obesity" and "mental health" for those with private health insurance coverage; "bullying" and "single-parent families" for

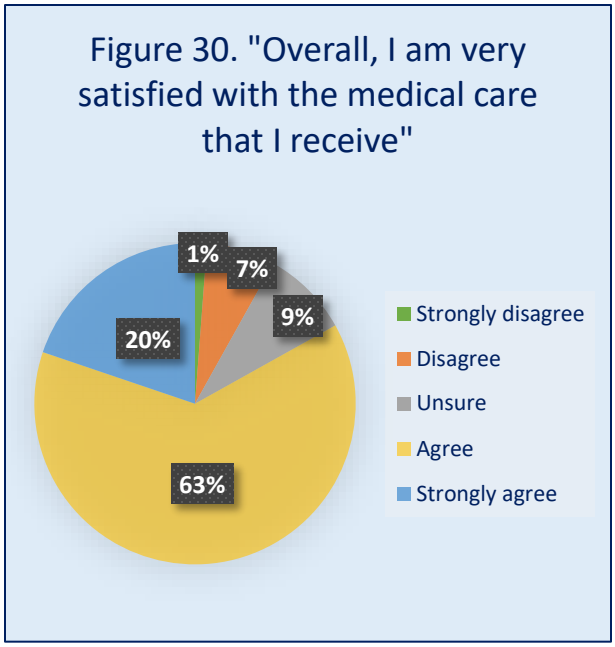
those with Medicaid coverage; and “obesity” and “alcohol abuse” for those with Medicare coverage (Figure 28).

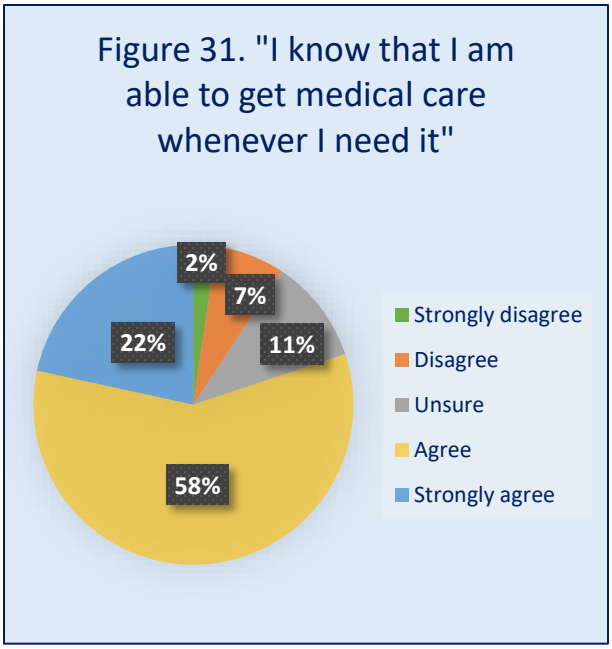


Community Assets

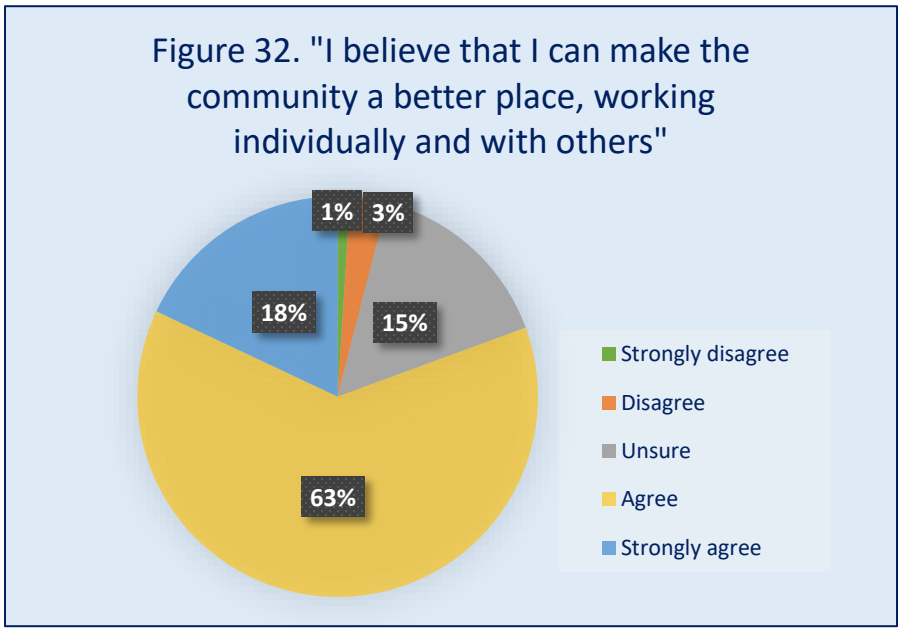
Overall, the top rated quality of life indicators from all respondents were in relation to the medical care available within the community, and the belief that residents can make the community a better place. In relation to medical care, respondents chose the highest level of agreement with the statements “I have access to medical specialists if needed” (Q7, Figure 29), “Overall, I am very satisfied with the medical care that I receive” (Q8, Figure 30), and “I know that I am able to get medical care whenever I need it” (Q10, Figure 31). As access to high quality medical care is essential to maintain health and promote wellness, it is a great asset to the community that perceptions are generally more favorable when it comes to accessing care, and the satisfaction with care that is received.







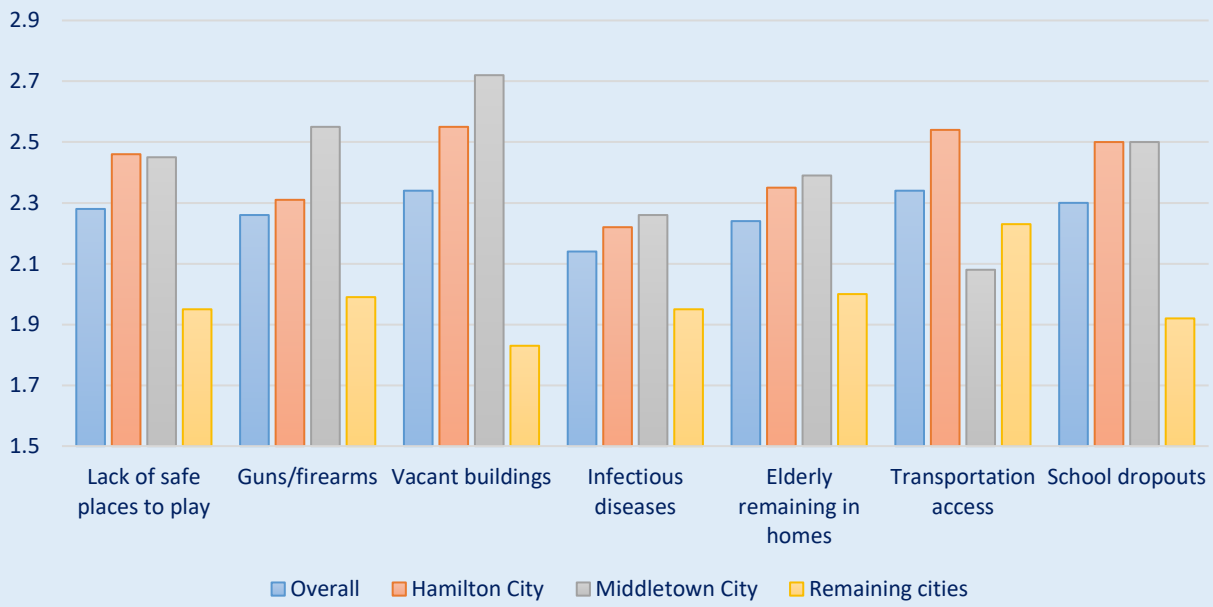
Another asset identified through the quality of life survey questions was the high level of agreement to the statement, "I believe that I can make the community a better place, working individually and with others" (Q19, Figure 32). Both collaboration and initiative are necessary to improving the health of a community, and finding that 80% of respondents agreed or strongly agreed with that statement was positive.



Further assets included a lack of problems that could potentially compromise the health of a community. When survey participants were asked to rate how much of a problem multiple issues were within the community, there were three issues that were more frequently identified overall

as “not a problem.” These included the issue of a “lack of safe places for youth to play,” (27.9%), “guns or firearms” (27.3%), and “vacant buildings” (26.3%). By geographic residence, participants from cities other than Hamilton and Middletown selected these three issues as not problematic more frequently then residents of Hamilton and Middletown (Figure 33). Overall, the issues of “infectious diseases,” “elderly remaining safely in their own homes,” and “guns or firearms” were considered the least problematic within the community. For Hamilton residents, the issues of “infectious diseases” was considered the least problematic, followed by “guns or firearms” and “elderly remaining safely in their own homes.” For Middletown residents, “access to transportation” was considered the least problematic, followed by “infectious diseases” and “elderly remaining safely in their own homes.” For residents of cities other than Hamilton and Middletown, the issue of “vacant buildings” was considered the least problematic, followed by “school dropouts” and “infectious diseases.” Figure 33 demonstrates the difference in how respondents viewed the least problematic issues based on geographic residence.

Figure 33. Comparison of Least Problematic Issues by Geographic Residence

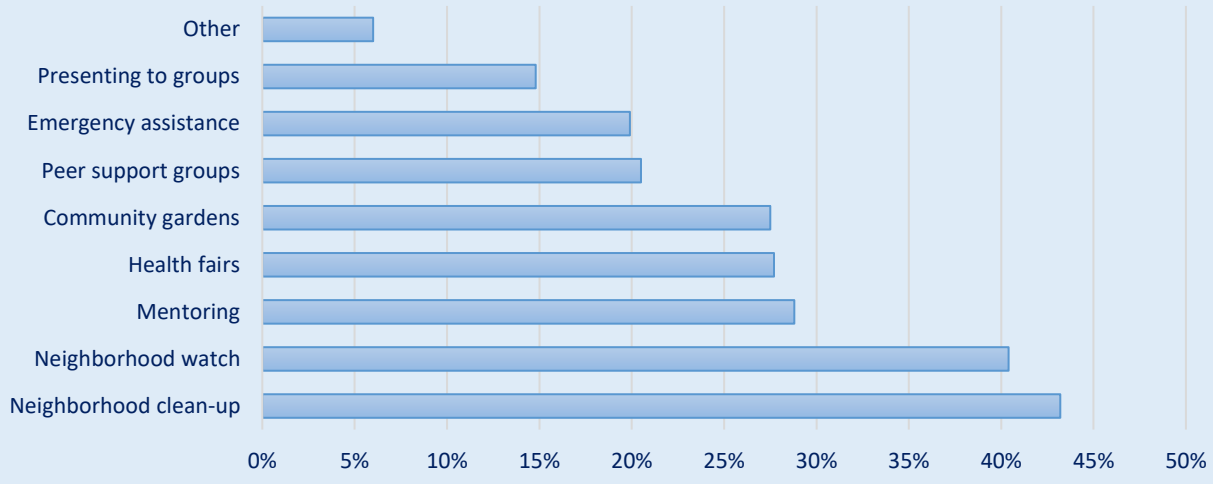


When compared based on demographics, the least problematic issue was “elderly remaining safely in their own homes” for those between 18-39 years old, those black or Hispanic, those making less than $30,000 annual income, those with a high school diploma or technical training, and those with Medicaid. The demographic groups which identified “infectious diseases” as the least problematic issue were those over the age of 40, non-Hispanic whites, those making more than $30,000, those with some college education or higher, and those with private health insurance or Medicare. Those with some high school education rated “reckless driving,” “child abuse,” and “domestic violence” as the three least problematic issues. Those who paid cash for their health care rated “guns or firearms” as least problematic.

Another clear asset to the community was the amount of residents who actively volunteered their time and talents to serve others. 62.6% of respondents participated in community service, with 42.4% volunteering between one to five hours a month, 9.6% volunteering between six to ten hours, and 10.6% volunteering more than 10 hours a month. When asked what types of interventions they would be willing to help with, respondents selected "neighborhood clean-up" most frequently, followed by "neighborhood watch" and "mentoring" (Figure 34).

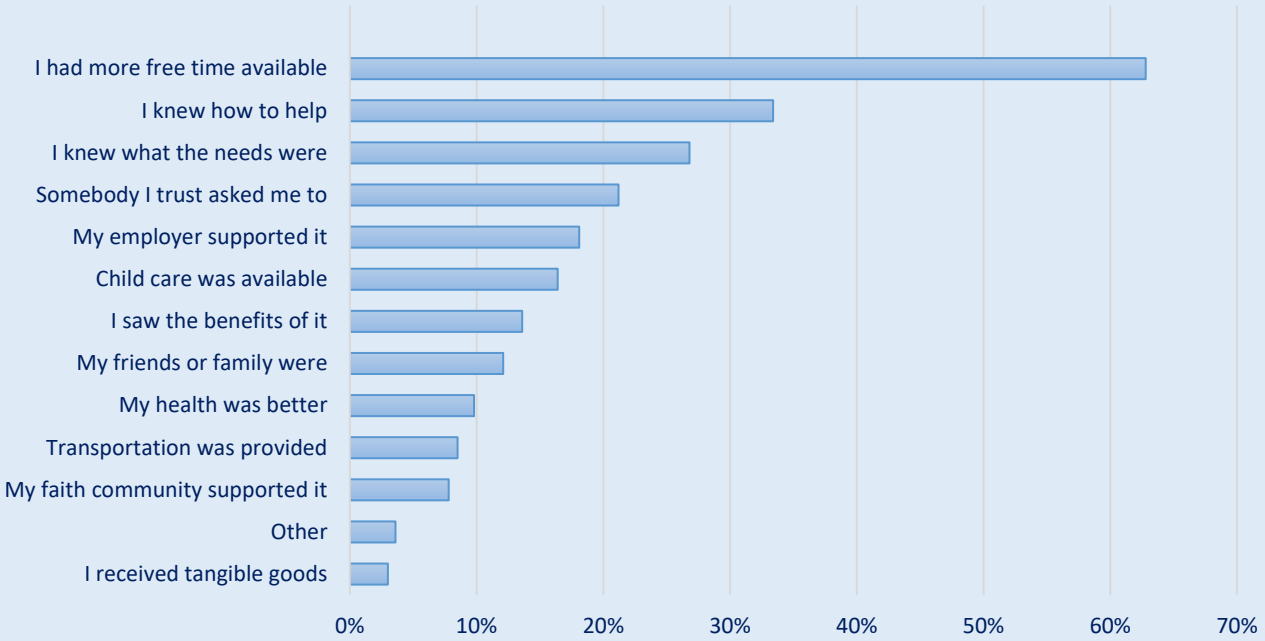
62.6% of survey respondents volunteer regularly within the community

Figure 34. "What types of interventions would you volunteer to help with?" (select all that apply)



Participants were also asked what factors prevented them from taking an active role within the community. The most frequently selected response to the question, "I would spend more time participating in community activities if…" was "I had more free time available," followed by "I knew how to help," and "I knew what the needs were." While it may not be possible for a resident to find more free time, it is possible for them to learn what the needs of the community are, and what they personally can do to help others (Figure 35).

Figure 35. "I would spend more time participating in community activities if..." (select all that apply)



Special Populations

Targeted focus groups were conducted with two special populations who might not have had the same level of access to the electronic and paper survey as other populations. These included the elderly and the economically deprived. Each focus group lasted 30 minutes, and followed the same format and same questions (see Appendix B for details). Participants were asked to speak freely on each question, and encouraged to dialogue and respond to each other.

Economically Deprived

On the afternoon of April 19, 2017 a focus group was held at the Butler County Educational Service Center, located in Hamilton, with 12 participants. All participants were parents with children in Head Start and Early Head Start or staff members that worked with both programs. The overall perception shared was that current quality of life was “not great.” Participants stated that it had greatly decreased over recent years, and cited increases in job loss, drug use, crime, and fear as contributing factors. The group voiced that the most important factors for a healthy community included availability of and access to resources, jobs, clinics, agencies, and opportunities to be active, as well as a safe and drug-free environment.

While discussing the current issues and assets within the community, the group identified three serious health problems, two areas for improvement, and five strengths. The three most serious health problems acknowledged were drugs, which was the unanimous frontrunner, smoking, and obesity. Participants discussed the alarming rate at which drug use seemed to be increasing,

recent drug overdose cases, the perceived ease of access to prescription narcotics, and current efforts within the community to increase awareness of the problem. Smoking was seen as being present "everywhere" in the community. Participants shared that when they traveled outside of the community, they did not see people smoking as frequently. One participant shared an example of what they viewed as a way to rationalize smoking during pregnancy, by hearing pregnant mothers say at least were not using drugs. Obesity was also identified as a serious health problem within the community, with a perceived cultural correlation to the local Appalachian and Hispanic populations. In light of the problem of obesity, participants discussed the desire to have more healthy prepared food options available. Participants pointed to high rates of eating meals outside of the home, and the disparity of options available by geographic location. Specifically, the more economically disadvantaged cities of Hamilton and Middletown had less healthy "fast food" options available, while the cities of Fairfield and West Chester had "more healthy" options. The second area for improvement was in regards to public transportation, specifically the desire for extended routes and hours.

All focus group participants identified "drugs" as the most serious health problem

While the bulk of the conversation focused on the negative aspects of the community, residents also highlighted five unique strengths. The size and location of the county was viewed as the primary strength due to the close proximity to two large metropolitan cities, which translated into a perceived ease of access to health care, shopping, services, and recreational opportunities extending beyond county lines. Specifically, the abundance of area hospitals was viewed as an important facilitator of resident health and wellness. Additionally, a vibrant and accessible parks and recreation district was highlighted, as well as current efforts to revitalize downtown Hamilton with new businesses and building improvements, and the fact that local employers supported community service efforts.

Elderly

On the morning of May 4, 2017 a focus group was held at Central Connections, a Senior Center located in Middletown, with 17 participants. All participants were local senior citizens or staff members at the center. The perception of current quality of life within the community was that it depended on how long that someone had lived within the community. Participants discussed that those who had lived in the community for longer, knew how to physically navigate the area, as well as the services available. Whereas those who were new to the community had a difficult time seeing the positive aspects of the area through the negative aspects. Specifically, participants discussed Middletown as once being an "all-American" city, which seemed more "close knit" then it is today. The most important aspects for a healthy community identified were being free of drugs, having schools with excellent teachers, hospitals and clinics with excellent providers, and a strong economy which included funding for necessary programs.

The group also identified three serious health problems, as well as six areas for improvement and six areas of strength within the community. The three most serious health problems

acknowledged were drugs, which was again the unanimous frontrunner, as well as violent crime and air pollution. Participants discussed the perception that drugs had "taken over the city," and although drugs could be found in every community, it seemed that drug use there was extremely "blatant." Specifically, participants shared their concerns for their personal safety and fear of not receiving emergency assistance, including fire, police, and medical, if needed due to first responders being "too busy" attending to the increased drug-related incidents. Along that same theme, participants discussed a dramatic increase in violent crime recently, which no longer seemed confined to specific neighborhoods, but happened "everywhere." Specifically, participants shared fear that there had been an increase in armed robberies of homes and public places that used to be considered safe. In turn, participants discussed increased concern over their personal safety and the toll it took on their mental well-being. Lastly, participants identified air pollution due to local factories as a health problem, but also pointed out that it had improved in recent years. However, there remained a concern over a possible increased susceptibility to respiratory illnesses and cancer due to exposure to local air pollution over time.

In addition to the most serious health problems identified, participants spoke about areas for improvement within the community. Participants discussed fear related to the perception that excellent teachers and medical providers had left the community for higher pay or better work environments elsewhere. Participants discussed a desire for unity throughout the community, specifically between families, schools, and faith communities. They shared that while many groups were doing good work within the community, they seemed to lack a unified approach as they worked towards common goals. Participants also expressed a desire for parents to teach and enforce healthy behaviors and attitudes within their children, and not rely on others to do so. Public transportation also came up as an area for improvement. Participants shared that while traveling around the immediate area by bus and shuttle was relatively easy, it was more difficult to travel to the nearby larger cities without a means of personal transportation. The economy was also discussed, and residents shared that specifically in Middletown, it seemed like the city "never recovered" after the recession. While much of the conversation was focused on the negative aspects of the community, participants specifically identified the perception that residents tend to be "too negative" and easily overlook the positive aspects of the community.

Several strengths were also identified by participants, starting with the size and location of the county being a primary asset. Residents shared that within Middletown, it felt like a "small town," which made everything seem convenient and easily accessible, with minimal traffic or parking difficulties. Participants discussed specific organizations within the community, such as Central Connections, which was invaluable for bringing senior citizens together and offering beneficial services. The local library system was another organization recognized as "vibrant" and offering many services. While discussing the local public school system, residents shared that the perception was public education for students with disabilities was outstanding, serving as a magnet to those in need and

The "size and location" of Butler County was identified as a strength in both focus groups

a source of pride within the community. Participants also discussed revitalization of the downtown area, pointing out that the local leadership seemed to be successfully making positive changes and had brought new businesses to the area, which the residents perceived as a sign that others still cared about the welfare of the community. The last strength discussed was that of the local faith community. Participants discussed that there seemed to be a strong sense of hope, as well as a desire to cooperate and collaborate in order to increase capacity between faith communities.

Discussion

The quantitative and qualitative data collected from community members related to demographic characteristics, perception of health, quality of life, health problems, community assets, and a focus on special populations all provide valuable information on the health of Butler County. Through the analysis of 60 multiple choice and fill-in-the-blank survey questions, and seven open-ended focus group questions, the current themes and strengths of the community were assessed in a comprehensive process.

Participants generally rated their personal health better than the health of their community, and the overall community health rating was highest from Butler County residents of cities other than Hamilton and Middletown. While the three primary strengths identified through the survey were access to medical specialists if needed, overall satisfaction with medical care received, and the perception that medical care was accessible whenever needed, covering the cost of a medical visit was a problem for almost a third of respondents. Overall, the top five problems within the community identified through the survey were drug sales and/or use, obesity, bullying, mental health issues, and single-parent families. Through the focus groups, the top problems identified were drugs, smoking, obesity, and violent crime. The three most important factors for a healthy community were low crime/safe neighborhoods, good schools, and a good place to raise children. Additionally, the majority of participants believed that they could make the community a better place, and actively participated in service to the community. Focus group participants discussed several community strengths, which included the size and location of the county, access to health care, recreation, and needed services, revitalization efforts, the faith community, and employer support for community service.

3. Local Public Health System Assessment

The Local Public Health System (LPHS) Assessment focuses on all of the organizations and entities that contribute to the public's health. The guide used to conduct the LPHS assessment was the National Public Health Performance Standards (NPHPS or the Standards for short). The Standards provided a framework to assess the capacity and performance of public health systems and public health governing bodies. Development, oversight, and support of the Standards is the collaborative effort of six national partner organizations: the American Public Health Association, the Association of State and Territorial Health Officials, the National Association of County and City Health Officials, the National Network of Public Health Institutes, the Public Health Foundation, and the Centers for Disease Control and Prevention, Office for State, Tribal, Local and Territorial Support.[87]

The Local Public Health System Assessment answers the questions:

What are the components, activities, competencies, and capacities of our local public health system?

How are the Essential Services being provided to our community?

Benefits of Utilizing the Standards as a Framework for the LPHS Assessment:

- Identification of partners and community members in the local public health system
- Increased partner and community member engagement in health assessment and improvement planning efforts
- Improved communication and collaboration between community members and partners
- Improved understanding about public health and the interconnectedness of community activities
- Identification of local public health system strengths and weaknesses
- Identification of benchmarks for public health practice improvements
- Strengthened local public health system

The Standards are based on the framework of the ten Essential Public Health Services (Essential Services or ES), which represent the spectrum of activities that should be undertaken in all local communities in order to ensure the health of residents. The instrument itself is divided into ten sections, one for each of the Essential Services. Because many entities contribute to delivering the Essential Services, the focus of the Standards is on the "public health system" as a whole. A public health system

includes all public, private and voluntary entities that contribute to the delivery of the Essential Services within a local area.

The Performance Standards related to each ES describe an optimal level of performance and capacity to which all Local Public Health Systems (LPHSs) should aspire. The Local Assessment Instrument provides every LPHS with benchmarks by which the system can be assessed to help identify strengths, weaknesses, and short- and long-term improvement opportunities. In addition, the Standards promote continuous quality improvement by serving as a guide for learning about activities throughout the system, and determining how to make improvements to enhance system performance. Ultimately, the assessment results can inform policy and resource decisions, leading to an improved LPHS.[88]

Methods

The Advisory Committee met to discuss and plan for the LPHS assessment, and decided to complete it during a full-day retreat at the Butler County Government Services Center on February 9, 2017. The Local Assessment Instrument Version 3.0 was successfully conducted with 25 Advisory Committee members in attendance, marking the first time a comprehensive LPHS assessment had ever been completed in Butler County. The Committee members present represented a diverse spectrum of public health system entities, including: the local public health departments, education, local hospitals, emergency management, health care providers, city and county board of health members, local government, local agencies, representatives of vulnerable populations, non-profit organizations, and community members.

Source: Local Public Health System Assessment Instrument Version 3.0

For each of the 10 Essential Services, there were between two and four Model Standards that covered a total of 108 Performance Measures. Based on each Performance Measure, the LPHS determined a score to reflect the level of activity. Scoring was conducted through the use of color coded voting cards, and each Performance Measure was discussed in detail until a consensus score was achieved. The scoring range was 0 for no activity, 25 for minimal activity, 50 for moderate activity, 75 for significant activity, and 100 for optimal activity. All scores were then averaged to determine an overall score for each Model Standard and Essential Service.

Limitations

Limitations of the LPHS assessment include wide variations in the breadth and knowledge of participants and differences in the interpretation of assessment questions. The resulting

Performance Measure scores should not be interpreted to reflect the capacity or performance of any single agency or organization within the LPHS, or used for comparisons between jurisdictions or organizations. Use of the LPHS assessment data should instead guide an overall public health infrastructure and performance improvement process for the LPHS, as determined by organizations involved in the assessment.

Further, the responses to the questions within the assessment are based upon processes that utilize input from diverse system participants, each with unique experiences and perspectives. The gathering of input and the development of a response for each question incorporated an element of subjectivity. While consensus scoring was eventually obtained on all Performance Measures, it is important to note that not every Committee Member initially agreed on each score. Also, while many diverse LPHS entities were represented, it is possible that additional important perspectives may have been missed.

Results

Essential Service 1: Monitor Health Status to Identify Community Health Problems

The Committee discussion focused on the ability of the LPHS to accurately and continually assess the community's health status, identify health threats, determine health service needs, recognize and respond to the health needs of groups that are at a higher risk than the total population, identify community assets and resources, use appropriate methods and technology, and collaborate with stakeholders.

ES 1 answers the questions:
What is going on in our community?
Do we know how healthy we are?

Table 34. ES 1: Monitor Health Status to Identify Community Health Problems		
1.1	**Model Standard: Population-Based Community Health Assessment** *At what level does the local public health system:*	
1.1.1	Conduct regular community health assessments?	100
1.1.2	Continuously update the community health assessment with current information?	75
1.1.3	Promote the use of the community health assessment among community members and partners?	25
1.2	**Model Standard: Current Technology to Manage and Communicate Population Health Data** *At what level does the local public health system:*	
1.2.1	Use the best available technology and methods to display data on the public's health?	50
1.2.2	Analyze health data, including geographic information, to see where health problems exist?	25

1.2.3	Use computer software to create charts, graphs, and maps to display complex public health data (trends over time, sub-population analyses, etc.)?	75
1.3	**Model Standard: Maintenance of Population Health Registries** *At what level does the local public health system:*	
1.3.1	Collect data on specific health concerns to provide the data to population health registries in a timely manner, consistent with current standards?	25
1.3.2	Use information from population health registries in community health assessments or other analyses?	75

Essential Service 2: Diagnose and Investigate Health Problems and Health Hazards

The Committee discussion focused on the ability of the LPHS to access a public health laboratory capable of conducting rapid screening and high-volume testing, establish active infectious disease epidemiology programs, and create technical capacity for epidemiological investigation of disease outbreaks and patterns of infectious and chronic diseases, injuries, and other adverse health behaviors and conditions.

ES 2 answers the questions:
Are we ready to respond to health problems or health hazards in our county?
How quickly do we find out about problems?
How effective is our response?

Table 35. ES 2: Diagnose and Investigate Health Problems and Health Hazards		
2.1	**Model Standard: Identification and Surveillance of Health Threats** *At what level does the local public health system:*	
2.1.1	Participate in a comprehensive surveillance system with national, state and local partners to identify, monitor, share information, and understand emerging health problems and threats?	100
2.1.2	Provide and collect timely and complete information on reportable diseases and potential disasters, emergencies and emerging threats (natural and manmade)?	100
2.1.3	Assure that the best available resources are used to support surveillance systems and activities, including information technology, communication systems, and professional expertise?	100
2.2	**Model Standard: Investigation and Response to Public Health Threats and Emergencies** *At what level does the local public health system:*	

2.2.1	Maintain written instructions on how to handle communicable disease outbreaks and toxic exposure incidents, including details about case finding, contact tracing, and source identification and containment?	100
2.2.2	Develop written rules to follow in the immediate investigation of public health threats and emergencies, including natural and intentional disasters?	100
2.2.3	Designate a jurisdictional Emergency Response Coordinator?	100
2.2.4	Prepare to rapidly respond to public health emergencies according to emergency operations coordination guidelines?	100
2.2.5	Identify personnel with the technical expertise to rapidly respond to possible biological, chemical, or and nuclear public health emergencies?	100
2.2.6	Evaluate incidents for effectiveness and opportunities for improvement?	100
2.3	**Model Standard: Laboratory Support for Investigation of Health Threats** *At what level does the local public health system:*	
2.3.1	Have ready access to laboratories that can meet routine public health needs for finding out what health problems are occurring?	100
2.3.2	Maintain constant (24/7) access to laboratories that can meet public health needs during emergencies, threats, and other hazards?	100
2.3.3	Use only licensed or credentialed laboratories?	100
2.3.4	Maintain a written list of rules related to laboratories, for handling samples (collecting, labeling, storing, transporting, and delivering), for determining who is in charge of the samples at what point, and for reporting the results?	100

Essential Service 3: Inform, Educate, and Empower People about Health Issues

The Committee discussion focused on the ability of the LPHS to create community development activities, establish social marketing and target media public communications, provide accessible health information resources at community levels, collaborate with personal health care providers to reinforce health promotion messages and programs, and work with joint health education programs.

ES 3 answers the question:
How well do we keep all segments of our community informed about health issues?

Table 36. ES 3: Inform, Educate, and Empower People about Health Issues		
3.1	**Model Standard: Health Education and Promotion** *At what level does the local public health system:*	
3.1.1	Provide policymakers, stakeholders, and the public with ongoing analyses of community health status and related recommendations for health promotion policies?	50
3.1.2	Coordinate health promotion and health education activities to reach individual, interpersonal, community, and societal levels?	25
3.1.3	Engage the community throughout the process of setting priorities, developing plans and implementing health education and health promotion activities?	25
3.2	**Model Standard: Health Communication** *At what level does the local public health system:*	
3.2.1	Develop health communication plans for relating to media and the public and for sharing information among LPHS organizations?	75
3.2.2	Use relationships with different media providers (e.g. print, radio, television, and the internet) to share health information, matching the message with the target audience?	50
3.2.3	Identify and train spokespersons on public health issues?	100
3.3	**Model Standard: Risk Communication** *At what level does the local public health system:*	
3.3.1	Develop an emergency communications plan for each stage of an emergency to allow for the effective dissemination of information?	100
3.3.2	Make sure resources are available for a rapid emergency communication response?	75
3.3.3	Provide risk communication training for employees and volunteers?	100

Essential Service 4: Mobilize Community Partnerships to Identify and Solve Health Problems

The Committee discussion focused on the ability of the LPHS to convene and facilitate partnerships among groups and associations (including those not typically considered to be health related), undertake defined health improvement planning processes and health projects, and build a coalition to draw on the full range of potential human and material resources to improve community health.

ES 4 answers the question:
How well do we truly engage people in local health issues?

Table 37. ES 4: Mobilize Community Partnerships to Identify and Solve Health Problems		
4.1	**Model Standard: Constituency Development** *At what level does the local public health system:*	
4.1.1	Maintain a complete and current directory of community organizations?	100
4.1.2	Follow an established process for identifying key constituents related to overall public health interests and particular health concerns?	25
4.1.3	Encourage constituents to participate in activities to improve community health?	50
4.1.4	Create forums for communication of public health issues?	75
4.2	**Model Standard: Community Partnerships** *At what level does the local public health system:*	
4.2.1	Establish community partnerships and strategic alliances to provide a comprehensive approach to improving health in the community?	75
4.2.2	Establish a broad-based community health improvement committee?	25
4.2.3	Assess how well community partnerships and strategic alliances are working to improve community health?	25

Essential Service 5: Develop Policies and Plans that Support Individual and Community Health Efforts

The Committee discussion focused on the ability of the LPHS to ensure leadership development at all levels of public health, ensure systematic community-level and state-level planning for health improvement in all jurisdictions, develop and track measurable health objectives from the Community Health Improvement Plan as a part of continuous quality improvements, establish joint evaluation with the medical health care system to define consistent policies regarding prevention and treatment services, and develop policy and legislation to guide the practice of public health.

ES 5 answers the questions:
What local policies in both the government and private sector promote health in my community?
How well are we setting healthy local policies?

Table 38. ES 5: Develop Policies and Plans that Support Individual and Community Health Efforts		
5.1	**Model Standard: Governmental Presence at the Local Level** *At what level does the local public health system:*	
5.1.1	Support the work of a local health department dedicated to the public health to make sure the essential public health services are provided?	25
5.1.2	See that the local health department is accredited through the national voluntary accreditation program?	25
5.1.3	Assure that the local health department has enough resources to do its part in providing essential public health services?	25
5.2	**Model Standard: Public Health Policy Development** *At what level does the local public health system:*	
5.2.1	Contribute to public health policies by engaging in activities that inform the policy development process?	50
5.2.2	Alert policymakers and the community of the possible public health impacts (both intended and unintended) from current and/or proposed policies?	50
5.2.3	Review existing policies at least every three to five years?	25
5.3	**Model Standard: Community Health Improvement Process and Strategic Planning** *At what level does the local public health system:*	
5.3.1	Establish a community health improvement process, with broad-based diverse participation, that uses information from both the community health assessment and the perceptions of community members?	25
5.3.2	Develop strategies to achieve community health improvement objectives, including a description of organizations accountable for specific steps?	25
5.3.3	Connect organizational strategic plans with the Community Health Improvement Plan?	25
5.4	**Model Standard: Plan for Public Health Emergencies** *At what level does the local public health system:*	
5.4.1	Support a workgroup to develop and maintain preparedness and response plans?	100
5.4.2	Develop a plan that defines when it would be used, who would do what tasks, what standard operating procedures would be put in place, and what alert and evacuation protocols would be followed?	100
5.4.3	Test the plan through regular drills and revise the plan as needed, at least every two years?	100

Essential Service 6: Enforce Laws and Regulations That Protect Health and Ensure Safety

The Committee discussion focused on the ability of the LPHS to enforce sanitary codes, protect drinking water supplies, enforce clean air standards, initiate animal control activities, follow-up with hazards, preventable injuries and exposure-related diseases identified in occupational and community settings, monitor the quality of medical services, and review new drug, biologic and medical device applications.

ES 6 answers the question: When we enforce health regulations are we technically competent, fair, and effective?

Table 39. ES 6: Enforce Laws and Regulations that Protect Health and Ensure Safety		
6.1	**Model Standard: Review and Evaluation of Laws, Regulations, and Ordinances** *At what level does the local public health system:*	
6.1.1	Identify public health issues that can be addressed through laws, regulations, or ordinances?	100
6.1.2	Stay up-to-date with current laws, regulations, and ordinances that prevent, promote, or protect public health on the federal, state, and local levels?	100
6.1.3	Review existing public health laws, regulations, and ordinances at least once every five years?	100
6.1.4	Have access to legal counsel for technical assistance when reviewing laws, regulations, or ordinances?	100
6.2	**Model Standard: Involvement in the Improvement of Laws, Regulations, and Ordinances** *At what level does the local public health system:*	
6.2.1	Identify local public health issues that are inadequately addressed in existing laws, regulations, and ordinances?	75
6.2.2	Participate in changing existing laws, regulations, and ordinances, and/or creating new laws, regulations, and ordinances to protect and promote the public health?	75
6.2.3	Provide technical assistance in drafting the language for proposed changes or new laws, regulations, and ordinances?	50
6.3	**Model Standard: Enforcement of Laws, Regulations, and Ordinances** *At what level does the local public health system:*	
6.3.1	Identify organizations that have the authority to enforce public health laws, regulations, and ordinances?	100

6.3.2	Assure that a local health department (or other governmental public health entity) has the authority to act in public health emergencies?	100
6.3.3	Assure that all enforcement activities related to public health codes are done within the law?	100
6.3.4	Educate individuals and organizations about relevant laws, regulations, and ordinances?	75
6.3.5	Evaluate how well local organizations comply with public health laws?	100

Essential Service 7: Link People to Needed Personal Health Services and Assure the Provision of Health Care When Otherwise Unavailable

The Committee discussion focused on the ability of the LPHS to ensure effective entry for socially disadvantaged and other vulnerable persons into a coordinated system of clinical care, provide culturally and linguistically appropriate materials and staff to ensure linkage to services for special populations, ensure ongoing care management, ensure transportation services, and conduct targeted health education, promotion, and disease prevention to vulnerable populations.

ES 7 answers the question:
Are people in my community receiving the health services they need?

Table 40. ES 7: Link People to Needed Personal Health Services and Assure the Provision of Health Care when Otherwise Unavailable		
7.1	**Model Standard: Identification of Personal Health Service Needs of Populations** *At what level does the local public health system:*	
7.1.1	Identify groups of people in the community who have trouble accessing or connecting to personal health services?	100
7.1.2	Identify all personal health service needs and unmet needs throughout the community?	75
7.1.3	Defines partner roles and responsibilities to respond to the unmet needs of the community?	25
7.1.4	Understand the reasons that people do not get the care they need?	75
7.2	**Model Standard: Assuring the Linkage of People to Personal Health Services** *At what level does the local public health system:*	
7.2.1	Connect (or link) people to organizations that can provide the personal health services they may need?	50

7.2.2	Help people access personal health services, in a way that takes into account the unique needs of different populations?	50
7.2.3	Help people sign up for public benefits that are available to them (e.g., Medicaid or medical and prescription assistance programs)?	50
7.2.4	Coordinate the delivery of personal health and social services so that everyone has access to the care they need?	50

Essential Service 8: Assure a Competent Public Health and Personal Health Care Workforce

The Committee discussion focused on the ability of the LPHS to educate, train and assess personnel to meet community needs for public and personal health services, establish efficient processes for professionals to acquire licensure, adopt continuous quality improvement and lifelong learning programs, establish active partnerships with professional training programs to ensure community-relevant learning experiences for all students, and ensure continuing education in management and leadership development programs are available to those with administrative and executive roles.

ES 8 answers the questions:
Do we have competent public health staff?
Do we have competent health care staff?
How can we be sure that our staff stays current?

Table 41. ES 8: Assure a Competent Public and Personal Health Care Workforce		
8.1	**Model Standard: Workforce Assessment, Planning, and Development** *At what level does the local public health system:*	
8.1.1	Set up a process and a schedule to track the numbers and types of LPHS jobs and the knowledge, skills, and abilities that they require whether those jobs are in the public or private sector?	75
8.1.2	Review the information from the workforce assessment and use it to find and address gaps in the local public health workforce?	75
8.1.3	Provide information from the workforce assessment to other community organizations and groups, including governing bodies and public and private agencies, for use in their organizational planning?	75
8.2	**Model Standard: Public Health Workforce Standards** *At what level does the local public health system:*	
8.2.1	Make sure that all members of the public health workforce have the required certificates, licenses, and education needed to fulfill their job duties and meet the law?	100

8.2.2	Develop and maintain job standards and position descriptions based in the core knowledge, skills, and abilities needed to provide the essential public health services?	75
8.2.3	Base the hiring and performance review of members of the public health workforce in public health competencies?	75
8.3	**Model Standard: Life-Long Learning through Continuing Education, Training, and Mentoring** *At what level does the local public health system:*	
8.3.1	Identify education and training needs and encourage the workforce to participate in available education and training?	100
8.3.2	Provide ways for workers to develop core skills related to essential public health services?	100
8.3.3	Develop incentives for workforce training, such as tuition reimbursement, time off for class, and pay increases?	75
8.3.4	Create and support collaborations between organizations within the public health system for training and education?	75
8.3.5	Continually train the public health workforce to deliver services in a cultural competent manner and understand social determinants of health?	50
8.4	**Model Standard: Public Health Leadership Development** *At what level does the local public health system:*	
8.4.1	Provide access to formal and informal leadership development opportunities for employees at all organizational levels?	25
8.4.2	Create a shared vision of community health and the public health system, welcoming all leaders and community members to work together?	25
8.4.3	Ensure that organizations and individuals have opportunities to provide leadership in areas where they have knowledge, skills, or access to resources?	50
8.4.4	Provide opportunities for the development of leaders representative of the diversity within the community?	25

Essential Service 9: Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services

The Committee discussion focused on the ability of the LPHS to assess program effectiveness through monitoring and evaluating implementation, outcomes and effect, and provide information necessary for allocating resources and reshaping programs.

ES 9 answers the questions:
Are we meeting the needs of the population we serve?
Are we doing things right?
Are we doing the right things?

Table 42. ES 9: Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services		
9.1	**Model Standard: Evaluation of Population-Based Health Services** *At what level does the local public health system:*	
9.1.1	Evaluate how well population-based health services are working, including whether the goals that were set for programs were achieved?	25
9.1.2	Assess whether community members, including those with a higher risk of having a health problem, are satisfied with the approaches to preventing disease, illness, and injury?	25
9.1.3	Identify gaps in the provision of population-based health services?	50
9.1.4	Use evaluation findings to improve plans and services?	25
9.2	**Model Standard: Evaluation of Personal Health Services** *At what level does the local public health system:*	
9.2.1	Evaluate the accessibility, quality, and effectiveness of personal health services?	75
9.2.2	Compare the quality of personal health services to established guidelines?	50
9.2.3	Measure satisfaction with personal health services?	75
9.2.4	Use technology, like the internet or electronic health records, to improve quality of care?	100
9.2.5	Use evaluation findings to improve services and program delivery?	75
9.3	**Model Standard: Evaluation of the Local Public Health System** *At what level does the local public health system:*	
9.3.1	Identify all public, private, and voluntary organizations that provide essential public health services?	25
9.3.2	Evaluate how well LPHS activities meet the needs of the community at least every five years, using guidelines that describe a model LPHS and involving all entities contributing to essential public health services?	25
9.3.3	Assess how well the organizations in the LPHS are communicating, connecting, and coordinating services?	25
9.3.4	Use results from the evaluation process to improve the LPHS?	25

Essential Service 10: Research for New Insights and Innovative Solutions to Health Problems

The Committee discussion focused on the ability of the LPHS to establish a full continuum of innovation, ranging from practical field-based efforts to fostering change in public health practice to more academic efforts that encourage new directions in scientific research, continually link institutions of higher learning and research, and create internal capacity to mount timely epidemiologic and economic analyses and conduct health services research.

ES 10 answers the question:
Are we discovering and using new ways to get the job done?

Table 43. ES 10: Research for New Insights and Innovative Solutions to Health Problems		
10.1	**Model Standard: Fostering Innovation** *At what level does the local public health system:*	
10.1.1	Provide staff with the time and resources to pilot test or conduct studies to test new solutions to public health problems and see how well they actually work?	75
10.1.2	Suggest ideas about what currently needs to be studied in public health to organizations that do research?	75
10.1.3	Keep up with information from other agencies and organizations at the local, state, and national levels about current best practices in public health?	50
10.1.4	Encourage community participation in research, including deciding what will be studied, conducting research, and in sharing results?	25
10.2	**Model Standard: Linkage with Institutions of Higher Learning and/or Research** *At what level does the local public health system:*	
10.2.1	Develop relationships with colleges, universities, or other research organizations, with a free flow of information, to create formal and informal arrangements to work together?	100
10.2.2	Partner with colleges, universities, or other research organizations to do public health research, including community-based participatory research?	100
10.2.3	Encourage colleges, universities, and other research organizations to work together with LPHS organizations to develop projects, including field training and continuing education?	100
10.3	**Model Standard: Capacity to Initiate or Participate in Research** *At what level does the local public health system:*	

10.3.1	Collaborate with researchers who offer the knowledge and skills to design and conduct health-related studies?	100
10.3.2	Support research with the necessary infrastructure and resources, including facilities, equipment, databases, information technology, funding, and other resources?	75
10.3.3	Share findings with public health colleagues and the community broadly, through journals, websites, community meetings, etc?	75
10.3.4	Evaluate public health systems research efforts throughout all stages of work from planning to impact on local public health practice?	25

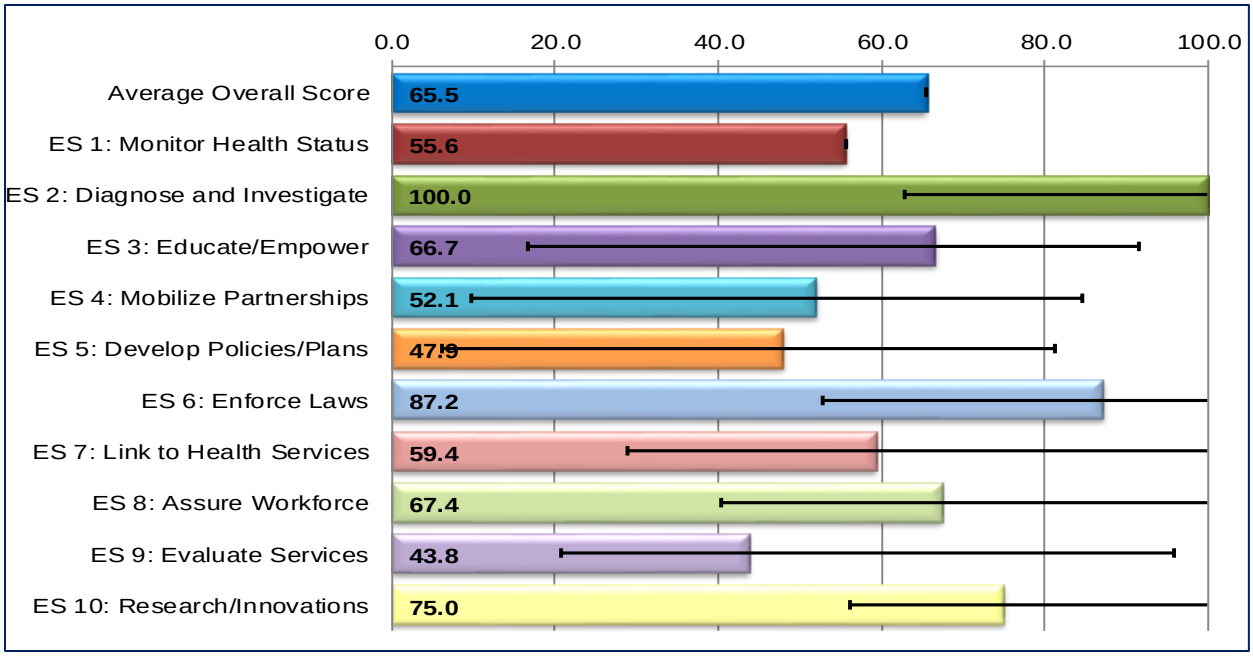
Discussion

Based upon the responses to each Performance Measure, an average score was calculated for every one of the 10 Essential Services. The individual ES score can be interpreted as the overall degree to which the LPHS meet the quality indicators for each ES. Scores can range from a minimum value of 0%, which demonstrates that no activity was performed pursuant to the standards, to a maximum value of 100%, indicating that all activities associated with the standards were performed at optimal levels. Analysis of Performance Measure scoring provided an average score for each ES. The overall average assessment score across all ten ESs was 65.5, meaning that the LPHS was engaging in a significant level of activity on average across all Essential Services. The black bar within each ES in Figure 36 identifies the range of reported performance score responses.

Scoring Guide

Optimal activity = >75% of the activity described is met
Significant activity = Between 51-75% of the activity described is met
Moderate activity = Between 26-50% of the activity described is met
Minimal activity = Between 1-25% of the activity described is met
No activity = 0% of the activity described is met

Figure 36. Summary of Average Essential Service Performance Scores

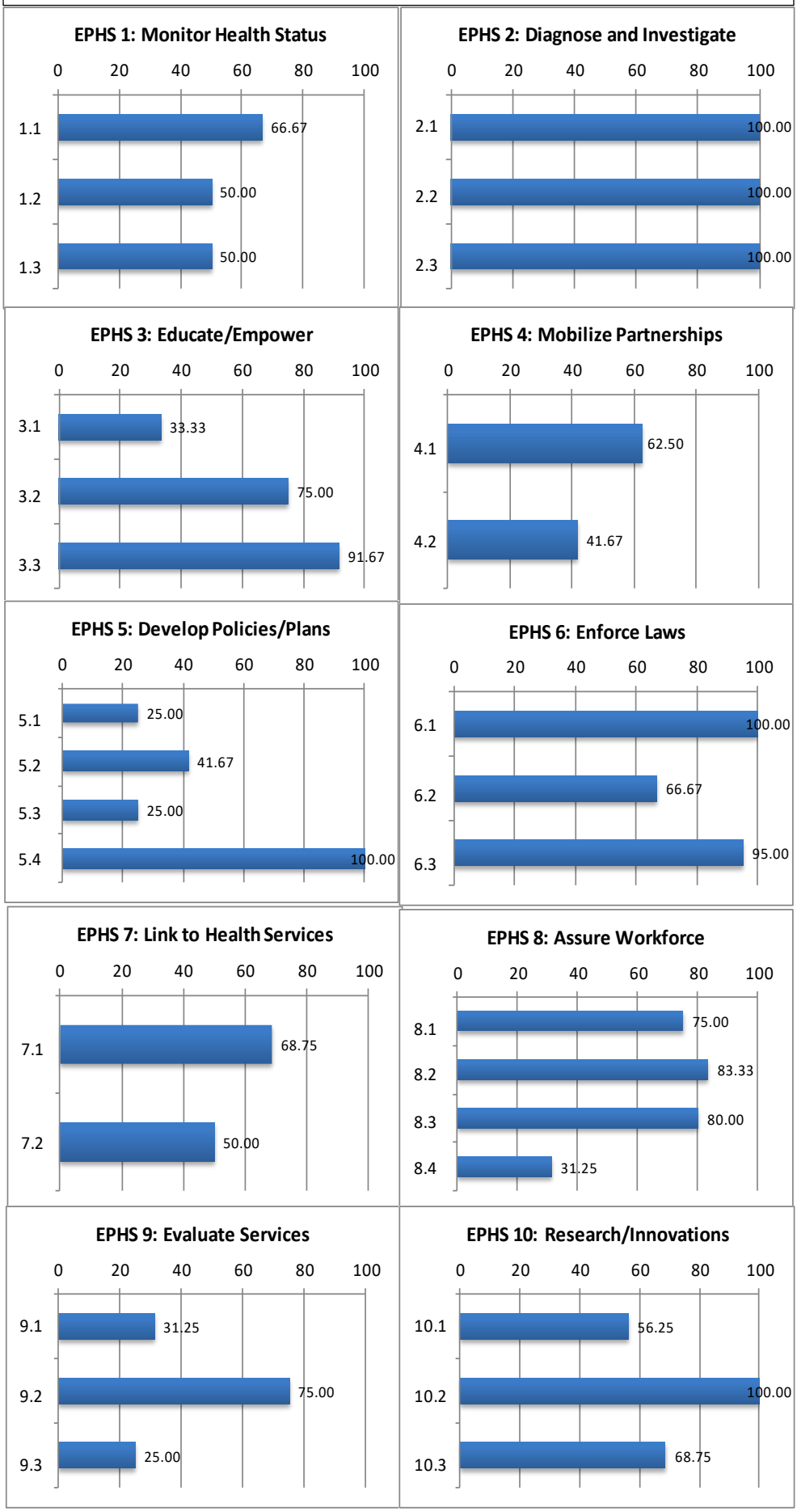


The three areas of greatest strength identified were ES 2, ES 6, and ES 10. The score for ES 2 indicated that the LPHS was currently performing 100% of activities related to diagnosing and investigating health problems and health hazards at optimal levels. The score for ES 6 indicated that the LPHS was also performing the activities related to enforcing laws and regulations that protect health and ensure safety at optimal levels. The score for ES 10 indicated that the LPHS was performing the activities related to research for new insights and innovative solutions to health problems at a very significant level.

The three areas for greatest improvement identified were ES 9, ES 5, and ES 4. The score for ES 9 indicated that the LPHS was currently performing the activities related to evaluating the effectiveness, accessibility, and quality of personal and population-based health services at a moderate level. The score for ES 5 indicated that the LPHS was performing the activities related to developing policies and plans that support individual and community health efforts at a high moderate level. The score for ES 4 indicated that the LPHS was performing the activities related to mobilizing community partnerships to identify and solve health problems at a low significant level.

Figure 37 and Table 44 detail the average scores of the Model Standards which comprise each ES, in order to pinpoint specific areas of strengths and weaknesses. Overall, Model Standards 5.1, 5.3, and 9.3 received the lowest scores, revealing that related activities were being performed at only minimal levels. Model Standard 5.1 evaluated the governmental presence at the local level, and currently, the LPHS is only minimally supporting the work of the local health departments to ensure the 10 ESs are being provided, minimally seeing that the local health departments are accredited through the Public Health Accreditation Board's voluntary national public health department accreditation program, and minimally ensuring that the local health departments had enough resources to do their part in providing essential public health services.

Figure 37. Average Model Standard Performance Scores



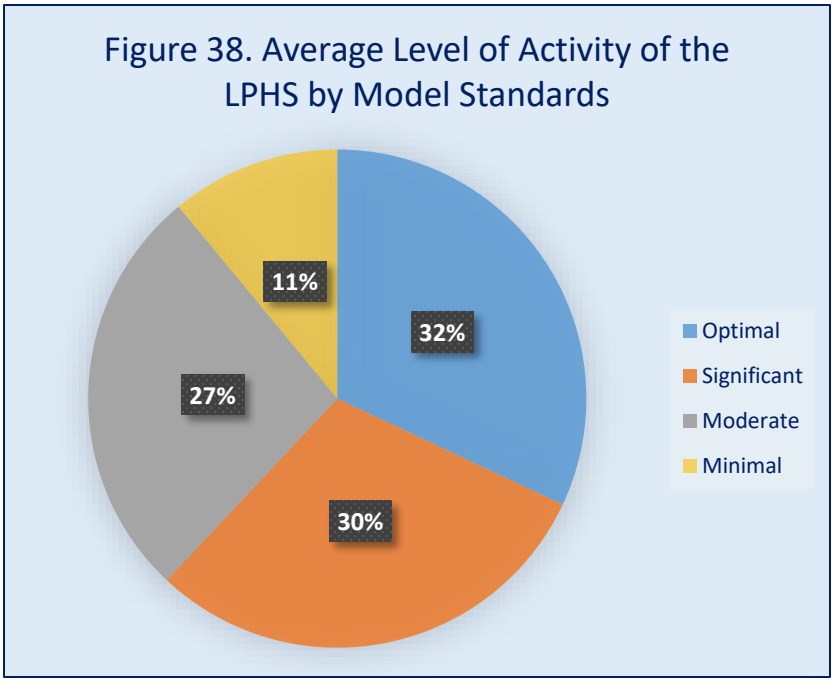
Model Standard 5.3 evaluated the level of community health improvement process and strategic planning, and currently the LPHS is only minimally working on a Community Health Improvement Plan (CHIP) with broad-based diverse participation, minimally developing strategies to achieve community health improvement objectives, and minimally connecting organizational strategic plans with the CHIP. Model Standard 9.3 assessed the level of evaluating the LPHS, and currently the LPHS is only minimally identifying organizations that contribute to the delivery of the ESs, minimally evaluating how well LPHS activities meet the needs of the community on a regular basis and with standard guidelines, minimally assessing how well the organizations in the LPHS are communicating, connecting and coordinating services, and minimally using the results from the evaluation process to improve the LPHS.

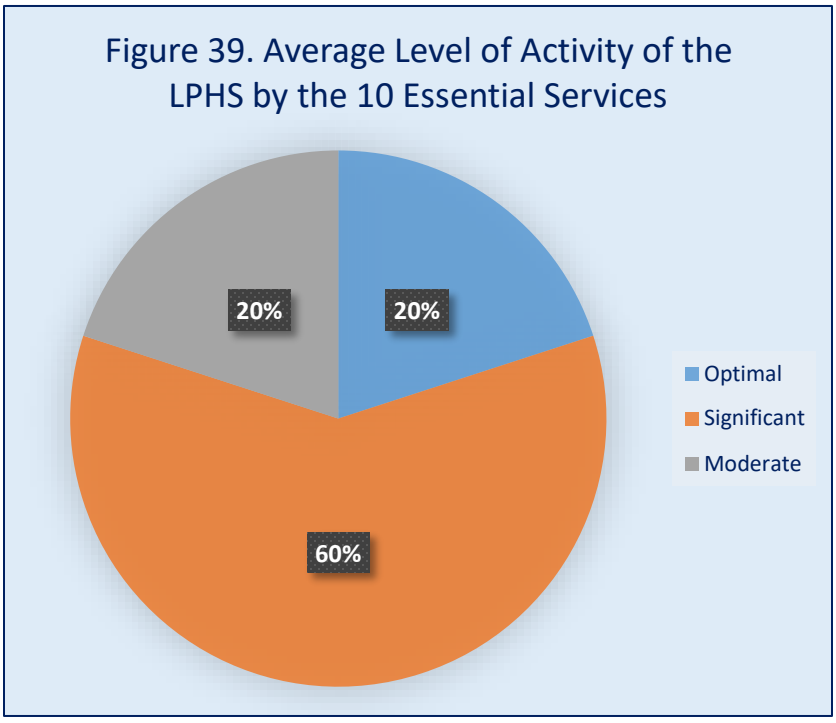
Table 44. Average Model Standard Performance Scores by Essential Service

Model Standards by Essential Service	Score	Model Standards by Essential Service	Score
ES 1: Monitor Health Status	**55.6**	**ES 6: Enforce Laws**	**87.2**
1.1 Community Health Assessment	66.7	6.1 Review Laws	100.0
1.2 Current Technology	50.0	6.2 Improve Laws	66.7
1.3 Registries	50.0	6.3 Enforce Laws	95.0
ES 2: Diagnose and Investigate	**100.0**	**ES 7: Link to Health Services**	**59.4**
2.1 Identification/Surveillance	100.0	7.1 Personal Health Service Needs	68.8
2.2 Emergency Response	100.0	7.2 Assure Linkage	50.0
2.3 Laboratories	100.0	**ES 8: Assure Workforce**	**67.4**
ES 3: Educate/Empower	**66.7**	8.1 Workforce Assessment	75.0
3.1 Health Education/Promotion	33.3	8.2 Workforce Standards	83.3
3.2 Health Communication	75.0	8.3 Continuing Education	80.0
3.3 Risk Communication	91.7	8.4 Leadership Development	31.3
ES 4: Mobilize Partnerships	**52.1**	**ES 9: Evaluate Services**	**43.8**
4.1 Constituency Development	62.5	9.1 Evaluation of Population Health	31.3
4.2 Community Partnerships	41.7	9.2 Evaluation of Personal Health	75.0
ES 5: Develop Policies/Plans	**47.9**	9.3 Evaluation of LPHS	25.0
5.1 Governmental Presence	25.0	**ES 10: Research/Innovations**	**75.0**
5.2 Policy Development	41.7	10.1 Foster Innovation	56.3
5.3 CHIP/Strategic Planning	25.0	10.2 Academic Linkages	100.0
5.4 Emergency Plan	100.0	10.3 Research Capacity	68.8
			Average Overall Score = 65.5

Overall, based on the average Model Standard scoring, 32% of related activities were performed by the LPHS at the optimal level, 30% of related activities were performed at the significant level, 27% of related activities were performed at the moderate level, and 11% of related activities were performed at the minimal level (Figure 38). Overall, based on the average 10

Essential Service scoring, 20% of related activities were performed by the LPHS at the optimal level, 60% of related activities were performed at the significant level, and 20% of related activities were performed at the moderate level (Figure 39).





4. Forces of Change Assessment

The Forces of Change (FOC) Assessment focuses on identifying the specific forces, such as legislation, technology, and other impending changes, that affect the context in which the community and its public health system operate.

The Forces of Change Assessment answers the questions:

What is occurring or might occur that affects the health of our community or the local public health system?

What specific threats or opportunities are generated by these occurrences?

Methods

This assessment was conducted by the Advisory Committee on January 12, 2017 at the Butler County Government Services Center. A total of 17 Advisory Committee members were present and participated in the assessment. The Committee members present represented a diverse spectrum of public health system entities, including: the local city and county public health departments, health care providers, emergency management, local hospitals, local agencies, representatives of vulnerable populations, local government, education, and infection control. Prior to the meeting, Committee members were given a FOC brainstorming worksheet and asked to identify relevant trends, events, and factors that affect the community. Examples were provided, including trends such as migration in and out of a community, factors such as a community's large ethnic population, and events such as a hospital closure or natural disaster. The forces were discussed in terms of eight broad categories: social, economic, political, technological, environmental, scientific, legal, and ethical.

Participants were asked to consider all of the forces that affect the LPHS or community by considering and discussing the following questions:

- What has occurred recently?
- What may occur in the future?
- Are there any trends occurring that will have an impact?
- What forces are occurring locally? Regionally? Nationally? Globally?
- What characteristics of our county may pose an opportunity or threat?
- What may occur or has occurred that may pose a barrier to achieving the shared vision?

Limitations

The limitations of the FOC assessment are similar to that of the LPHS assessment. There may be wide variations in the breadth and knowledge of participants, and differences in the interpretation of assessment questions. The resulting FOC assessment should not be interpreted as an exhaustive list of all forces affecting the LPHS and community, but rather a snapshot of the most significant trends, factors, and events as brainstormed by Committee members.

Further, the responses to the questions within the assessment were based upon processes that utilize input from diverse system participants, each with unique experiences and perspectives. The gathering of input and the development of a response for each question incorporates an element of subjectivity. Also, while many diverse LPHS entities were represented, it is possible that additional important perspectives may have been missed.

Results

Within the eight categories, the majority of the discussion centered on social, environmental, and economic issues. Overall, the committee identified and discussed ten social, eight environmental, six economic, four legal, two political, two technological, two scientific, and one ethical issue.

Table 45. Social Forces of Change Identified

Forces	Threats Posed	Opportunities Created
Acts of violence in public places	• Injury or death • Fear of gathering in public	• Community dialogue on underlying issues • Improved emergency preparedness
Madison School shooting	• Multiple injuries occurred • Increased fear of violence in public places	• Made gun violence and preparedness a priority when it was not at the time • Increased community awareness and involvement
Designated Outdoor Refreshment Area in Middletown	• Increased alcohol consumption • Risk for violence and injuries	• Increased revenue at local participating establishments • Venue to promote community activities and participation in art, music, etc.
Farmers Markets	• Risk for unsafe food production and handling	• Increased access to fresh healthy produce • Support for local agriculture and small businesses
Outdoor entertainment in Hamilton, Fairfield, and West Chester	• Risk for violence and injuries	• Venue to promote community activities and participation in art, music, etc.
Emerging Community Paramedicine providers and programs	• Risk for injury due to inadequate or non-standardized training • Liability and increased health care costs from potential negligent care	• Increased access to health care and resources for underserved populations • New job opportunities

Pervasive use of social media	• Increased social isolation • Unlearned social behaviors due to lack of experience, education, need, or desire	• Interconnectedness irrespective of geographic location can expand social support networks • Simple and accessible platform for information sharing
Aging population	• Risk for unsafe living situation • Increased health care utilization	• Innovative services to allow elderly to remain in their homes and access services as needed
Increased immigrant populations	• Language and cultural barriers may inhibit access to necessary services	• Increased diversity and greater exposure to alternate culture, values, and ways of thinking
High rates of Kinship Care providers	• Financial and physical strain placed disproportionately on the elderly	• Short term improved social development of children and improved health of caregivers • Children stay out of the foster care system

Table 46. Environmental Forces of Change Identified

Forces	Threats Posed	Opportunities Created
Increased walkability	• Risk for violence and injuries	• Weight loss and improved health
Bed bugs and lice are common	• Missed work and school • Significant investment of time and money needed for treating and re-treating	• Need for improved prevention education • Assistance with treatment
Climate change	• Significant changes in temperature affect the global health and safety of people, animals, and the environment	• Need for innovative policies, programs, technologies, etc. to mitigate effects
Catastrophic illness and disease risk	• Increased translocation of disease due to global travel	• Research and development for prevention and treatment • Improved focus on disaster response training and preparedness
Harmful Algal Blooms increasing across the state	• Allergic reactions and physical discomfort • Toxic to animals	• Increased monitoring and reduction efforts • Awareness and avoidance education

Potential for drinking water contaminated with lead	• Lead exposure may occur in homes built before the 1930s	• Increased awareness of available testing and home improvement recommendations
Increase in number of facilities with hazardous materials and types of materials	• Danger to people, animals, and the environment	• Increased communication and transparency between facilities and governing agencies • Improved emergency preparedness
Aging infrastructure	• Health and safety of the public • Significant investment needed for maintenance, repairs, new projects, etc.	• Improved quality of life through new developments and renovations • Local job opportunities

Table 47. Economic Forces of Change Identified

Forces	Threats Posed	Opportunities Created
Shift from indoor to outdoor malls	• Decreased social interaction	• Declining businesses can remain/improve by adjusting the way retail is offered • Increased time spent outdoors
Health care system expansions	• Smaller practices/systems may not be competitive	• Improved access to medical care • Increased resources, job opportunities, and "medical tourism" for the area
Persistent pockets of poverty	• Unequal access to health care and opportunities for healthy lifestyle behaviors • Increased substance abuse	• Need for poverty alleviation services
New $38 Million Spooky Nook sports complex	• Significant initial capital required • Surrounding infrastructure may be unable to accommodate increased traffic	• Local job opportunities • Upgrades to surrounding infrastructure and new business opportunities
Lack of trained local workforce available	• Limits new businesses	• Need for local training programs
Forgoing marriage to maintain government aid	• Decreased earned income tax credit after marriage • Eligibility for various types of aid changes with marriage	• Changes needed to current laws and programs

Table 48. Legal Forces of Change Identified		
Forces	**Threats Posed**	**Opportunities Created**
Harsher penalties for heroin dealers and traffickers	• Strength of deterrent may vary	• Reduction in heroin dealers and traffickers • Decreased availability and use of heroin
Drug use by youth shown to peak in the 8th grade	• Impaired adolescent development • Risk for violence and injuries	• Increase parental involvement and disapproval can reduce drug use in youth • Awareness and avoidance education
Reduction in drug-related crimes from felonies to misdemeanors	• May inadvertently increase drug use	• Improved job, housing, financial, etc. opportunities for those with convictions • Reduced stigma related to criminal background
Increased rates of drug-related theft	• Risk for violence and injuries • Security of belongings	• Increased access to services that address addiction and mental health issues needed

Table 49. Political Forces of Change Identified		
Forces	**Threats Posed**	**Opportunities Created**
New U.S. President	• Changes to current laws, programs, and services	• New laws, programs, and services
Possible repeal of the Affordable Care Act	• Changes to existing health insurance coverage • Changes to existing eligibility criteria	• New services and opportunities may be created

Table 50. Technological Forces of Change Identified		
Forces	**Threats Posed**	**Opportunities Created**
Telemedicine	• Requires specialized technical training and equipment • Altered physical assessment abilities	• Increase convenience and access to health care • Overall health care cost savings
Butler Tech available to train local work force	• Investment of time and resources needed	• Training to meet demand of local job opportunities

Table 51. Scientific Forces of Change Identified		
Forces	**Threats Posed**	**Opportunities Created**
Genetic testing to guide Medication Assisted Treatment for alcohol and opiate addiction	• Other treatment options may be overlooked	• Improved addiction treatment and recovery
New Proton Therapy Center for cancer care	• Other treatment options may be overlooked	• Decreased damage to non-cancerous tissue through new approach to focused radiation • Reduction in long-term side effects

Table 52. Ethical Forces of Change Identified		
Forces	**Threats Posed**	**Opportunities Created**
Emerging genomic medicine	• Ethics of genetic testing questionable when treatment is not available or accessible • Mismanagement of personal genetic information without professional assistance	• Improved potential for more effective treatment options • Increased collaboration between health providers and individuals is needed

Discussion

The Advisory Committee identified 35 unique and timely forces which have the ability to affect the LPHS and the overall health of the community. During the brainstorming session, relevant trends, factors, and events were shared, and the threats and opportunities of each were discussed. The most concerning threat posed by the identified forces was an increased risk of morbidity or mortality, which was a concern related to 16 of the identified forces. The most frequently acknowledged opportunities created by the identified forces included the creation of local jobs, community health education and promotion opportunities, and increased partnerships and collaboration to achieve shared community goals.

Phase IV. Identify Strategic Issues

The fourth phase of the MAPP process, and the final phase addressed by this report, was the identification of strategic issues. The goal of this phase was to identify strategic issues by exploring the convergence of the results of the four MAPP assessments, and determine how those issues affect the achievement of the shared vision. In order to achieve a connected and healthy Butler County, one in which all members are connected to both physical resources and to each other with the opportunity to lead a healthy lifestyle and meet their full potential, 12 issues need to be addressed.

The Advisory Committee met on May 11, 2017 at the Butler County Government Services Center to review and analyze the findings from the four assessments, and identify the issues that impact the health of the community. A total of 20 Advisory Committee members were present and participated in the identification of strategic issues. Committee members were instructed to consider factors of prevalence, seriousness, impact on other health issues, urgency, prevention, economics, acceptability, and available resources. Following a review and discussion of the findings of the four assessments, Committee members identified the following 12 issues, listed here in alphabetical order:

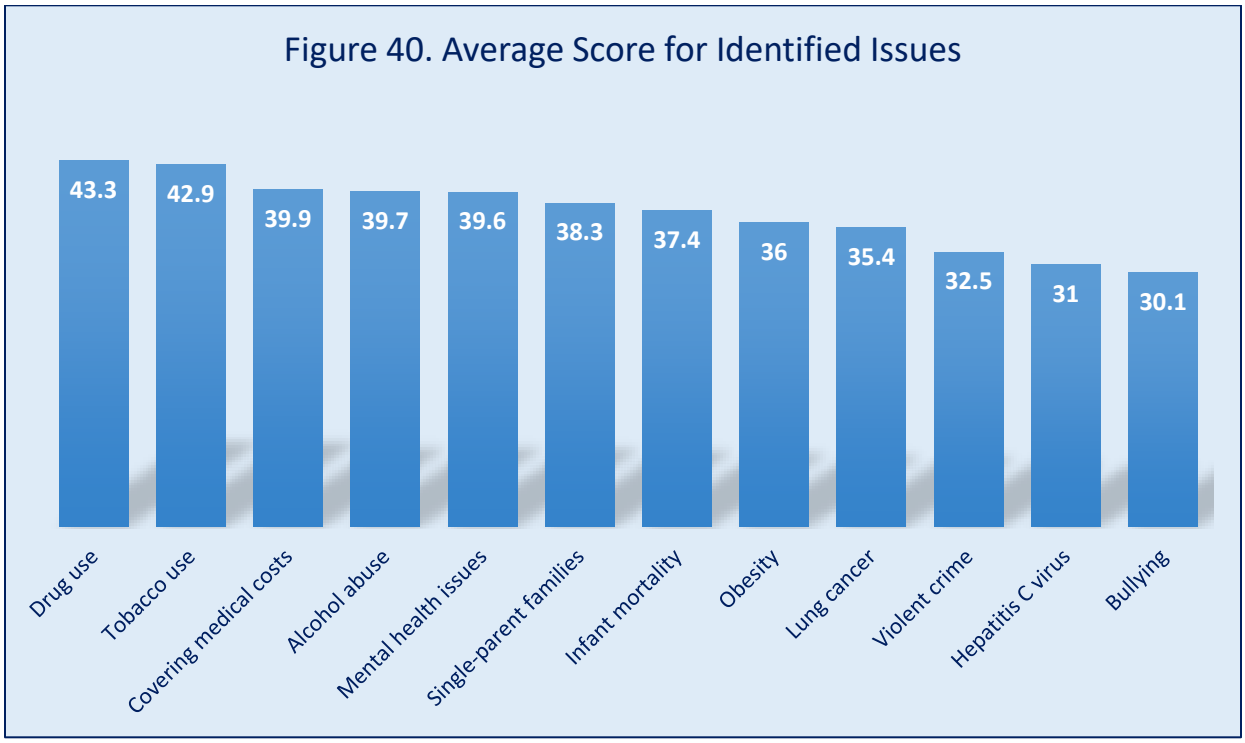
- Alcohol abuse
- Bullying
- Covering the cost of medical care
- Drug use
- Hepatitis C virus
- Infant mortality
- Lung cancer
- Mental health issues
- Obesity
- Single-parent families
- Tobacco use
- Violent crime

The Advisory Committee met again on July 13, 2017 in order to systematically prioritize the 12 identified issues. A total of 11 Advisory Committee members were present for the prioritization process, with an additional three members who participated electronically. Prior to the meeting, Committee members were given a detailed explanation of the method to determine prioritization, and a summary of findings related to each issue. A Prioritization Matrix was chosen as the tool to determine the priority ranking, due to the ability to consider each issue against multiple criteria with varying levels of priority.[89] The four criteria chosen were size of the population affected, severity of the health issue, ability to evaluate outcomes, and the current community capacity to address the health issue (Table 53). To address the varying degrees of importance of each criteria, a weight was assigned. Size of the population was weighted the most, by a factor of four, severity of the issue was weighted by a factor of three, ability to evaluate outcomes by a factor of two, and current community capacity by a factor of one.

Table 53. Evaluative Criteria for Prioritizing Issues	
1. Size of the population affected: Assess what percent of the community is affected by the identified issue, based on the Butler County 2016 population estimate of 377,537 residents. 5 = ≥ 25% of population is affected (≥94,384) 4 = 10%-24.9% (37,753-94,383) 3 = 1%-9.9% (3,775-37,752) 2 = 0.1%-0.9% (377-3,774) 1 = 0.01%-0.09% (37-376)	**2. Severity of the health issue identified:** Degree to which the issue causes long-term illness, produces an above average mortality rate, an above average hospitalization rate, or public health implications. 5 = Very serious - direct connection to long-term illness and/or other co-morbidity, high mortality, great impact on others 4 = Serious - indirect link to serious conditions, some deaths, some impact on others 3 = Somewhat serious - can become widespread if not addressed 2 = Not very serious - may cause illness, but no long-term or widespread impact 1 = Not a serious health issue
3. Ability to evaluate outcomes: Assess availability of data, benchmarks, tracking of trends, service counts, etc. to determine ability to evaluate outcomes. 5 = Excellent ability - baseline data available for several years to establish trends 4 = Good ability - baseline available with some on-going evaluations 3 = Some ability - some data available 2 = Little ability - mostly qualitative, primarily perceptions, or anecdotal information 1 = No ability to evaluate	**4. Current community capacity to address the health issue:** The presence of facilities, organizations, agencies, groups, associations, etc. that address the identified health need. 5 = Not currently addressed 4 = Need is addressed by efforts outside of the community 3 = A few independent efforts currently address the need 2 = Community efforts address the need but are mostly uncoordinated 1 = Community has a well-coordinated approach in place

Committee members discussed the identified issues in alphabetical order, and individually scored each issue on a scale of one to five based on the criteria. The raw scores were then weighted and added to calculate a raw total score for each issue. Based on the weighting, each issue could receive a total score between 10 and 50. The weighted total scores for each issue were analyzed to calculate a total score on each issue from the Committee, as well as an average score for each issue. Based on the weighted and averaged scores, the issues were prioritized on a scale of importance from one to twelve, with one being the highest priority (Table 54 and Figure 40).

Table 54. Average Score for Identified Issues	
Drug use	43.3
Tobacco use	42.9
Covering the cost of medical care	39.9
Alcohol abuse	39.7
Mental health issues	39.6
Single-parent families	38.3
Infant mortality	37.4
Obesity	36.0
Lung cancer	35.4
Violent crime	32.5
Hepatitis C virus	31.0
Bullying	30.1



The identified issues are consistent with the three priority topic areas established for the 2017-2019 Ohio state health improvement plan (Table 55).[90]

Table 55. Prioritized Issues in Butler County by ODH Priority Topic Areas

Ohio 2017-2019 Priority Topics		
Mental health and addiction	Chronic disease	Maternal and infant health
Butler County 2017 Priority Issues		
Drug use	Access to care	Access to care
Tobacco use	Obesity	Single-parent families
Access to care	Lung cancer	Infant mortality
Alcohol abuse	Hepatitis C virus	
Mental health issues		
Violent crime		
Bullying		

Conclusion

Clearly, the strategic issues identified represent the prominent cross-cutting findings that need to be addressed to reach the community's vision for a connected and healthy Butler County. Utilizing the Mobilizing for Action through Planning and Partnerships model, representatives from diverse sectors of the community met regularly to guide the community through the process of assessment. The CHA involved organizing and developing community partnerships, discovering the shared community vision and common values, conducting four separate comprehensive assessments, and concluded with the identification of strategic issues. This community health assessment provides valuable information on issues and assets within the community, and provides the data needed to inform the community health improvement plan, the next step in the journey to improved health for Butler County.

Terminology

Age-adjusted mortality rate: A type of mortality rate that has been statistically modified to eliminate the effect of different age distributions among different populations.

Community: A group of people who have common characteristics. Communities can be defined by location, race, ethnicity, age, occupation, interest in particular problems or outcomes, or other similar common bonds.

Community Health Assessment (CHA): A systematic examination of the health status indicators for a given population that is used to identify key problems and assets in a community. The ultimate goal is to develop strategies to address the community's health needs and identified issues, and the essential components are community engagement and collaborative participation.

Community Health Improvement Plan (CHIP): A long-term, systematic effort to address public health problems on the basis of the results of CHA activities and the community health improvement process. A CHIP is critical for developing policies and defining actions to target efforts that promote health.

Demographics: The characteristics of a person or group. Demographic information is used to characterize individuals or populations.

Event: A one-time occurrence.

Factor: A discrete element.

Health disparity: Differences in health conditions and health status between populations, occurring more often among populations that are marginalized due to gender, race/ethnicity, age, socioeconomic status, geographic location, etc.

Health equity: The absence of differences in health that are caused by social and economic factors.

Health indicator: A variety of measures that indicate the state of health of a population.

Incidence: A measure of the frequency of new cases of illness, injury, or other health conditions within a population during a specified period.

Incidence rate: A measure of the frequency within which new cases of illness, injury, or other health conditions occur, expressed explicitly per a time frame, usually per 100,000 population.

Mean: Average.

Median: The middle value in a list of numbers.

Morbidity: Any departure from a state of physiological or psychological well-being, encompassing disease, injury, and disability.

Mortality: Death.

Mortality rate: A measure of the frequency of occurrence of death among a defined population during a specified time period, usually per 100,000 population.

Population: The total number of inhabitants of a geographic area, or the total number of individuals in a particular group.

Prevalence: The number or proportion of cases, events, or attributes among a specified population.

Quality of life: A multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life. Overall quality of life is affected by multiple domains, such as health, jobs, housing, schools, neighborhood, culture, values, and spirituality.

Rate: An expression of the relative frequency with which an event occurs among a defined population per unit of time, calculated as the number of new cases or deaths during a specified period per the population and/or the time period in which the population was at risk.

Risk factor: An aspect of personal behavior or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or health condition.

Social determinants: The social, economic, and physical conditions in the environment in which people are born, live, learn, play, work, and age. Social determinants influence the health of people and communities, and affect a wide range of health, functional, and quality-of-life outcomes and risks.

Trend: A movement or change in frequency over time, usually upward or downward.

Appendices

Appendix A

Butler County Community Health Survey 2017

	Very Unhealthy	Unhealthy	Somewhat Healthy	Healthy	Very Healthy
1. How would you rate the health of your community?	❍	❍	❍	❍	❍
2. How would you rate your physical health?	❍	❍	❍	❍	❍
3. How would you rate your mental/emotional health?	❍	❍	❍	❍	❍

Considering your community, please indicate your level of agreement with the following statements:

	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
4. I am satisfied with the quality of life in my community (consider your safety and well-being).	❍	❍	❍	❍	❍
5. The community has adequate health and wellness activities and opportunities.	❍	❍	❍	❍	❍
6. I am satisfied with the health care system available.	❍	❍	❍	❍	❍
7. I have access to medical specialists if needed.	❍	❍	❍	❍	❍
8. Overall, I am very satisfied with the medical care that I receive.	❍	❍	❍	❍	❍
9. It is not a problem for me to cover my share of the cost for a medical care visit.	❍	❍	❍	❍	❍
10. I know that I am able to get medical care whenever I need it.	❍	❍	❍	❍	❍
11. I am satisfied with the mental health care available.	❍	❍	❍	❍	❍
12. I am satisfied with the substance abuse and addiction treatment services available.	❍	❍	❍	❍	❍
13. This community is a good place to raise children (consider school quality, day care, recreation).	❍	❍	❍	❍	❍
14. This community is a good place to grow old (consider transportation options, meal assistance, home care, support agencies).	❍	❍	❍	❍	❍
15. There are jobs available in the community (consider locally owned and operated businesses, jobs with career growth, reasonable commute).	❍	❍	❍	❍	❍
16. This community is a safe place to live (consider safety in your neighborhood, workplace, schools, playgrounds, parks, shopping areas).	❍	❍	❍	❍	❍
17. Neighbors know and trust one another and look out for one another in my community.	❍	❍	❍	❍	❍
18. There are support networks for individuals and families (neighbors, support groups, faith community, outreach, agencies and organizations) during times of stress and need.	❍	❍	❍	❍	❍
19. I believe that I can make the community a better place, working individually and with others.	❍	❍	❍	❍	❍

20. From the following list, what do you think are the **three** most important factors for a healthy community?

❍ Good place to raise children	❍ Friendships with neighbors	❍ Low crime/safe neighborhoods
❍ Strong economy	❍ Low rates of child abuse	❍ Public transportation
❍ Good schools	❍ Healthy behaviors/lifestyles	❍ Access to health care
❍ Low death and disease rates	❍ Community involvement	❍ Clean environment
❍ Affordable housing	❍ Religious or spiritual values	❍ Arts and cultural events
❍ Tolerance for diversity	❍ Recreational/exercise opportunities	❍ Meaningful employment
❍ Well maintained infrastructure	❍ Access to fresh produce	

❍ Other: _____

21. How much of a **problem** are these in your community?

	Not a problem	Somewhat a problem	Becoming more of a problem	A serious problem	Unsure
a. Drug sales and/or use	❍	❍	❍	❍	❍
b. Alcohol abuse	❍	❍	❍	❍	❍
c. Tobacco use	❍	❍	❍	❍	❍
d. Crimes by adults (other than drug sales/use)	❍	❍	❍	❍	❍
e. Crimes by teens (other than drug sales/use)	❍	❍	❍	❍	❍
f. Domestic violence	❍	❍	❍	❍	❍
g. Guns or firearms	❍	❍	❍	❍	❍
h. Child abuse and neglect	❍	❍	❍	❍	❍
i. Reckless driving	❍	❍	❍	❍	❍
j. Obesity	❍	❍	❍	❍	❍
k. Homelessness	❍	❍	❍	❍	❍
l. Hunger	❍	❍	❍	❍	❍
m. Underage drinking	❍	❍	❍	❍	❍
n. Sexual activity of teens	❍	❍	❍	❍	❍
o. Teen pregnancy	❍	❍	❍	❍	❍
p. Bullying	❍	❍	❍	❍	❍
q. Lack of safe places for youth to play	❍	❍	❍	❍	❍
r. School dropouts	❍	❍	❍	❍	❍
s. Mental health issues	❍	❍	❍	❍	❍
t. Infectious diseases	❍	❍	❍	❍	❍
u. Unemployment	❍	❍	❍	❍	❍
v. One-parent families	❍	❍	❍	❍	❍
w. Racism and intolerance	❍	❍	❍	❍	❍
x. Vacant buildings	❍	❍	❍	❍	❍
y. Access to transportation	❍	❍	❍	❍	❍
z. Elderly remaining safely in their own homes	❍	❍	❍	❍	❍

22. In response to the problems listed above, what types of interventions would **you** volunteer to help with?

❍ Mentoring ❍ Emergency assistance ❍ Neighborhood watch ❍ Community gardens
❍ Peer support groups ❍ Neighborhood clean-up ❍ Health fairs ❍ Presenting to groups
❍ Other: _____

23. Approximately how many hours per month do you volunteer your time?

❍ None ❍ 1-5 hours ❍ 6-10 hours ❍ More than 10 hours

24. "I would spend more time participating in community activities if…" (Check all that apply)

❍ My employer supported it ❍ Transportation was provided ❍ I had more free time available
❍ I knew what the needs were ❍ I received tangible goods ❍ I saw the benefits of it
❍ My friends or family were ❍ My faith community supported it ❍ Child care was available
❍ Somebody I trust asked me to ❍ I knew how I could help ❍ My health was better
❍ Other: _____

Please provide the following information so that we can understand how different types of people feel about health issues. It will be used for demographic purposes only. Keep in mind you will NOT be identified in any way with your answers.

25. Zip Code: | | | | | |

26. Elementary School District: _____
(Please identify the district that you reside in, if known)

27. Age:
☐ 18-25 years
☐ 26-39 years
☐ 40-54 years
☐ 55-64 years
☐ 65-80 years
☐ Over 80 years

28. Marital Status:
☐ Married
☐ Divorced
☐ Never married
☐ Separated
☐ Widowed
☐ Other: _____

29. Gender:
☐ Male
☐ Female

30. Are you Hispanic or Latino?
☐ Yes
☐ No

31. Which one of these groups would you say best represents your race?

☐ White ☐ Black or African American
☐ Asian ☐ Native Hawaiian or Pacific Islander
☐ American Indian ☐ Other: _____

32. What is your household income?
☐ Less than $20,000 ☐ $20,000 to $29,000
☐ $30,000 to $49,000 ☐ $50,000 to $74,000
☐ $75,000 to $99,000 ☐ More than $100,000

33. Size of household?
☐ 1 ☐ 2 ☐ 3
☐ 4 ☐ 5 ☐ 6
☐ 7 ☐ 8 ☐ 9 or more

34. What is your highest level of education achieved?

☐ Some high school ☐ High school diploma ☐ Technical training

☐ Some college ☐ College degree or higher

☐ Other: _____

35. How do you pay for your health care? (Check all that apply)

☐ Cash ☐ Private Health Insurance (through employer or exchange)

☐ Medicaid ☐ Medicare

☐ Veterans Administration ☐ Indian Health Services

☐ Other: _____

Thank you very much for your response! Please return your completed survey as directed.
If you would like more information, please contact us at: Butler County Health Department, 301 S. 3rd St., Hamilton, OH 45011
(513) 863-1770, www.butlercountyohio.org/health

Appendix B

Community Themes and Strengths Assessment: Focus Group Questions

Today we are talking about your community, and your ideas about the strengths and needs of your community. We will take about 30 minutes to discuss a handful of questions. Everyone's opinion is very important, so please talk openly and feel free to respond to each other and give your opinion even if it differs from your neighbor. To respect your time, I may need to interrupt you to move on to the next question, but this does not mean that I do not think what you are saying is important.

Let's take a minute to introduce ourselves before we get started. Please tell everyone your name, where you live and how long you have lived there.

1. First, I would like to start by getting an idea of how you would describe your community. If you were talking with a friend or family member who had never been here, how would you describe your community to them? (Probes: what does it look like; get an idea of physical boundaries-definition of community; what is different about here compared to other places; what types of things are available here; what activities do you do here)

2. What are the most important factors for a healthy community? (Examples: low crime, strong economy, good schools, community involvement, clean, affordable housing, transportation, etc.)

3. What do you view as the strengths of your community?

4. What are some of the things that you see as lacking in your community? (Probe: what are the greatest needs in your family or your friends' families, what are your biggest concerns?)

    a) Which of these needs would you say is the most important? Remember it is okay if people have different opinions. (Explore why most important and rank order other needs)

5. How is the quality of life in your community? (CDC defines QOL as a perception of physical and mental health over time)

6. Where do you go for health care? (Probes: explore perceptions of health care services; barriers/facilitators)

Thank you for taking the time to talk with me today. What you have shared will help us work together to understand more about the strengths and needs of the community. We will use your responses as part of our comprehensive community health assessment, which will be used to guide a community health improvement plan and ultimately improve the health of our community.

Appendix C

Table 56. Butler County Community Health Survey 2017 Population Profile				
	Hamilton City	Middletown City	Butler County (outside cities)	TOTAL*
Age (N*=1,378)				
18-25	64 (10.3%)	16 (6.0%)	29 (6.2%)	113 (8.2%)
26-39	220 (35.4%)	80 (30.1%)	171 (36.3%)	479 (34.8%)
40-54	196 (31.6%)	70 (26.3%)	132 (28.0%)	399 (29.0%)
55-64	104 (16.8%)	39 (14.7%)	87 (18.5%)	235 (17.1%)
65-80	35 (5.6%)	52 (19.6%)	46 (9.8%)	135 (9.8%)
80+	2 (0.3%)	9 (3.4%)	6 (1.3%)	17 (1.2%)
Sex (N=1,345)				
Male	130 (21.8%)	61 (23.2%)	87 (18.7%)	283 (21.0%)
Female	467 (78.2%)	202 (76.8%)	378 (81.3%)	1,062 (79.0%)
Race (N=1,280)				
Non-Hispanic Black	46 (8.2%)	45 (18.3%)	42 (9.3%)	136 (10.6%)
Non-Hispanic White	431 (76.6%)	180 (73.2%)	349 (77.0%)	971 (75.9%)
Hispanic	66 (11.7%)	7 (2.9%)	33 (7.3%)	109 (8.5%)
Other	20 (3.6%)	14 (5.7%)	29 (6.4%)	64 (5.0%)
Income (N=1,325)				
< $20,000	152 (25.7%)	52 (20.6%)	79 (17.2%)	295 (22.3%)
$20,000-$29,000	45 (7.6%)	25 (9.9%)	57 (12.4%)	129 (9.7%)
$30,000-$49,000	93 (15.7%)	49 (19.4%)	63 (13.7%)	208 (15.7%)
$50,000-$74,000	88 (14.9%)	37 (14.6%)	69 (15.0%)	196 (14.8%)
$75,000-$99,000	87 (14.7%)	32 (12.7%)	83 (18.0%)	203 (15.3%)
$100,000 +	126 (21.3%)	58 (22.9%)	109 (23.7%)	294 (22.2%)
Education (N=1,381)				
Some HS	57 (9.3%)	13 (4.9%)	29 (6.1%)	104 (7.5%)
HS Diploma	130 (21.1%)	47 (17.7%)	68 (14.3%)	251 (18.2%)
Technical Training	26 (4.2%)	17 (6.4%)	17 (3.6%)	62 (4.5%)
Some College	125 (20.3%)	58 (21.8%)	68 (14.3%)	255 (18.5%)
College Degree or higher	277 (45.0%)	131 (49.3%)	294 (61.8%)	709 (51.3%)
Health Insurance Status (N=1,403)**				
Cash	115 (18.2%)	33 (12.4%)	71 (14.8%)	223 (15.9%)
Private Health Insurance	389 (61.7%)	167 (62.8%)	310 (64.6%)	873 (62.4%)
Medicaid	161 (25.5%)	51 (19.2%)	114 (23.8%)	334 (23.8%)
Medicare	63 (10.0%)	70 (26.3%)	57 (11.9%)	200 (14.3%)
Veteran's Administration	9 (1.4%)	4 (1.5%)	3 (0.6%)	16 (1.1%)
*N reported among demographics is the total number of survey responses for which an answer was reported. None of the demographic variables had a 100% response rate.				
**The number/percent of respondents who reported paying for their healthcare using the specified method. Percent is calculated among individuals who reported any method. Multiple methods may be specified and therefore totals/percent will exceed total N who reported a method/100%.				

Table 57. Health Rating by Demographic Factors			
	Overall (Community)	Physical (Personal)	Mental/Emotional (Personal)
OVERALL	3.10 (3.06-3.14)	3.65 (3.61-3.69)	3.92 (3.88-3.96)
Residence			
Butler County	3.39 (3.32-3.47)	3.68 (3.60-3.75)	4.00 (3.93-4.06)
Hamilton City	3.00 (2.93-3.06)	3.65 (3.59-3.71)	3.90 (3.83-3.97)
Middletown City	2.95 (2.84-3.06)	3.66 (3.57-3.75)	3.94 (3.85-4.04)
Age			
18-25	3.35 (3.17-3.53)	3.79 (3.65-3.93)	3.95 (3.80-4.09)
26-39	3.14 (3.05-3.22)	3.63 (3.56-3.70)	3.88 (3.81-3.96)
40-64	3.05 (2.99-3.11)	3.61 (3.55-3.68)	3.94 (3.87-4.00)
65 +	3.20 (3.07-3.33)	3.83 (3.71-3.95)	4.12 (4.00-4.24)
Sex			
Male	3.18 (3.08-3.28)	3.68 (3.58-3.77)	3.97 (3.87-4.07)
Female	3.10 (3.05-3.15)	3.66 (3.61-3.70)	3.94 (3.89-3.99)
Income			
< $20,000	3.25 (3.14-3.36)	3.52 (3.42-3.62)	3.69 (3.58-3.80)
$20,000-$29,000	3.35 (3.20-3.51)	3.68 (3.53-3.83)	3.96 (3.81-4.11)
$30,000-$49,000	3.08 (2.96-3.20)	3.62 (3.51-3.72)	3.94 (3.83-4.04)
$50,000-$74,000	2.97 (2.85-3.09)	3.60 (3.50-3.71)	3.93 (3.82-4.04)
$75,000-$99,000	3.00 (2.89-3.10)	3.76 (3.66-3.87)	3.96 (3.85-4.07)
$100,000 +	3.10 (3.01-3.19)	3.75 (3.66-3.83)	4.11 (4.04-4.19)
Education			
Some HS	3.39 (3.21-3.56)	3.52 (3.35-3.70)	3.79 (3.62-3.96)
HS Diploma or Technical Training	3.14 (3.04-3.25)	3.60 (3.51-3.69)	3.92 (3.83-4.01)
Some College	3.12 (3.02-3.23)	3.61 (3.51-3.70)	3.85 (3.74-3.95)
College Degree or higher	3.07 (3.01-3.13)	3.72 (3.67-3.78)	4.00 (3.94-4.06)
Health Insurance Status			
Cash	3.29 (3.18-3.40)	3.57 (3.46-3.67)	3.88 (3.76-3.99)
Private Health Insurance	3.01 (2.96-3.07)	3.69 (3.64-3.74)	3.99 (3.94-4.04)
Medicaid	3.32 (3.22-3.42)	3.50 (3.40-3.60)	3.75 (3.65-3.85)
Medicare	3.15 (3.03-3.27)	3.69 (3.57-3.81)	3.91 (3.79-4.04)
*N values reflect the highest number of responses for which population in the demographic category answered any of the three questions presented.			

Table 58. Community Assessment Questions by Geographic Residence				
	Hamilton City	Middletown City	Butler County (outside cities)	TOTAL
Q4 – Quality of Life	3.56 (3.49,3.63)	3.38 (3.25,3.51)	3.92 (3.85,3.99)	3.64 (3.59,3.69)
Q5 – Health Opportunity	3.40 (3.33,3.48)	3.31 (3.19,3.43)	3.71 (3.63,3.79)	3.48 (3.44,3.53)
Q6 – Health Care System	3.42 (3.34,3.50)	3.57 (3.44,3.70)	3.67 (3.58,3.75)	3.52 (3.47,3.57)
Q7 – Specialist Access	3.95 (3.89,4.02)	4.10 (4.01,4.20)	4.11 (4.05,4.17)	4.03 (3.99,4.07)
Q8 – Medical Care	3.84 (3.77,3.91)	4.01 (3.91,4.10)	4.04 (3.98,4.11)	3.94 (3.89,3.98)
Q9 – Medical Costs	3.17 (3.07,3.26)	3.43 (3.29,3.58)	3.33 (3.23,3.44)	3.26 (3.20,3.32)

Q10 – Medical Care Avail.	3.85 (3.78,3.92)	3.98 (3.88,4.09)	3.97 (3.90,4.05)	3.90 (3.86,3.95)
Q11 – Mental Care Avail.	3.35 (3.27,3.42)	3.33 (3.21,3.46)	3.39 (3.30,3.48)	3.35 (3.30,3.40)
Q12 – Drug Tx Avail.	3.01 (2.93,3.09)	2.79 (2.67,2.92)	3.06 (2.97,3.14)	2.98 (2.93,3.04)
Q13 – Raise Children	3.56 (3.48,3.63)	3.33 (3.20,3.47)	4.05 (3.98,4.13)	3.68 (3.63,3.73)
Q14 – Grow Old	3.33 (3.26,3.41)	3.27 (3.15,3.39)	3.67 (3.59,3.74)	3.43 (3.38,3.48)
Q15 – Jobs Avail.	3.44 (3.36,3.51)	3.15 (3.03,3.28)	3.63 (3.55,3.71)	3.44 (3.39,3.49)
Q16 – Safe Place	3.47 (3.39,3.55)	3.27 (3.14,3.40)	3.98 (3.91,4.06)	3.60 (3.55,3.65)
Q17 – Neighbor Trust	3.38 (3.30,3.46)	3.38 (3.26,3.51)	3.73 (3.64,3.81)	3.50 (3.45,3.55)
Q18 – Support Networks	3.45 (3.38,3.52)	3.42 (3.31,3.53)	3.70 (3.62,3.77)	3.53 (3.48,3.57)
Q19 – Better Place	3.94 (3.89,4.00)	3.82 (3.72,3.92)	4.01 (3.95,4.08)	3.94 (3.90,3.97)

Table 59. Three Most Important Factors for a Healthy Community, by Demographic Factors

	#1 Most Important Factor	#2 Most Important Factor	#3 Most Important Factor
OVERALL	Low crime / Safe neighborhood (N=761)	Good schools (N=583)	Good place to raise children (N=464)
Residence			
Butler County	Low crime (N=247)	Good schools (N=217)	Raise children (N=171)
Hamilton City	Low crime (N=331)	Good schools (N=230)	Raise children (N=185)
Middletown City	Low crime (N=145)	Good schools (N=107)	Raise children (N=83)
Age			
18-25	Low crime (N=51)	Raise children (N=40)	Good schools (N=32)
26-39	Low crime (N=250)	Good schools (N=202)	Raise children (N=186)
40-64	Low crime (N=347)	Good schools (N=255)	Raise children (N=173)
65 +	Low crime (N=66)	Good schools (N=63)	Raise children (N=41)
Sex			
Male	Low crime (N=134)	Good schools (N=107)	Strong economy (N=83)
Female	Low crime (N=575)	Good schools (N=431)	Raise children (N=355)
Income			
< $20,000	Low crime (N=113)	Good schools (N=107)	Raise children (N=101)
$20,000-$29,000	Low crime (N=59)	Raise children (N=55)	Good schools (N=52)
$30,000-$49,000	Low crime (N=125)	Good schools (N=88)	Raise children (N=74)
$50,000-$74,000	Low crime (N=100)	Good schools (N=77)	Raise children (N=52)
$75,000-$99,000	Low crime (N=115)	Good schools (N=71)	Raise children (N=65)
$100,000 +	Low crime (N=174)	Good schools (N=136)	Raise children (N=83)
Education			
Some HS	Raise children (N=43)	Good schools (N=39)	Low crime (N=37)
HS Diploma or Technical Training	Low crime (N=157)	Good schools (N=116)	Raise children (N=110)
Some College	Low crime (N=142)	Good schools (N=101)	Raise children (N=95)
College Degree or higher	Low crime (N=380)	Good schools (N=300)	Raise children (N=191)

Health Insurance Status			
Cash	Low crime (N=104)	Good schools (N=88)	Raise children (N=51)
Private Health Insurance	Low crime (N=503)	Good schools (N=357)	Raise children (N=261)
Medicaid	Low crime (N=145)	Raise children (N=136)	Good schools (N=133)
Medicare	Good schools (N=83)	Low crime (N=80)	Raise children (N=55)

Table 60. Problem Rating of Issues by Geographic Residence				
	Hamilton City	Middletown City	Butler County (outside cities)	TOTAL
Q21a – Drugs	3.09 (3.01,3.17)	3.24 (3.11,3.37)	2.72 (2.62,2.83)	3.00 (2.95,3.06)
Q21b – Alcohol	2.67 (2.58,2.76)	2.82 (2.68,2.97)	2.45 (2.33,2.56)	2.63 (2.57,2.69)
Q21c – Tobacco	2.61 (2.51,2.71)	2.69 (2.54,2.85)	2.17 (2.06,2.27)	2.48 (2.42,2.55)
Q21d – Crime (adult)	2.62 (2.54,2.71)	2.73 (2.60,2.87)	2.15 (2.05,2.25)	2.50 (2.44,2.56)
Q21e – Crime (teen)	2.58 (2.50,2.67)	2.72 (2.59,2.85)	2.23 (2.14,2.33)	2.50 (2.45,2.56)
Q21f – Domestic Violence	2.47 (2.37,2.56)	2.52 (2.37,2.66)	2.17 (2.05,2.28)	2.38 (2.31,2.44)
Q21g – Guns	2.31 (2.21,2.41)	2.55 (2.40,2.70)	1.99 (1.87,2.10)	2.26 (2.19,2.32)
Q21h – Child Abuse	2.70 (2.60,2.80)	2.69 (2.55,2.83)	2.19 (2.07,2.30)	2.52 (2.46,2.59)
Q21i – Reckless Driving	2.47 (2.38,2.55)	2.48 (2.35,2.60)	2.25 (2.15,2.35)	2.39 (2.34,2.45)
Q21j – Obesity	2.95 (2.87,3.04)	2.97 (2.84,3.10)	2.74 (2.64,2.84)	2.89 (2.83,2.94)
Q21k – Homelessness	2.67 (2.59,2.76)	2.63 (2.50,2.77)	2.09 (1.99,2.20)	2.47 (2.41,2.53)
Q21l – Hunger	2.60 (2.51,2.69)	2.68 (2.55,2.82)	2.19 (2.09,2.30)	2.47 (2.41,2.53)
Q21m – Underage Drinking	2.58 (2.48,2.68)	2.68 (2.54,2.82)	2.54 (2.43,2.66)	2.58 (2.52,2.65)
Q21n – Teen Sexual Activity	2.65 (2.55,2.76)	2.75 (2.62,2.89)	2.43 (2.31,2.55)	2.60 (2.54,2.67)
Q21o – Teen Pregnancy	2.61 (2.51,2.71)	2.65 (2.50,2.80)	2.25 (2.13,2.36)	2.50 (2.43,2.57)
Q21p – Bullying	2.88 (2.78,2.97)	2.84 (2.71,2.97)	2.72 (2.61,2.82)	2.81 (2.75,2.87)
Q21q – Safe Youth Play	2.46 (2.37,2.56)	2.45 (2.31,2.59)	1.95 (1.84,2.05)	2.28 (2.22,2.35)
Q21r – School dropouts	2.50 (2.39,2.60)	2.50 (2.35,2.66)	1.92 (1.80,2.03)	2.30 (2.23,2.37)
Q21s – Mental Health	2.85 (2.76,2.94)	2.83 (2.69,2.97)	2.57 (2.45,2.68)	2.75 (2.68,2.81)
Q21t – Infectious Disease	2.22 (2.11,2.32)	2.26 (2.11,2.41)	1.95 (1.83,2.06)	2.14 (2.07,2.21)
Q21u – Unemployment	2.57 (2.49,2.66)	2.80 (2.66,2.93)	2.26 (2.16,2.37)	2.52 (2.46,2.58)
Q21v – Single-parent Families	2.76 (2.66,2.86)	2.94 (2.79,3.09)	2.44 (2.33,2.56)	2.70 (2.63,2.76)
Q21w – Racism/Intolerance	2.59 (2.50,2.68)	2.67 (2.53,2.80)	2.31 (2.21,2.41)	2.50 (2.43,2.56)
Q21x – Vacant Buildings	2.55 (2.46,2.65)	2.72 (2.57,2.87)	1.83 (1.73,1.93)	2.34 (2.28,2.41)
Q21y – Transportation Access	2.54 (2.44,2.64)	2.08 (1.94,2.22)	2.23 (2.12,2.34)	2.34 (2.28,2.41)
Q21z – Elderly Safety	2.35 (2.26,2.45)	2.39 (2.25,2.53)	2.00 (1.90,2.10)	2.24 (2.18,2.30)

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