Health Equity Report 2018

Montgomery County Health Department

Public Health
Prevent. Promote. Protect.
Montgomery County
Health Department

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Health Equity in Montgomery County

Introduction

Use of this report

The information provided in this report is intended for use by the media; our general public; local policymakers; and program managers to address disparities and help all persons in Montgomery County live longer, healthier, and more productive lives. The information on disparities can be used to help select interventions for specific demographics or populations and support local and regional community actions to address disparities.

Criteria for Topic Selection

The selection of topics for this report was based on the Social Determinants of Health. The primary concern was that data be as current and relevant as possible and from quality sources for developing comparable estimates to state and national data. In addition, the topics should be known determinants of health (e.g., social, demographic, and environmental) where disparities have been identified. See Exploring the Social Determinants of Health on the next page for a deeper explanation of these factors.

Analysis

Data can have quite different meanings and uses and without analysis cannot tell a story on its own. The comparative analyses of the available quantitative data in this report are descriptive and caution should be used in comparing these findings to other reports with different analytical approaches. When data were available and suitable for analysis, disparities were examined for characteristics that included race and ethnicity, sex, age, household income, educational attainment, and geographic location. Readers will find some similarities and differences in definitions included within the report, therefore we recommend using the glossary provided to ensure a full understanding of the terminology included in the report. Health department staff and Public Health interns participated in identifying standardized and appropriate definitions.

Limitations

Sample sizes for locally collected data through surveys are considered statistically significant however, the findings in this report are subject to at least three limitations. First, all local data was self-reported and therefore subject to self selection or no-response bias. Second, the limited response by racial/ethnic groups might not reflect the true needs of the wider population again creating a bias in those demographics. Third, as a rural community lack of zip code data hinders the ability to identify pockets of need or associate a burden in a specific area based on other demographic features such as age, gender, etc. Improvements in these areas in future surveys will be made a priority for future reporting.

Health Equity in Montgomery County

Exploring the Social Determinants of Health

There are many factors that influence our overall health. “Good health” is much more than the absence of disease or illness. Rather, health is a holistic measure of physical, emotional, and social well-being. A state of health equity is achieved when every member of a community has an equal opportunity to reach their full potential in terms of health regardless of social position or other demographic factors.

We strive towards a state of health equity, but in reality a person’s social position and other demographic factors play a large role in determining the opportunities that person has to improve his or her overall health. Non-medical factors including (but not limited to) economic stability, education level, and built environment affect rates of mortality, morbidity of chronic conditions, and access to care. We call these non-medical factors the social determinants of health.

The purpose of this document is to explore the relationship between the social determinants of health and various health outcomes within the community. By discovering disparities in health between social demographics (uneven health outcomes due to non-medical factors), the Montgomery County Health Department is able to identify opportunities for programs that reach the people who need them most.

In 2010, the national Office of Disease Prevention and Health Promotion (ODPHP) released its Healthy People 2020 plan. The Healthy People plan outlines a set of health equity-related goals for communities to reach by the year 2020. Throughout the report we will be using Healthy People 2020 as well as state and national averages as reference points for comparison.

No community exists in a state of perfect health equity; every community can still improve and grow closer to reaching that ideal. Small changes that help ease the disparities between socioeconomic groups can lead to large improvements in overall community health that ripple out to benefit the community as a whole.

County Demographic Breakdown

In public health we know that certain populations and demographic groups suffer from illnesses or morbidities at rates disproportionately larger than the general population. Certain groups have disproportionately poor access to affordable care, including a lack of insurance or the means to afford insurance or care, as well as poor access to providers (e.g. no local hospital) or transportation. These populations also experience disparities in treatment, quality of care and outcomes. In order to understand the specific needs of your community you must first know "who" they are and this is done through demographic information collection by way of public surveys and patient information.

Age and Sex[1]	2014	2017(V)
Persons Under 5 Years	**6.3%**	**6.1%**
Persons Under 18 Years	**23.3%**	**23.1%**
Persons 65 Years and Older	**16.6%**	**17.5%**
Female Persons	**49.6%**	**49.4%**

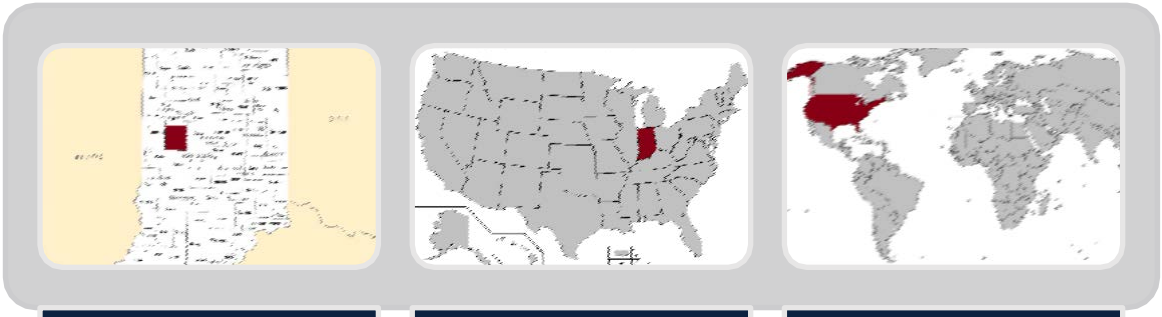
Race and Hispanic Origin[1]	2014	2017
White Alone	**96.6%**	**96.3%**
Black or African American Alone	**1.0%**	**1.1%**
American Indian and Alaska Native Alone	**0.4%**	**0.4%**
Asian Alone	**0.6%**	**0.8%**
Native Hawaiian/Pacific Islander Alone	**0.0%**	**0.0%**
Two or More Races	**1.3%**	**1.3%**
Hispanic or Latino	**4.5%**	**4.9%**
White Alone, not Hispanic or Latino	**92.5%**	**91.8%**

Population Characteristics[1]	2014	2017
Veterans (Estimated)	**2,840**	**2,322**
Foreign Born Persons	**2.8%**	**3.0%**
Language other than English Spoken at Home	**5.2%**	**4.9%**

Child Population (2016)[2]	Total	Percent
White	**7,715**	**88.6%**
Black	**170**	**2.0%**
American Indian	**23**	**0.3%**
Asian	**65**	**0.7%**
Hispanic, of any Race	**731**	**8.4%**
Total	**8,704**	

Economic Stability

Economic stability is classified as a state of steady employment, food security, and freedom from poverty. The lack of resources stemming from economic instability can impact health by restricting a family's access to healthcare, healthy foods, and safe/sanitary living conditions. The stress from economic stability can also directly impact health by increasing risk for chronic disease and stress- related mental disorders such as anxiety and depression.



Montgomery County

Median Household Income[1]: **$50,253**

Per Capita Income: **$24,095**

Persons in Poverty: **11.3%**

Children in Poverty[2]: **16.2%**

Indiana

Median Household Income: **$50,433**

Per Capita Income: **$26,117**

Persons in Poverty: **14.1%**

Children in Poverty: **19.1%**

United States of America

Median Household Income: **$55,322**

Per Capita Income: **$29,829**

Persons in Poverty: **12.7%**

Children in Poverty: **19.0%**

EMPLOYMENT

Employment Status	Depression	Anxiety	Hypertension	Diabetes
Employed Full Time (MC)[3]	18.6%	19.9%	25.5%	5.2%
Employed Part Time (MC)	24.3%	28.3%	24.9%	8.1%
Unemployed (MC)	44.7%	37.4%	32.5%	13.0%
Indiana (Average)[4]	15.9%	NA	32.4%	11.5%
US (Average)	17.4%	NA	30.9%	10.5%
HP 2020[5]	5.8%	NA	26.9%	NA

Table 1-1 Chronic disease prevalence among several demographics compared to the HP2020 goal. Survey responses to the 2015 CHNA were separated by income. Prevalence of each condition within each group was then determined.

The data in Table 1-1 comes from the Montgomery County 2015 Community Health Needs Assessment. Rates of depression, anxiety, hypertension, and diabetes were higher among unemployed survey respondents than survey respondents who were employed full or part time. Unemployment is frequently a cause of chronic stress; chronic stress can result in overproduction of stress hormones like cortisol. Elevated cortisol levels and similar imbalances weaken the immune system, affect appetite and sleep schedules (increasing risk of conditions like high blood pressure and type II diabetes), and have been linked to increased rates of depression[6]. While unemployment certainly isn't the only cause of high stress, data shows that this demographic feels a disproportionate level of chronic disease burden in the community.

FOOD INSECURITY

	2013		2014		2015		2016		2017	
	MC	IN	MC	IN	MC	IN	MC	IN	MC	IN
Free Lunch	39.1%	40.9%	38.4%	41.2%	39.9%	41.2%	40.4%	41.0%	39.2%	39.5%
RPL	7.8%	8.1%	8.8%	7.9%	8.7%	7.9%	7.5%	7.2%	8.1%	7.7%
Food Insecure Children	24.6%	21.8%	22.8%	21.2%	19.9%	19.1%	17.7%	17.7%	N.A.	N.A.

Table 1-2 Food insecure children and children receiving free or reduced price lunches in Montgomery County (MC) and Indiana (IN) between the years 2013 and 2017. Source: KidsCount Data Book[2]

	Montgomery County	Indiana
Limited Access to Healthy Foods	7%	7%
Food Insecurity	13.0%	14%
Food Environment Index	7.9	7.0

Table 1-3 Various measures of food insecurity in Montgomery County and Indiana. Source: County Health Rankings[7]

Access to healthy foods is another factor of economic stability that has an effect on community health. Food insecurity has been linked to increased rates of hypertension, hyperlipidemia, and diabetes[8]. Paradoxically, food insecurity and obesity are positively correlated[9]. Table 1-2 contains rates of children receiving free lunches or reduced price lunches (RPLs) at school, along with the estimates for food insecurity among children in both Montgomery County in Indiana. Over the years, Montgomery County's rates of childhood food insecurity have been consistent with Indiana's overall rate. While no detectable trend exists in the numbers of children receiving free or reduced price lunches, rates of food insecurity among children have been declining overall since 2013.

Indiana and Montgomery County also have similar rates of healthy food access and food insecurity overall. The Food Environment Index, provided by County Health Rankings, is a measure between 0 and 10 (0 being the best, 10 being the worst) of food availability in an area based on average income and proximity to grocery stores (Table 1-3). It should be noted that in this statistic "near a grocery store" is defined as within one mile for non-rural areas but defined as within ten miles for a rural area like Montgomery County. With that in mind, levels of food insecurity in Montgomery County are likely underreported by this figure considering the transportation difficulties posed by a ten-mile distance versus a one-mile distance[7].

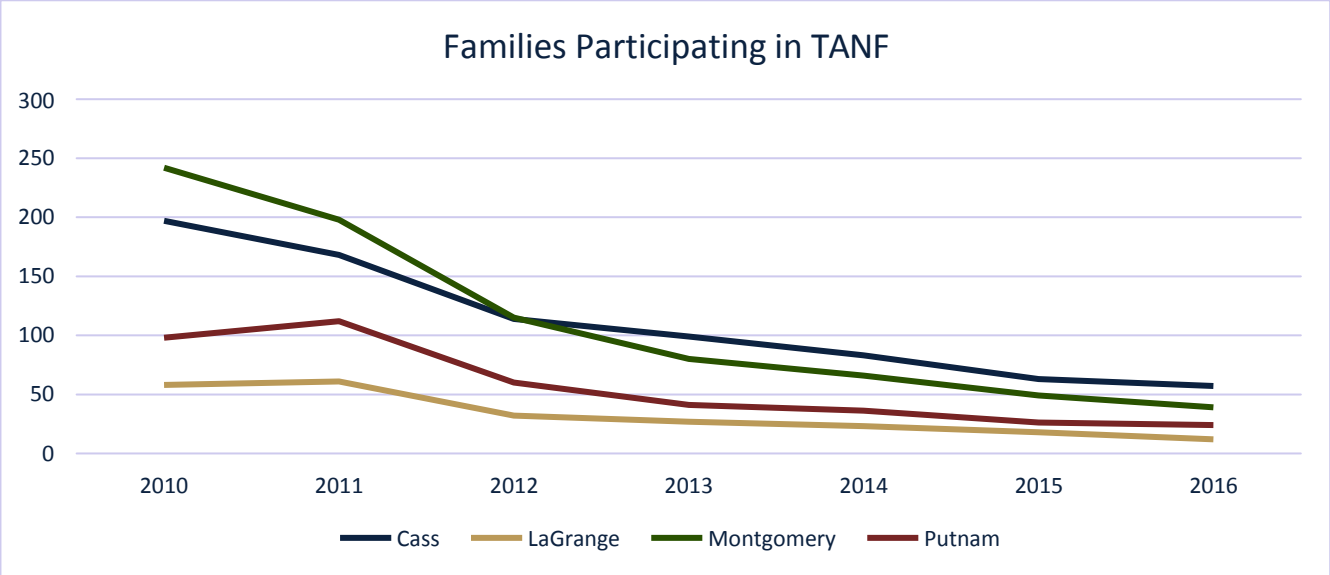
HOUSING INSTABILITY

	Montgomery County	Indiana
Owner-Occupied Housing Unit Rate[1]	71.4%	68.7%
Median Value of Owner-Occupied Housing Units	$111,600	$126,500
Median Selected Monthly Owner Costs (with Mortgage)	$984	$1,097
Median Selected Monthly Owner Costs (without Mortgage)	$333	$380
Median Gross Rent	$647	$758
Living in Same House as 1 Year Ago	82.4%	84.9%
Housing Unstable Students[2]	1.2%	1.0%

Table 1-4 Comparative housing data from Montgomery County

Housing instability covers a broad spectrum of issues including (but not limited to) overcrowding, inability to pay rent, unfit living conditions, and relying on friends or relatives for housing. Housing instability can be a cause of chronic stress as well as an impediment to establishing long-term primary care. Individuals living in stable, affordable housing are more likely to seek medical care as well as follow through with their treatment plans[10]. Additionally, increased rates of intimate partner violence and sexual violence have been associated with unstable housing conditions[11]. Overall, housing in Montgomery County is slightly more affordable than the Indiana average and the owner-occupied housing rate is slightly higher (Table 1-4). While housing instability is often associated with urban areas, the problem still exists in Montgomery County and those who are housing unstable in the county are very vulnerable to adverse health outcomes.

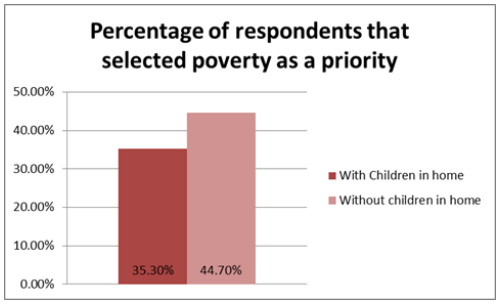
POVERTY

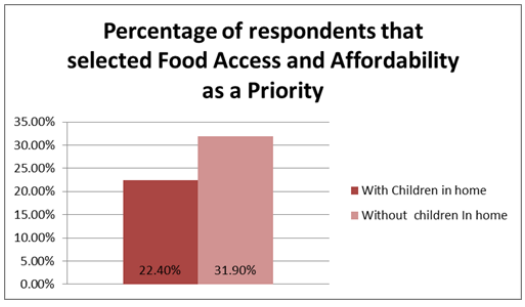


	Population (2017)[1]	Median Household Income	Persons in Poverty	Children in Poverty[2]
LaGrange County	39,303	$53,947	10.0%	13.6%
Montgomery County	38,525	$50,253	11.3%	16.2%
Cass County	37,994	$43,918	12.5%	18.9%
Putnam County	37,702	$52,465	12.6%	16.1%

Figure 1 TANF (Temporary Assistance for Needy Families) participation and economic data for Montgomery County and comparable Indiana counties. Source: KidsCount Data Book.

Poverty affects health in a manner very similar to income instability. While Montgomery County has a lower median household income and lower per capita income than the state as a whole, it also has slightly lower rates of poverty[1,2]. Figure 1 shows the numbers of families participating in TANF (Temporary Assistance for Needy Families) between the years 2010 and 2016 in Montgomery County as well as several economically comparable counties. As the economy recovers from the 2008 recession, TANF participation has declined across the board.





Education

There is a strong positive correlation between education level and health outcomes in a community. In many cases level of education is linked to income and employment, which play a large role in determining the resources that are available to an individual. Additionally, education level has an intergenerational effect on health. In many cases the education level of the parents (particularly the mother) is useful in assessing health risks of the child.

ENROLLMENT IN HIGHER EDUCATION

	Montgomery County	Indiana
High School Graduates	88.5%	88.1%
Bachelor's Degree or Higher	16.8%	24.6%

Table 2-1 Higher Education in Montgomery County. Source: US Census Population Estimates Program (2017)

	Visited a Dentist	Teeth Cleaning	Flu Shot	BP Check	Cholesterol Check	Skin Cancer Test	Blood Sugar Check	Routine Checkup
College Degree	95.6%	94.9%	84.4%	98.8%	90.4%	49.7%	79.7%	96.1%
No College Degree	86.2%	82.0%	74.4	96.3%	86.7%	42.6%	76.2%	90.6%

Table 2-2 Preventive health behaviors among those with and without college degrees in Montgomery County. Source: 2015 Montgomery County Community Health Needs Assessment.

Research has shown that individuals with a higher level of education generally experience better health outcomes[12]. Education can affect health both directly and indirectly. People who are more educated generally have a higher level of health literacy, making them more aware of common health risks, preventive health behaviors, and infrastructure of the healthcare system. As a result, individuals with a higher level of education are more likely to seek out primary care. Data from the 2015 Community Health Needs Assessment indicate that community members with college degrees are more likely than those without to access preventive healthcare services across the board, with the largest disparities occurring in dental health and annual flu vaccinations (Table 2-2). Additionally, individuals with a higher level of education are more likely to maintain a healthy diet and less likely to engage in risky health behaviors such as smoking and binge drinking. Indirectly, higher education levels are associated with higher income levels and employment stability (see Economic Stability, page 4).

Montgomery County High School Graduation Rates						
Year	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Crawfordsville Community Schools	96.7%	94.7%	98.7%	96.7%	96.6%	96.1%
North Montgomery Community Schools	98.2%	96.9%	96.1%	99.3%	96.4%	98.1%
South Montgomery Community Schools	95.7%	97.3%	98.3%	97.4%	98.0%	96.1%
Indiana	88.7%	88.6%	90.0%	88.9%	89.1%	87.2%

HIGH SCHOOL GRADUATION

Table 2-3 Graduation rates for Montgomery County Public Schools. Source: Indiana Department of Education[13]

A community's high school graduation rate is a strong indicator of the future, both economically and with respect to health. High school graduation is so closely linked to community health that some circles consider high school dropout rate an issue of public health[14](CDC). Fortunately, all three public school systems in Montgomery County have high school graduation rates that are well above the state average (Table 2-3).

LANGUAGE & LITERACY

	2016-2017 ISTEP+ Passing				**2015-2016 ECA Passing**	
	4th Grade Math	**4th Grade ELA**	**8th Grade Math**	**8th Grade ELA**	**Algebra I**	**English 10**
Crawfordsville Community Schools	62.4%	64.1%	57.7%	60.5%	66.1%	74.9%
North Montgomery Community Schools	63.1%	57.4%	45.6%	50%	61.5%	86.4%
South Montgomery Community Schools	81%	81.8%	69%	68.8%	70.9%	76.5%
Indiana	61.9%	65.9%	55.1%	61.8%	68.8%	78%

Table 2-4 Standardized test scores for Montgomery County Public Schools. Source: Indiana Department of Education

Literacy is gaining more attention as a determinant of health due to its observed role as a mediator between education level and health outcomes[15]. The Healthy People 2020 initiative has listed increasing the proportion of parents who read to their young child as a national public health goal[16]. Literacy is essential in comprehending health information and low levels of literacy can create a barrier in understanding and lead to reduced treatment compliance. Reduced reading

comprehension can lead to improper dosing and misinterpretation of warning labels[17]. ISTEP+ scores between the three school districts in the county range from well above the state average to well below, making it difficult to draw specific conclusions regarding relative levels of literacy in the community. However, programs to improve literacy in the community generally have a positive effect on community health regardless of baseline community literacy level.

EARLY CHILDHOOD EDUCATION & DEVELOPMENT

	2012	2013	2014	2015	2016
Children Served By First Steps	106	105	128	111	100
Children Enrolled in Special Education	962	983	1,041	1,138	1,181
Licensed Child Care Slots Per 100 Children (ages 0-5)	11.7	11.6	6.4	6.6	5.1
Children Receiving CCDF Vouchers	179	152	152	99	108
Children on Waitlist for CCDF Vouchers	22	28	11	26	6

Table 2-5 Early Childhood Education and Childcare in Montgomery County. Source: KidsCount Data Book

Developmental delays stemming from the social determinants of health can appear by three years of age[18]. However, enrollment in early childhood education can help reduce the disparities seen between demographics of preschool-age children. While most children benefit from early childhood education, research has shown that children from low-income families and minority groups benefit the most[19]. The Child Care Development Fund (CCDF) is a federal program that offers vouchers to low income families in need of childcare. First Steps is a government program through the Division of Disability and Rehabilitative Services of the Indiana Family and Social Services Administration. The organization provides a broad range of nonmedical services to children ages 0-3 who display developmental delays in one or more areas. After a child's third birthday, responsibility shifts to the local school system's early childhood special education services program[20]. The data also suggests a shortage of childcare options in the community. Nearly 20% (19.31%) of survey respondents with children ages 0-5 indicated that childcare was a personal need on the 2015 Community Health Needs Assessment. However, between 2012 and 2016 the number of licensed childcare slots per 100 children decreased by over 50% (Table 2-5).

Social & Community Context

Social and community context is the sum of social settings in which community members interact. This includes degree of civic participation (voting, volunteering, etc.), prevalence of community membership organizations (e.g. churches), incarceration rates, discrimination, and general levels of community trust. Individuals with extensive social support generally experience better health outcomes, therefore a positive social and community context is beneficial to community health as a whole.

INCARCERATION

Department of Corrections Admissions in Montgomery County (Adults)					
Year	**2012**	**2013**	**2014**	**2015**	**2016**
Male	92	77	103	99	52
Female	24	42	26	32	14
Total	116	119	129	131	66

Department of Corrections Admissions in Montgomery County (Youth)					
Year	**2012**	**2013**	**2014**	**2015**	**2016**
Male	7	6	5	10	7
Female	1	4	0	1	1
Total	8	10	5	11	8

Table 3-2 Number of new incarcerations in Montgomery County by year. Source: Indiana Department of Corrections[23].

The United States has the highest incarceration rate in the world. While incarceration certainly affects the health of individuals in prison, attention has recently been turned to the impact of mass incarceration on community health. Having an incarcerated parent decreases the amount of social support available to a child, which can have lasting effects on overall health. Children with parents in prison are more likely to have behavioral problems and struggle with mental health beginning early in their childhood. Additionally, there is a higher rate of substance abuse during adolescence and young adulthood among children of incarcerated individuals. Women with partners in prison consistently report higher levels of stress and experience higher rates of cardiovascular disease[24]. Incarceration of a relative also exacerbates the financial hardships experienced by a family (see Economic Stability, pg. 4). On a community level increased levels of incarceration are associated with higher levels of chronic disease, STIs, and suicide. While it is difficult to distinguish what is causative and what is correlative between incarceration rate and health outcomes, the association between the two is well-documented.

SOCIAL COHESION

Social Cohesion in Montgomery County			
	Montgomery County	**Indiana**	**National 90th Percentile**
Social Association[7]	13.3	12.3	22.1
Secular Social Association	4.7	4.5	NA
Disconnected Youth[2]	19%	14%	10%

Table 3-3 Comparative social cohesion in Montgomery County.

Social cohesion refers to the degree of connectedness within a given community. Individuals living in socially cohesive communities experience greater levels of social support and generally experience better health outcomes. Research has shown that individuals with large support networks generally live healthier lifestyles, report fewer mental health problems, and are more likely to comply with treatment. A large social support network can even counteract setbacks in other social determinants of health such as low income or education level[25].

Social Association, a metric provided by County Health Rankings, measures the number of membership associations and social organizations per 10,000 population in a county. Higher numbers indicate more opportunities for inclusion and involvement in a community. Montgomery County's value for Social Association is slightly higher than Indiana as a whole, but it is interesting to note that Montgomery County's value drops by almost two thirds when religious organizations are excluded from the metric (Table 3-3). Thus, there are significantly fewer social opportunities available to nonreligious members of the community.

Disconnected youth are individuals between the ages of 16 and 24 who are neither employed nor in school[7]. Disconnected youth are more likely to engage in criminal activity as well as high risk behaviors such as smoking and excessive drinking[26,27]. Youth who are disconnected for multiple years generally struggle more economically, educationally, and socially when they enter adulthood. As a result, preventing disconnectedness among youth in the community is a significant public health concern. Currently, levels of disconnectedness among youth are higher in Montgomery County than in Indiana overall (Table 3-3).

CIVIC PARTICIPATION

"Civic participation" or civic engagement refers to any actions taken by an individual or group of individuals in a community to address a public concern. This could include voting, running for public office, serving on local committees, volunteering, amongst many other ways of getting involved. Communities with higher levels of civic participation are generally more efficient in creating positive change[21]. Civic participation is a solid indicator of the economic and social well-being of a community, and as we have shown these factors strongly influence community health. Individuals who exhibit high degrees of civic participation are also less

likely to feel isolated or helpless in their community, and thus civic engagement and mental health are generally positively correlated. Civic participation improves health by helping to build social capital; in turn this social capital fosters social trust and helps to facilitate community coordination and collaboration. While we have voter data reported by the state of Indiana and includes Montgomery County. At this time we do not have enough local data broken down into demographics in order to adequately assess civic participation in Montgomery County. Nationally, the importance of civic participation in a healthy community is well-documented and will be .

VOTER TURNOUT DATA	Registered Voters	Voters Voting	Turn Out Percentage	Election Day Voting	Absentee Voting	Absentee Percentage
2018 Primary Data - No City Elections						
Montgomery	22,910	5,130	22%	3,382	1,748	34%
State	4,425,250	870,336	20%	696,850	173,486	20%
2018 General Election - Unofficial						
Montgomery	23,177	12,700	55%	6,213	6,487	51%
*State	4,535,765					
2016 Primary Data - City Elections/Presidential						
Montgomery	23,624	10,074	43%	6,777	3,297	33%
State	4,715,292	1,771,753	38%	1,489,365	282,288	16%
2016 General Election						
Montgomery	24,363	15,471	64%	5,020	10,451	68%
State	4,829,243	22,807,676	58%	1,873,281	934,403	33%
2014 Primary Data - No City Election						
Montgomery	22,844	5,261	23%	4,703	558	11%
State	4,571,744	617,156	13%	518,168	98,969	16%
2014 General Election - No City Election						
Montgomery	22,941	8,850	39%	7,829	1,021	12%
State	4,593,222	1,388,965	30%	1,163,054	228,932	16%

Table 3-4 State of Indiana Voter Registration and turnout. Source: https://www.in.gov/sos/elections/2983.htm.[49]

In the review of voter turnout data, statistically Montgomery County voters are more active than their state resident counterparts. It also shows that voters are more active in General Elections where city offices are being contested, primarily the Mayoral elections. Vote centers introduced in 2016 seem to have assisted in voter turnout due to the ease and expansion of access for voters.

DISCRIMINATION

Attitudes Regarding Recovery in Montgomery County	
Addiction is a Treatable Disease	69.66%
Would Hire Someone Who Had Completed Treatment	87.45%
Would Be Uncomfortable with Transitional Housing in Their Neighborhood	42.37%
Stigma is a Major Roadblock to Recovery	36.08%

Table 3-5 Attitudes regarding addiction and recovery in Montgomery County. Source: Montgomery County 2017 Community Attitudes and Awareness Survey[28].

With the ongoing opioid crisis in the United States, the recovery community is becoming more and more prevalent in communities (particularly in rural communities like Montgomery County)[29]. As a result, community attitudes regarding addiction and recovery play a large role in overall public health. While over two thirds of survey respondents on the 2017 Community Attitudes and Awareness Survey indicated that they believe addiction is a treatable disease, residual attitudes that addiction is merely a choice or a personal weakness remain. Additionally, while almost 90% of survey respondents indicated that they would hire someone who had completed treatment; over 40% indicated they would be uncomfortable with transitional housing in their neighborhood (Table 3-4).

Despite increased awareness of the issue, stigmata surrounding drug abuse continue to affect the lives of individuals with histories of drug addiction. A history of addiction can hinder employment prospects (see Employment, pg. 4), make it difficult to find stable housing (see Housing Stability, pg. 5), and lead to feelings of isolation (see Social Cohesion, pg. 14). For more information regarding the opioid epidemic in Montgomery County, please see the Montgomery County Opioid Report (there will be a link in the future).

Residential Segregation in Montgomery County			
	Montgomery County	**Indiana**	**National 90th Percentile**
White/Black	75	69	23
White/Non-White	33	56	14

Table 3-6 Residential Segregation in Montgomery County. Source: County Health Rankings.

There is a large body of research supporting the consequences of race and ethnicity on health. Discrimination based on race and/or ethnicity can lead to chronic stress, hinder economic advancement, and social mistrust leading to adverse health outcomes[30]. Immigrant status exacerbates these effects[31]. The vast majority of Montgomery County residents are white (>96%), which makes obtaining data regarding racial health disparities in the county difficult. However, the Hispanic community within the county is growing; preliminary data suggests that this group (the immigrant population in particular) faces significant disparities in health.

Health & Health Care

Accessible and affordable health care for all community members is essential in the pursuit of health equity. Individuals who cannot afford health care or cannot access healthcare due to transportation issues, physician shortages, etc. generally experience more adverse health outcomes than individuals who receive regular medical care. Often these health outcomes are both costly and avoidable, like complications from advanced diabetes or unchecked depression.

ACCESS TO HEALTH CARE

	Montgomery County	Indiana	HP2020
Persons Under 65 Without Health Insurance[1]	10.7%	9.4%	0%
Children Under 19 Without Health Insurance[2]	7.3%	5.8%	0%

Table 4-1 Comparative insurance information for Indiana and Montgomery County.

The Affordable Care Act, colloquially known as "Obamacare," was signed into law in April of 201032. The bill aimed to provide insurance to all U.S. citizens by expanding Medicaid and reforming the individual health insurance marketplace. The Medicaid expansion was state-by-state, with Indiana opting to expand. While both Montgomery County and Indiana are still shy of Healthy People 2020's goal of insurance for everyone, insurance coverage has expanded greatly over the past decade. In Montgomery County, percentage of uninsured children (all income levels) has fallen from 10.5% in 2008 to 7.3% in 2018. The percentage of uninsured children (200% below the poverty line or greater) has fallen from 16.6% in 2008 to 9.6% in 2018[7].

ACCESS TO PRIMARY CARE

Patient to Provider Ratios in Indiana		
	Montgomery County	**Indiana**
Primary Care Physicians	2,730:1	1,500:1
Dentists	2,120:1	1,850:1
Mental Health Providers	1,060:1	700:1

Table 4-2 Comparative patient to provider ratios for Montgomery County and Indiana as a whole. Source: County Health Rankings

Persons With a Regular Primary Care Provider (County Survey Data)[3]	
Montgomery County (<$25,000/yr.)	75.1%
Montgomery County ($40,000-$60,000/yr.)	80.3%
Montgomery County (>$75,000/yr.)	87.4%

Persons With a Regular Primary Care Provider (State and National Data)	
Indiana (All Income Levels)[4]	81.7%
HP2020[5]	83.9%

Table 4-3 Primary care provider information for Montgomery County and Indiana compared to HP2020 goal.

The United States is currently facing a massive shortage of primary care physicians, and this shortage is even more pronounced in rural areas[33]. A shortage of primary care physicians not only makes it more difficult for patients to schedule an appointment and access care, but it also causes the quality of care to decline. A 2012 study in the Annals of Family Medicine concluded that a primary care team with one physician could provide sufficient care to approximately 1,950 patients maximum[34]. While the Indiana as a whole is below this number (1,500 patients per primary care physician) Montgomery County is well above this number (2,730 patients per primary care physician) (Table 4-2). It is estimated that in order to provide all recommended care (acute, chronic, and preventive) to 2,500 patients, a physician would have to work 21.7 hours per day[34]. Similarly, Montgomery County's patient to provider ratios for dentists and mental health providers are much higher than Indiana's. Until this provider shortage is addressed, healthcare accessibility will continue to be a problem regardless of affordability.

Individuals with a medical home (a regular, long-term primary care provider) generally experience better health outcomes than those without[35,36] (NIH, Xu; NIH, Shi). On the 2015 Montgomery County Community Health Needs Assessment, the percentage of individuals reporting a primary care physician varied widely with income. Only survey respondents making greater than $75,000 per year surpassed the Healthy People 2020 goal of 83.9%. Approximately three quarters (75.1%) of individuals making less than $40,000 per year in Montgomery County reported having a regular primary care physician (Table 4-3). While the physician shortage hinders primary care access in Montgomery County, this disparity based on income suggests that affordability of care still plays a major role as well.

HEALTH LITERACY

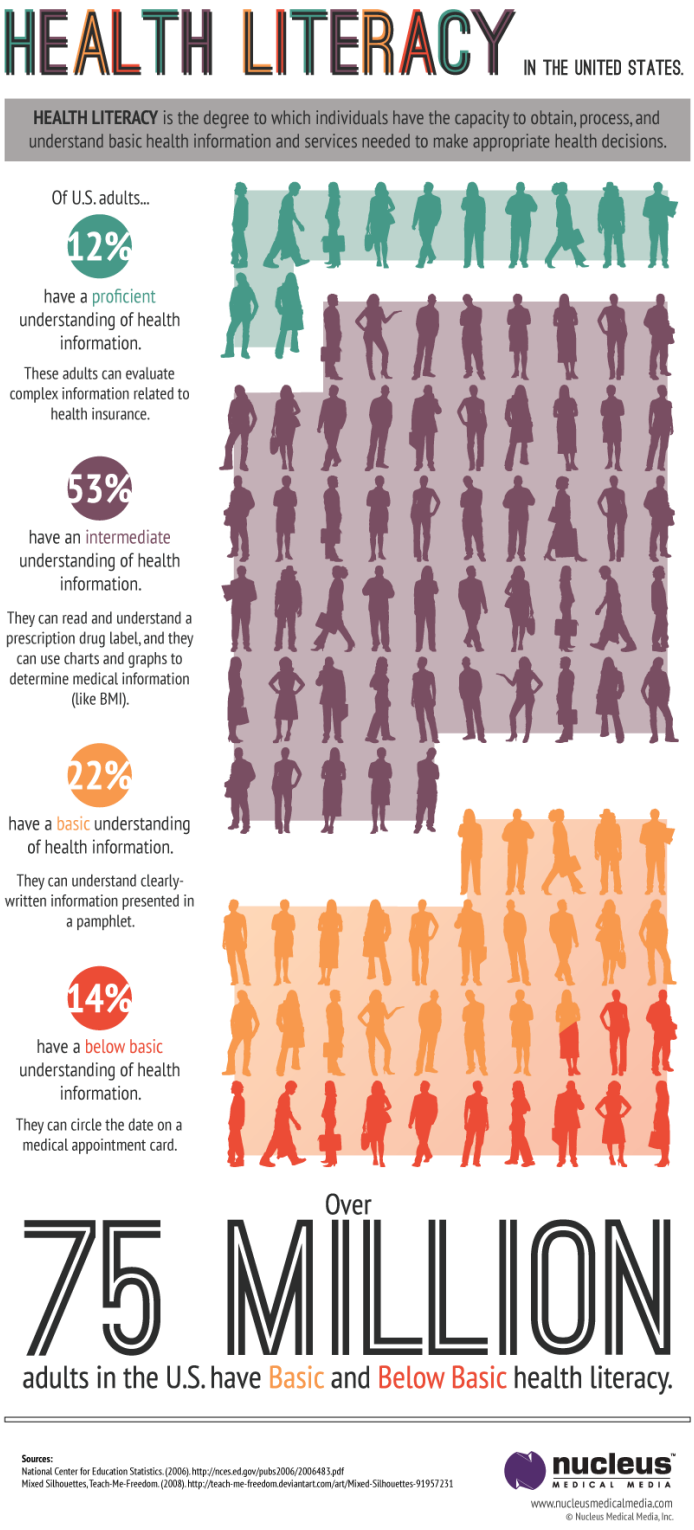
	Community Need	Personal Need
Nutrition Education For Adults	46.4%	8.2%
Nutrition Education Specific to Chronic Disease	48.4%	9.0%
Weight Management Education	49.3%	12.5%

Table 4-4 Lifestyle education needs in Montgomery County. Source: 2015 Community Health Needs Assessment.

Sources of Health Information in Montgomery County	
Family and Friends	65.1%
Internet	64.0%
Television	45.2%
Local Newspaper	33.1%
Magazines	25.4%
Health Professional	19.1%

Table 4-5 Sources of Health Information in Montgomery County. Source: 2015 Community Health Needs Assessment.

Health literacy is defined as "the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions"[37]. Health literacy is closely linked to education in the community (see Education, pg. 8). Identifying and maintaining a healthy diet, properly following treatment protocol, understanding the nature of conditions/medications/operations, and knowing where to go in case of a health concern are all affected by an individual's level of health literacy. Insufficient health literacy can lead to poor diet, decreased management of chronic disease, high-risk behaviors, and increased ER burden[38]. These issues are amplified by adverse economic conditions and low levels of education. The best way to promote health literacy is through education, but currently the county has no regular community health education programs. However, approximately half of survey respondents on the Community Health Needs Assessment indicated that nutrition and weight management education for adults was a community need (Table 4-4).



Identifying where the community goes for health information can also be a useful step in improving health literacy. "Health Professional" was the sixth most common source of health information on the Community Health Needs Assessment, behind "family and friends" as well as four different kinds of media (Table 4-5). Health literacy becomes even more important when a majority (64.0%) of the community uses the internet for health information, since health literacy is essential in identifying accurate, reliable information.

Neighborhood & Built Environment

Where social and community context describes all of the social factors that shape a community, neighborhood and built environment describes all of the physical characteristics of the environment (both man-made and natural) that shape the way community members live and interact. Local businesses, grocery stores, housing, inpatient and outpatient care facilities, gyms, liquor stores, public parks, flood plains, and nature preserves all fall under the umbrella of neighborhood and built environment. Factors in the built environment shape many of the other social determinants of health because they determine the economic, educational, social, and medical opportunities available to the community.

ACCESS TO FOODS THAT SUPPORT HEALTHY EATING PATTERNS

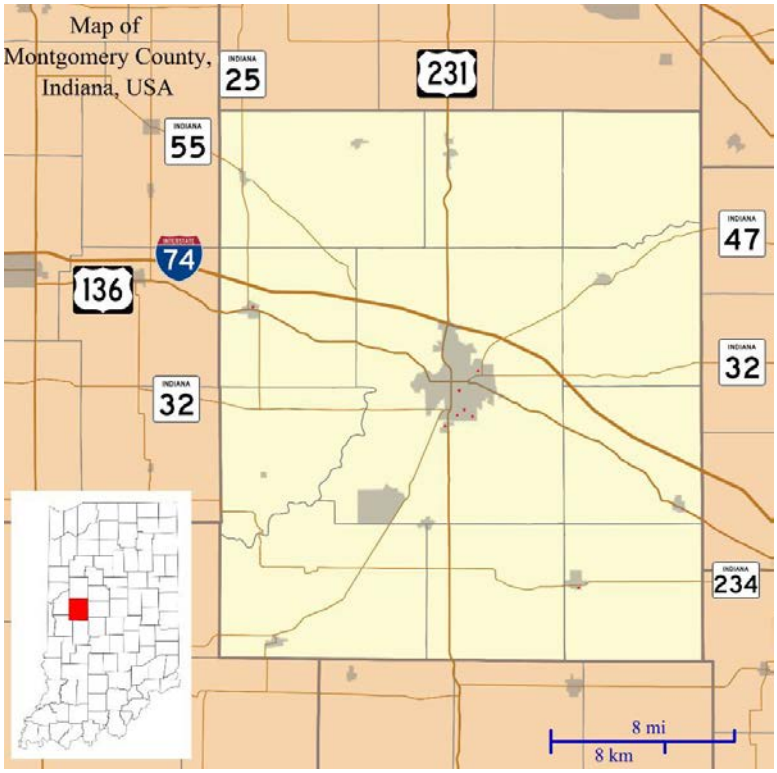


Figure2: Grocery stores that stock fresh produce in Montgomery County

Access to healthy foods is a critical part of the built environment. Figure 2 shows all of the stores that stock fresh produce in Montgomery County[39]. Six of the eight grocery stores that stock fresh produce are in Crawfordsville, within a 1.5 mile radius of one another. Ladoga and Waynetown both have their own grocery stores. Residents of Wingate, Linden, Darlington, New Ross, New Market, Alamo, or Waveland have to drive to a different town to purchase fresh produce (with the exception of seasonal farmers' markets in Darlington and Waveland). While Montgomery County as a whole is not considered a food desert (it has a better food environment index than Indiana as a whole), this is likely because the majority of the population lives in Crawfordsville near at least one of its six grocery stores. Analysis of the neighboring towns individually would most likely reveal smaller food deserts within the county. For more information on how food insecurity affects health, see "Food Insecurity," pg. 5.

NOTE: Eventually Figure 2 will be replaced by a figure generated using GIS mapping.

QUALITY OF HOUSING

Housing Incidents in Montgomery County by Year						
	2012	**2013**	**2014**	**2015**	**2016**	**2017**
Meth Labs	23	24	17	11	1	2
Housing Complaints				88	89	118
Unfit Homes					24	27

Table 5-1 Housing incidents in Montgomery County by year. Source: Montgomery County Health Department.[40]

Quality of housing can profoundly affect the health and development of a family. Housing problems such as leaky pipes, poor ventilation, and garbage buildup can lead to mold growth, structural damage, and pest infestations that pose health risks. Lack of air conditioning in the summer (especially when compounded with poor ventilation) increases risk of heat-related mortality, particularly among the elderly. In older homes, chronic exposure to lead-based paints and/or asbestos insulation can cause illness. Additionally, homes that are overcrowded report increased rates of infectious disease, respiratory infections, and psychological distress[41].

The Montgomery County Health Department began tracking housing complaints beginning in 2015 and began tracking the number of homes deemed unfit for human habitation in 2016. Although data is limited, the numbers appear to be fairly consistent from year to year. To be deemed unfit, a home must be "dangerous or detrimental to life or health" due to want of repair, infection with contagious disease, unsanitary conditions likely to cause disease, or defects in drainage, lighting, ventilation, plumbing, and/or construction[42]. The number of homes used to produce methamphetamine has decreased sharply since 2012 (Table 5-1).

Development	Section	Units
Indian Springs	515/521	22
Cloverdale Heights	8 (Project-Based)	20
Waterford Apartments	8 (Project-Based)	180
Shady Knoll	8 (Project-Based)	208
Crawfordsville Housing Authority	8 (Tenant-Based)	497

Table 5-2 Housing Assistance in Crawfordsville. Source: Telephone Call

Lack of affordable housing is detrimental to community health (Housing Instability, pg. 6). Public housing and other forms of low-income housing aim to provide affordable housing in the community, yet in many cases public housing residents have some of the worst health outcomes in the US[43]. It is unclear if there is a causative relationship between public housing and poor health, or if individuals who apply for public housing simply have poor health on average to begin with. Other research suggests that public housing functions as a safety net, providing better housing than alternative options and increasing access to social support, health care, and grocery stores[44]. Table 5-2 displays different opportunities for housing assistance available in Crawfordsville. Tenant-based Section 8 housing assistance through the Crawfordsville Housing Authority is a voucher system that allows recipients to find housing anywhere that fits into a certain income bracket. Project-based Section 8 housing is location specific. Section 515/521 housing assistance is similar to Section 8 but specific to rural areas[45,46].

In order to address substandard housing, in 2016, the Crawfordsville Common Council adopted an ordinance (Ordinance 34-2016) establishing a rental registration and inspection program. This program requires registration by all landlords and establishes equitable standards for health and safety for residential rental housing units within the city of Crawfordsville over which it has the authority to exercise enforcement.

CRIME AND VIOLENCE

	Montgomery County	Indiana	90th Percentile
Violent Crime Rate	423	356	62
Firearm Fatalities	12	13	7

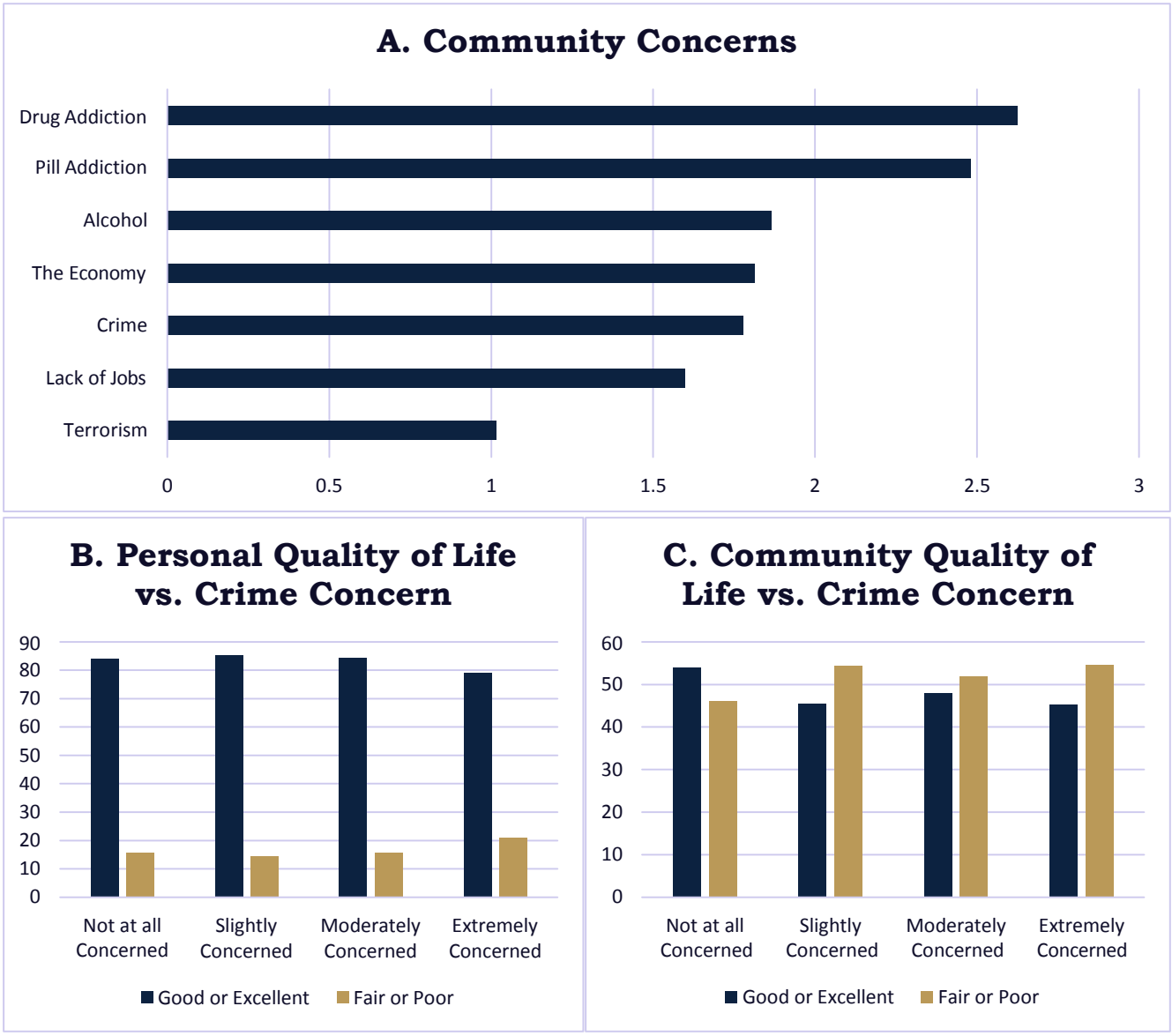


Figure 3: Attitudes towards crime in Montgomery County. Source: 2017 Community Attitudes and Awareness Survey

While the effects of mass incarceration on health have already been covered (Incarceration, pg. 13), the crime rate itself has an effect on community health. Living with chronic fear of crime has been

linked to poorer mental health, reduced levels of activity, and lower overall quality of life[47]. While Montgomery County didn't have the data to link attitudes toward crime to health outcomes, the 2017 Community Attitudes and Awareness Survey did not indicate a significant correlation between crime concern and self-reported quality of life at either a community or personal level (Fig 3B, 3C). When asked to rate their levels of concern regarding crime in the community (0 – Not at all Concerned, 3 – Extremely Concerned), survey respondents averaged a 1.77, placing the crime between concern due to lack of jobs (1.60) and the economy (1.81) (Figure 3A). Unfortunately, the county lacks data dealing with specific crime rates and locations, so it is difficult to address disparities in this area.

ENVIRONMENT

	Montgomery County	Indiana	90th Percentile
Air Pollution – Particulate Matter	10.9	11.1	6.7

In Indiana, including Montgomery County, oversight is provided by the Indiana State Department of Health (ISDH) and the Indiana Department of Environmental Management (IDEM). ISDH provides oversight and standards for on-site sewage systems and public swimming pools and beaches in order to limit exposures to harmful bacteria and contagious disease in our water. IDEM provides statewide environmental regulation oversight and technical assistance through qualified engineers, scientists and environmental project managers specializing in air, land, pollution prevention and water quality issues. These regulations are enforced at the local level by the Montgomery County Health Department. In addition to state agencies, several community organizations (e.g. Friends of Sugar Creek, NICHES Land Trust) are dedicated to keeping the environment of Montgomery County healthy and free of pollutants.

Pollution disrupts ecosystems, contaminates air and water, and hurts community health overall by increasing the rate of respiratory infections and introducing waterborne illnesses. Chronic exposure to air pollutants can increase the risk of cardio vascular disease. While a measure of air pollution (measured in micrograms of particulate matter per cubic meter) is available through the CDC's monitoring system[48], a relatively limited amount of data is available regarding the natural environment of Montgomery County.

Summary

ECONOMIC STABILITY

Unemployed individuals in Montgomery County experience significantly higher rates of chronic disease and mental illness than employed individuals. It is also generally more difficult for this demographic to receive clinical care. Thus, an employment-based health disparity is present in the county. Future steps could include making resources for individuals seeking employment more available, making healthcare more accessible, and increasing awareness of the issue in the community. With respect to the rest of Indiana, Montgomery is average in terms of housing stability and poverty.

EDUCATION

Community members with lower levels of education are generally less likely to participate in preventive health measures. Community health education could potentially ease this disparity. Affordable early childhood education is a need within the community. The health disparity due to education is closely linked to the health disparity due to economic stability.

SOCIAL & COMMUNITY CONTEXT

Montgomery County has high levels of social cohesion as a whole, but many social opportunities in the county are religious in nature. Social support (and the associated health benefits) may be significantly more limited among nonreligious members of the community. This potential disparity could be a source of future research. Montgomery County also has higher rates of disconnected youth than Indiana as a whole. This should be considered an issue of public health.

HEALTH & HEALTH CARE

Insurance rates have increased since the implementation of the Affordable Care Act but a portion of the community remains uninsured. Individuals in higher income brackets are more likely to have a medical home than individuals in lower income brackets, suggesting that affordability of healthcare is still a major issue in the community. Opportunities for community health education and more county-sponsored online resources related to health could help improve health literacy in the county and subsequently improve overall health.

NEIGHBORHOOD & BUILT ENVIRONMENT

Access to healthy foods is uneven throughout the county. Although residents of Crawfordsville have a variety of food options, choices are much more limited in the neighboring towns. Lack of transportation could potentially be a major issue with respect to food accessibility in the towns of Montgomery County. It is difficult to draw conclusions regarding crime and environmental conditions in the community without additional data.

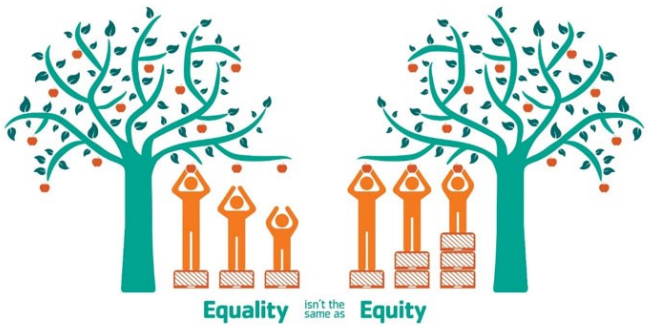
Next Steps

Health Equity for our community is a goal that can be achieved and it is well within our power to do so. It is the intention of this department to work with local agencies and community leaders to provide the knowledge and tools they need to ensure Health Equity is considered in all planning and development of community plans and programs.

Working in partnership with the Montgomery County Wellness Coalition, we will help establish Health Equity Initiatives that align with the 2016 Community Health Improvement Plan. Members of the coalition will be able to utilize this report as a baseline, and identify opportunities to integrate health equity and optimize opportunities for our community's wellness.

The Montgomery County Health Department has authored and released this report with the expressed intention of its use by the community. Over the coming months, the Montgomery County Wellness Coalition will be working on the development of personal or agency work plans. These plans are based on initiatives identified in the Strategic Doing meetings held in April 2018 workshops in alignment with CHIP objectives. These commit statements were self identified objectives for each entity that would help address the goals and objectives within the CHIP.

- Initiatives directly involving the health department staff and impacting the goals and objectives of the Community Health Improvement Plan will be tracked and reported through annually progress reporting.
- Initiatives lead by outside agencies will be followed as complimentary programming to assess their progress against these same goals and objectives.
- Continued review of data and planned focus groups on specific needs will take place over the next year in order to provide more insight on identified disparities and opportunities for improvement.
- The Montgomery County Health Department will act as a facilitator for the reviews, revisions, and publishing of subsequent Health Equity Reports.



Glossary of Terms

Affordable Care Act (ACA)
Also known as "Obamacare," the ACA was passed in April of 2010. The aim was to increase the accessibility of medical care by expanding Medicaid and reforming the insurance marketplace.

Anxiety
A nervous disorder characterized by a state of excessive uneasiness or apprehension, generally accompanied by compulsive behavior and/or panic attacks.

Built Environment
The man-made physical characteristics of a community. Includes (but is not limited to) local businesses, playgrounds, churches, and prisons.

Civic Participation (Civic Engagement)
Refers to any actions taken by an individual or group of individuals in a community to address a public concern.

Depression
A mental condition characterized by feelings of severe despondency and dejection, typically also with feelings of inadequacy and guilt, often accompanied by lack of energy and disturbance of appetite and sleep.

Discrimination
Prejudicial treatment of people based on age, race, gender, ethnicity, or sexual orientation.

Disparity
A lack of equality between groups

Economic Stability
A state of steady employment, food security, and freedom from poverty.

Food Insecurity
A state in which healthy foods are not readily accessible due to either geographic or economic adversity.

Health
A holistic measure of physical, emotional, and social well-being.

Health Equity
An ideal state in which every member of a community has an equal opportunity to reach their full potential in terms of health regardless of social position or other demographic factors.

Health Literacy
The degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions.

Medicaid
A program primarily funded through the federal government that assists low-income individuals and families pay for medical care.

Morbidity
The general level of disease burden in a population (not to be confused with mortality).

Mortality
The death rate within a given population (not to be confused with morbidity).

Preventive Healthcare
Healthcare that aims to avoid poor health rather than react to health crises when they arise.

Social Capital
The networks of relationships among people who live and work in a particular society, enabling that society to function effectively.

Social and Community Context
The sum of social settings in which community members interact. This includes degree of civic participation (voting, volunteering, etc.), prevalence of community membership organizations (e.g. churches), incarceration rates, discrimination, and general levels of community trust.

Social Cohesion
Refers to the degree of connectedness within a given community. Individuals living in socially cohesive communities experience greater levels of social support.

Stigma
A strong feeling of cultural disapproval associated with a particular circumstance, quality, or person.

Unfit Housing
Housing deemed dangerous or detrimental to life or health due to want of repair, infection with contagious disease, unsanitary conditions likely to cause disease, or defects in drainage, lighting, ventilation, plumbing, and/or construction.

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