

Community Health Needs Assessment

October 3, 2018

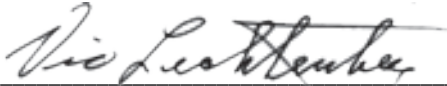


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Arnett Hospital

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Arnett Hospital



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Access to Health Care Services

- The area served by IU Health Arnett Hospital has an under-supply of primary care physicians, mental health professionals, and dentists (**Exhibits 24, 25**).
- Financial barriers to access and a lack of transportation options are present for some community members (**Community Meetings, Interviews**).

Drug and Substance Abuse (Including Opioids)

- The opioid crisis, and other forms of drug and substance abuse, were identified by community members as particularly significant (**Community Survey**).

Health Care and Social Services for Seniors

- Demographic data indicate rapid growth in the population aged 65 years and older (**Exhibit 12**).
- Community members ranked “aging and older adult needs” as among the most significant issues (**Community Survey**).

Mental Health

- Mental health status was identified by community members as a significant problem (**Community Survey**).
- Data indicate that peer counties have many more mental health providers available (on a per-capita basis) (**Exhibit 25**).

Obesity and Diabetes

- Individuals providing input identified obesity and diabetes as top concerns (**Community Meetings, Community Survey**).
- Physical inactivity, a lack of access to exercise opportunities, and food insecurity are contributing factors (**Exhibits 24, 25, Community Meetings, Interviews**).

Smoking

- Smoking rates are comparatively high, including among pregnant women and lower-income residents (**Exhibits 25, 30**).

Social Determinants of Health

- Tippecanoe County has higher than average poverty rates for children and for African American residents (**Exhibits 17, 25**). Purdue University’s student population could contribute to a higher than average poverty rate for the county as a whole (**Community Meetings**).
- Data indicate a higher than average prevalence of housing problems and homelessness (**Exhibit 24, Interviews**).

DATA AND ANALYSIS

Definition of Community Assessed

The community assessed by IU Health Arnett Hospital was defined by the geographic origins of patients discharged from the hospital, and on that basis was identified as Benton, Carroll, and Tippecanoe counties, Indiana.

Residents from these three counties accounted for over 67 percent of the hospital’s 2016 inpatient discharges (**Exhibit 1**).

Exhibit 1: IU Health Arnett Hospital Inpatient Discharges by County, 2016

County	Percent of Inpatients (2016)
Benton County	4.3%
Carroll County	6.2%
Tippecanoe County	57.3%
Total Community	67.7%

Source: Analysis of Indiana University Health Discharge Data, 2016

The estimated, total population of these counties in 2015 was 214,305 persons (**Exhibit 2**).

Exhibit 2: Community Population, 2015

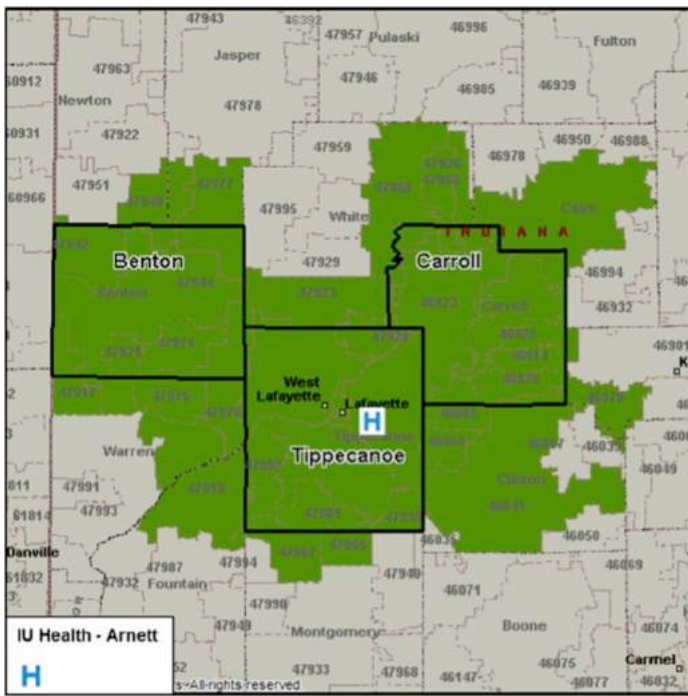
County	Estimated Population 2015	Percent of Total Community Population
Benton County	8,674	4.0%
Carroll County	19,890	9.3%
Tippecanoe County	185,741	86.7%
Total Community	214,305	100.0%

Source: State of Indiana by the Indiana Business Research Center, March 2018

The hospital is located in Tippecanoe County (City of Lafayette, Indiana, ZIP code 47905).

Exhibit 3 portrays the community. The map shows county and ZIP code boundaries. Specific ZIP codes are included in the assessment if any portion of the ZIP code overlaps with one or more of the counties.

Exhibit 3: IU Health Arnett Hospital Community



Source: Microsoft MapPoint and IU Health, 2018

Secondary Data Summary

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

Demographics

Population characteristics and trends directly influence community health needs. The total population in the IU Health Arnett Hospital community is expected to grow 4.3 percent from 2015 to 2020. Between 2016 and 2021, 23 of the 36 ZIP codes in the IU Health Arnett Hospital community are projected to gain population. The populations in six Tippecanoe County ZIP codes (including the hospital's home ZIP code, 47905 and others nearby) are expected to grow by more than five percent.

The number of persons aged 65 years and older is projected to grow at a much faster rate (19 percent). This should contribute to growing need for health services, since older individuals typically need and use more services than younger persons.

The Hispanic (or Latino) population in Tippecanoe County is projected to grow faster than the total population. Linguistic isolation is more prevalent in the county than in Indiana as a whole.

Economic Indicators

Many health needs have been associated with poverty. Poverty rates for Black populations in Tippecanoe County are near 50 percent, more than double the poverty rate for White residents. Low income census tracts are prevalent in IU Health Arnett Hospital's community, particularly around the hospital.

Unemployment rates and crime rates in the community have been consistently below Indiana averages.

The percentage of people uninsured has declined in recent years due to two primary factors:

- In recent years, unemployment rates have decreased significantly. Many receive health insurance coverage through their (or a family member's) employer.
- In 2010, the Patient Protection and Affordable Care Act (PPACA) was enacted, and Indiana was among the states that expanded Medicaid eligibility.

Local Health Status and Access Indicators

Indiana has 92 counties. In the 2018 *County Health Rankings* for overall health outcomes, Tippecanoe County ranked 24th, Benton County ranked 32nd, and Carroll County ranked 19th.

Tippecanoe County had 14 out of 42 indicators ranked in the bottom half of Indiana counties. Of those, seven were in the bottom quartile, including: adult obesity, sexually transmitted infections, uninsured status, high school graduation, income inequality, social associations, and severe housing problems.

In Benton County, 20 indicators ranked in the bottom half. Of those, three were in the bottom quartile, including: uninsured status, per-capita supply of mental health providers, and residents with long commutes who drive alone.

In Carroll County, 10 indicators ranked in the bottom half. Of those, six were in the bottom quartile, including: physical inactivity, access to exercise opportunities, per-capita supply of primary care physicians, diabetes monitoring rate, air pollution, and residents with long commutes who drive alone.

In the 2018 *Community Health Status Indicators* (which compares community health indicators for each county with those for peers across the United States), the following indicators appear to be most problematic:

- Average Daily PM2.5 (the average daily density of fine particulate matter in micrograms per cubic meter, a measure of air quality and pollution)
- Chlamydia rate
- Mentally unhealthy days
- Percent in fair or poor health
- Percent physically inactive
- Percent receiving mammography screening
- Percent receiving some college education

- Percent uninsured
- Percent with access to exercise opportunities
- Physically unhealthy days
- Primary care physicians rate
- Teen birth rate
- Years of potential life lost

According to the Centers for Disease Control and Prevention (CDC), mortality rates for congenital malformations, deformations and chromosomal abnormalities were higher in two of the three counties compared to Indiana averages. Mortality rates for influenza and pneumonia and assault (homicide) were also high in Carroll County. The overall cancer incidence rate was higher in Benton County than the Indiana average.

Rates of communicable disease in Tippecanoe County, particularly for chlamydia and syphilis, were significantly higher than Indiana averages.

Ambulatory Care Sensitive Conditions

Ambulatory Care Sensitive Conditions (ACSCs) include fourteen health conditions (also referred to as Preventative Quality Indicators, or “PQIs”) “for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.”² Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic obstructive pulmonary disease (COPD), hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, and asthma.

The ACSC rate for perforated appendix in the IU Health Arnett Hospital community counties exceeded the Indiana average. Benton County’s ACSC rates for heart failure, low birth weight, uncontrolled diabetes, and asthma in younger adults compared unfavorably to the Indiana averages.

Community Need Index

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

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

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

² Agency for Healthcare Research and Quality (AHRQ) *Prevention Quality Indicators*.

The weighted average CNI score for Tippecanoe County was 3.6 – higher than the national median of 3.0. Three ZIP codes in the IU Health Arnett Hospital community, Carroll ZIP codes 46947 and Tippecanoe ZIP codes 47901 and 47904, scored in the “highest need” category.

Food Deserts

The U.S. Department of Agriculture’s Economic Research Service identifies census tracts that are considered “food deserts” because they include lower-income persons without supermarkets or large grocery stores nearby.

Several census tracts within the IU Health Arnett Hospital community have been designated as food deserts, including several near the hospital.

Medically Underserved Areas and Populations

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

Both Carroll and Tippecanoe counties in their entirety were designated as medically underserved areas.

Health Professional Shortage Areas

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

Areas throughout IU Health Arnett Hospital’s community have been designated as Primary Care, Dental Care, and Mental Health HPSAs.

Relevant Findings of Other CHNAs

This CHNA also has considered the findings of other recent, available assessments conducted by other hospital facilities, local health departments (LHDs), and the State of Indiana. These other assessments consistently have identified the following needs as significant for the community served by IU Health Arnett Hospital.

- Mental and behavioral health
- Access to basic and primary health care
- Chronic disease management
- Drug and substance abuse
- Housing issues and homelessness

Significant Indicators

Exhibit 4 presents many of the indicators discussed in the above secondary data summary. An indicator is considered significant if it varies materially from a benchmark level (e.g., an average for Indiana or the United States).

For example, the percent of Tippecanoe County residents with severe housing problems was 19 percent. A comparable statistic for Indiana as a whole was 14 percent. For IU Health Arnett Hospital, housing problems thus are considered significant. The last column of **Exhibit 4** identifies where more information regarding the data sources can be found.

The benchmarks include Indiana averages, national averages, and in some cases averages for “peer counties” from across the United States. In the *Community Health Status Indicators* data source, peer counties are defined as being similar in terms of population density, household incomes, and related characteristics.

Exhibit 4: Significant Indicators

Indicator	Area	Value	Benchmark	Exhibit
Population change, 2015-2020	Tippecanoe County	5.3%	1.9% – Indiana	11A
65+ Population change, 2015-2020	Three-County Composite	19.0%	4.3% – Total Community Population	12
Percent of population Black, 2015	Tippecanoe County	3.1%	8.9% – Indiana	14
Percent of population Hispanic, 2015	Tippecanoe County	8.9%	5.9% – Indiana	15
Hispanic population change, 2015-2020	Tippecanoe County	13.6%	5.3% – Total population change	15
Population linguistically isolated	Tippecanoe County	6.2%	3.2% – Indiana	16
Poverty rate, 2012-2016	Tippecanoe County	21.8%	15.0% – Indiana	17
Poverty rate, Black, 2012-2016	Tippecanoe County	50.5%	21.8% – Tippecanoe County Total	18
Percent of Children in poverty, Black	Tippecanoe County	71.5%	35.9% – Peer Counties	25
Overall Community Needs Index	Tippecanoe County	3.6	3.0 – U.S. Median	34
Percent with severe housing problems	Tippecanoe County	19.3%	14.0% – Indiana	24
Years of potential life lost per 100,000	Benton County	8,137	6,700 – U.S.	24
Percent of adults physically inactive	Three-County Composite	33.1%	23.0% – U.S.	24
Percent with access to exercise opportunities	Carroll + Tippecanoe	75.8%	81.3% – Peer Counties	25
New Chlamydia cases per 100,000	Tippecanoe County	616	438 – Indiana	24
Population per primary care MD	Carroll County	4,964	1,320 – U.S.	24
Population per dentist	Carroll County	2,496	1,480 – U.S.	24
Population per mental health provider	Benton County	4,325	470 – U.S.	24
Dentists per 100,000	Tippecanoe County	46.3	72.6 – Peer Counties	25
Mental health providers per 100,000	Benton + Tippecanoe	121.9	258.1 – Peer Counties	25
Percent of adults who smoke	Benton + Carroll	19.0%	15.7% – Peer Counties	25
Smoked during pregnancy percent	Carroll County	21.0%	15.6% – Indiana	30

Source: Verité Analysis

Primary Data Summary

Primary data were gathered in three ways: Community Meetings, Key Stakeholder Interviews, and a Community Survey.

Community Meetings – Tippecanoe County

On May 8, 2018, a meeting of community representatives was held at IU Health Arnett Hospital in Lafayette, the county seat of Tippecanoe County. The meeting was attended by 22 community members invited by IU Health because they represent important community organizations and sectors such as: local health departments, non-profit organizations, local businesses, health care providers, local policymakers, parks and recreation departments, and schools.

Through this meeting, IU Health sought a breadth of perspectives on the community's health needs. The specific organizations represented at the meeting are listed below.

Organizations Represented at Community Meetings

- City of Lafayette
- Food Finders Food Bank
- Hanna Community Center
- Heartford House Child Advocacy Center
- Henriott Group, Inc.
- IU Health
- IU Health Arnett Hospital
- IU Health West Central Region
- LTHC Homeless Services
- Lafayette Family YMCA
- North Central Health Services
- Purdue Extension
- Riggs Community Health Center
- Sycamore Springs
- Tippecanoe Arts Federation
- Tippecanoe County CASA
- Tippecanoe County
- Tippecanoe Health Department
- United Way of Greater Lafayette
- YWCA Greater Lafayette
- YWCA Foundation

The meeting began with a presentation that discussed the goals and status of the CHNA process and the purpose of the community meeting. Then, secondary data were presented, along with a summary of the most unfavorable community health indicators. For Tippecanoe County, those indicators were (in alphabetical order):

- Cancer incidence and mortality
- Diabetes
- Physical inactivity and access to exercise opportunities
- Physically and mentally unhealthy days
- Preventable hospital stays
- Sexually transmitted diseases
- Smoking, including during pregnancy
- Supply of primary care physicians and mental health providers

Participants then were asked to discuss whether the identified, unfavorable indicators accurately identified the most significant community health issues and were encouraged to add issues that they believed were significant. Several issues were added, such as: opioid abuse, the number of uninsured, childhood trauma, and suicide. Obesity was added as a factor that contributes to diabetes.

During the meeting, a range of other topics was discussed, including:

- Access to healthy food
- Suicide (not related to overdoses) among the younger population
- Teen pregnancy
- Screen time
- Purdue University students contributing to the poverty rate

After discussing the needs identified through secondary data and adding others to the list, each participant was asked through a voting process to identify “three to five” they consider to be most significant. From this process, the group identified the following needs as most significant in Tippecanoe County:

- Diabetes and obesity
- Opioid abuse
- Supply of primary care physicians
- Supply of mental health providers

The group decided it would be best to split the supply of primary care physicians and the supply of mental health providers into two distinct needs.

Community Meetings – Carroll County

On April 16, 2018, a meeting of community representatives was held at Wabash & Erie Canal Conference Center in Delphi, the county seat of Carroll County. The meeting was attended by 12 community members invited by IU Health because they represent important community organizations and sectors such as: non-profit organizations, local business, health care providers, local policymakers, and schools.

Through this meeting, IU Health sought a breadth of perspectives on the community's health needs. The specific organizations represented at the meeting are listed below.

Organizations Represented at Community Meetings

- Carroll County Chamber of Commerce
- Carroll County Council
- Carroll White Rural Electric Membership Corporation (REMC)
- Delphi Community Elementary School
- Family Health Clinics (North Central Nursing Clinics)
- IU Health Arnett Hospital
- IU Health West Central Region
- North Central Health Services

The meeting began with a presentation that discussed the goals and status of the CHNA process and the purpose of the community meeting. Then, secondary data were presented, along with a summary of the most unfavorable community health indicators. For Carroll County, those indicators were (in alphabetical order):

- Cancer incidence and mortality
- Diabetes
- Physical inactivity and access to exercise opportunities
- Physically and mentally unhealthy days
- Preventable hospital stays
- Sexually transmitted diseases
- Smoking, including during pregnancy
- Supply of primary care physicians and mental health providers

Participants then were asked to discuss whether the identified, unfavorable indicators accurately identified the most significant community health issues and were encouraged to add issues that they believed were significant. Several issues were added, such as: opioid use, pharmacy care, and urgent/emergency care.

During the meeting, a range of other topics was discussed, including:

- Children/youth
- Follow up care
- Pharmacy access
- Transportation

After discussing the needs identified through secondary data and adding others to the list, each participant was asked through a voting process to identify “three to five” they consider to be most significant. From this process, the group identified the following needs as most significant for Carroll County:

- Supply of primary care physicians and mental health providers
- Physical inactivity and access to exercise opportunities
- Opioid use
- Urgent/Emergency Care
- Physically and mentally unhealthy days
- Pharmacy Care
- Cancer Incidence and Mortality
- Diabetes

Community Meetings – Benton County

A separate community meeting was not held for Benton County.

Key Stakeholder Interviews

An interview was conducted with a representative from the Benton County Health Department, and the feedback was consistent with the input received during the Community Meetings. An interview was not conducted with a representative from the Carroll County Health Department.

An interview was conducted with a representative of the

Tippecanoe County Health Department. The interview was conducted to assure that appropriate and additional input was received from a governmental public health official. The individual that was interviewed for Tippecanoe County participated in the community meeting. Accordingly, the results of the community meeting were discussed and insights were sought regarding significant community health needs, why such needs are present, and how they can be addressed.

The interview was guided by a structured protocol that focused on opinions regarding significant community health needs, describing why such needs are present, and seeking ideas for how to address them.

- The interviewee confirmed that the four needs identified by the community meeting participants were significant, adding that all four rank fairly evenly in terms of their prevalence and significance. These four needs were:
 - Diabetes and obesity
 - Opioid abuse
 - Supply of primary care physicians
 - Supply of mental health providers
- “Diabetes and obesity” was identified as particularly prevalent in low income populations who struggle to afford and access healthy foods.
- The shortage of primary care and mental health providers is “real” and is made more challenging because existing professionals typically only are available to patients during business hours.
- The supply of mental health providers contributes to opioid abuse, because those unable to access mental health services may be self-medicating.
- Homelessness also was described as a contributing factor to substance abuse. Many recovering or suffering from addiction have trouble finding stable housing, leading to continued drug abuse.
- Affordable housing for low income and Section 8 residents is needed.
- Many residents are uninsured or underinsured, leading to inadequate access to care. For underinsured individuals, many providers are out of network, presenting significant access barriers.
- Many community residents do not own cars. A lack of transportation options presents another barrier to accessing care. Bringing health services to people in their homes would be helpful.
- Due to inadequate access to primary care, many use emergency departments for basic health care service. This is particularly true for low income residents who, at the end of the month, exhaust their food, medication, and other basic-needs assistance.
- Programs that seek to improve the health of low income populations would enhance job retention, education levels, and housing stability.
- Maternal and child health services also are needed. Pregnant women in Tippecanoe County (and Indiana in general) lack access to prenatal services. Birth control also is difficult to access for many residents.

Community Survey

To inform the CHNA, a community survey was conducted by the Indiana Hospital Collaborative.³

Across Indiana, 9,161 completed questionnaires were received by all participating hospitals in the Indiana Hospital Collaborative, for an overall response rate of 11.6 percent; 5,030 questionnaires were received from the 17 Indiana counties served by one or more IU Health hospitals.

For IU Health Arnett Hospital, surveys were received from 861 community households. According to the responses, these households included 1,595 adults.

Exhibit 5 portrays the community health needs considered most significant by survey respondents from IU Health Arnett Hospital's community.

Exhibit 5: Community Survey – Significant Health Needs

Community Health Need	IU Health Arnett Hospital Number of Responses	IU Health Arnett Hospital Percent of Respondents
Substance use or abuse	560	65.0%
Obesity	478	55.6%
Mental health	446	51.8%
Chronic diseases, like diabetes, cancer, and heart disease	356	41.4%
Poverty	285	33.1%
Aging and older adult needs	243	28.2%
Alcohol use or abuse	230	26.7%
Child neglect and abuse	221	25.7%
Food access, affordability, and safety	218	25.3%
Tobacco use	182	21.2%
Assault, violent crime, and domestic violence	164	19.0%
Homelessness	148	17.1%
Disability needs	130	15.1%
Environmental issues	98	11.4%
Injuries and accidents	96	11.2%
Sexual violence, assault, rape, or human trafficking	91	10.5%
Suicide	76	8.8%
Reproductive health and family planning	67	7.8%
Dental care	60	6.9%
Infectious diseases, like HIV, STDs, and hepatitis	57	6.6%
Infant mortality	5	0.5%

Source: Community Survey

The community survey indicates that substance abuse, obesity, mental health, chronic diseases, and poverty represent top concerns in the community served by IU Health Arnett Hospital.

Exhibit 6 arrays survey responses regarding health factors across demographic and socioeconomic characteristics. The exhibit includes findings from surveys returned by adults living in the 17 counties served by IU Health.

Exhibit 7 summarizes survey responses regarding health behaviors across demographic and socioeconomic characteristics. As frequently found in community health data, physical and mental health status (and tobacco use) tends to be worse for lower-income individuals and for those without a high school diploma. Opioid misuse also appears to be more prevalent in these populations.

³ For more information on the survey methodology, see Appendix A.

Exhibit 6: Community Survey – Health Factors

Measure	Total	Female	Male	White	Black	Asian	Hispanic	\$0 – \$25k	\$25 – \$75k	\$75k+	No High School Diploma
Total Number of Responses	8,885	5,694	3,137	8,487	133	111	148	1,480	3,659	3,328	329
Fair or Poor Health	16.6%	16.4%	16.8%	16.6%	33.1%	6.3%	18.2%	39.4%	16.7%	5.9%	39.2%
Physical Health – Fair or Poor	42.6%	42.8%	42.5%	42.7%	27.1%	60.4%	46.6%	17.4%	36.8%	60.8%	18.8%
Mental Health – Fair or Poor	8.2%	8.6%	7.5%	8.2%	18.0%	4.5%	5.4%	22.2%	8.0%	2.4%	20.4%
Social Well-being – Fair or Poor	61.2%	61.5%	61.2%	61.1%	52.6%	79.3%	62.2%	33.9%	57.8%	77.7%	37.4%
Are not satisfied with life	12.8%	12.3%	13.9%	12.6%	15.0%	23.4%	10.1%	19.0%	12.1%	11.2%	14.6%
Without Health Insurance	4.2%	4.2%	4.0%	4.1%	7.5%	0.9%	10.1%	6.6%	5.3%	2.1%	7.9%
Without Primary Care Physician	11.0%	10.5%	11.9%	10.9%	10.5%	20.7%	23.0%	11.2%	11.0%	12.0%	15.8%

Exhibit 7: Community Survey – Health Behaviors

Measure	Total	Female	Male	White	Black	Asian	Hispanic	\$0 – \$25k	\$25 – \$75k	\$75k+	No High School Diploma
Total Number of Responses	8,885	5,694	3,137	8,487	133	111	148	1,480	3,659	3,328	329
Smoked cigarettes or used other tobacco	9.9%	8.8%	12.0%	9.9%	8.3%	1.8%	9.5%	17.9%	11.3%	5.6%	20.4%
Physically active on regular basis	52.9%	50.3%	57.9%	52.8%	45.1%	54.1%	52.7%	37.3%	51.0%	62.3%	37.7%
Ate a healthy balanced diet	57.5%	57.9%	57.0%	57.6%	41.4%	62.2%	59.5%	42.2%	54.7%	67.6%	34.0%
Got plenty of sleep	56.2%	55.5%	57.8%	56.8%	39.1%	36.9%	46.6%	46.8%	57.1%	59.7%	43.2%
Took an opioid or narcotic that was prescribed to me	8.3%	8.9%	7.4%	8.4%	7.5%	0.0%	2.7%	15.3%	9.0%	5.0%	12.8%
Took an opioid or narcotic that was not prescribed to me	0.6%	0.6%	0.4%	0.5%	0.0%	0.9%	0.0%	1.2%	0.5%	0.4%	0.0%

Exhibit 7: Community Survey – Health Behaviors (continued)

Measure	Total	Female	Male	White	Black	Asian	Hispanic	\$0 – \$25k	\$25 – \$75k	\$75k+	No High School Diploma
Took a medication for anxiety, depression, or other mental health challenge that was prescribed to me	18.2%	22.9%	9.6%	18.4%	15.8%	4.5%	10.8%	26.4%	17.4%	16.0%	19.8%
Had blood pressure checked	48.0%	46.4%	50.9%	48.3%	38.3%	32.4%	31.8%	53.7%	52.1%	40.8%	52.0%
Drank alcohol to the point of intoxication	6.1%	4.8%	8.5%	6.1%	7.5%	1.8%	12.2%	2.9%	5.5%	8.9%	1.8%
Drove while under the influence of alcohol or drugs	1.0%	0.7%	1.6%	1.1%	0.0%	0.0%	0.7%	1.0%	1.1%	1.1%	0.3%
Took steps to reduce level of stress	27.9%	32.2%	20.2%	27.8%	33.8%	25.2%	27.7%	24.1%	24.1%	34.5%	20.4%

OTHER FACILITIES AND RESOURCES IN THE COMMUNITY

This section identifies other facilities and resources available in the community served by IU Health Arnett Hospital that are available to address community health needs.

Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs) are established to promote access to ambulatory care in areas designated as “medically underserved.” These clinics provide primary care, mental health, and dental services for lower-income populations. FQHCs receive enhanced reimbursement for Medicaid and Medicare services and most also receive federal grant funds under Section 330 of the Public Health Service Act.

There currently are six FQHC sites operating in the IU Health Arnett Hospital community (**Exhibit 8**).

Exhibit 8: Federally Qualified Health Centers, 2018

County	Facility
Carroll	Family Health Clinic of Burlington (Burlington)
Carroll	Family Health Clinic of Carroll County (Delphi)
Carroll	North Central Nursing Clinics (Delphi)
Tippecanoe	Riggs Community Health Center (Lafayette)
Tippecanoe	Riggs Community Health Center Annex (Lafayette)
Tippecanoe	Riggs Community Health Center South Street (Lafayette)

Source: HRSA, 2018

Hospitals

Five hospitals (including IU Health Arnett Hospital) are located in the community (**Exhibit 9**).

Exhibit 9: Hospitals, 2018

County	Facility
Tippecanoe	Franciscan Health Lafayette (Lafayette)
Tippecanoe	IU Health Arnett Hospital (Lafayette)
Tippecanoe	Lafayette Regional Rehabilitation Hospital (Lafayette)
Tippecanoe	River Bend Hospital (West Lafayette)
Tippecanoe	Sycamore Springs Hospital LLC (Lafayette)

Source: Indiana State Department of Health, 2018

Local Health Departments (LHDs)

Exhibit 10 presents information on LHDs that provide services in the IU Health Arnett Hospital community.

Exhibit 10: Local Health Departments, 2018

County	Facility
Benton	Benton County Health Dept. (Fowler)
Carroll	Carroll County Health Dept. (Delphi)
Tippecanoe	Tippecanoe County Health Dept. (Lafayette)

Source: Indiana State Department of Health, 2018

Other Community Resources

A wide range of agencies, coalitions, and organizations that provide health and social services, is available in the region served by IU Health Arnett Hospital. Indiana 211 Partnership, Inc. is a nonprofit 501(c)(3) organization that provides the Indiana 2-1-1 information and referral service. By calling 2-1-1 or (866) 211-9966 (available 24/7), individuals receive referrals to service providers 24 hours a day. Individuals also can search for services using the organization’s website, <https://www.in211.org/>.

The other organizations accessible through the Indiana 211 Partnership provide the following types of services and resources:

- Housing and utilities
- Food, clothing, and household items
- Summer food programs
- Health care and disability services
- Health insurance and expense assistance
- Mental health and counseling
- Substance abuse and other addictions
- Support groups
- Tax preparation assistance
- Legal, consumer, and financial management services

- Transportation
- Employment and income support
- Family support and parenting
- Holiday assistance
- Disaster services
- Government and community services
- Education, recreation, and the arts
- Donations and volunteering

APPENDIX A – OBJECTIVES AND METHODOLOGY

Regulatory Requirements

Federal law requires that tax-exempt hospital facilities conduct a CHNA every three years and adopt an Implementation Strategy that addresses significant community health needs.⁴ In conducting a CHNA, each tax-exempt hospital facility must:

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

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

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

Methodology

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

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

⁴ Internal Revenue Code, Section 501(r).

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

Federal regulations allow hospital facilities to define the community they serve based on “all of the relevant facts and circumstances,” including the “geographic location” served by the hospital facility, “target populations served” (e.g., children, women, or the aged), and/or the hospital facility's principal functions (e.g., focus on a particular specialty area or targeted disease).⁵

This assessment was conducted by Verité Healthcare Consulting, LLC, in collaboration with IU Health. See Appendix E for consultant qualifications.

Data from multiple sources were gathered and assessed, including secondary data⁶ published by others and primary data obtained through community input. See Appendix B for an assessment of secondary data. Input from the community was received through key informant interviews, community meetings, and a community survey.

The informants participating in the community input process represented the broad interests of the community and included individuals with special knowledge of or expertise in public health. See Appendix C.

Considering a wide array of information is important when assessing community health needs to ensure the assessment captures a wide range of facts and perspectives and to increase confidence that significant community health needs have been identified accurately and objectively.

Certain community health needs were determined to be “significant” if they were identified as problematic in at least two of the following five data sources:

- Secondary data⁷ including demographics, health status, and access to care indicators,
- Findings from other community health assessments of areas served by the hospital,
- Input obtained from individuals who participated in one or more community meetings,
- Input obtained from individuals who were interviewed, and
- A community survey conducted in collaboration with other Indiana health systems.

⁵ 501(r) Final Rule, 2014.

⁶ “Secondary data” refers to data published by others, for example the U.S. Census and the Indiana State Department of Health. “Primary data” refers to data observed or collected from first-hand experience, for example by conducting interviews.

⁷ “Secondary data” refers to data published by others, for example the U.S. Census and the Indiana State Department of Health.

Collaborating Organizations

For this assessment, IU Health Arnett Hospital collaborated with all IU Health hospitals and with other Indiana health systems on the community survey.

Data Sources

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

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

Community Survey Methodology

To inform the CHNA, a community survey was conducted. The survey was sponsored by a cooperative of Indiana hospital systems, under contract with the University of Evansville and the Indiana University School of Public Health-Bloomington. Researchers from Indiana University and University of Evansville contracted with the Center for Survey Research at Indiana University to administer the survey.

The survey was conducted in two phases, with Phase 1 conducted as a paper survey mailed to an address-based sample, and Phase 2 administered by some of the hospitals to a convenience sample they selected. IU Health participated in Phase 1.

A questionnaire was developed, with input provided by the Indiana hospital systems, and included a number of questions about general health status, access and utilization of services, personal behaviors, social determinants of health, and also respondent demographic information (e.g., ZIP code, income level, employment status, race and ethnicity, household size, gender, and age). The survey was mailed to approximately 82,000 households, and the "field period" was April 2, 2018 through June 29, 2018. The process included two mailings to each address; a postcard mailing also took place to encourage responses.

Overall, 9,161 completed questionnaires were received by all participating hospitals in the Indiana Hospital

Collaborative, for an overall response rate of 11.6 percent; 5,030 questionnaires were received from the 17 Indiana counties served by one or more IU Health hospitals. A dataset was created from the IU Health survey responses, and the responses were adjusted for two factors:

- The number of adults in each household (i.e., a survey from a household with two adults received a base weight of "2" and a survey from a household with one adult received a base weight of "1").
- A post-stratification adjustment designed to make the results more representative of the population in each community (i.e., female and older adults were overrepresented among survey respondents when compared to census data, and the adjustment made corrections).

For IU Health Arnett Hospital, surveys were received from 861 community households. According to the responses, these households included 1,595 adults.

Information Gaps

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

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

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

APPENDIX B – SECONDARY DATA ASSESSMENT

This section presents an assessment of secondary data regarding health needs in the IU Health Arnett Hospital community. IU Health Arnett Hospital's community is comprised of Tippecanoe, Benton, and Carroll counties, Indiana.

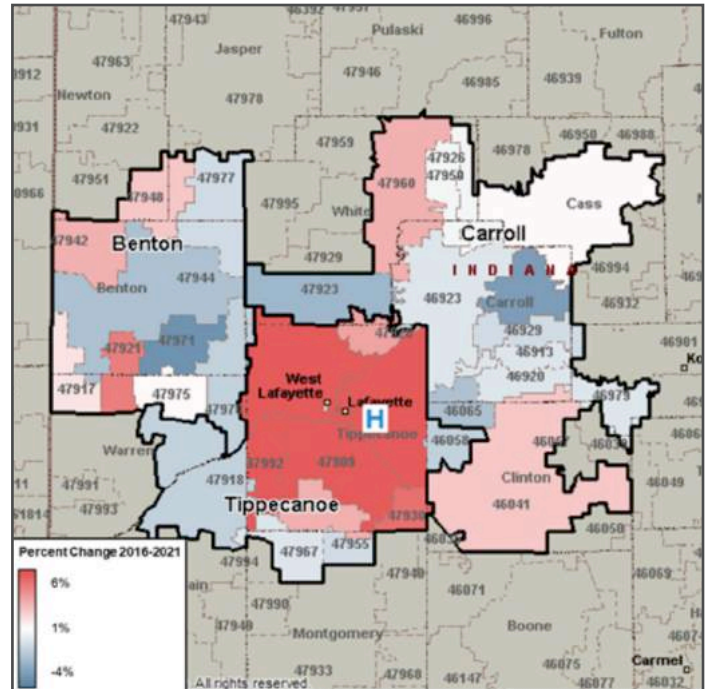
Demographics

Exhibit 11A: Percent Change in Community Population by County, 2015-2020

County	Estimated Population 2015	Estimated Population 2020	Percent Change 2015-2020
Benton County	8,674	8,507	-1.9%
Carroll County	19,890	19,509	-1.9%
Tippecanoe County	185,741	195,555	5.3%
Total Community	214,305	223,571	4.3%
Indiana Total	6,612,768	6,738,573	1.9%

Source: State of Indiana by the Indiana Business Research Center, March 2018

Exhibit 11B: Percent Change in Community Population by ZIP Code, 2016-2021



Healthcare Advisory Board, 2017

Description

Exhibit 11A shows the total population for each community county in 2015 and projections to 2020. Exhibit 11B maps the percent change in population by ZIP code between 2016 and 2021 for each ZIP code in the community.

Observations

- Decreases in population are projected for Benton and Carroll counties between 2015 and 2020. An increase in population is expected for Tippecanoe County between 2015 and 2020. On a combined basis, the population in the counties is expected to grow faster than Indiana as a whole.
- Tippecanoe County ZIP codes surrounding the hospital are expected to experience the highest growth.
- An increase of five percent in the population of ZIP code 47905 (where the hospital is located) is projected.

Exhibit 12: Percent Change in Population by Age/Sex Cohort, 2015-2020

Age/Sex Cohort	Estimated Population 2015	Projected Population 2020	Percent Change 2015-2020
Benton	8,674	8,507	-1.9%
0-17	2,163	2,099	-3.0%
Male, 18-44	1,352	1,320	-2.4%
Female, 18-44	1,332	1,285	-3.5%
45-64	2,416	2,285	-5.4%
65+	1,411	1,518	7.6%
Carroll County	19,890	19,509	-1.9%
0-17	4,445	4,112	-7.5%
Male, 18-44	3,126	3,008	-3.8%
Female, 18-44	3,013	2,961	-1.7%
45-64	5,703	5,423	-4.9%
65+	3,603	4,005	11.2%
Tippecanoe County	185,741	195,555	5.3%
0-17	42,936	45,564	6.1%
Male, 18-44	46,518	47,695	2.5%
Female, 18-44	40,083	41,387	3.3%
45-64	36,687	37,247	1.5%
65+	19,517	23,662	21.2%
Total Community	214,305	223,571	4.3%
0-17	49,544	51,775	4.5%
Male, 18-44	50,996	52,023	2.0%
Female, 18-44	44,428	45,633	2.7%
45-64	44,806	44,955	0.3%
65+	24,531	29,185	19.0%
Indiana State	6,612,768	6,738,573	1.9%
0-17	1,578,079	1,571,356	-0.4%
Male, 18-44	1,178,486	1,187,607	0.8%
Female, 18-44	1,160,314	1,169,877	0.8%
45-64	1,729,765	1,695,267	-2.0%
65+	966,124	1,114,466	15.4%

Source: State of Indiana by the Indiana Business Research Center, March 2018

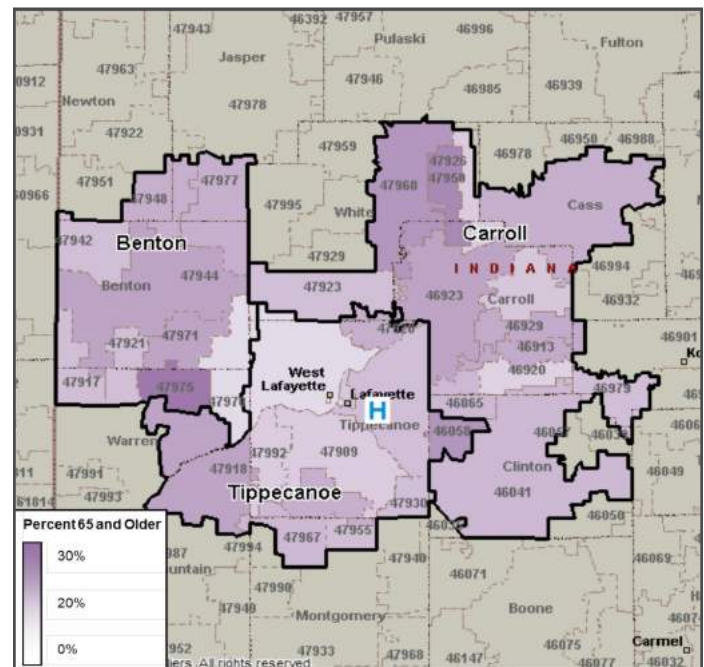
Description

Exhibit 12 shows the community's population for certain age and sex cohorts in 2015, with projections to 2020.

Observations

- The number of persons aged 65 years and older is projected to increase by 19.0 percent between 2015 and 2020. This growth rate exceeds that projected for Indiana as a whole (15.4 percent).
- The growth of older populations is likely to lead to growing need for health services, since on an overall per-capita basis, older individuals typically need and use more services than younger persons.

Exhibit 13: Percent of Population Aged 65+ by ZIP Code, 2015



Source: U.S. Census ACS 2016 5-year estimates and Microsoft MapPoint

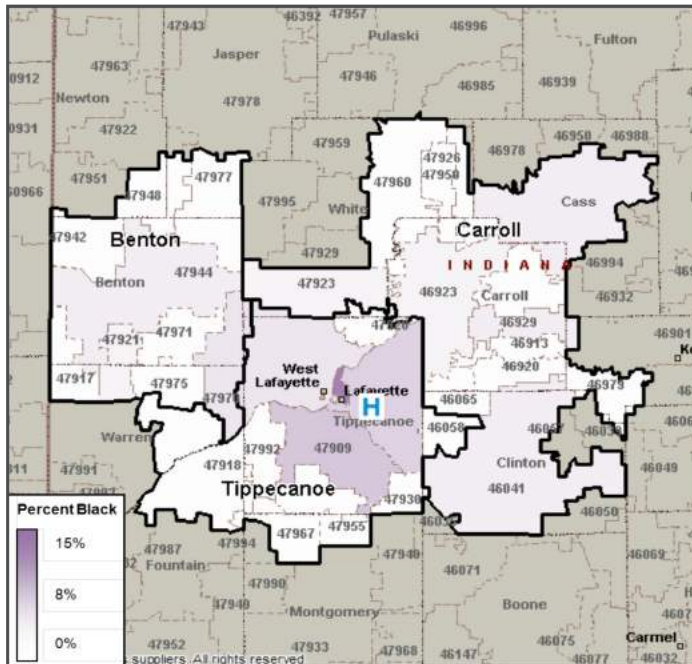
Description

Exhibit 13 portrays the percent of the population 65 years of age and older in the community by ZIP code.

Observations

- ZIP codes with the highest proportions of the population 65 years of age and older currently are located in Benton and Carroll counties.

Exhibit 14: Percent of Population – Black, 2015



Source: U.S. Census ACS 2016 5-year estimates and Microsoft MapPoint

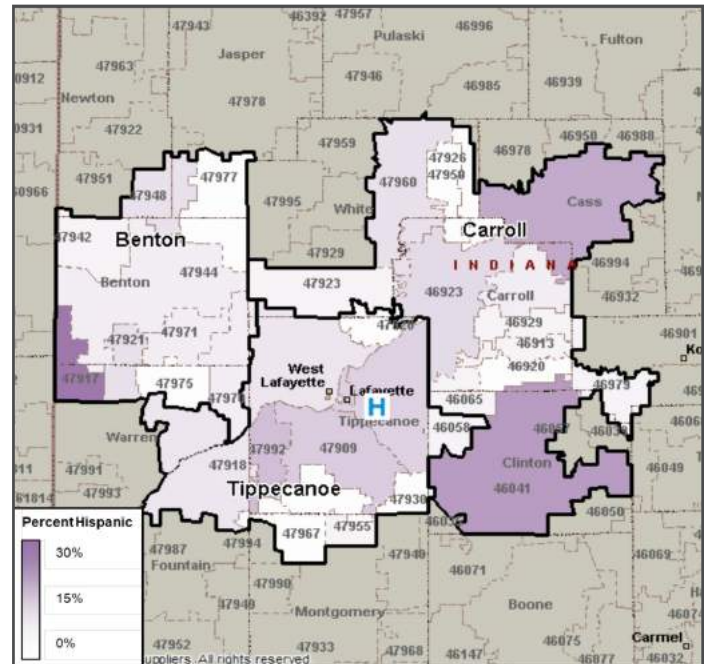
Description

Exhibit 14 portrays locations where the percentages of the population that are Black were highest in 2015.

Observations

- Nearly 14 percent of residents of ZIP code 47904 in 2015 were Black.
- In 2015, the percent of residents that were black was under two percent in 30 of the community's 36 ZIP codes.

Exhibit 15: Percent of Population – Hispanic (or Latino), 2015



Source: U.S. Census ACS 2016 5-year estimates and Microsoft MapPoint

Description

Exhibit 15 portrays locations in the community where the percentages of the population that are Hispanic (or Latino) were highest in 2015. The diversity of the community is important to recognize given the presence of health disparities and barriers to health care access experienced by different racial and ethnic groups.

Observations

- The percentage of residents that are Hispanic (or Latino) was highest in ZIP codes 47917 (28.4 percent), 46041 (20.0 percent), and 46947 (18.0 percent).

Exhibit 16: Other Socioeconomic Indicators, 2012-2016

Measure	Benton County	Carroll County	Tippecanoe County	Indiana	United States
Population 25+ without High School Diploma	10.4%	12.0%	9.3%	11.9%	13.0%
Population with a Disability	17.5%	15.5%	9.9%	13.6%	12.5%
Population Linguistically Isolated	1.2%	1.5%	6.2%	3.2%	8.5%

Source: U.S. Census, ACS 5-Year Estimates, 2017

Description

Exhibit 16 portrays the percent of the population (aged 25 years and above) without a high school diploma, with a disability, and linguistically isolated.

Observations

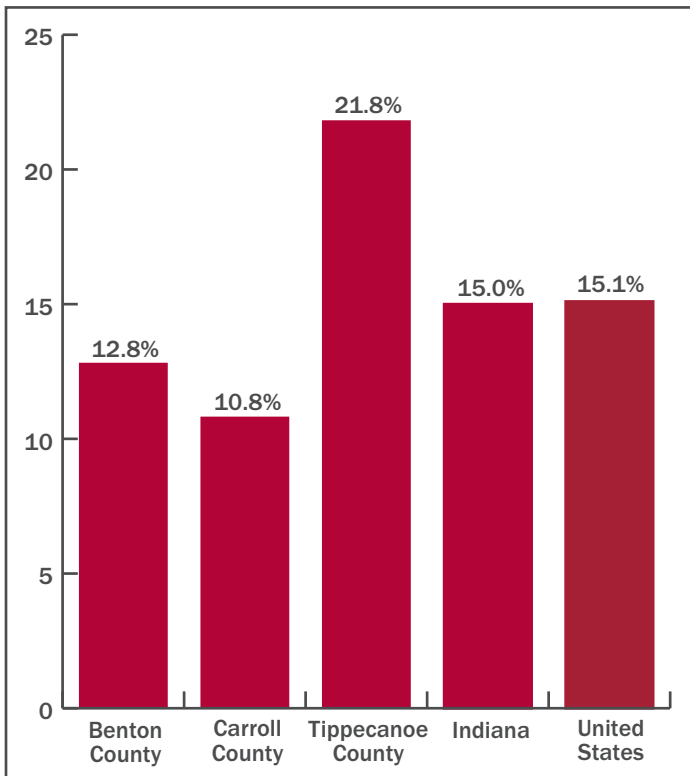
- Carroll County had a slightly higher percentage of residents aged 25 years and older without a high school diploma than the Indiana average.
- Benton and Carroll counties each had a higher percentage of the population with a disability compared to Indiana and U.S. averages.
- Compared to Indiana, Tippecanoe County had a higher proportion of the population that is linguistically isolated. Linguistic isolation is defined as residents who speak a language other than English and speak English less than “very well.”

Economic Indicators

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

People in Poverty

Exhibit 17: Percent of People in Poverty, 2012-2016



Source: U.S. Census, ACS 5-Year Estimates, 2017

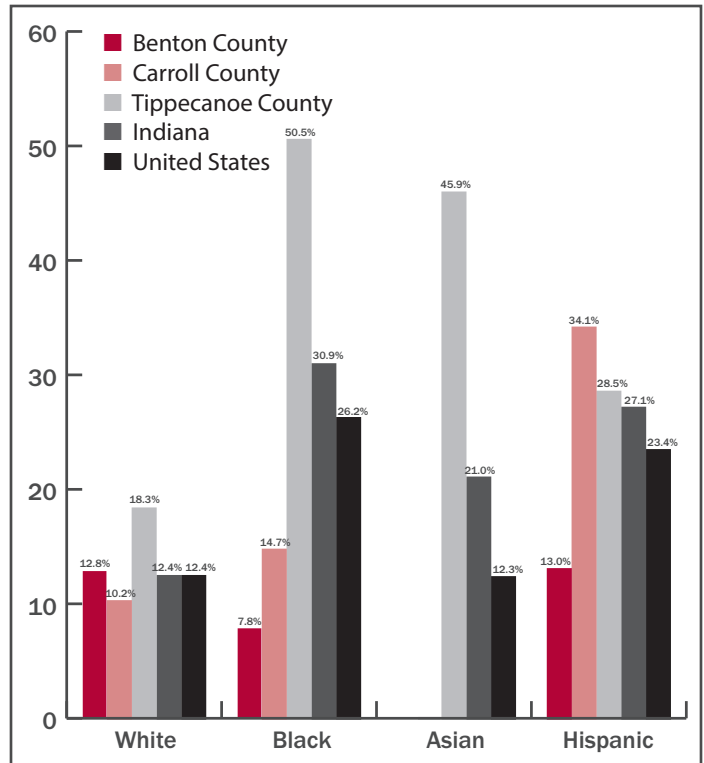
Description

Exhibit 17 portrays poverty rates by county.

Observations

- The poverty rate in Tippecanoe County was well above Indiana and national averages from 2012-2016.
- Community input, however, indicated that the student population at Purdue University could contribute significantly to the above-average poverty rate for Tippecanoe County as a whole.

Exhibit 18: Poverty Rates by Race and Ethnicity, 2012-2016



Source: U.S. Census, ACS 5-Year Estimates, 2017

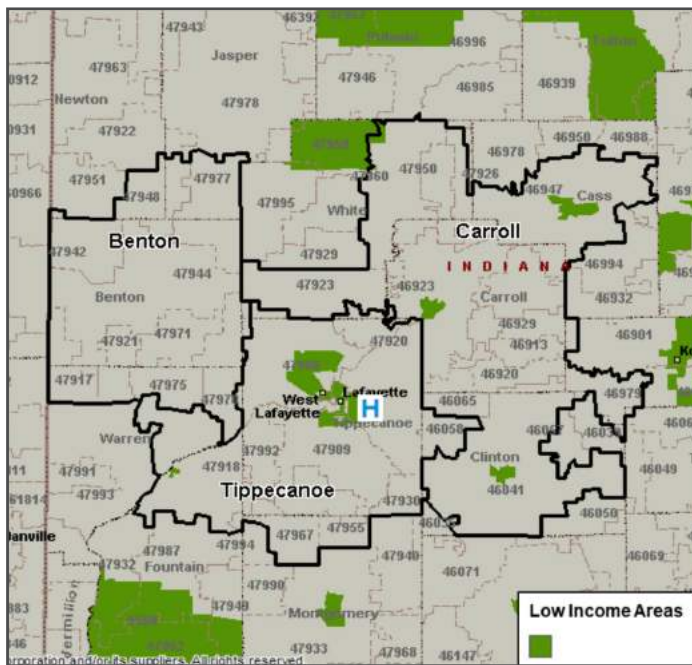
Description

Exhibit 18 portrays poverty rates by race and ethnicity.

Observations

- Asian population in both Carroll and Benton counties is about 0%.
- Poverty rates in Tippecanoe County have been higher than national averages for all population cohorts. Purdue University students could contribute to these statistics.
- Approximately half of Black and Hispanic (or Latino) residents in Tippecanoe County lived in poverty.
- More than one-third of Hispanic (or Latino) residents of Carroll County lived in poverty.

Exhibit 19: Low Income Census Tracts, 2017



Source: US Department of Agriculture Economic Research Service, ESRI, 2017

Description

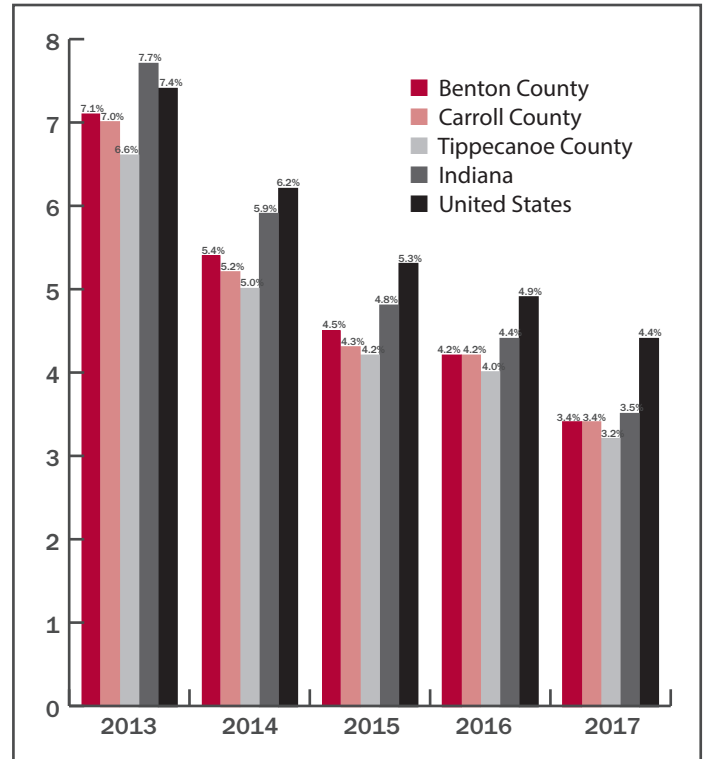
Exhibit 19 portrays the location of federally-designated low income census tracts.

Observations

- Low income census tracts have been prevalent in areas surrounding the hospital.

Unemployment

Exhibit 20: Unemployment Rates, 2013-2017



Source: Bureau of Labor Statistics, 2018

Description

Exhibit 20 shows unemployment rates for 2013 through 2017 for Benton, Carroll, and Tippecanoe counties, with Indiana and national rates for comparison.

Observations

- Between 2013 and 2017, unemployment rates at the local, state, and national levels declined significantly.
- Rates in Benton, Carroll, and Tippecanoe counties have been below Indiana and U.S. averages.

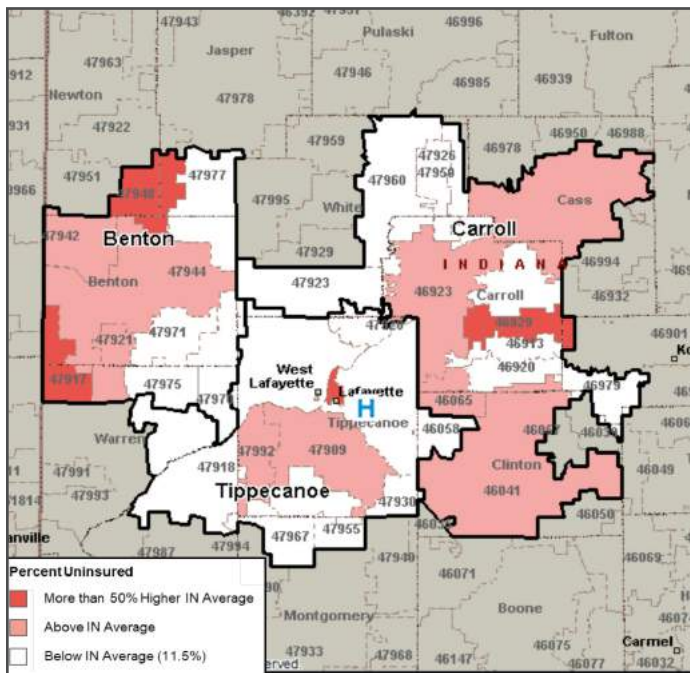
Insurance Status

Exhibit 21A: Percent of the Population without Health Insurance, 2015-2020

County	Population	Population Uninsured	Percent Uninsured
Benton County	8,642	1,140	13.2%
Carroll County	19,894	2,355	11.8%
Tippecanoe County	181,721	19,644	10.8%
Total Community	210,239	23,159	11.0%
Indiana	6,490,256	747,942	11.5%
United States	313,576,137	36,700,246	11.7%

Source: U.S. Census, ACS 5-Year Estimates, 2017

Exhibit 21B: Percent of the Population without Health Insurance, 2015-2020



Source: U.S. Census, ACS 5-Year Estimates, 2017

Description

Exhibit 21A presents the estimated percent of people uninsured by county in 2015, with a projection to 2020. Exhibit 21B maps the 2015 uninsured rates by ZIP code.

Observations

- In 2015, the uninsured rates were 50 percent or more higher than the Indiana rate in ZIP codes 47917, 47948, 46929, 47901, and 47904.
- Subsequent to the Affordable Care Act’s passage, a June 2012 Supreme Court ruling provided states with discretion regarding whether or not to expand Medicaid eligibility. Indiana was one of the states that expanded

Medicaid. Across the United States, uninsured rates have fallen most in states that decided to expand Medicaid.⁸

Crime

Exhibit 22: Crime Rates by Type and Jurisdiction, Per 100,000, 2016

Indicator	Benton (Data N/A)	Carroll (Data N/A)	Tippecanoe	Indiana
Violent crime	–	–	24.5	407.4
Murder	–	–	–	6.7
Rape (revised definition)	–	–	–	38.0
Rape (legacy definition)	–	–	4.4	28.1
Robbery	–	–	3.3	111.2
Aggravated assault	–	–	16.9	251.5
Property crime	–	–	311.3	2,606.5
Burglary	–	–	98.7	517.4
Larceny – theft	–	–	193.6	1,865.5
Motor vehicle theft	–	–	19.1	223.5

Source: Federal Bureau of Investigation, 2017

Description

Exhibit 22 provides crime statistics. No data were available from the Federal Bureau of Investigation for Benton and Carroll counties.

Observations

- 2016 crime rates in Tippecanoe County were well below Indiana averages.

Local Health Status and Access Indicators

This section assesses health status and access indicators for the IU Health Arnett Hospital community. Data sources include: (1) County Health Rankings, (2) the Indiana State Department of Health, and (3) the CDC’s Behavioral Risk Factor Surveillance System.

Throughout this section, data and cells are highlighted if indicators are unfavorable – because they exceed benchmarks (e.g., Indiana, peer group, or U.S. averages). Where confidence interval data are available, cells are highlighted only if variances are unfavorable and statistically significant.

⁸ See: <http://hrms.urban.org/briefs/Increase-in-Medicaid-under-the-ACA-reduces-uninsurance.html>

County Health Rankings

Exhibit 23: County Health Rankings, 2015 and 2018

Measure	Benton County 2015	Benton County 2018	Carroll County 2015	Carroll County 2018	Tippecanoe County 2015	Tippecanoe County 2018
Health Outcomes	31	32	15	19	18	24
Health Factors	37	17	18	14	11	18
Length of Life	56	52	6	16	16	15
Premature death	56	52	6	16	16	15
Quality of Life	12	12	36	32	26	36
Poor or fair health	60	57	74	33	36	47
Poor physical health days	84	43	28	24	20	51
Poor mental health days	7	53	24	16	51	48
Low birthweight	1	3	31	44	23	22
Health Behaviors	63	30	26	11	5	17
Adult smoking	75	64	64	19	4	9
Adult obesity	66	24	24	4	3	7
Food environment index	16	16	9	7	89	77
Physical inactivity	89	65	43	83	16	7
Access to exercise opportunities	63	62	30	74	24	18
Excessive drinking	N/A	48	35	32	56	54
Alcohol-impaired driving deaths	9	1	23	41	72	54
Sexually transmitted infections	37	51	14	54	86	91
Teen births	23	31	11	13	8	8
Clinical Care	63	19	33	44	18	16
Uninsured	78	74	45	59	50	77
Primary care physicians	70	N/A	83	80	15	16
Dentists	74	29	37	41	29	28
Mental health providers	90	82	50	46	20	20
Preventable hospital stays	48	4	16	5	29	11
Diabetes monitoring	49	10	57	89	53	36
Mammography screening	37	50	18	64	24	12
Social & Economic Factors	20	23	16	18	36	44
High school graduation	1	34	13	12	66	83
Some college	58	36	48	57	5	6
Unemployment	47	39	34	41	24	28
Children in poverty	33	43	15	21	35	36
Income inequality	37	13	35	36	91	91
Children in single-parent households	12	24	17	10	52	54
Social associations	12	17	41	40	78	76
Violent crime	N/A	N/A	24	N/A	63	54
Injury deaths	64	35	23	32	4	5
Physical Environment	8	5	24	43	50	25
Air pollution	35	20	37	78	49	32
Severe housing problems	9	19	17	8	91	91
Driving alone to work	9	6	24	33	4	4
Long commute - driving alone	48	74	84	81	1	1

Source: County Health Rankings, 2018

Description

Exhibit 23 presents *County Health Rankings*, a University of Wisconsin Population Health Institute initiative funded by the Robert Wood Johnson Foundation, that incorporates a variety of health status indicators into a system that ranks each county/city within each state in terms of “health factors” and “health outcomes.” Indicators and composites are grouped into the following categories: health behaviors, clinical care,⁹ social and economic factors, and physical environment.¹⁰ *County Health Rankings* is updated annually. *County Health Rankings 2018* relies on data from 2006 to 2017, with most data from 2011 to 2016.

The exhibit presents 2015 and 2018 rankings for each available indicator category. Rankings indicate how the county ranked among all 92 counties in the Indiana, with 1 indicating the highest (most favorable) ranking and 92 the lowest (least favorable).

Light grey shading indicates rankings in the bottom half of Indiana counties; dark grey shading indicates rankings in bottom quartile of Indiana counties.

Observations

- In 2018, Benton County ranked in the bottom half of Indiana counties for 20 of the 42 indicators assessed. Of those, three were in the bottom quartile, including uninsured status, mental health providers to residents, and residents with long commutes who drive alone.
- In Carroll County, 10 indicators ranked in the bottom half of Indiana counties. Of those, six were in the bottom quartile, including: physical inactivity, access to exercise opportunities, primary care physicians to residents, diabetes monitoring, air pollution, and residents with long commutes who drive alone.
- In Tippecanoe County, 14 indicators ranked in the bottom half of Indiana counties. Of those, seven were in the bottom quartile, including adult obesity, sexually transmitted infections, uninsured status, high school graduation rate, income inequality, social associations, and severe housing problems.

⁹ A composite measure of Access to Care, which includes the percent of the population without health insurance and ratio of population to primary care physicians, and of Quality of Care, which includes the hospitalization rate for ambulatory care sensitive conditions, whether diabetic Medicare patients are receiving HbA1C screening, and percent of chronically ill Medicare enrollees in hospice care in the last 8 months of life.

¹⁰ A composite measure that examines Environmental Quality, which includes the number of air pollution-particulate matter days and air pollution-ozone days, and Built Environment, which includes access to healthy food and recreational facilities and the percent of restaurants that are fast food.

Exhibit 24: County Health Rankings Data Compared to Indiana and U.S. Averages, 2018

Indicator Category	Indicator	Benton County	Carroll County	Tippecanoe County	Indiana	U.S.
Health Outcomes						
Length of life	Years of potential life lost before age 75 per 100,000 population (age-adjusted)	8,137	6,485	6,472	7,794	6,700
Quality of life	Percentage of adults reporting fair or poor health (age-adjusted)	17.0	15.9	16.6	17.7	16.0
Quality of life	Average number of physically unhealthy days reported in past 30 days (age-adjusted)	3.8	3.7	3.9	3.9	3.7
Quality of life	Average number of mentally unhealthy days reported in past 30 days (age-adjusted)	4.1	3.8	4.1	4.3	3.8
Quality of life	Percentage of live births with low birthweight (< 2500 grams)	5.5	7.5	6.9	8.0	8.0
Health Factors						
Health Behaviors						
Adult smoking	Percentage of adults who are current smokers	20.7	18.2	17.3	21.1	17.0
Adult obesity	Percentage of adults that report a BMI of 30 or more	31.3	28.2	29.0	32.0	28.0
Food environment index	Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best)	8.5	8.7	7.2	7.0	7.7
Physical inactivity	Percentage of adults age 20 and over reporting no leisure-time physical activity	30.8	33.1	23.6	26.8	23.0
Access to exercise opportunities	Percentage of population with adequate access to locations for physical activity	57.9	51.7	78.4	76.6	83.0
Excessive drinking	Percentage of adults reporting binge or heavy drinking	17.5	17.1	17.6	18.6	18.0
Alcohol-impaired driving deaths	Percentage of driving deaths with alcohol involvement	0.0	20.0	23.7	22.4	29.0
Sexually transmitted infections	Number of newly diagnosed chlamydia cases per 100,000 population	264.4	281	616.1	437.9	478.8
Teen births	Number of births per 1,000 female population ages 15-19	29.3	22.9	20.1	30.5	27.0
Clinical Care						
Uninsured	Percentage of population under age 65 without health insurance	12.3	11.7	12.6	11.3	11.0
Primary care physicians	Ratio of population to primary care physicians	N/A	4964:1	1408:1	1,505:1	1,320:1
Dentists	Ratio of population to dentists	2163:1	2496:1	2162:1	1,852:1	1,480:1
Mental health providers	Ratio of population to mental health providers	4325:1	1536:1	790:1	701:1	470:1
Preventable hospital stays	Number of hospital stays for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	33.0	36.2	43.8	56.8	49.0
Diabetes monitoring	Percentage of diabetic Medicare enrollees ages 65-75 that receive HbA1c monitoring	89.4	75.8	87.0	84.7	85.0
Mammography screening	Percentage of female Medicare enrollees ages 67-69 that receive mammography screening	59.8	57.6	66.9	62.1	63.0
Social and Economic Environment						
High school graduation	Percentage of ninth-grade cohort that graduates in four years	92.5	95.3	85.3	87.2	83.0
Some college	Percentage of adults ages 25-44 with some post-secondary education	57.7	53.3	71.2	62.0	65.0

Exhibit 24: County Health Rankings Data Compared to Indiana and U.S. Averages, 2018 (continued)

Indicator Category	Indicator	Benton County	Carroll County	Tippecanoe County	Indiana	U.S.
Unemployment	Percentage of population ages 16 and older unemployed but seeking work	4.2	4.2	4.0	4.4	4.9
Children in poverty	Percentage of children under age 18 in poverty	17.4	14.2	16.3	19.1	20.0
Income inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	3.5	3.8	5.1	4.4	5.0
Children in single-parent households	Percentage of children that live in a household headed by single parent	26.4	22.4	31.5	33.7	34.0
Social associations	Number of membership associations per 10,000 population	17.3	14.6	10.1	12.3	9.3
Violent crime	Number of reported violent crime offenses per 100,000 population	0.0	0.0	268.2	356.2	380.0
Injury deaths	Number of deaths due to injury per 100,000 population	68.8	67.0	50.3	69.9	65.0
Physical Environment						
Air pollution – particulate matter ¹	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5)	10.8	11.4	11.0	11.1	8.7
Severe housing problems	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities	10.1	8.8	19.3	14.0	19.0
Driving alone to work	Percentage of the workforce that drives alone to work	78.0	82.9	74.4	83.0	76.0
Long commute – driving alone	Among workers who commute in their car alone, the percentage that commute more than 30 minutes	42.0	44.6	14.2	30.5	35.0

Source: County Health Rankings, 2018

Description

Exhibit 24 provides data for each underlying indicator of the composite categories in the County Health Rankings.¹¹ The exhibit also includes Indiana and national averages. Light grey shading highlights indicators found to be worse than the Indiana average; dark grey shading highlights indicators more than 50 percent worse than the Indiana average.

Observations

- The following indicators (presented alphabetically) compared particularly unfavorably across the three counties in the community:
 - Percent of the population under age 65 without health insurance
 - Ratio of population to dentists
 - Ratio of population to mental health providers

¹¹ County Health Rankings provides details about what each indicator measures, how it is defined, and data sources at http://www.countyhealthrankings.org/sites/default/files/resources/2013Measures_datasources_years.pdf

Community Health Status Indicators

Exhibit 25: Community Health Status Indicators, 2018

Indicator	Benton County	Carroll County	Tippecanoe County
Years of Potential Life Lost Rate			
% Fair/Poor Health			
Physically Unhealthy Days			
Mentally Unhealthy Days			
% Low Birth Weight			
% Smokers			
% Obese			
Food Environment Index			
% Physically Inactive			
% With Access to Exercise Opportunities			
% Excessive Drinking			
% Driving Deaths Alcohol-Impaired			
Chlamydia Rate			
Teen Birth Rate			
% Uninsured			
Primary Care Physicians Rate			
Dentist Rate			
Mental Health Professionals Rate			
Preventable Hospitalization Rate			
% Receiving HbA1c Screening			
% Receiving Mammography Screening			
High School Graduation Rate			
% Some College			
% Unemployed			
% Children in Poverty			
Income Ratio			
% Single-Parent Households			
Social Association Rate			
Violent Crime Rate			
Injury Death Rate			
Average Daily PM2.5			
% Severe Housing Problems			
% Drive Alone to Work			
% Long Commute – Drives Alone			

Source: County Health Rankings and Verité Analysis, 2018.

Description

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

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

Exhibit 25 compares Benton, Carroll, and Tippecanoe counties to their respective peer counties and highlights community health issues found to rank in the bottom half and bottom quartile of the counties included in the analysis. Light grey shading indicates rankings in the bottom half of peer counties; dark grey shading indicates rankings in the bottom quartile of peer counties.

Observations

- All three counties ranked unfavorably for a number of indicators. These include overall measures of physical and mental health, smoking rates, physical inactivity and lack of access to exercise opportunities, chlamydia rates, the supply of primary care physicians and other health professionals, educational achievement (percent with some college), and average daily particulate matter (air pollution).
- Carroll ranked in the bottom quartile for 19 (of 34) indicators; Benton and Tippecanoe ranked in the bottom quartile for seven and six indicators respectively.

Exhibit 26: Selected Causes of Death, Age-Adjusted Rates per 100,000 Population, 2016

Measure	Benton County	Carroll County	Tippecanoe County	Indiana
Major cardiovascular diseases	201.5	189.5	228.3	237.4
Diseases of heart	123.6	139.9	177.6	180.6
Cancer	187.3	169.1	166.1	172.5
All other diseases	142.2	140.8	148.2	171.3
Ischemic heart diseases	64.1	73.4	85.8	102.2
Other diseases of heart	51.3	60.1	85.4	68.3
Chronic lower respiratory diseases	32.8	39.4	48.8	54.6
All other and unspecified accidents and adverse effects	25.2	19.9	37.2	40.1
Cerebrovascular diseases (stroke)	49.8	34.7	36.4	39.5
Alzheimer's disease	24.6	29.6	35.4	34.9
Diabetes mellitus	8.2	31.2	10.5	26.0
Influenza and pneumonia	8.2	20.2	10.0	12.6
Motor vehicle accidents	8.2	14.7	4.9	12.4
Chronic liver disease and cirrhosis	14.2	3.1	12.9	11.2
Assault (homicide)	0.0	23.0	0.7	7.6
Congenital malformations, deformations and chromosomal abnormalities	12.0	12.3	3.1	3.9

Source: Indiana State Department of Health, 2017

Description

Exhibit 26 provides age-adjusted mortality rates for selected causes of death in 2016. Light grey shading highlights indicators worse than the Indiana average; dark grey shading highlights any indicators more than 50 percent worse than the Indiana average.

Observations

- Overall, age-adjusted mortality rates were below the Indiana averages.

Exhibit 27: Age-Adjusted Cancer Mortality Rates per 100,000 Population, 2016

Cancer Site or Type	Benton County	Carroll County	Tippecanoe County	Indiana
All Cancers	187.3	169.1	166.1	172.5
Stomach	14.2	0.0	3.4	2.7
Colon, rectum and anus	18.2	28.8	13.9	14.9
Pancreas	19.9	18.7	14.8	11.9
Trachea, bronchus and lung	29.9	40.1	43.9	49.2
Breast	27.9	15.3	10.8	11.6
Cervix uteri, corpus uteri and ovary	24.6	10.0	5.5	8.2
Prostate	0.0	3.3	6.7	7.6
Urinary tract	10.0	6.5	8.5	8.8
Non-Hodgkin's lymphoma	0.0	8.3	7.9	6.4
Leukemia	10.0	7.4	7.6	6.7
Other forms of cancer	32.7	30.8	43.2	44.6

Source: Indiana State Department of Health, 2017

Description

Exhibit 27 provides age-adjusted mortality rates for selected forms of cancer in 2016. Light grey shading highlights indicators worse than the Indiana average; dark grey shading highlights indicators more than 50 percent worse than the Indiana average.

Observations

- Cancer mortality rates for pancreatic cancer and leukemia were higher in all three counties than the Indiana averages.
- Cancer mortality in Benton County exceeded the state average in total and for most cancer types.

Exhibit 28: Age-Adjusted Cancer Incidence Rates per 100,000 Population, 2010-2014

Indicator	Benton County	Carroll County	Tippecanoe County	Indiana
All cancers	446.5	415.1	431.4	445.2
Breast	90.9	95.0	118.8	120.1
Prostate	89.6	88.3	94.5	95.7
Lung and bronchus	82.0	71.2	60.9	72.8
Colon and rectum	48.5	45.1	44.1	43.2
Uterus	N/A	29.7	27.7	27.0
Bladder	N/A	15.0	21.0	21.0
non-Hodgkin lymphoma	N/A	23.0	18.9	19.0
Melanoma of the skin	N/A	17.4	20.8	18.1
Kidney and renal pelvis	N/A	N/A	16.3	17.8
Childhood (Ages <15)	N/A	N/A	12.0	16.1
Leukemia	N/A	N/A	11.9	13.2
Pancreas	N/A	N/A	12.4	12.7
Thyroid	N/A	N/A	16.5	11.8
Oral cavity and pharynx	N/A	N/A	9.6	11.7
Ovary	N/A	N/A	13.4	11.1
Cervix	N/A	N/A	6.3	7.6
Brain and ONS	N/A	N/A	7.3	6.9
Liver and bile duct	N/A	N/A	5.6	6.5
Stomach	N/A	N/A	5.0	5.7
Esophagus	N/A	N/A	3.7	5.4

Source: Centers for Disease Control and Prevention, 2014.

Description

Exhibit 28 presents age-adjusted cancer incidence rates in the community. Light grey shading highlights indicators worse than Indiana averages.

Observations

- In Benton County, overall cancer incidence rates were above the Indiana average.

Exhibit 29: Communicable Disease Incidence Rates per 100,000 Population, 2016

Indicator	Benton County	Carroll County	Tippecanoe County	Indiana
HIV/AIDS*	70.0	42.0	91.0	188.0
Chlamydia	368.9	341.9	536.8	465.0
Gonorrhea	80.7	55.3	122.2	142.5
Primary and Secondary Syphilis	-	0.0	6.3	5.0

*Note: Data from 2014

Source: Indiana State Department of Health, 2016.

Description

Exhibit 29 presents incidence rates for various communicable diseases. Light grey shading highlights indicators worse than Indiana averages; dark grey shading highlights indicators more than 50 percent worse than Indiana averages, if any.

Observations

- Tippecanoe County has had comparatively high incidence rates of chlamydia and syphilis.

Exhibit 30: Maternal and Child Health Indicators, 2011-2015

Indicator	Benton County	Carroll County	Tippecanoe County	Indiana
Infant Mortality Rate (per 1,000 Live Births)	-	-	7.7	7.2
Low Birthweight Percent	4.6%	7.4%	7.1%	8.0%
Preterm Births Percent	8.0%	8.8%	8.5%	9.7%
Early Prenatal Care Percent	66.8%	71.0%	72.1%	68.1%
Smoked During Pregnancy Percent	19.7%	21.0%	13.8%	15.6%
Unmarried Mothers Percent	41.0%	37.0%	37.3%	43.2%
Breastfeeding Percent	75.1%	77.1%	79.6%	77.4%
Mother on Medicaid Percent	40.8%	37.7%	38.7%	44.3%
Teen Birth Rate (15-17)	14.2	7.0	13.4	13.6
Teen Birth Rate (15-19)	33.5	21.6	19.8	30.4

Source: Indiana State Department of Health, 2016

Description

Exhibit 30 presents various maternal and infant health indicators. Light grey shading highlights indicators worse than Indiana averages.

Observations

- In Benton County, the percent of pregnant women with early prenatal care was lower than the Indiana average.

Additionally, the percent of pregnant women who smoked during pregnancy and teen birth rates were above average.

- In Carroll County, the percent of pregnant women who smoked during pregnancy was higher and the percent of breastfeeding was lower than the Indiana averages.
- In Tippecanoe County, the infant mortality rate was above average.

Exhibit 31A: Behavioral Risk Factor Surveillance System, Race/Ethnicity, 2016

Indicator	White	Black	Hispanic	Indiana
Current Smokers	21.0%	23.0%	17.8%	21.1%
Adults without Health Care Coverage	10.8%	17.1%	39.4%	13.6%
Obese (based on BMI)	32.1%	42.1%	26.8%	32.5%
Diabetes	11.4%	16.2%	8.8%	11.5%
Angina or Coronary Heart Disease	5.1%	4.2%	2.2%	4.9%
No Physical Activity in Past Month	26.3%	27.5%	32.9%	26.8%
Asthma	9.8%	15.9%	6.3%	10.2%

Source: Behavioral Risk Factor Surveillance System, 2016

Exhibit 31B: Behavioral Risk Factor Surveillance System, Income, 2016

Indicator	<\$15,000	\$15-\$24,999	\$25-\$49,999	\$50-\$74,999	≥\$75,000	No High School Diploma	Indiana
Current Smokers	38.5%	30.0%	25.3%	16.6%	10.3%	38.1%	21.1%
Adults without Health Care Coverage	23.7%	25.3%	16.3%	7.6%	3.6%	33.1%	13.6%
Obese (based on BMI)	36.5%	35.3%	34.1%	34.6%	28.7%	34.0%	32.5%
Diabetes	18.7%	17.4%	11.9%	9.3%	6.5%	15.4%	11.5%
Angina or Coronary Heart Disease	8.3%	6.5%	5.1%	3.0%	3.0%	6.3%	4.9%
No Physical Activity in Past Month	42.5%	38.0%	28.6%	20.8%	13.7%	41.2%	26.8%
Asthma	20.4%	12.6%	9.5%	7.5%	7.1%	15.6%	10.2%

Source: Behavioral Risk Factor Surveillance System, 2016

Description

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

Exhibits 31A and 31B depict BRFSS data for the state of Indiana by race/ethnicity, income level, and for those without a high school diploma. Light grey shading highlights indicators worse than the Indiana average; dark grey

shading highlights indicators more than 50 percent worse than the Indiana average.

Observations

- The BRFSS data indicate that on all but one measure presented, risk factors were higher for Black residents of Indiana than for Whites (and for lower-income residents than for those with higher incomes). Hispanic (or Latino) residents have experienced higher uninsured and physical inactivity rates.
- BRFSS indicators for residents without a high school diploma were worse than average for all indicators presented.

Ambulatory Care Sensitive Conditions (ACSC) also referred to as Preventative Quality Indicators (PQI)

Exhibit 32: PQI (ACSC) Rates per 100,000, 2017

County	Diabetes Short-Term Complications	Perforated Appendix	Diabetes Long-Term Complications	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults	Hypertension	Heart Failure	Low Birth Weight
Benton County	13.6	1,000.0	13.6	581.7	54.5	449.8	6,896.6
Carroll County	37.5	666.7	62.5	356.1	25.0	300.2	1,604.3
Tippecanoe County	37.6	904.8	55.7	549.6	42.0	230.2	5,382.2
Arnett Community	36.5	888.9	54.5	526.3	40.9	247.1	5,171.0
Indiana	59.0	632.7	110.2	664.1	63.3	434.8	6,174.2
United States	68.9	351.4	101.6	480.9	49.2	321.6	#N/A

Source: IU Health, 2018 - Note: Rates are not age-sex adjusted

County	Dehydration	Community-Acquired Pneumonia	Urinary Tract Infection	Uncontrolled Diabetes	Asthma in Younger Adults	Lower-Extremity Amputation Among Patients with Diabetes
Benton County	122.7	122.7	122.7	40.9	32.9	65.8
Carroll County	50.0	156.4	50.0	25.0	-	37.6
Tippecanoe County	63.7	121.6	90.5	16.6	10.0	25.6
Arnett Community	65.0	125.1	87.9	18.6	10.2	28.0
Indiana	138.5	184.5	148.2	40.6	32.0	82.4
United States	130.1	249.7	155.6	13.2	41.1	17.2

Source: IU Health, 2018 - Note: Rates are not age-sex adjusted

Description

Exhibit 32 provides 2017 ACSC (PQI) rates (per 100,000 persons) for ZIP codes in the IU Health Arnett Hospital community – with comparisons to Indiana and U.S. averages. Light grey shading highlights indicators worse than Indiana averages; dark grey shading highlights indicators more than 50 percent worse than Indiana averages.

ACSCs are health “conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.”¹² As such, rates of hospitalization for these conditions can “provide insight into the quality of the health care system outside of the hospital,” including the accessibility and utilization of primary care, preventive care and health education. Among these conditions are: angina without procedure, diabetes, perforated appendixes, chronic

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

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

Observations

- For Benton County, the rates of admissions for ACSC exceeded Indiana averages for five of thirteen conditions: perforated appendix, heart failure, low birth weight, uncontrolled diabetes, and asthma in younger adults.

¹² Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators.

Exhibit 33: Ratio of ACSC Rates for IU Health Arnett Hospital Community and Indiana, 2017

Indicator	Arnett Community	Indiana	Ratio: Arnett/Indiana
Perforated Appendix	888.9	632.7	1.4
Low Birth Weight	5,171.0	6,174.2	0.8
Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults	526.3	664.1	0.8
Community-Acquired Pneumonia	125.1	184.5	0.7
Hypertension	40.9	63.3	0.6
Diabetes Short-Term Complications	36.5	59.0	0.6
Urinary Tract Infection	87.9	148.2	0.6
Heart Failure	247.1	434.8	0.6
Diabetes Long-Term Complications	54.5	110.2	0.5
Dehydration	65.0	138.5	0.5
Uncontrolled Diabetes	18.6	40.6	0.5
Lower-Extremity Amputation Among Patients with Diabetes	28.0	82.4	0.3
Asthma in Younger Adults	10.2	32.0	0.3

Source: IU Health, 2018 - Note: Rates are not age-sex adjusted

Description

Exhibit 33 provides the ratio of Ambulatory Care Sensitive Conditions (ACSC) also referred to as Preventative Quality Indicators (PQI) rates in the IU Health Arnett Hospital community compared to Indiana averages. Conditions where the ratios are highest (meaning that the PQI rates in the community are the most above average) are presented first.

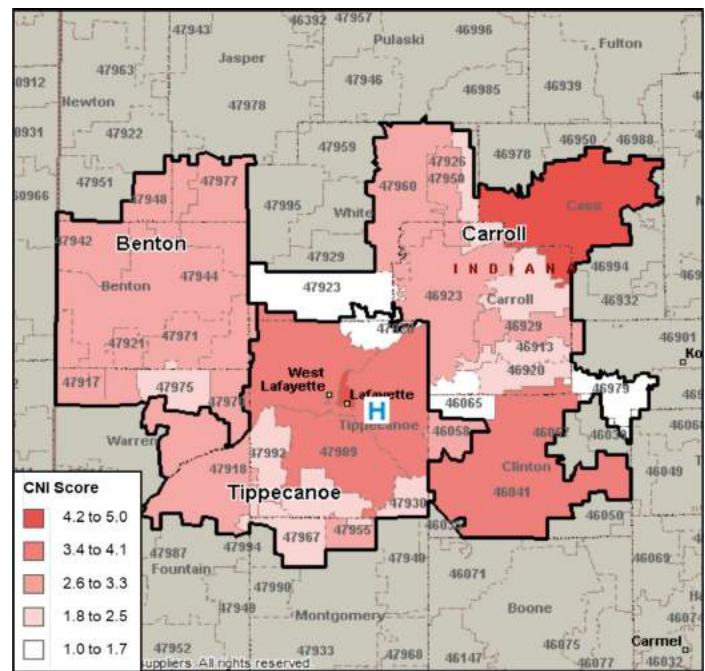
Observations

- In the community, ACSC rates for perforated appendix were 40 percent higher than the Indiana average.
- ACSC rates otherwise were below average.

Community Need Index™ and Food Deserts

Dignity Health Community Need Index

Exhibit 34: Community Need Index, 2017



Source: Microsoft MapPoint and Dignity Health, 2017

Description

Exhibit 34 presents the Community Need Index™ (CNI) score for each ZIP code in the community. Higher scores (e.g., 4.2 to 5.0) indicate higher levels of community need.

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

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

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

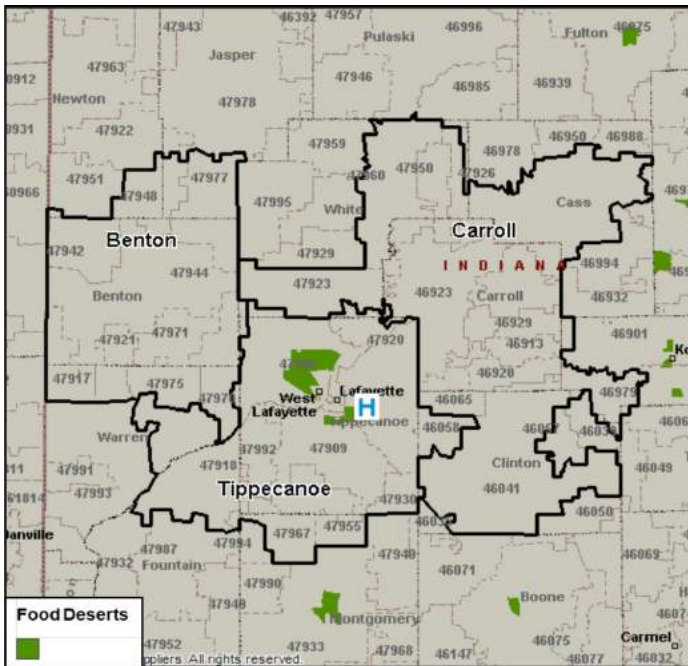
Observations

- Benton County scored a 2.7 on the CNI scale; Carroll County 2.6; Tippecanoe County 3.6.
- The Tippecanoe County overall score (3.6) indicates higher than average need exists in the county.

- Three ZIP codes in the IU Health Arnett Hospital community, Carroll ZIP codes 46947 and Tippecanoe ZIP codes 47901 and 47904, scored in the “highest need” category.

Food Deserts

Exhibit 35: Food Deserts, 2017



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

Description

Exhibit 35 shows the location of “food deserts” in the community.

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

Observations

- Several census tracts in the IU Health Arnett Hospital community have been designated as food deserts, notably in census tracts close to the hospital.

Medically Underserved Areas and Populations

Exhibit 36: Medically Underserved Areas, 2017

County	Designated Area	Medically Underserved Designation Type
Carroll	Whole County	Medically Underserved Area
Tippecanoe	Service Area	Medically Underserved Area

Source: Microsoft MapPoint and HRSA, 2017

Description

Exhibit 36 illustrates the location of Medically Underserved Areas (MUAs) in the community.

Medically Underserved Areas and Populations (MUA/Ps) are designated by the Health Resources and Services Administration (HRSA) based on an “Index of Medical Underservice.” The index includes the following variables: ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.¹³ Areas with a score of 62 or less are considered “medically underserved.”

Populations receiving MUP designation include groups within a geographic area with economic barriers or cultural and/or linguistic access barriers to receiving primary care. If a population group does not qualify for MUP status based on the IMU score, Public Law 99-280 allows MUP designation if “unusual local conditions which are a barrier to access to or the availability of personal health services exist and are documented, and if such a designation is recommended by the chief executive officer and local officials of the state where the requested population resides.”¹⁴

Observations

- While no specific census tracts have been designated medically underserved in the community, the entirety of Carroll and Tippecanoe counties were designated as Medically Underserved Areas.
- Benton County has not been designated to be medically underserved.

¹³ Health Resources and Services Administration. See <http://www.hrsa.gov/shortage/mua/index.html>

¹⁴ Ibid.

Health Professional Shortage Areas (HPSA)

Exhibit 37A: Primary Care Health Professional Shortage Areas, 2018

HPSA	County	Type
Benton County	Benton	Geographic Population
Carroll County	Carroll	Geographic Population
Tippecanoe County	Tippecanoe	Low Income Population HPSA
Purdue University – Family Health Clinics	Tippecanoe	Comprehensive Health Center
Riggs Community Health Center, Inc.	Tippecanoe	Comprehensive Health Center

Source: Health Resources and Services Administration, 2018

Description

Exhibit 37A lists the locations of federally-designated primary care HPSA areas.

A geographic area can receive a federal Health Professional Shortage Area (HPSA) designation if a shortage of primary medical care, dental care, or mental health care professionals is found to be present. In addition to areas and populations that can be designated as HPSAs, a health care facility can receive federal HPSA designation and an additional Medicare payment if it provides primary medical care services to an area or population group identified as having inadequate access to primary care, dental, or mental health services. HPSAs can be: “(1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility.”¹⁵

Observations

- The populations of Benton and Carroll counties and the low-income population of Tippecanoe County have been designated as primary care HPSAs.
- Within the IU Health Arnett Hospital community, two comprehensive health centers have been designated as primary care HPSAs.

Exhibit 37B: Dental Care Health Professional Shortage Areas, 2018

HPSA	County	Type
Benton County	Benton	Low Income Population HPSA
Carroll County	Carroll	Low Income Population HPSA
Tippecanoe County	Tippecanoe	Low Income Population HPSA
Purdue University – Family Health Clinics	Tippecanoe	Comprehensive Health Center
Riggs Community Health Center, Inc.	Tippecanoe	Comprehensive Health Center

Source: Health Resources and Services Administration, 2018

Description

Exhibit 37B shows the locations of federally-designated dental care HPSA areas.

Observations

- Within the IU Health Arnett Hospital community, low-income populations have been designated as dental care HPSAs.
- Within the IU Health Arnett Hospital community, two comprehensive health centers have been designated as dental care HPSAs.

Exhibit 37C: Mental Care Health Professional Shortage Areas, 2018

HPSA	County	Type
Benton County	Benton	Geographic Population
Carroll County	Carroll	Geographic Population
LI- Tippecanoe County	Tippecanoe	Low Income Population HPSA
Purdue University – Family Health Clinics	Tippecanoe	Comprehensive Health Center
Riggs Community Health Center, Inc.	Tippecanoe	Comprehensive Health Center

Source: Health Resources and Services Administration, 2018

Description

Exhibit 37C lists the locations of federally-designated mental health care HPSA areas.

Observations

- Within the IU Health Arnett Hospital community, the populations of Benton, Carroll, and Tippecanoe County have been designated as mental care HPSAs.
- Within the IU Health Arnett Hospital community, two comprehensive health centers have been designated as mental care HPSAs.

¹⁵ U.S. Health Resources and Services Administration, Bureau of Health Professionals. (n.d.). Health Professional Shortage Area Designation Criteria. Retrieved 2012, from <http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/index.html>

Findings of Other Community Health Needs Assessments

Indiana State Health Assessment and Improvement Plan

A State Health Assessment and Improvement Plan (SHA) was published recently by the Indiana State Department of Health.¹⁶ The SHA was conducted in collaboration with over 100 partner organizations, key informants, and health experts to identify and address Indiana's greatest health challenges.

The Indiana Health Improvement Partnership (IHIP), met three times during 2017 and early 2018 to develop key components of the SHA including values, forces of change analysis, and assessment of strengths, weaknesses, opportunities, and threats. The process involved five steps:

1. Conducting a community health status assessment;
2. Assessing and analyzing prior assessments;
3. Reviewing other agency and coalition plans;
4. Interviewing key informants and gathering qualitative data; and
5. Identifying health needs.

State Health Assessment. The SHA had the following conclusions regarding state health needs:

- After reviewing assessments from local health assessments around the state, ten needs were most often prioritized:
 - Access to care
 - Mental and behavioral health
 - Obesity
 - Substance abuse disorders
 - Nutrition and physical activity
 - Diabetes
 - Tobacco use
 - Heart disease
 - Cancer
 - Maternal and infant health
- The initial prioritization of health needs by the IHIP steering committee focused on the following areas:
 - Social determinants of health and health equity
 - Improving public health infrastructure (funding and culture/equality of public health practices)
 - Improving health and reducing health disparities, particularly in the areas of chronic disease, birth outcomes and infant mortality, reduced injury and death due to opioid exposure, and improved access to mental health services
- When asked about barriers to achieving optimal health in their communities, key informants indicated that low staffing levels, low funding levels, being able to break cultural barriers, increases in drug use, poverty and apathy, lack of free clinics, unaffordable healthcare and

medications, lack of available affordable housing, provider billing, and limited local resources as major limitations.

- Social determinants of health were recognized as a key component to achieving optimal health in Indiana, with a recognition to improve population health, "the public health system must expand to include non-traditional partners such as transportation, workforce development, and housing."
- Income inequality was identified as a social determinant of health need, with the top 20 percent of households in Indiana having an income 13.5 times higher than the bottom 20 percent.
- Indiana residents report different health status based on their location in the state, largely due to access to affordable healthcare. Mid-sized population areas report the lowest number of poor or fair health days, while rural areas report the highest.
- Indiana introduced expanded insurance options for lower income residents through the Healthy Indiana Plan (HIP) 2.0 in 2015. Over 1.4 million residents are enrolled in Medicaid in the state, with more than 20,000 of these enrollees being pregnant women.
- Language barriers and cultural competency of services were identified as major obstacles to receiving healthcare and social services in Indiana.
- Heart disease, cancer, and stroke were identified as the top causes of mortality in Indiana and identified as significant needs in the community.
- Indiana was the tenth most obese state in the nation, with over two-thirds of adults being overweight and almost a third being obese. Obesity disproportionately affects low-income, rural, and African American populations.
- Poor nutrition contributed to four of the top ten causes of death in Indiana: cardiovascular disease, stroke, diabetes, and cancer.
- Over 21 percent of Indiana adults were current smokers, the tenth highest rate in the nation and contributing to five of the top ten leading causes of death (cardiovascular disease, stroke, diabetes, chronic lower respiratory disease, and cancer). Smoking rates are disproportionately high for low income adults, those with a high school education or less, and those identifying as LGBT.
- Infant mortality has been an Indiana health priority since 2014. The national rate of infant deaths is 5.9 deaths per 1,000 live births. In Indiana, this rate was 7.5 in 2016. Additionally, Healthy People 2020 established a goal of 6.0 deaths by 2020.
- Drug overdose and opioid-related deaths increased by 500 percent between 1999 and 2016. More than 1,500 residents died of drug overdoses in 2016, with 785 of these overdoses being from opioids. This increase in opioid-related deaths represents a 1,725 percent increase since 1999.

State Health Improvement Plan. After the finalization of the state health assessment, a state health improvement

¹⁶ Available at: <https://www.in.gov/isdh/18888.htm>

plan (SHIP) was drafted to address the final priorities. These priorities were:

- Improve birth outcomes and reduce infant mortality
- Address the opioid epidemic
- Reduce rates of chronic disease
- Improve the public health infrastructure

Exhibit 38: Significant Needs Identified in Other CHNAs

Prioritized Need	Frequency
Mental/Behavioral health	3
Access to basic/primary health care	2
Chronic disease management	2
Drug/ substance abuse	2
Housing issues/Homelessness	2
Access to dental care	1
Access to mental health services	1
Home healthcare service	1
Nutrition/access to healthy food	1
Obesity	1
Physical inactivity/lack of exercise	1
Tobacco use/smoking	1

Source: Analysis of Other CHNA Reports by Verité, 2018

Description

Several other needs assessments conducted by hospital facilities were reviewed. Significant needs identified by these facilities are presented in Exhibit 38. The reviewed assessments include the following:

- Franciscan St. Elizabeth Health-Lafayette Central and East CHNA 2015-16
- Riverbend Hospital CHNA 2015
- Tippecanoe County CHNA 2016

Observations

- The following indicators most often were identified as significant in other hospital CHNAs that assessed IU Health Arnett Hospital's community:
 - Mental and behavioral health
 - Access to basic and primary health care
 - Chronic disease management
 - Drug and substance abuse
 - Housing issues and homelessness

APPENDIX C – INTERVIEWEES AND COMMUNITY MEETING PARTICIPANTS

Individuals from a wide variety of organizations and communities participated in the interview process and/or community meetings (Exhibit 39).

Exhibit 39: Interviewee and Community Meeting Participant Organizational Affiliations

- Benton County Health Department
- Carroll County Chamber of Commerce
- Carroll County Council
- Carroll White Rural Electric Membership Corporation (REMC)
- City of Lafayette
- Delphi Community Elementary School
- Family Health Clinics (North Central Nursing Clinics)
- Food Finders Food Bank
- Hanna Community Center
- Heartford House Child Advocacy Center
- Henriott Group, Inc.
- IU Health
- IU Health Arnett Hospital
- IU Health West Central Region
- LTHC Homeless Services
- Lafayette Family YMCA
- North Central Health Services
- Purdue Extension
- Riggs Community Health Center
- Sycamore Springs
- Tippecanoe Arts Federation
- Tippecanoe County CASA
- Tippecanoe County
- Tippecanoe Health Department
- United Way of Greater Lafayette
- YWCA Greater Lafayette
- YWCA Foundation

APPENDIX D – IMPACT OF ACTIONS TAKEN SINCE THE PREVIOUS CHNA

This appendix discusses the impact of community health improvement actions taken by IU Health Arnett Hospital to address significant community health needs since its last CHNA report was conducted. The impacts (both expected and achieved) of each community health program are described below.

Nutrition and Active Living (Obesity Prevention)

- **Community Walking Programs.** During the three year period, IU Health Arnett Hospital sponsored free water walking days, and during 2016 and 2017 coordinated walking groups with a walking coach from the YMCA. Staff time and funding for participant incentives were the resources utilized.
- **Strong Schools and Gaga Pits.** IU Health Arnett Hospital worked with two local schools to assist them in aiming to increase the amount of physical activity for students and teachers in addition to creating a healthier school environment. 1,122 elementary students attended the schools that received gaga ball pits.
- **Community Health Education.** IU Health Arnett Hospital employees provided education on topics such as nutrition and physical activity in a variety of settings including Farmers' Markets, a Health & Safety Fair, and local senior residences. Staff time was utilized for the education sessions. Over 2,000 individuals attended the various health fairs, etc. where community health education was provided. Over 4,200 hours of community health education programming occurred. The information provided helped the individuals increase their knowledge and awareness about nutrition and active living.
- **Meals on Wheels.** IU Health Arnett Hospital provides meals for the local Meals on Wheels program. Hospital staff prepares meals, per dietary restrictions, for individuals that have challenges getting meals on their own. Approximately, 4,100 hours of staff time per year is allocated to this program. About 90 seniors are served by the program and approximately 35,000 meals are provided each year.

Access to Healthcare

- **Low-Cost Healthcare Options.** IU Health Arnett Hospital provides financial assistance and information on prescription assistance to those in need. Low cost

physicals are offered to high school athletes, and support groups are offered for conditions such as cancer, obesity, breastfeeding, and diabetes. Staff time is utilized in each of these endeavors. During 2016, financial navigators enrolled 1,112 patients in insurance coverage, and during 2017, the number rose to 1,526.

- **Car Seat Installations and Donations.** This program is a collaboration between IU Health Arnett Hospital and IU Health White Memorial and any statistics include both hospitals. Car seat installations are performed to ensure the safety of child passengers. In addition, during 2017, 402 car seats were donated to families. Staff time is utilized for the car seat fittings. During 2017, 1,201 car seats were installed, and it is anticipated that during 2018, they will reach the milestone of 10,000 car seat installations.
- **Certified Patient Centered Medical Home.** IU Health Arnett Hospital is hoping to achieve better outcomes with asthmatic and diabetic patients in addition to providing better and more coordinated care. Resources include staff time.
- **Transportation.** The hospital worked with City Bus to get the hospital and the new medical building on the bus route. This provided the Patient Service Representatives with additional information on transportation options for the area that they could share with patients. For the years of 2016 and 2017, there was a combined total of 5,964 passengers boarded and 5,796 passengers dropped off on these routes.
- **Nurse Family Partnership.** The goal of the Nurse Family Partnership program is to provide prenatal and postnatal care to residents of both Tippecanoe and White counties. This program was a collaboration between IU Health White and IU Health Arnett Hospital. There was a monetary investment by the system for this program and staff time was involved. The program began in 2015 with 22 mothers and entered 2016 with 21 clients. During 2017, 21 mothers completed the program. Funding was not available to continue this program in 2018.

Behavioral Health

- **Screening, Brief Intervention, and Referral to Treatment (SBIRT Training).** IU Health Arnett Hospital provided SBIRT training in 2015. SBIRT is an early intervention and treatment model for people with substance use disorders and those at risk of developing these disorders. The goal of the program is to increase identification and treatment of individuals with substance abuse disorders. Thirty individuals attended the training.
- **Mental Health America Question, Persuade, and Refer (QPR) Suicide Prevention Training/National Alliance on Mental Illness (NAMI) Training.** QPR training teaches community members the warning signs of those in mental crisis and awareness for high school students/teachers on how to get help for crisis situations.

IU Health Arnett Hospital paid for training to be conducted by Mental Health America of the Wabash Valley Region. In 2016 and 2017, 183 and 259 people were trained in QPR, respectively. In addition, 578 people were trained in Mental Health First Aid and 176 people in Youth Mental Health First Aid.

- **Teen Texting Program.** The SAFE2TALK program is a crisis hotline that allows students to text for help with mental health issues rather than calling. Staff time was utilized to meet with school officials and Mental Health America (MHA) to plan and implement the program. During 2017, 3,043 calls and 114 texts were made to MHA and Safe2Talk was promoted in all Tippecanoe School Corporation middle and high schools. In 2018, Safe2Talk is to be rolled out in schools in White, Clinton, and Carroll counties.
- **Quit for Life.** The Indiana Tobacco Quitline is a free phone-based counseling service that helps Indiana smokers quit. Staff referred team members to the Quitline. During 2016 and 2017, there were 13 and 10 Quit for Life participants, respectively.
- **New Behavioral Health Program in Primary Setting.** The new program provides outpatient access to community members requiring behavioral health services. The second part of the program involves working in collaboration with Sycamore Springs, River Bend Hospital, and NAMI to serve community members in need of inpatient behavioral health services. The entire department is dedicated to providing necessary services to patients – staff time, clinic space, office space. During 2017, seven providers provided 3,939 patient visits at no charge. In 2018, four behavioral health specialists were embedded in primary care clinics to provide immediate care to patients needing behavioral health services.

Chronic Disease Management

- **Community Event Health Education.** In order to increase the health knowledge of attendees, staff participated in Health & Safety Fairs, screenings, and education sessions. Activities included blood pressure and cholesterol screenings, support groups, a sleep quiz, and diabetes education. During 2016, 40,837 people were served and 1,824 screenings occurred.
- **Aging Brain Care (ABC) Program.** The ABC program provides support for patients and family members supporting those with dementia. There is no cost to patients to participate in this program. Approximately, 400 patients have been served each year through this program.

K-12 Education

- **United Way's Kindergarten Countdown (K-Camps) Support.** These United Way programs aim to increase readiness for students entering Kindergarten. Staff time was utilized along with donations of funding of \$79,060, \$40,000, and \$20,000 during 2016, 2017, and 2018, respectively.

APPENDIX E – CONSULTANT QUALIFICATIONS

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

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



Arnett Hospital