



# Community Health Needs Assessment

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### Icon Legend

St. Luke's Community Health Needs Assessment Data

# Executive Summary

## ..... Key Findings .....

From our analysis of primary and secondary data, as well as the Community Health Needs Assessment (CHNA) key informant interviews and work with our community members, we see significant issues facing our communities that impede healthy lifestyles. Our efforts in prevention, care transformation, research, and partnerships help support our work to promote sustainable programs and opportunities for our reach to focus on a wide range of health promotion and quality of life initiatives. While there are many issues that need to be addressed, the results from the 2022 CHNA found the top priorities for the St. Luke's network include:

2022 Community Health Needs Assessment
Top Priority Outcomes
COVID-19
Access to Care
Workforce Development
Food Insecurity
Obesity Reduction
Physical Activity Promotion
Mental Health
Opioids and other Substance Use
Housing
Transportation

The needs discussed within the health categories outlined in this document will serve as our guide in creating a detailed network implementation plan to best address the needs of the St. Luke's University Health Network service areas using three pillars:

**\*Wellness and Prevention**

**\*Care Transformation**

**\*Research and Partnerships**

We will work collaboratively in partnership with our community and network partners to create a more equitable society with better health outcomes, especially among our most vulnerable populations such as our Hispanic communities, seniors, women, and children.

# Introduction

## ..... Background .....

As part of the Patient Protection and Affordable Care Act, nonprofit hospitals are required to conduct a Community Health Needs Assessment (CHNA) every three years to maintain tax-exempt status under section 501(c)(3) of the Internal Revenue Code. The goal of the assessment is to identify critical health disparities faced by populations within St. Luke's University Health Network (SLUHN) service areas. The assessments state health priorities unveiled by community stakeholders, hospital professionals, and public health experts. Additionally, regional implementation plans will be crafted to build collaborative partnerships to determine the allocation of resources to address the specified health needs. To view our previous CHNA reports, please refer to the following link: <https://www.slhn.org/community-health/community-health-needs-assessment>. If you have any questions regarding any of these reports, please contact the Department of Community Health at (484) 526-2100.

## ..... Methodology .....

The CHNA is comprised of both primary and secondary data. The primary data were collected through three methods. First, key informant interviews were performed with leaders from each campus community to identify high level strengths and needs in their respective communities. A list of the interview questions can be found in Appendix A. Second, a community forum was held for each campus community through SLUHN and facilitated by Dr. Christopher Borick of Muhlenberg College. A list of organizations represented at the forum can be found in Appendix B. Quotes from key informants and community forum participants are reported throughout the assessment and highlighted in grey boxes unless otherwise noted. Due to the COVID-19 pandemic, key informant interviews were conducted through Microsoft Teams and the community forums were conducted through Zoom. Third, 11,523 voluntary CHNA surveys were administered throughout our fourteen campus geographic regions, where the main priority health needs were identified. We used snowball sampling to reach respondents, especially those represented in our vulnerable populations. Snowball sampling is most effective when used to reach vulnerable populations to help to shed light on the social determinants of health (SDOH) within hard-to-reach populations. To reach populations with diverse resources, surveys were completed in either paper or digital format. The survey findings document, also posted online, lists questions and responses recorded from CHNA surveys conducted in 2012, 2016, 2019, and 2022. Secondary data included the use of hospital network data as well as county, state, and national level data obtained from the following: U.S. Census, the Robert Wood Johnson Foundation, Vital Statistics, Community Commons, the American Community Survey (ACS), U.S. Department of Labor, the Behavioral Risk Factor Surveillance System, as well as other data sources, which can be found in the footnotes. The needs identified in the

interviews and community forums were supplemented by the survey data and secondary data to provide a comprehensive picture of the contributing factors and needs in the community.

## ..... Existing Network Community Assets .....

The St. Luke's Community Health Department has a variety of health initiatives and goals for each fiscal year. These initiatives and goals are in place to help respond to the needs identified in the most recent assessment and addressing social determinants of health and lifestyle behaviors in hopes of making the community healthier. The strategies St. Luke's uses to reach these goals are through prevention, care transformation, and research and partnerships. For the previous CHNA, our initiatives and goals addressed chronic disease, mental and behavioral health, along with access to care.

Within the chronic disease health priority, St. Luke's introduced Fit for Life, with the goal to promote healthy lifestyles and prevent chronic disease by increasing physical activity and fruit and vegetable consumption based on lifestyle medicine principles. Fit for Life includes Get Your Tail on the Trail, which is a partnership with the Delaware & Lehigh Corridor (D & L) to encourage overall physical activity among community residents in order to promote enjoyment of nature and reduce obesity while concurrently integrating programs such as Walk with a Doc, where participants learn directly from a St. Luke's provider and go on a walk together. In conjunction with Fit for Life, St. Luke's Healthy Kids Bright Futures Garden Program provided garden resources for the school-aged population. These resources included seed packets with planting instructions, recipes for utilizing fresh produce, and a weekly Healthy Living Tracker to record and monitor physical activity, sleep, and fruit/vegetable consumption.

In the mental and behavioral health priority, St. Luke's focused on employee mental health by providing online cognitive behavioral therapy to employees and their spouses, with 3,028 participants in 2020. In partnership with Pinebrook Family Answers and United Way of the Greater Lehigh Valley, St. Luke's provided mobile mental health vans in Allentown, Bethlehem, and Panther Valley school districts (SD). Despite the suspension of van use in March 2020 due to COVID-19, 93% of students with needs or who sought services were reached in the Allentown SD, along with 84% of students in Bethlehem SD and 76% of students in Panther Valley SD. In relation to drug use, St. Luke's campuses participated in both the spring and fall "Take Back Days" in 2019 and collected 698.9 pounds of unwanted medications. To further improve harm reduction, all St. Luke's campuses installed a permanent drug take back box. In response to opioid use disorder and substance use disorders, St. Luke's was awarded a Health Resource Service Administration (HRSA) Rural Community Opioid Response Planning (RCORP) grant in 2018 to work within a consortium to improve OUD prevention, treatment, and recovery response. With the grant, along with funding from Lehigh county's Single County Authority on Drug and Alcohol, St. Luke's ran an urban (St. Luke's Sacred Heart Naloxone Initiative) and rural (St. Luke's Miners campus) pilot, which educated and distributed naloxone to 751 and 255 people, respectively in 2021.

To address the access to care health priority, St. Luke's Maternal Child Health Initiative served 371 families in 2020. St. Luke's also focused on literacy initiatives, which helped to distribute over 12,000 books to children, installed 6 little free libraries across 6 SLUHN campuses, and served over 4,600 students in 234 classrooms on Dr. Seuss Day. During fiscal year 2019-2020, St. Luke's Adolescent Career Mentoring Initiatives served a total of 78 high school students, with a high school graduation rate of 99%. Another St. Luke's asset is the partnership with the Hispanic Center Lehigh Valley (HCLV), a collaboration to support low-income community members in Bethlehem's Southside neighborhood and throughout Northampton county. In 2019-2020, HCLV and St. Luke's helped to connect 460 individuals with community resources through the Community Empowerment Program. HCLV's food pantry served 2,530 individuals from 425 distinct households during 2019-2020. St. Luke's also has a sister organization, Star Community Health, a Federally Qualified Health Center (FQHC) look-alike outpatient center that provides primary care, OB/GYN, dental, and pediatric health services to the medically underserved, including the uninsured and underinsured. Other community-based St. Luke's assets, apart from the top-ranked clinical care and teaching hospital features, include the Lyft program, Parish Nursing, and the HOPE Clinic. Additionally, SLUHN acquired the Penn Foundation to help support the mental and behavioral health needs of our population and build capacity to address the service needs related to mental and behavioral healthcare.

Throughout the COVID-19 pandemic, SLUHN has been able to pivot and meet the needs of the community through existing relationships built with nonprofits, schools, and community-based organizations that have assisted with initiatives, education, and providing services in our communities.

## ..... County Health Rankings .....

Every year, the Robert Wood Johnson Foundation releases data that compare counties to state averages, as well as U.S. top performers. Figure 1 depicts select health indicators for 2021 for each of the counties in SLUHN's service area. There are 20 indicators evaluated for each county with the US top performers being the counties at the 90<sup>th</sup> percentile for the nation. Indicators are color-coded using a stoplight approach, in which green indicates that the value is higher than both state and U.S. top performers, yellow indicates that the value is in between state and U.S. top performers, and red indicates that the value is at or worse than both state and U.S. top performers. Data indicates (180 values), 60% are red (108), 21% are yellow (38), and 19% are green (34). In 2018, 47% of values were red (84), 40% were yellow (73), and 13% were green (23). From 2018 to 2021, there was a 28.6% increase in red values, a 47.9% decrease in yellow values, and a 47.8% increase in green values. Out of the counties where a St. Luke's hospital is located, Bucks county has the most green values (45%) and Carbon, Monroe, and Schuylkill all have the least amount of green values with 5% each.

\*The Robert Wood Johnson Foundation reports their findings as the year 2021, but many of the measures are reported from previous years. Please see <https://www.countyhealthrankings.org/> for more information.

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2021	U.S. Top Performers*	Pennsylvania (PA)	Berks (BR) County, PA	Bucks (BU) County, PA	Carbon (CR) County, PA	Lehigh (LH) County, PA	Monroe (MO) County, PA	Montgomery (MT) County, PA	Northampton (NO) County, PA	Schuylkill (SC) County, PA	New Jersey (NJ)	Warren (WA) County, NJ
Unemployment	2.6%	4.4%	4.3%	3.8%	5.4%	4.5%	5.4%	3.5%	4.5%	5.4%	3.6%	3.3%
Uninsured	6%	7%	7%	5%	6%	8%	8%	5%	6%	6%	9%	7%
Primary care physicians	1,030:1	1,230:1	1,600:1	1,180:1	2,380:1	990:1	2,420:1	730:1	1,210:1	1,870:1	1,180:1	1,680:1
Dentists	1,210:1	1,410:1	1,780:1	1,150:1	2,290:1	1,130:1	2,580:1	920:1	1,700:1	2,210:1	1,140:1	1,350:1
Poor physical health days	3.4	4.0	4.0	3.1	4.3	4.1	4.0	3.3	4.0	4.5	3.7	3.9
Food environment index	8.7	8.4	8.6	9.1	8.3	8.4	8.0	9.1	8.7	8.3	9.4	8.7
Physical inactivity	19%	22%	22%	18%	24%	17%	24%	18%	27%	24%	27%	28%
Access to exercise opportunities	91%	84%	86%	89%	75%	82%	86%	95%	87%	75%	95%	97%
Adult obesity	26%	31%	34%	28%	34%	31%	33%	25%	31%	37%	27%	32%
Excessive drinking	15%	20%	21%	23%	22%	22%	20%	22%	22%	21%	16%	21%
Adult smoking	16%	18%	20%	16%	23%	18%	20%	14%	19%	23%	13%	17%
Poor mental health days	3.8	4.7	4.6	4.4	5.1	4.7	4.9	4.4	4.7	5.2	3.8	4.6
Mental health providers	270:1	450:1	680:1	390:1	1,600:1	510:1	830:1	280:1	420:1	1,210:1	420:1	470:1
Low birthweight	6%	8%	8%	8%	9%	8%	9%	7%	8%	8%	8%	8%
Teen births	12	17	21	6	19	21	11	7	12	22	12	9
Sexually transmitted infections	161.2	463.4	475	245.1	175.4	511.9	367.8	295.1	411.0	244.8	405.5	206.9
High school graduation	94%	91%	87%	94%	89%	89%	90%	94%	91%	89%	90%	91%
Children in poverty	10%	17%	16%	7%	14%	18%	17%	7%	10%	16%	12%	9%
Severe housing problems	9%	15%	15%	15%	14%	16%	18%	15%	14%	11%	21%	15%
Social associations	18.2	12.2	11.4	7.7	13.9	10.2	7.6	11.2	10.6	13.2	8.7	9.5
University of Wisconsin Population Health Institute. County Health Rankings and Roadmaps. 2021.		KEY	At or above State/Top Performer			Between Top Performers and State			At or below State/Top Performer			

Figure 1

# Demographics

St. Luke's University Health Network reaches people from multiple counties and zip codes across the Lehigh Valley, western New Jersey, as well as others who travel to our campuses and receive care from beyond our local reach. St. Luke's has 14 different hospital location across Bucks, Carbon, Lehigh, Monroe, Northampton, Schuylkill, and Warren (NJ) counties, including a new Behavioral Health Center on Lehighton's campus. St. Luke's also serves portions of patients from Berks and Montgomery counties. A total of 46 zip codes account for 80% of the St. Luke's service area (18012, 18017, 18103, 18015, 08865, 18042, 18235, 18018, 18045, 18064, 18104, 18360, 18951, 18020, 18052, 18252, 18301, 18040, 18109, 19071, 18067, 18013, 18062, 18229, 18353, 18055, 18014, 18036, 18049, 18058, 18232, 18302, 18210, 18091, 18330, 18466, 18240, 18080, 18072, 18034, 07882, 18088, 07823, 18073, 18250, 18032). The top three zip codes include 18102 (Lehigh County- Allentown), 18107 (Northampton County- Bethlehem), and 18103 (Northampton County- Bangor). The Allentown and Sacred Heart service area has the most amount of people living in an urban area (94%).<sup>1</sup> The US Census Bureau defines an urban area by population density, count, size thresholds, and the amount of impervious surface development (i.e., areas impervious to water seeping into the ground, concrete-heavy areas). Rural areas are all other areas not defined as urban.<sup>2</sup> The Rural West service area, comprised of Miners, Lehighton, and Carbon hospitals, has the highest percent of population living in a rural area (43.5%).<sup>3</sup> Similarly, Allentown and Sacred Heart hospitals have the highest population density, 1,156.17 people per square mile, while Rural West has the smallest population density, 217.11 people per square mile.<sup>4</sup>

## ..... Population .....

The following sections give an overview of the St. Luke's service area populations. Understanding the demographics of the service area is essential to addressing need and improving upon the region's health services. The following data come from American Community Survey (ACS) 5-year estimates (2015-2019) by the Census Bureau and St. Luke's Community Health Needs Assessment (CHNA) survey data unless stated otherwise.<sup>5</sup> Please refer to the Network and Campus Community Health Needs Assessment Survey Findings document for more detailed information.

<sup>1</sup> Data.census.gov (2010 Decennial Census)

<sup>2</sup> <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html>

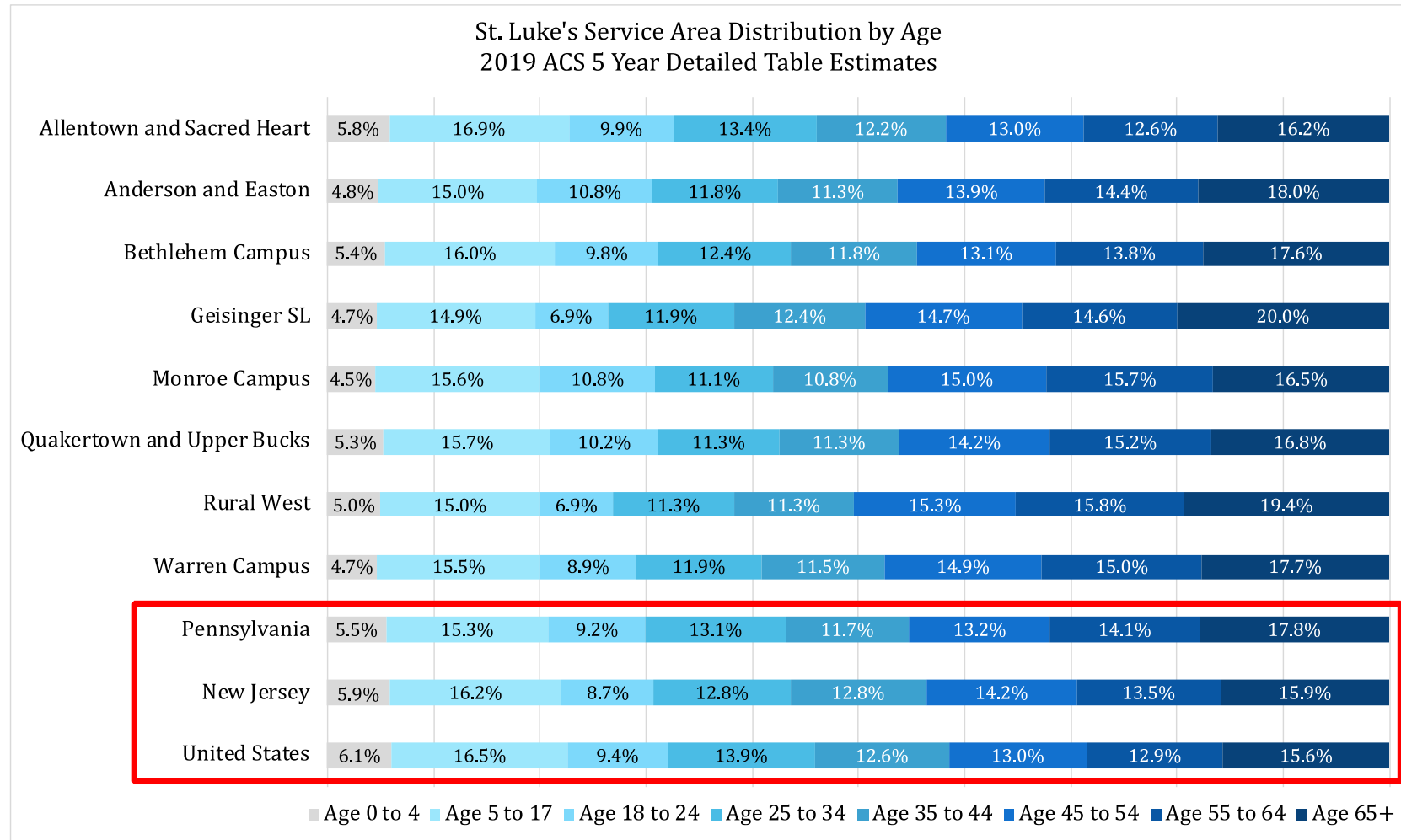
<sup>3</sup> Data.census.gov (2010 Decennial Census)

<sup>4</sup> Data.census.gov (2019 ACS 5 Year Detailed Tables)

<sup>5</sup> <https://www.census.gov/programs-surveys/acs/>

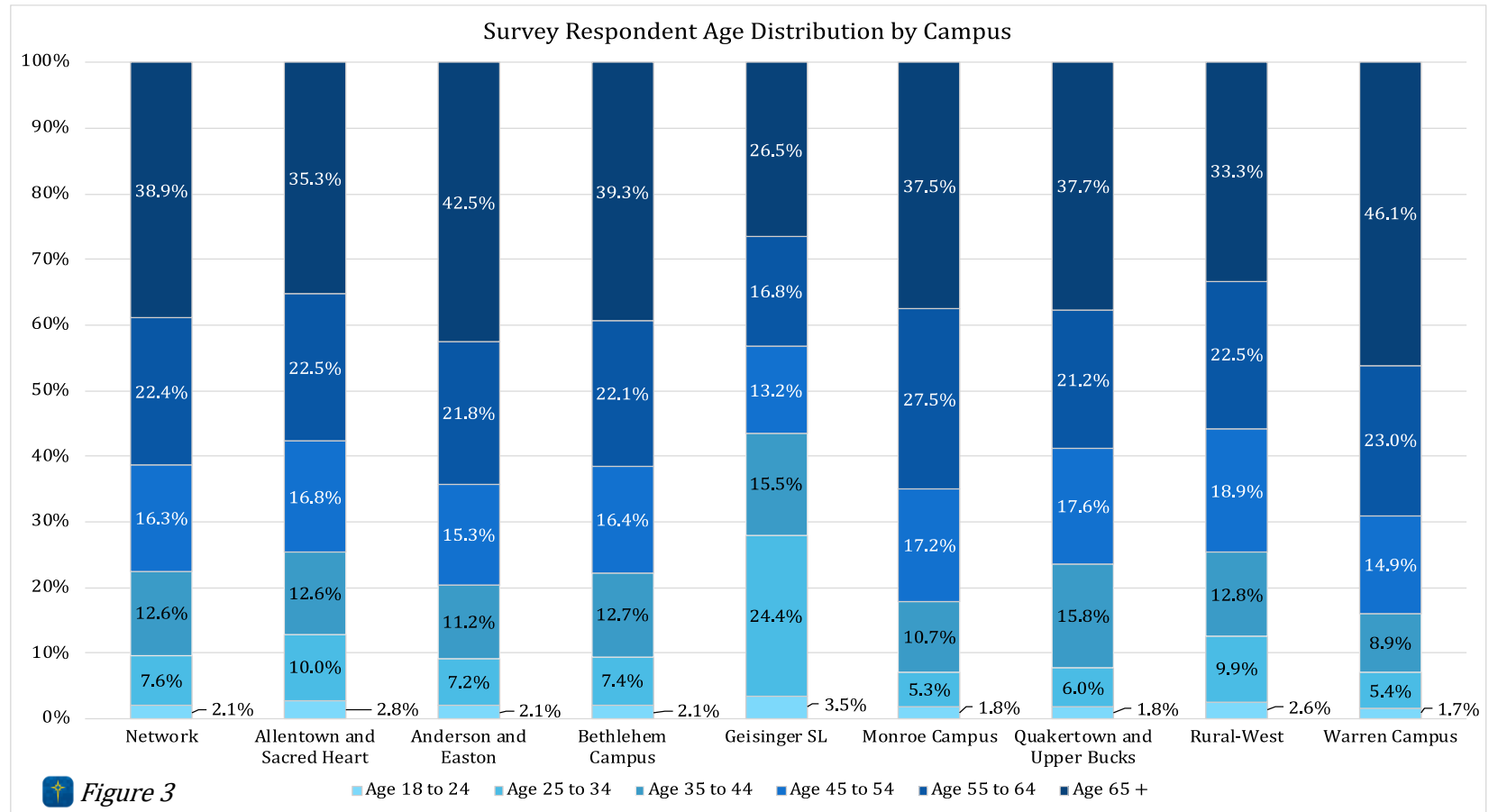
## Age

St. Luke's provides services for a wide range of ages, all requiring specific needs throughout the life span. The Allentown and Sacred Heart service area has the greatest number of children under 18 years, which accounts for 22.7% of their population. Geisinger St. Luke's provides services to the highest number of people 65 years and older, which account for 20% of their population. The numbers vary by service area, but generally the ACS reports that all the service area populations are approximately 20%-22% children, 60%-64% adults 18 to 64 years old, and 16%-20% adults 65 years and older.



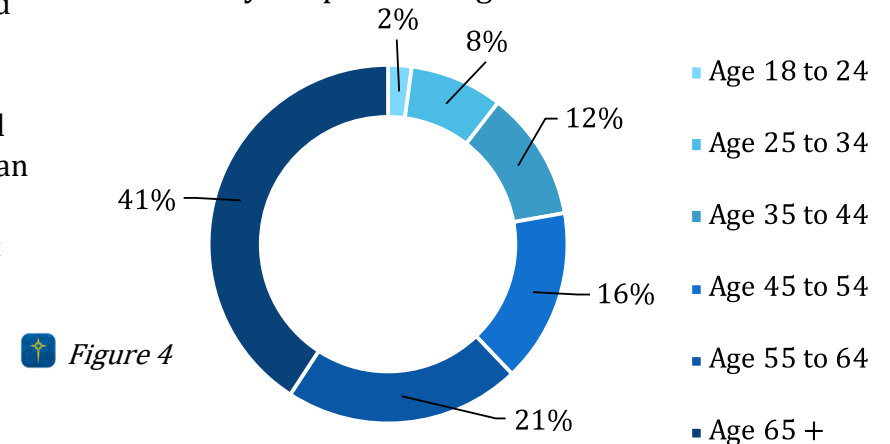


## 2022 St. Luke's University Health Network Community Health Needs Assessment



Compared to the Census distribution, most survey respondents were 65 and older (41%) followed by 55 to 64 years old (21%). When looking at the age breakdown by campus, Geisinger St. Luke's had the largest portion of respondents ages 25 to 34 (24.4%). The survey assessed individuals 18 and older, therefore ages under 18 are not reflected in survey results. The median age of all respondents was 60 years old. Based on the U.S. Census findings, the data from the survey provide insight into network-specific findings that are skewed with a larger population of 65 and older respondents.

### Total Survey Respondent Age Distribution



## ..... Sex .....

The 2019 ACS survey asked respondents to indicate their sex (male or female only) assigned at birth. Generally, the population of all SLUHN service area communities are evenly split between men and women with women as a slightly higher percentage of the population, which is on par with the Pennsylvania and New Jersey state averages as well as the United States. The Warren campus (NJ) population has the largest difference between the sexes (3%) and Rural West has the smallest difference (0.6%).

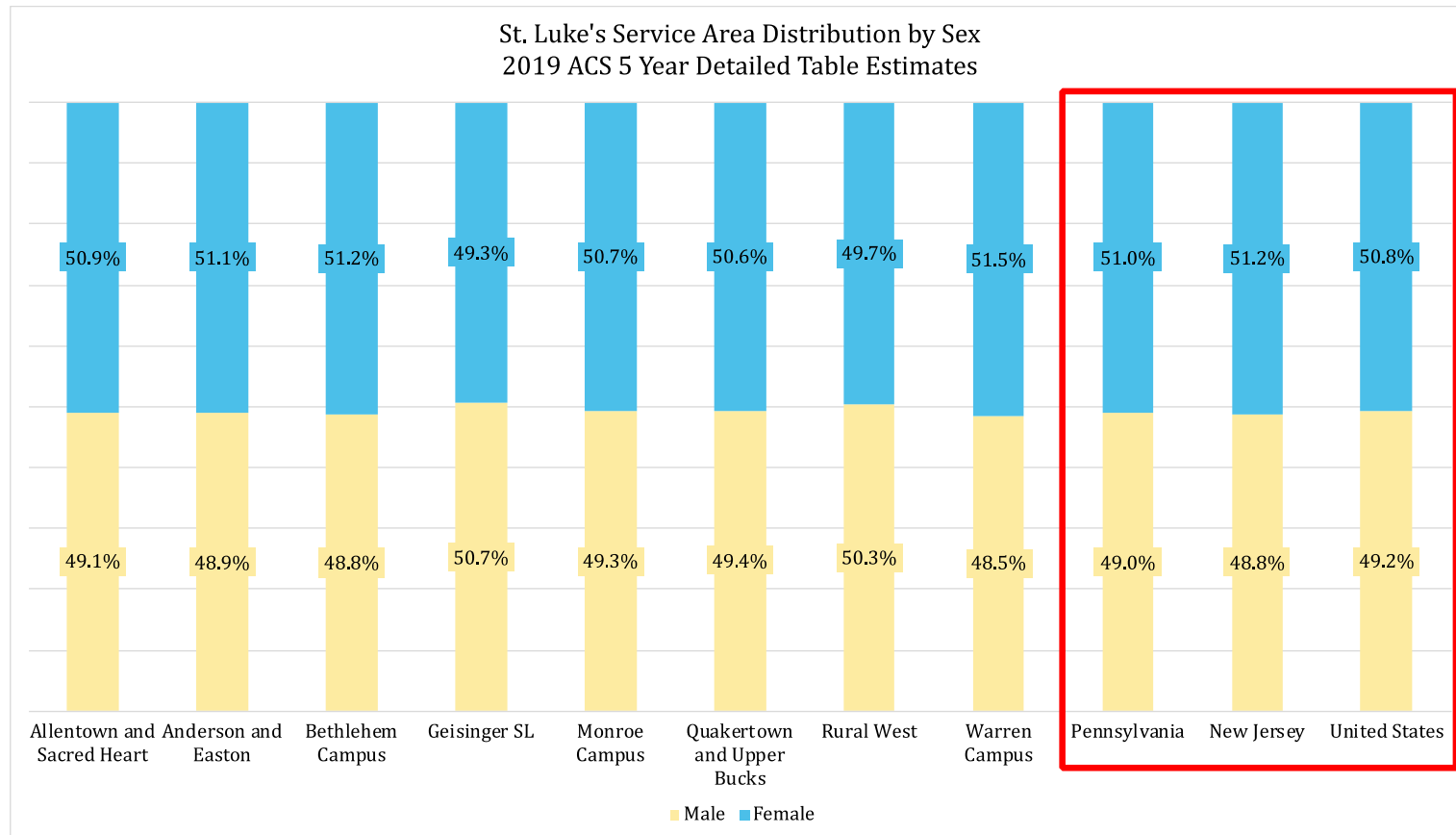
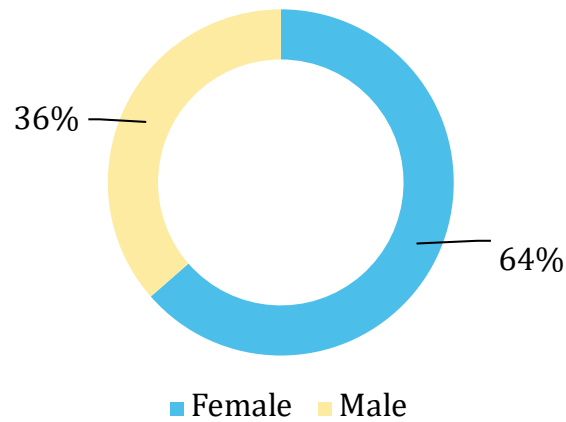



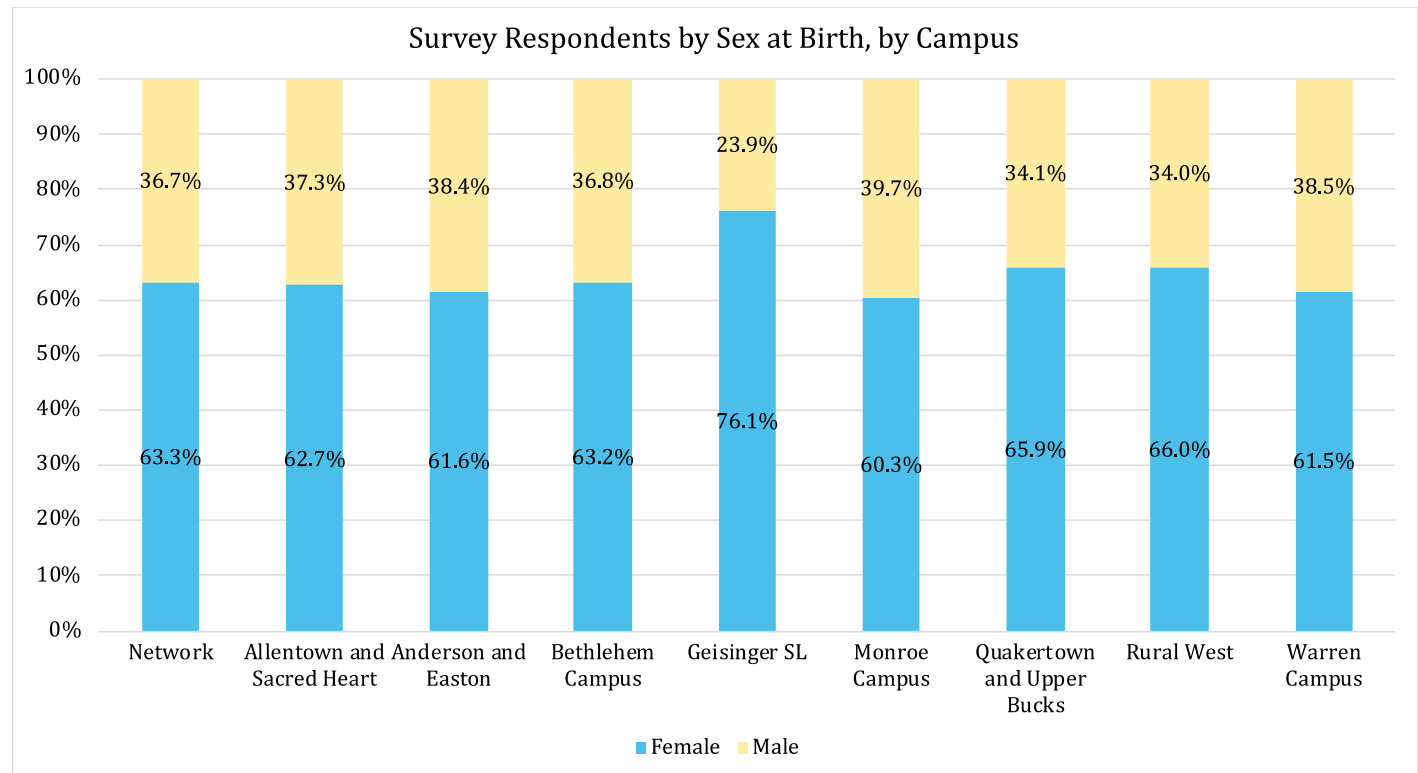
Figure 5


### Total Survey Respondent Sex at Birth



Of all CHNA survey respondents, 64% were assigned female at birth compared to 36% assigned male at birth. For each campus, most respondents were assigned female at birth, which is on par with U.S. Census Bureau findings. However, the percentage of female survey respondents is approximately 10 percent points higher for each campus. Further information related to gender identification is found in the LGBT section.

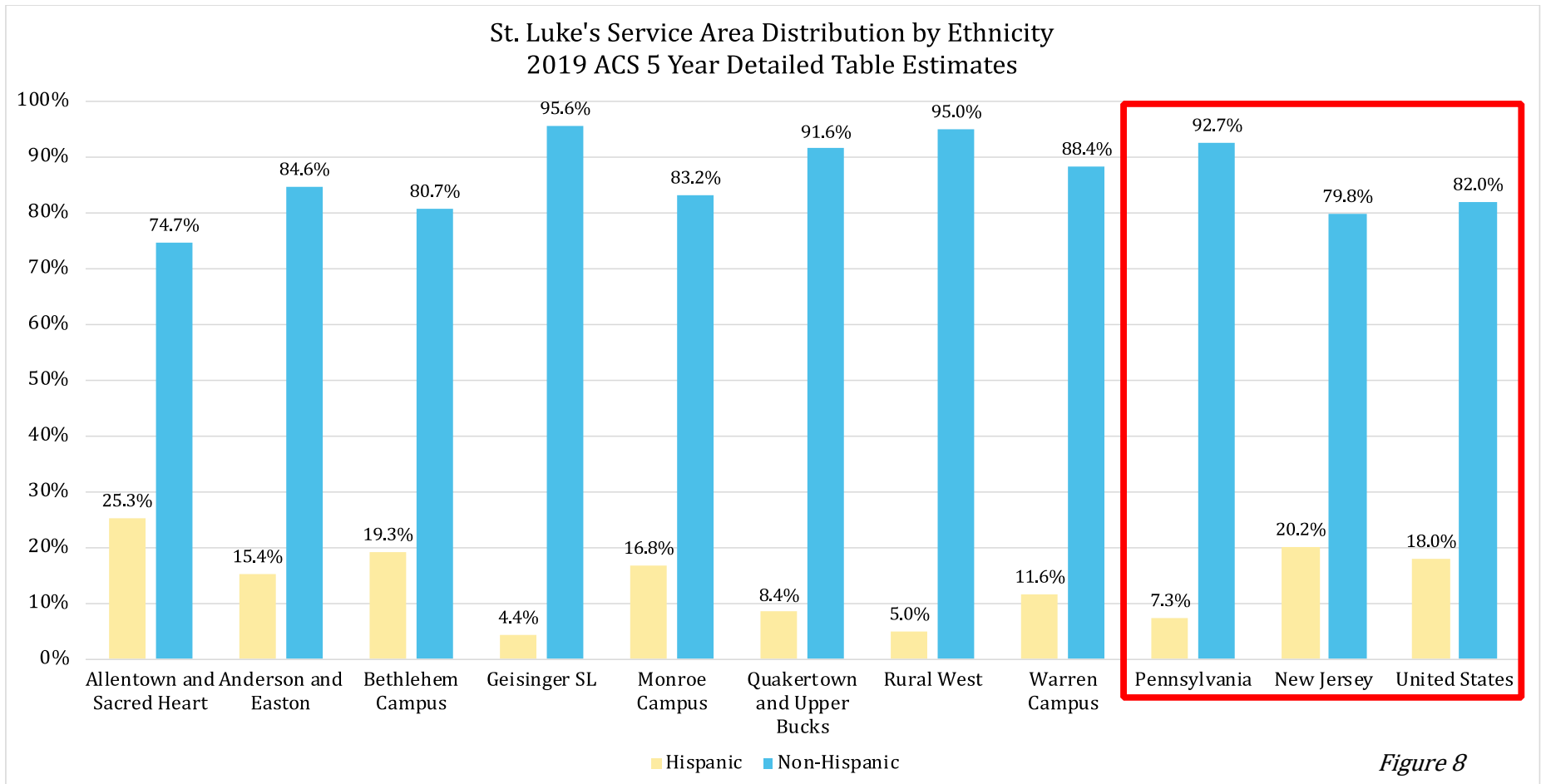
 *Figure 6*



 *Figure 7*

## ..... Ethnicity .....

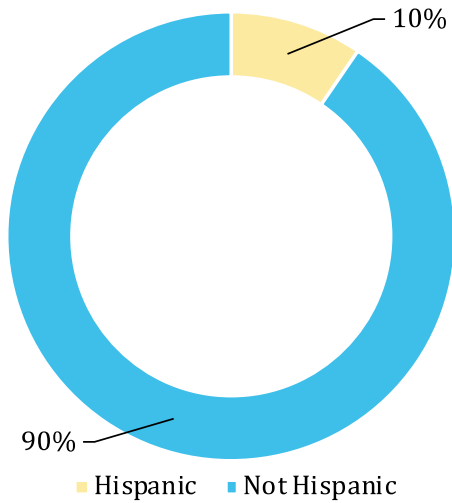
The majority of the SLUHN service area population identifies as non-Hispanic. According to the ACS, the Allentown and Sacred Heart service area has the highest percentages of their population reporting Hispanic identification (25.3%), followed by Bethlehem (19.3%) and Monroe (16.8%), all well above the Pennsylvania average (7.3%). In Allentown city limits, 52.5% of people identify as Hispanic compared to 47.5% as non-Hispanic. In Bethlehem city limits, 30.2% of people identify as Hispanic and 69.8% identify as non-Hispanic.




*Figure 8*

## 2022 St. Luke's University Health Network Community Health Needs Assessment

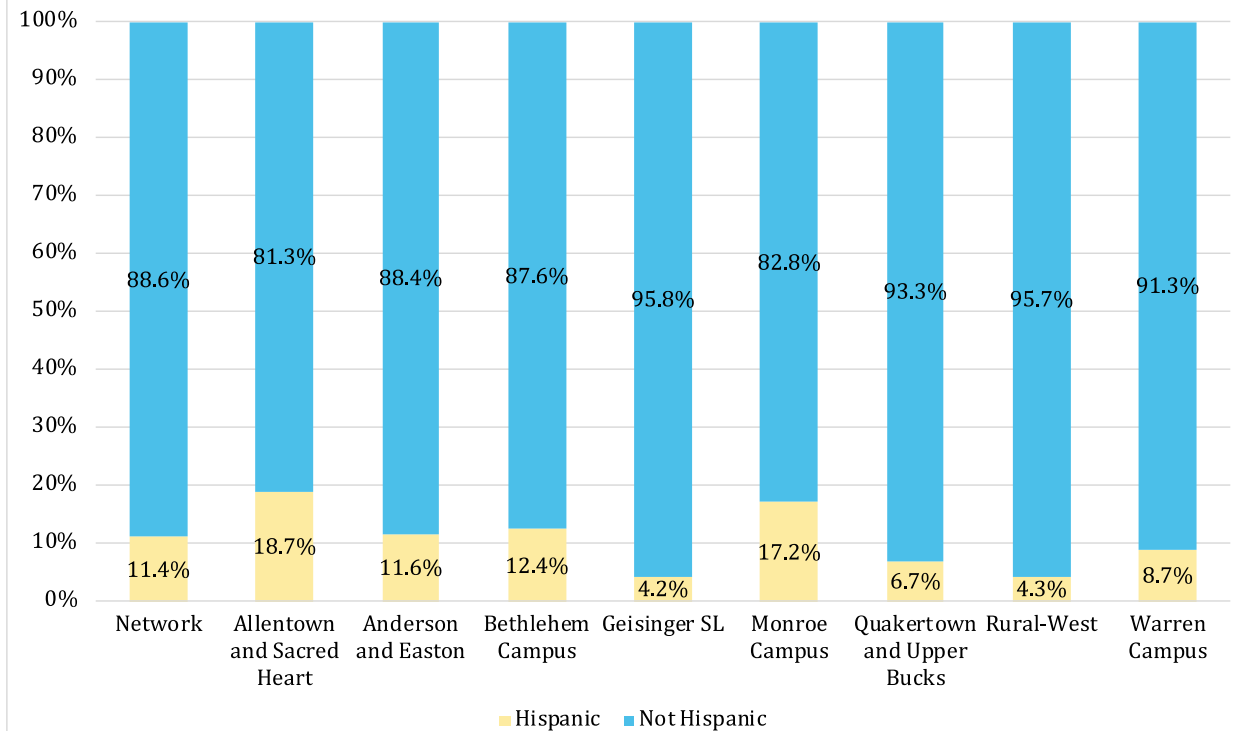
### Total Survey Respondent Ethnicity Distribution



 *Figure 9*

For CHNA survey respondents, 10% identify as Hispanic and 90% identify as non-Hispanic. Similar to the U.S. Census Bureau findings, Allentown and Sacred Heart, Bethlehem, and Monroe campuses all have the highest number of respondents who identify as Hispanic.

### Survey Respondent Ethnicity Distribution, by Campus



 *Figure 10*

## ..... Race .....

Figure 11 highlights the distribution of identified races in each service area. Data for individuals identifying as Native Hawaiian/Pacific Islander, Native American/Alaska Native, and Multiple Races have been combined with Other Race on the graph due to their small sample sizes. The majority of people in each service area identify as White. The Monroe service area has the least amount people who identify as White (75.4%) while Quakertown and Upper Bucks, Geisinger St. Luke's, and Rural West all have above 90% of their population as people who identify as White, with 90.2%, 93.4%, and 95.6%, respectively.

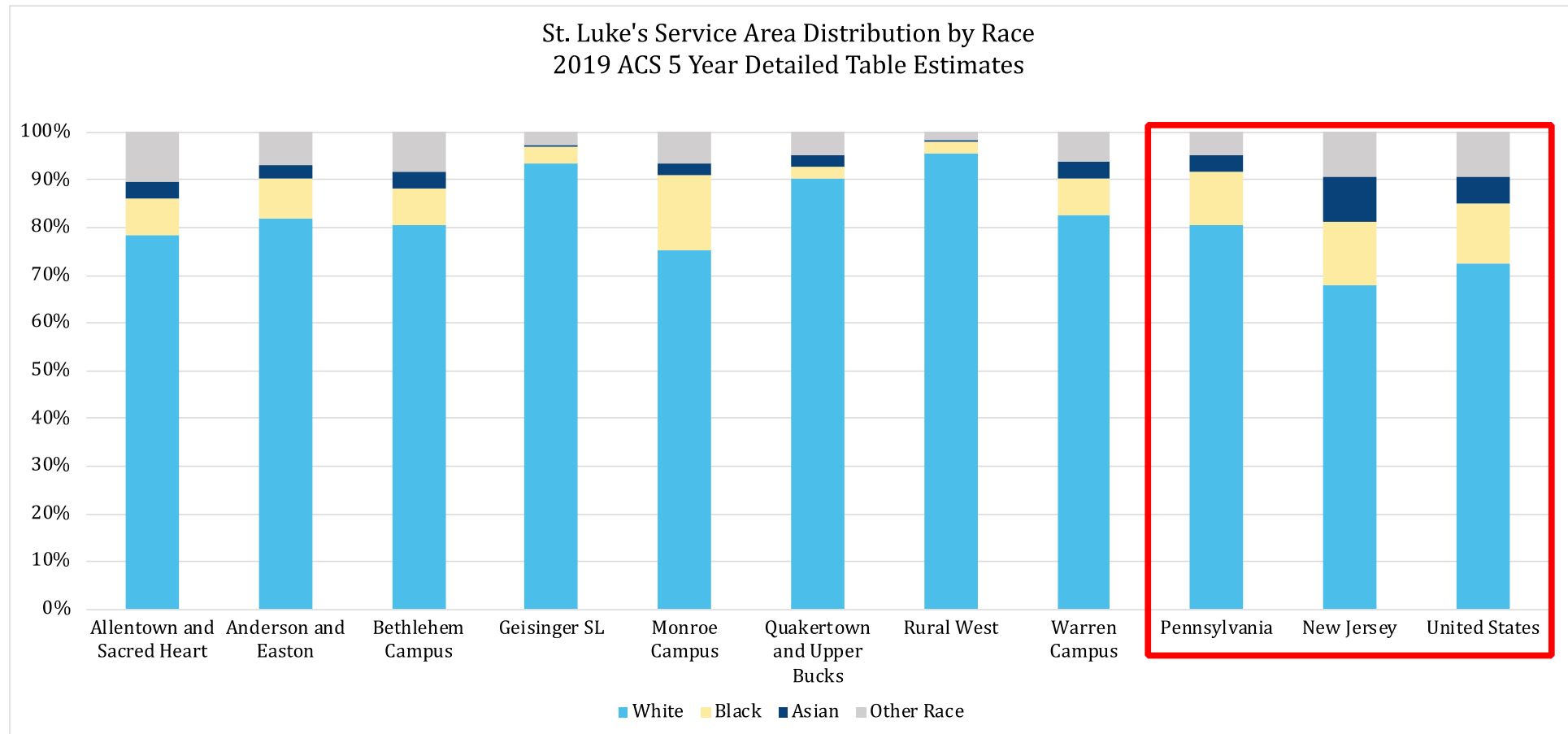


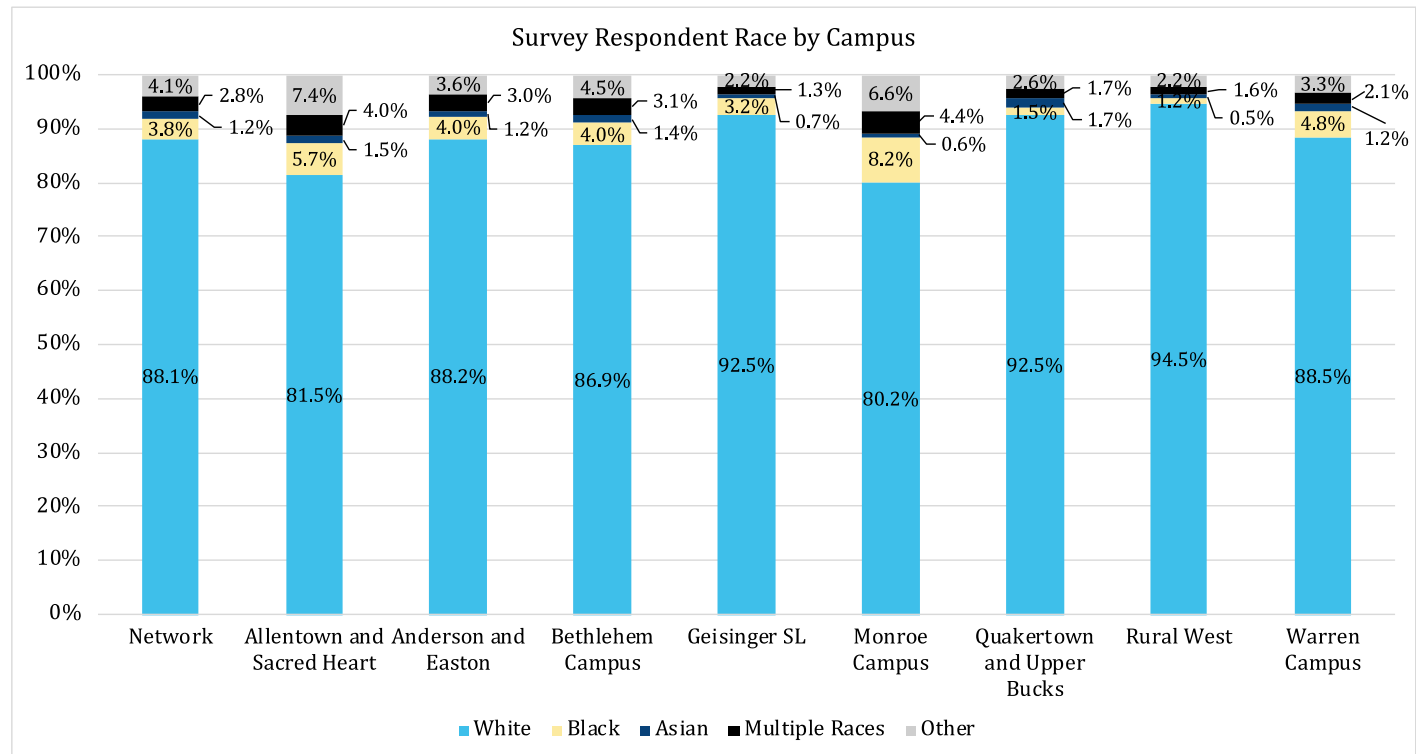
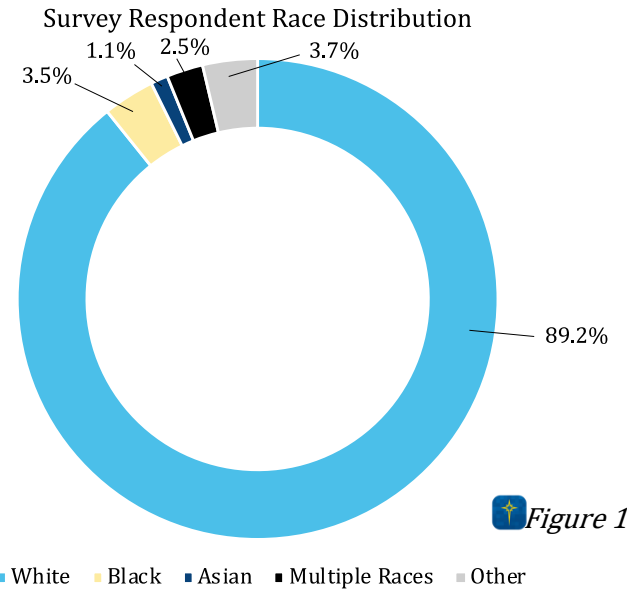
Figure 11

## 2022 St. Luke's University Health Network Community Health Needs Assessment

St. Luke's Service Area Distribution by Race 2019 ACS 5 Year Detailed Table Estimates				
	White	Black	Asian	Other Race
Allentown and Sacred Heart	78.6%	7.7%	3.5%	10.3%
Anderson and Easton	82.0%	8.1%	3.0%	6.9%
Bethlehem Campus	80.7%	7.7%	3.2%	8.4%
Geisinger SL	93.4%	3.5%	0.6%	2.6%
Monroe Campus	75.4%	15.6%	2.4%	6.6%
Quakertown and Upper Bucks	90.2%	2.6%	2.6%	4.6%
Rural West	95.6%	2.2%	0.5%	1.7%
Warren Campus	82.5%	7.9%	3.2%	6.3%
Pennsylvania	80.5%	11.2%	3.4%	4.9%
New Jersey	67.8%	13.5%	9.5%	9.3%
United States	72.5%	12.7%	5.5%	9.3%

Figure 12

The majority of CHNA survey respondents also identify as White (89.2%). Due to the small number of CHNA survey respondents that identify as American Indian and Alaskan Native, their responses were combined with Other Race. Similar to U.S. Census Bureau findings, Quakertown and Upper Bucks, Geisinger St. Luke's, and Rural West all have more than 90% of people identifying as White while the Monroe campus had the highest percentage of respondents identifying as Black (8.2%).



## ..... Vulnerable Populations .....

The following data was retrieved from the 5-year American Community Survey (2015-2019) conducted by the Census Bureau unless otherwise stated.<sup>6</sup>

### ..... Black, Indigenous, People of Color (BIPOC) .....

It is important to identify the BIPOC communities within the SLUHN service area to address specific needs. For example, Indigenous peoples historically lack proper access to health resources and information and often face discrimination when accessing healthcare facilities.<sup>7</sup> Additionally, in regard to the COVID-19 pandemic, more than half of infections have occurred among Black Americans, despite only comprising approximately 14% of the United States Population.<sup>8,9</sup> Disparities in access to care for BIPOC communities can be detrimental to health outcomes and generate mistrust in healthcare.<sup>10</sup> In the St. Luke's service areas, the Monroe service area has the largest percent of the population identifying as Black (15.6%) and Rural West has the smallest percentage (2.2%). Additionally, Allentown and Sacred Heart have the largest percentage identifying as Hispanic (25.3%) and Geisinger St. Luke's has the smallest Hispanic population (4.4%).<sup>11</sup> Out of the BIPOC individuals who were surveyed, 33% identified as Other Race, followed by Black (32%), Multiple Races (23%), Asian (10%), and American Indian or Alaskan Native (2%).

### ..... Uninsured Population .....

Lack of insurance or adequate coverage is a primary barrier to healthcare because it prevents people from accessing crucial services required to monitor and maintain a healthy lifestyle. Medicare, a federal healthcare program in the United States available to most of the population ages 65 years and older, helps to nearly eliminate the uninsured population in that age demographic, with only 0.4% in Pennsylvania, 1% in New Jersey, and 0.8% in the United States ages 65 years and older uninsured. While Medicare is available to most of the population over 65 years old, lack of health insurance, or adequate health insurance, can lead to serious barriers to care. Of the population

<sup>6</sup> <https://www.census.gov/programs-surveys/acs/>

<sup>7</sup> <https://www.bsr.org/en/our-insights/blog-view/respecting-the-rights-of-vulnerable-groups>

<sup>8</sup> <https://www.bsr.org/en/our-insights/blog-view/respecting-the-rights-of-vulnerable-groups>

<sup>9</sup> <https://covid.cdc.gov/covid-data-tracker/>

<sup>10</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4194634/>

<sup>11</sup> <https://data.census.gov>



less than 65 years old, 7% in Pennsylvania, 9.3% in New Jersey, and 10.2% in the United States are uninsured. Of the counties in the SLUHN service area, Monroe county has the highest uninsured rate for the population less than 65 years old (8.3%) and Montgomery county has the lowest (4.9%).<sup>12</sup> According to CHNA survey results, 3.4% of all surveyed respondents either have no coverage and pay cash or do not know if they have insurance. The discrepancy between service area statistics and CHNA survey respondents is important to note as we continue to increase our outreach efforts in the communities we serve to reach our most vulnerable populations, which includes the uninsured population.

## ..... ALICE .....

Asset Limited, Income Constrained, Employed (ALICE) are households that earn more than the Federal Poverty Level, but less than the basic cost of living.<sup>13</sup> Because ALICE households do not qualify for Federal assistance, they cannot always pay bills and have little money left over to put towards savings. ALICE households are often forced to make difficult decisions like choosing between paying rent or quality childcare. The most recent ALICE report was published in 2018 and found that 27% of people in both Pennsylvania and New Jersey were considered ALICE.<sup>14</sup> In the Pennsylvania counties that St. Luke's serves, Bucks county has the lowest amount of ALICE households (24%) and Lehigh has the most (35%). Additionally, in New Jersey, 30% of households in Warren county were considered ALICE.<sup>15</sup>

## ..... Children and Adolescents .....

Childhood is a crucial time for development in all aspects of life, thus it is important to study health behaviors and target initiatives towards addressing negative health patterns in youth. The 2019 Pennsylvania Youth Survey (PAYS)<sup>16</sup> is run by the Pennsylvania Commission on Crime and Delinquency and asks questions pertaining to drug use, violence, mental health, school safety, and more. PAYS is administered (by paper or online) biennially in odd years to students in grades 6, 8, 10, and 12. In order to gain insight into Warren county data, the Warren County Needs Assessment<sup>17</sup>, the Profile of Family and Community Indicators results<sup>18</sup>, and the most recent New Jersey Middle School Risk and Protective Factor Survey (2018)<sup>19</sup> were analyzed.

<sup>12</sup> [https://www.census.gov/data-tools/demo/sahie/#/?s\\_agecat=0&s\\_year=2019&s\\_statefips=34,42](https://www.census.gov/data-tools/demo/sahie/#/?s_agecat=0&s_year=2019&s_statefips=34,42)

<sup>13</sup> <https://www.unitedforalice.org/>

<sup>14</sup> <https://www.unitedforalice.org/national-overview>

<sup>15</sup> <https://www.unitedforalice.org/county-profiles/new-jersey>

<sup>16</sup> [https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-\(PAYS\)-2019.aspx](https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx)

<sup>17</sup> <https://www.nj.gov/dcf/about/divisions/opma/docs/WarrenCountyNeedsAssessment2020.pdf>

<sup>18</sup> <https://dcfdata.ssw.rutgers.edu/Warren>

<sup>19</sup> <https://www.state.nj.us/humanservices/dmhas/publications/surveys/Middle%20School%20Risk%20%20Protective%20Factors/2015.pdf>

## ..... Tobacco, Nicotine, and Vaping .....

In Pennsylvania, 10.8% of students have used cigarettes in their lifetime and 3.5% have used cigarettes in the past 30 days, a decrease of multiple percentage points since 2017. Cigarette use is of highest concern in Schuylkill county, where 5.1% of students reported cigarette use in the last 30 days—higher than the overall student state cigarette use of 3.5%. Lehigh and Northampton counties both reported the lowest levels of student smoking (1.7%). In Warren county, New Jersey, no youth surveyed used cigarettes in the last 30 days and only 0.7% reported lifetime use.

In Warren county, New Jersey, 0.5% of students reported using e-cigarettes in the past 30 days and 4.6% reported lifetime use. In Pennsylvania, 19% of students used an e-cigarette or vape within the last 30 days. In Pennsylvania, 56.6% of students use nicotine in their vape, a 92.5% increase from 29.4% of students using nicotine in 2017. For marijuana/hash oil, 26.6% of students in Pennsylvania use it in their vape, a 111.1% increase since 2017. In Schuylkill county, 23.4% of students reported using a vaping product in the last 30 days; the highest in the network. Monroe county touts some of the lowest levels of vaping (14.5%).

## ..... Other Substance Use .....

Substance use in children and adolescents can have a significant impact on their health and well-being.<sup>20</sup> Substance use can affect growth and development, especially brain development, lead to risky behaviors such as unprotected sex and dangerous driving, as well as contribute to health problems in adulthood (e.g., heart disease, sleep disorders).<sup>21</sup> The New Jersey Middle School Risk and Protective Factor Survey found that in their lifetime, 10.2% of students in Warren county used alcohol, 2.1% used marijuana, and 0.7% used illicit drugs.<sup>22</sup>

In 2019, PAYS found that lifetime use of substances among youth across the state was 41% alcohol use, 17.3% marijuana use, 4.1% prescription pain medication, and 3.9% over-the-counter drugs. Students often view these drugs as safer than illicit drugs because they are prescribed by a doctor or available legally for adults. Small portions of the state used cocaine, methamphetamines, heroin, ecstasy, and synthetic drugs. However, the most frequent “other drug” used were hallucinogens, with a 2.7% lifetime use. Regarding risky behavior while under the influence of drugs and other substances, 7.4% of students engaged in binge drinking in the past two weeks, 3% drove after using marijuana, and 1.5% of students reported driving while or shortly after drinking. Finally, 34.3% of students report *taking without*

<sup>20</sup> <https://www.cdc.gov/ncbddd/fasd/features/teen-substance-use.html>

<sup>21</sup> <https://www.cdc.gov/ncbddd/fasd/features/teen-substance-use.html>

<sup>22</sup> <https://www.state.nj.us/humanservices/dmhas/publications/surveys/Middle%20School%20Risk%20&%20Protective%20Factors/2015.pdf>

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*permission* as their most frequent source/method of obtaining alcohol. The next highest source was *giving money to someone to buy it for them* (25.7%). For prescription drugs, the most common method for obtaining was *taking them from a family member*, a method used by 41.4% of students. For willingness to use, 24.5% of students across the state indicated a willingness to use alcohol if presented with the chance.

	Alcohol	Marijuana	Prescription Pain Medication	Over the Counter	Hallucinogens
Bucks	40.5%	18.7%	3.4%	3.4%	2.6%
Carbon	44.7%	16.5%	5.4%	4.4%	2.0%
Lehigh	38.3%	16.8%	4.0%	3.8%	1.8%
Monroe	38.2%	16.4%	5.1%	4.4%	2.2%
Northampton	41.2%	17.9%	4.9%	4.3%	2.5%
Schuylkill	44.7%	15.7%	4.5%	3.9%	2.9%
PA	41.0%	17.3%	4.1%	3.9%	2.7%

Figure 15

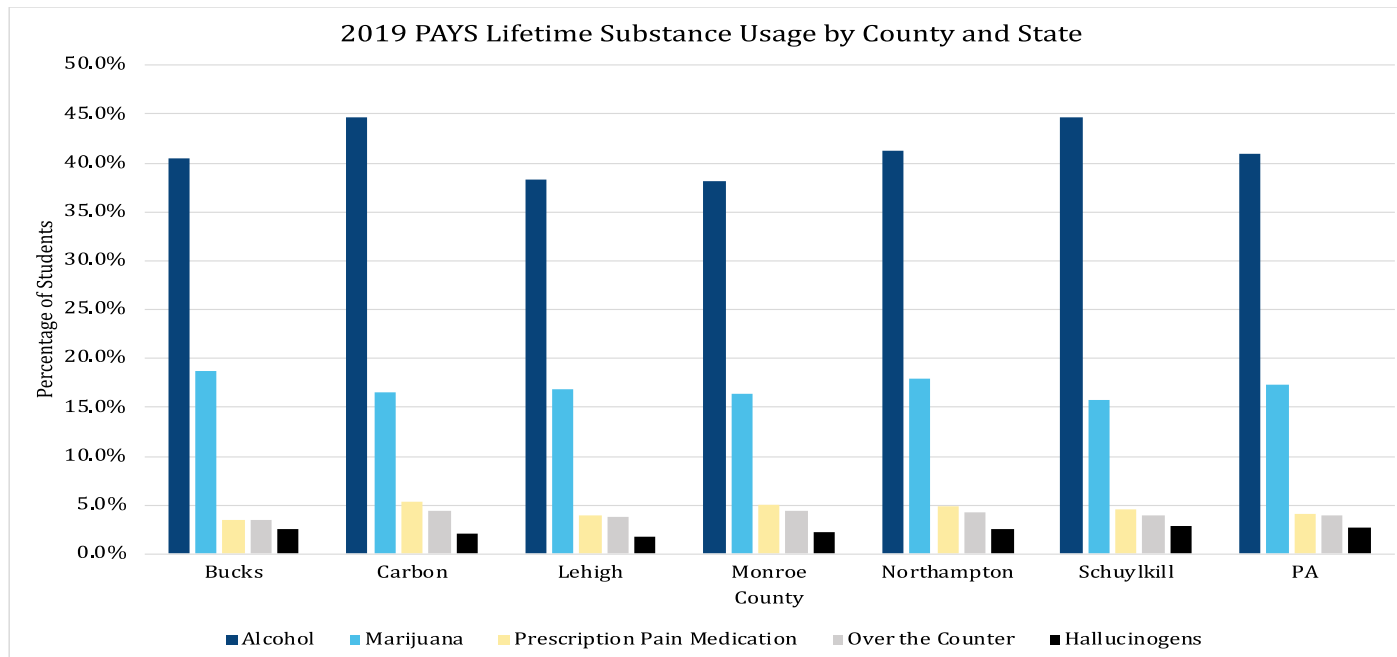


Figure 16

## ..... Violence and Bullying .....

It is important for all children to feel safe at school in order to learn, socialize, and develop. Perceived lack of school safety and school violence has a negative impact on mental health outcomes and school performance.<sup>23</sup> In Pennsylvania, 18.9% of students report having been threatened with violence on school property. In the SLUHN service area, Schuylkill county has the highest percentage of students who have been threatened on school property (24.6%) and 7.6% of all students in Pennsylvania report having been attacked on school property, 1.1% with a weapon. Finally, 0.9% of students report bringing a weapon to school in the past 30 days. Lehigh county has the highest percentage of students in Pennsylvania who brought a weapon to school (1.7%). In Warren county, New Jersey, no students reported carrying a gun to school, but 1.2% reported carrying a handgun elsewhere.

According to the Centers for Disease Control and Prevention (CDC), those who experience bullying are at increased risk for mental health disorders, suicide, substance use disorder, violence, poor school performance, and other poor health outcomes.<sup>24</sup> In Pennsylvania, 25.1% of students report experiencing bullying in the past 12 months, including 29.7% of students in Schuylkill county, the highest rate in the network. The most common forms of abuse reported include emotional abuse, insults, and name calling (61.4%), followed by physical injury (23.5%), and threats (21.2%). Of the students in Pennsylvania who have been bullied, 14% of students experienced bullying via text or social media, a 2.5% decrease since 2017. Of the students in the state that reported being cyberbullied, 54% indicated feeling so sad or hopeless every day for the past 2 weeks they stopped doing usual activities; and in the past year, 39.5% of those students seriously considered suicide, 30.9% made a suicide plan, and 28.2% had attempted suicide.

Students in Schuylkill county reported the highest level of bullying, while students in Lehigh county report the lowest. This is a concerning increase in Schuylkill county, which reported the lowest levels of bullying in the 2017 PAYS. The use of technology and social media has made bullying more pervasive in the lives of youth in recent years.

## ..... Mental Health .....

Mental health and suicide rates are of rising concern in our communities. Limited access to mental health care and resources has been a long-standing problem in many of our counties, and the COVID-19 pandemic has exhausted those limited resources, with more people than

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<sup>23</sup> <https://www.cdc.gov/violenceprevention/pdf/schoolviolence-factsheet.pdf>

<sup>24</sup> <https://www.cdc.gov/violenceprevention/pdf/bullying-suicide-translation-final-a.pdf>

ever experiencing mental health issues—some for the first time in their lives. According to the Kaiser Family Foundation (KFF), 53% of American adults reported mental health concerns “due to worry and stress over the coronavirus,”<sup>25</sup> which can also impact their children.

In the 2019 PAYS survey children were asked about prolonged sadness and depression. The most common depressed thought of all children in Pennsylvania (36.6%) was *at times I think I am no good at all*. Carbon county had the highest percentage of respondents from the counties in the SLUHN service area (39.3%). Additionally, 38.0% of children in Pennsylvania reported feeling sad or depressed most days in the past 12 months, with Carbon county again having the highest percentage in the SLUHN service area (41.7%).

Children are becoming more vulnerable to mental health disorders (e.g., depression), suicidal ideation, and suicide, with 14.4% of students in Pennsylvania indicated using self-harm (e.g., cutting, scraping, burning) in the past 12 months. Monroe county had the highest percentage of students using self-harm (16.1%). Across the state, 16.2% of students indicated seriously considering suicide, 12.9% planned suicide, 9.7% attempted suicide, and 2.0% needed medical treatment as a result.

2019 PAYS Survey, Suicide and Suicidal Ideation					
County	Question				
	Indicated using self-harm (scrapping, burning, cutting)	Seriously considered suicide	Planned suicide	Attempted suicide	Needed medical treatment from suicide attempt
Berks	15.1%	16.9%	13.1%	10.4%	2.4%
Bucks	12.5%	14.7%	11.2%	8.1%	1.7%
Carbon	14.7%	17.5%	13.5%	10.9%	2.8%
Lehigh	13.8%	16.7%	13.5%	10.7%	2.3%
Monroe	16.1%	18.7%	15.2%	12.4%	2.7%
Montgomery	12.4%	14.3%	10.6%	7.8%	1.6%
Northampton	15.7%	17.9%	13.6%	10.4%	1.9%
Schuylkill	15.4%	17.5%	15.0%	11.5%	2.4%
PA	14.4%	16.2%	12.9%	9.7%	2.0%

Figure 17

<sup>25</sup> <https://www.kff.org/coronavirus-covid-19/issue-brief/the-implications-of-covid-19-for-mental-health-and-substance-use/>

## ..... Risk and Protective Factors .....

The 2019 PAYS has also illustrated some concerning trends in regard to perceived importance of school with only half of all students across the state feeling that school is going to be important their future, with only 38.6% of students report enjoyment in school, a reduction from 41.3% in 2017. Finally, 80% of students feel safe at school, a 3-percentage point fall from 83.4% of students in 2017.

Many risk and protective factors come into play when understanding observed rates of substance use and mental health issues addressed in this assessment. A risk factor is something that poses potential harm to a student's life and a protective factor is something that can help keep the student safe. Among the highest risk factors across the state were low commitment toward school (50.6% of students at risk), perceived risk of drug use (49.2% at risk), and parental attitudes encouraging antisocial behavior (48.2% at risk). Among the highest protective factors were family attachment (62.3% of students with protection), family opportunities for prosocial involvement (61.9% with protection), and family rewards for prosocial involvement (60.3% with protection).

The New Jersey Middle School Risk and Protective Factors Survey assessed risk and protective factors with different measures than PAYS. In Warren county, the risk factor with the highest percentage is low commitment to school (35%), followed by laws and norms favorable to drug use (26%). The factors with the highest protective effect include interaction with prosocial peers (69%) followed by positive school opportunities (67%), and school rewards for prosocial interactions (59%).

## ..... Seniors .....

The population and life expectancy in the United States has rapidly increased in recent decades, requiring a greater need for senior services. The U.S. Census Bureau reports the 65 and older population grew 34.2% during the last decade.<sup>26</sup> The Bureau also estimates that the 65 and older population will outnumber children by the year 2034.<sup>27</sup> By 2060, adults 65 and older will account for 23.4% of the population, approximately 94.7 million people.

America's Senior Health Rankings assess the state on six categories: overall, behaviors, social and economic, physical environment, clinical care and health outcomes, using a scale of 1-50 with a score of 1 as the best. Areas that have shown recent improvement are Supplemental Nutrition Assistance Program (SNAP) usage in Pennsylvania and flu vaccines in New Jersey. During the last four years in Pennsylvania, SNAP

<sup>26</sup> <https://www.census.gov/newsroom/press-releases/2020/65-older-population-grows.html>

<sup>27</sup> <https://www.census.gov/library/visualizations/2018/comm/historic-first.html>

reach has increased 24% per 100 participants over age 60 living in poverty.<sup>28</sup> New Jersey's success in flu vaccine coverage for the senior population has increased 11% in the past five years for adults 65 years and older.<sup>29</sup>

2020 America's Senior Health Rankings					
	Behaviors	Social and Economic	Physical Environment	Clinical Care	Health Outcomes
NJ	39	22	48	33	8
PA	31	24	46	19	29

Figure 18

Senior mental health is a growing concern in the United States, even more so with isolation during the COVID-19 pandemic. According to the America's Health Rankings 2020 Senior Report, 11.6% of adults 65 and older in New Jersey experience frequent mental health distress, the highest rate in the nation.<sup>30</sup> In Pennsylvania, 8.3% of seniors experience frequent mental health distress and the United States average is 7.9%.<sup>31</sup> Frequent mental distress is defined as 14 or more poor mental health days a month and is associated with physical inactivity, insufficient sleep, obesity, smoking, and alcohol consumption. Other factors that can contribute to frequent mental distress are the inability to afford healthcare, living alone, and activity limitations due to chronic conditions, physical disabilities, or mental health problems. One reason that the senior population may not receive adequate mental care is because symptoms of some mental health issues like depression or lapses in memory often get dismissed as typical aspects of aging.<sup>32</sup>

Cardiovascular disease is a health outcome that many American seniors encounter. In a CDC study conducted in 2017, 21.7% of adults over 65 years old reported having coronary heart disease, a stroke, or both.<sup>33</sup> The same study also found that 71.6% of adults diagnosed with coronary heart disease, a stroke, or both, were also taking medicine for high blood pressure. High blood pressure, along with high cholesterol and smoking, are risk factors for heart disease as people age. According to America's Health Rankings, New Jersey ranked 7 of 51 states (including Washington, DC), their best ranking, for the number of seniors who have smoked at least 100 cigarettes in their lifetime and continue to smoke. Pennsylvania's highest rank was in the percent of seniors who have high cholesterol, ranked at 18.

<sup>28</sup> [https://www.americashealthrankings.org/explore/senior/measure/overall\\_sr\\_3/state/PA](https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/PA)

<sup>29</sup> [https://www.americashealthrankings.org/explore/senior/measure/overall\\_sr\\_3/state/NJ](https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/NJ)

<sup>30</sup> [https://www.americashealthrankings.org/explore/senior/measure/overall\\_sr\\_3/state/NJ](https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/NJ)

<sup>31</sup> [https://www.americashealthrankings.org/explore/senior/measure/overall\\_sr\\_3/state/PA](https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/PA)

<sup>32</sup> <https://www.agingcare.com/articles/understanding-mental-health-issues-in-seniors-209387.htm>

<sup>33</sup> <https://www.cdc.gov/aging/publications/coronary-heart-disease-brief.html>



Figure 19 highlights these findings, with the rankings in parentheses.<sup>34,35</sup> When surveying adults 65 years and older in the St. Luke's service area, results showed that 10.7% have had a heart attack or other heart disease, 54.5% have high blood pressure, and 63.5% have high cholesterol.

Diabetes is another serious health condition that can impact the senior population. There are two types of diabetes, type 1 and type 2. In type 1, the islet cells in the pancreas are attacked and destroyed by the immune system, and insulin is no longer made by the pancreas.

This can be developed later in life, but usually occurs in early childhood and is endured throughout the lifespan. In type 2, the body cannot make or use insulin well, which is the most common form of diabetes. This is usually developed by older adults with certain conditions (e.g., overweight, inactivity, genetics). Both conditions can lead to serious health problems including heart disease, stroke, and nerve damage. The St. Luke's survey results show that 19.3% of adults 65 years and older within the network have diabetes. This is an area of senior health that can be targeted and decreased through education, awareness, and promotion of healthy behaviors. In addition to those that have diabetes, there are millions of Americans who have *prediabetes*, defined as having higher than normal glucose levels but not to the point where they can be diagnosed with diabetes. People with prediabetes have a higher chance of developing type 2 diabetes, having a heart attack, or having a stroke.<sup>36</sup>

While the United States population grows, so should the food supply. Food insecurity is becoming a larger problem as there are more people to feed and the food supply fails to meet demand. The USDA defines food insecurity as the lack of consistent access to enough food and very low food security (VLFS) as reduced food intake and disrupted eating patterns due to a lack of money and other resources for food.<sup>37</sup> Feeding America released a 2020 food insecurity report on seniors in America and found that 7.3% of seniors are food insecure and 2.7% are VLFS.<sup>38</sup> This translates to 5.3 million and 2 million seniors, respectively.<sup>39</sup> Of the food insecure senior population, the highest insecure rates were found in racial and/or ethnic

2020 America's Senior Health Rankings			
	High Blood Pressure	High Cholesterol	Smoked 100 cigarettes in lifetime and still smoke daily or some days
NJ	63% (36)	50.7% (29)	7.7% (7)
PA	60.8% (31)	49.4% (18)	9.6% (31)
US	60.1%	51.2%	8.9%

USDA Food Insecurity		
	Food Insecure	VLFS
NJ	4.8%	1.9%
PA	5.7%	2.3%

Figure 20

<sup>34</sup> [https://www.americashealthrankings.org/explore/annual/measure/Hypertension/population/hypertension\\_65/state/ALL](https://www.americashealthrankings.org/explore/annual/measure/Hypertension/population/hypertension_65/state/ALL)

<sup>35</sup> [https://www.americashealthrankings.org/explore/annual/measure/High\\_Cholesterol/population/High\\_Cholesterol\\_65/state/ALL](https://www.americashealthrankings.org/explore/annual/measure/High_Cholesterol/population/High_Cholesterol_65/state/ALL)

<sup>36</sup> <https://www.nia.nih.gov/health/diabetes-older-people>

<sup>37</sup> <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>

<sup>38</sup> <https://www.feedingamerica.org/research/senior-hunger-research/senior>

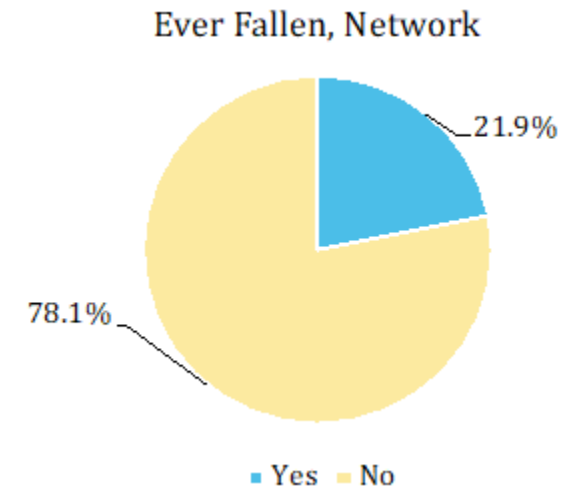
<sup>39</sup> <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>




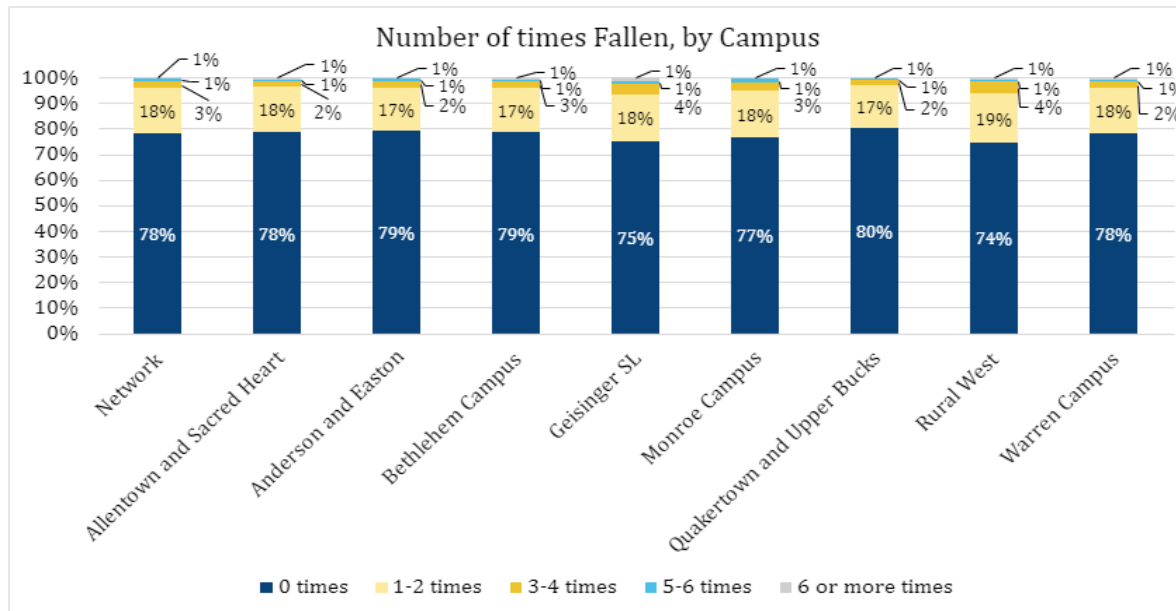
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minorities, those with lower incomes, those who are younger seniors (ages 60-69), and those who are renters.

Every 11 seconds, an older adult visits the emergency room for a fall-related injury.<sup>40</sup> Falls are the leading cause of fatal and nonfatal injuries in older Americans. The 2020 senior health report found that 21.2% of older adults in New Jersey and 24.2% in Pennsylvania had fallen within the last 12 months. In these falls, one in five falls among older adults causes serious injury, including hip fractures and head injuries.<sup>41</sup> Common factors that can lead to falls are balance and gait, vision, medications, environment, and chronic conditions.<sup>42</sup> However, the number of falls can be reduced through practical lifestyle adjustments, evidence-based programs and community partnerships.<sup>43</sup> Of all survey respondents who are 45 years and older, 21.9% indicated they have fallen. The majority of respondents surveyed have never fallen, but of those who have fallen, 18% have fallen once or twice.



 **Figure 21**



 **Figure 22**

<sup>40</sup> <https://www.ncoa.org/healthy-aging/falls-prevention/preventing-falls-tips-for-older-adults-and-caregivers/>

<sup>41</sup> [https://www.americashealthrankings.org/explore/senior/measure/falls\\_sr/state/NJ](https://www.americashealthrankings.org/explore/senior/measure/falls_sr/state/NJ)

<sup>42</sup> <https://www.ncoa.org/healthy-aging/falls-prevention/preventing-falls-tips-for-older-adults-and-caregivers/6-steps-to-protect-your-older-loved-one-from-a-fall/>

<sup>43</sup> <https://www.ncoa.org/healthy-aging/falls-prevention/>

Along with other health concerns that increase with aging, polypharmacy is one of the hardest to track. Polypharmacy lacks a central definition, but authors Dagli and Sharma define polypharmacy as the use of multiple medications, generally referred to as five or more prescribed drugs per day.<sup>44</sup> This is common among the senior population because of the need to treat diseases and injuries that increase with age. Some symptoms of polypharmacy include decreased alertness, incontinence, lack of appetite, falls, depression, and hallucinations. In 2020 it was estimated that 44% of men and 57% of women 65 and older take five or more prescription and/or nonprescription drugs a week.<sup>45</sup> Polypharmacy has severe negative impacts on patient care and increases the risk for adverse drug reactions.<sup>46</sup>

By increasing protective factors in the community, the effects of aging can be mitigated, and the senior population can thrive. A protective factor is a condition or characteristic that helps people deal more effectively with stressful events and lessens the risk of vulnerability.<sup>47</sup> Engaging in physical activities or hobbies and eating well can have a positive impact on senior well-being. Regular exercise can reduce the risk of some diseases, lower blood pressure, and help cognitive function.<sup>48</sup> Self-efficacy, the belief in one's ability to achieve goals and influence life events, is also a potential protective factor. Research indicates that self-efficacy in older adults may be related to increased energy, better sleep, decreased pain or discomfort, and increased overall satisfaction with life.<sup>49</sup>

## ..... Lesbian, Gay, Bisexual, Transgender (LGBT) .....

According to the Williams Institute at UCLA School of Law, 4.1% of both the New Jersey and Pennsylvania populations identify as Lesbian, Gay, Bisexual or Transgender (LGBT).<sup>50</sup> New Jersey and Pennsylvania both rank 24<sup>th</sup> out of the 50 states for total LGBT population. In New Jersey, 52% of the LGBT population identifies as female and 48% identify as male. Just over half (51%) identify as White, 27% as Hispanic/Latino, 13% as Black, 5% as Asian, and 4% as Other Races. The average age of LGBT individuals in New Jersey is 37, with 31% of the population between the ages of 18-24. The unemployment rate of New Jersey LGBT individuals is 8% compared to 7% of non-LGBT individuals, 12% of New Jersey LGBT individuals are uninsured, 22% are food insecure, and 23% have an income less than \$24,000 a year. While 41% of New Jersey LGBT individuals have a high school diploma, only 19% have a bachelor's degree. According to the Movement Advancement Project (MAP), New Jersey fares high for LGBT policies. MAP gave New Jersey a 32.5 out of 38.5 for overall policies. The state

<sup>44</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295469/>

<sup>45</sup> <https://www.uspharmacist.com/article/polypharmacy-and-drug-adherence-in-elderly-patients>

<sup>46</sup> [https://www.npjjournal.org/article/S1555-4155\(19\)31051-7/fulltext](https://www.npjjournal.org/article/S1555-4155(19)31051-7/fulltext)

<sup>47</sup> [https://www.respectaging.ca/training/Participant\\_Manual\\_-\\_Module\\_08.pdf](https://www.respectaging.ca/training/Participant_Manual_-_Module_08.pdf)

<sup>48</sup> <https://www.ncbi.nlm.nih.gov/books/NBK316205/>


<sup>49</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4437657/>

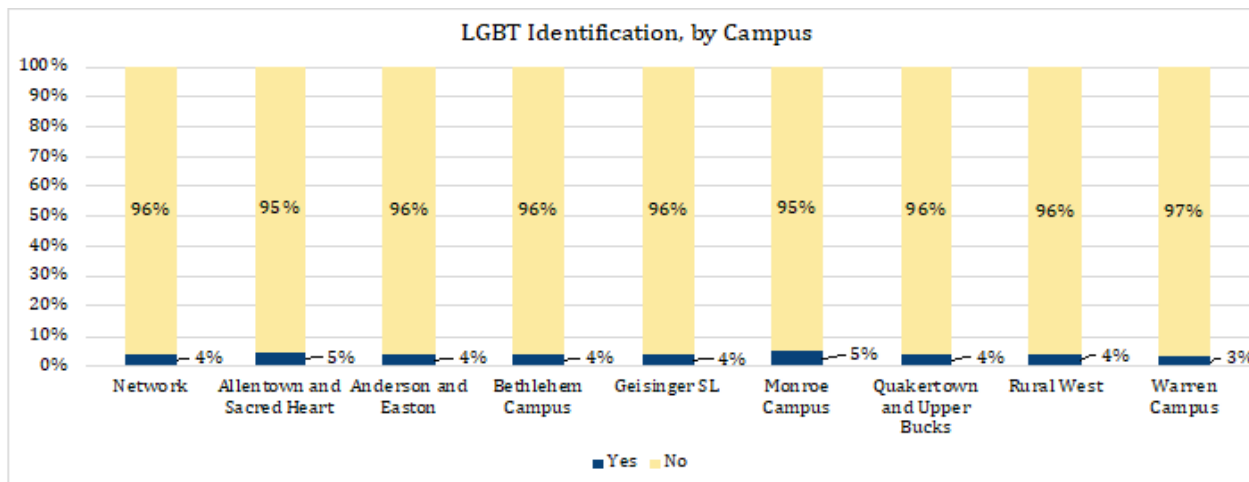
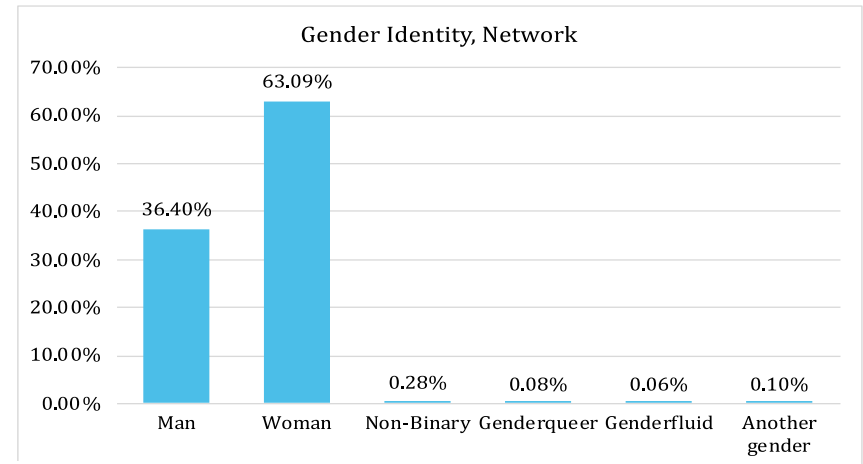
<sup>50</sup> <https://williamsinstitute.law.ucla.edu/visualization/lgbt-stats/?topic=LGBT&area=42#density>


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has implemented universal (100%) nondiscrimination laws for sexual orientation, gender identity, and conversion therapy is banned across the state.

In 2020, the Bradbury-Sullivan LGBT Community Center in Allentown, Pennsylvania, with funding from the PA Department of Health, conducted a Pennsylvania statewide LGBT Needs Assessment. More than 6,500 LGBT-identified people responded to the survey.<sup>51</sup> The results identified risk factors related to LGBT health, including a reported 23.6% of respondents not visiting the doctor for a routine check-up in a year or longer, 36% did not visit the dentist in the past year, and 1 in 3 respondents feared seeking healthcare services because of past or potential negative reactions from healthcare providers. Of all respondents to the CHNA survey, only 4% identify as LGBT. The Allentown and Sacred Heart service area and Monroe service area had the highest percentage of LGBT respondents (5%), and the Warren service area had the lowest (3%). Additionally, 0.28% of CHNA respondents identify as non-binary, 0.08% identify as genderqueer, 0.06% identify as gender fluid, and 0.1% identify as another gender.

 **Figure 23**



 **Figure 24**

<sup>51</sup> [https://www.bradburysullivancenter.org/health\\_needs\\_assessment](https://www.bradburysullivancenter.org/health_needs_assessment)

## ..... Healthy Living & Tobacco Use .....

When comparing Bradbury-Sullivan LGBT respondents to CHNA LGBT respondents, rates of cigarette use and e-cigarette use fares similar; cigarettes are the most used tobacco product by respondents in both surveys. However, hookah use (21.9%) and cigar use (20.2%) is much higher in Bradbury Sullivan respondents than CHNA respondents, 9.7% and 1.6%, respectively.

According to the CDC, the smoking rate among all U.S. adults in 2019 was 14%.<sup>52</sup> Of the St. Luke's service counties and LGBT population from the Bradbury-Sullivan Needs Assessment, Northampton county (14.9%) and Carbon and Schuylkill (38.9%) exceed the U.S. smoking rate. Bucks county (8.3%), Lehigh county (10.4%), Monroe county (11.8%), and the St. Luke's service area (13.4%) all fall below the U.S. smoking rate of 14%.

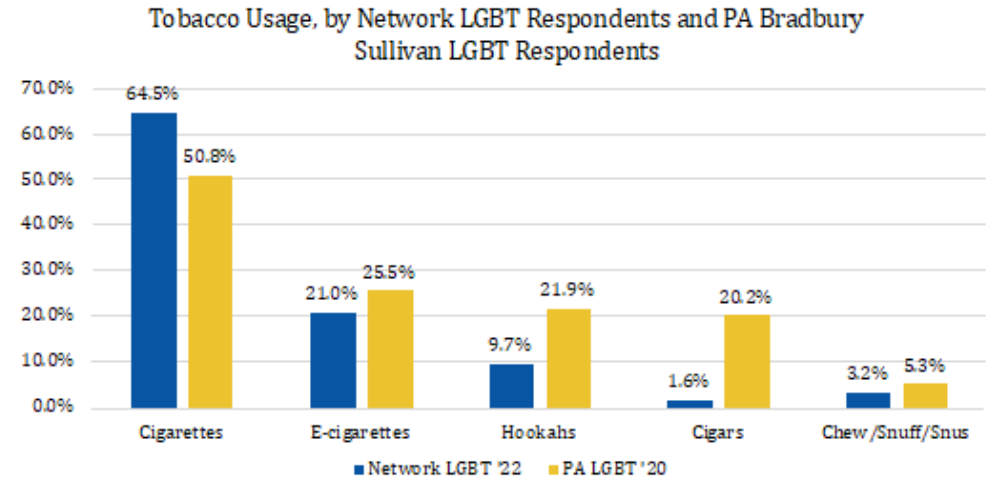


Figure 25

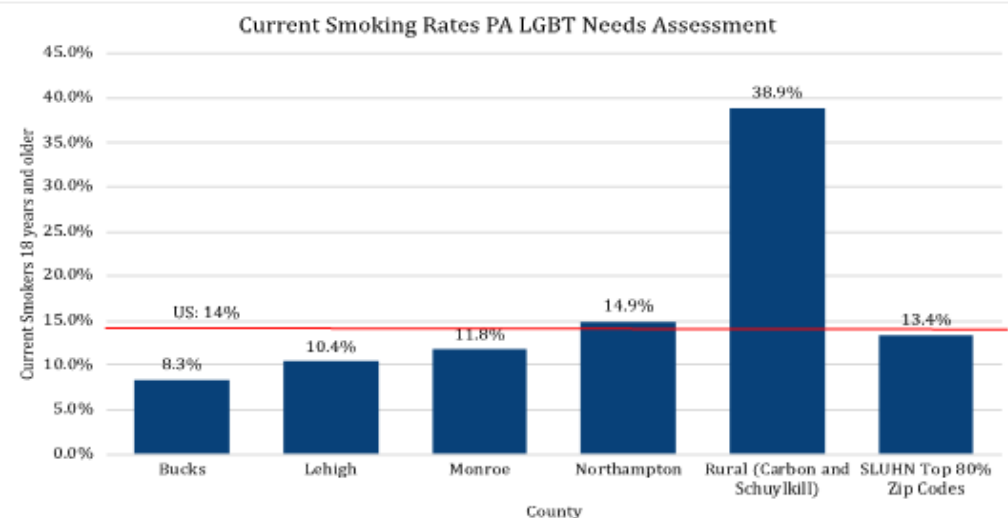


Figure 26

<sup>52</sup> [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/adult\\_data/cig\\_smoking/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm)

## ..... Healthcare Barriers.....

More than a quarter of LGBT survey respondents receive health insurance through Medicaid, Medicare, Children's Health Insurance Plan (CHIP), or do not have health insurance. Of Bradbury-Sullivan respondents, 23.6% did not visit the doctor for a routine check-up in a year or longer and 36% did not visit the dentist in the past year. Statewide in Pennsylvania, 7% of the LGBT population under age 65 is uninsured.<sup>53</sup> The Rural West counties have the highest percent of LGBT people without insurance (9.5%). Bucks county is not included in the graph because no respondents were uninsured.

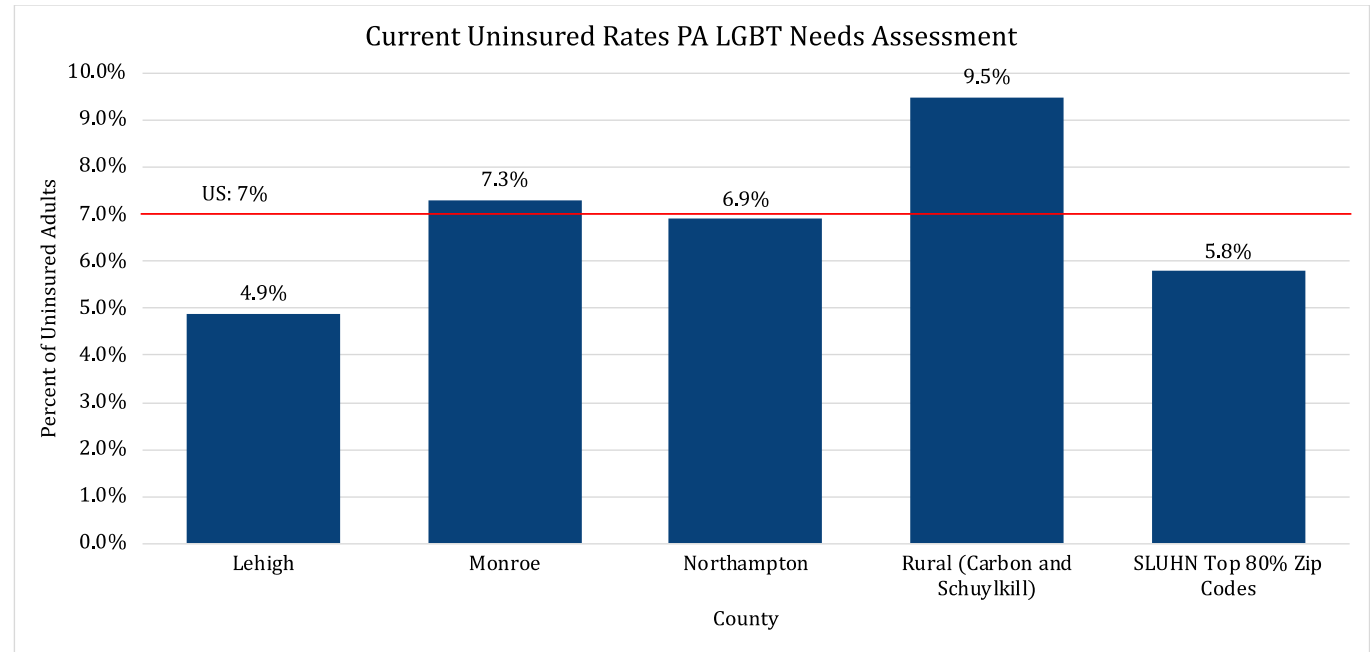


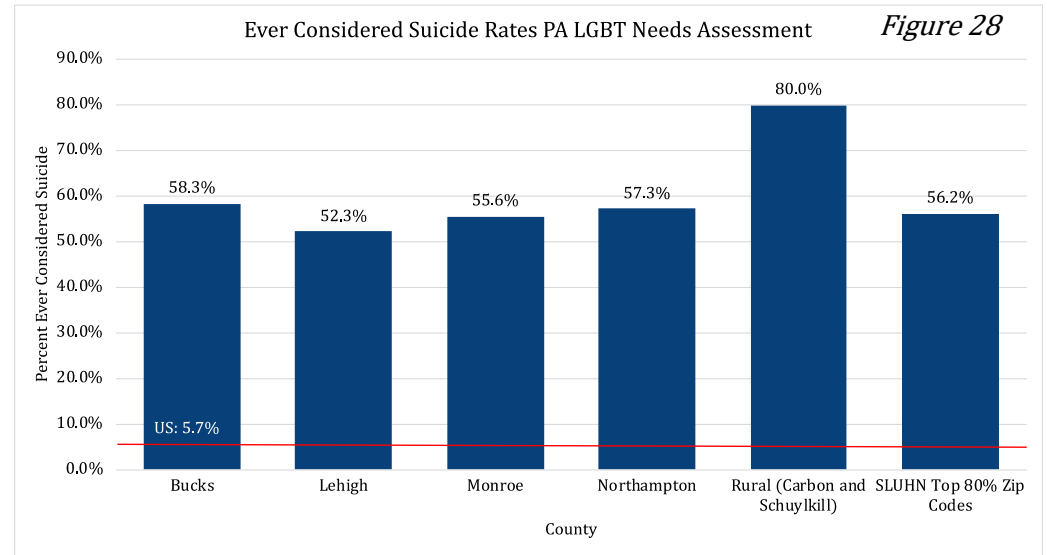
Figure 27

The lack of regular checkups can be related to perceived discrimination from the healthcare profession, with 35.5% of transgender, non-binary, and genderqueer respondents have experienced a negative reaction from a healthcare provider when the provider learned their LGBT identity. More than a quarter of respondents have chosen not to share their LGBT identity with their healthcare providers. Finally, 1 in 3 Bradbury-Sullivan survey respondents fear seeking healthcare services because of past or potential negative reactions from healthcare providers. There is a high level of medical mistrust among LGBT-identified people and that mistrust stems from negative interactions and experiences within healthcare systems over time. Despite negative attitudes towards doctors, respondents still show an interest in going to their personal doctor for more services. Out of respondents who are interested in quitting smoking, many (44.2%) would feel most comfortable receiving cessation services from a personal doctor.

<sup>53</sup> <https://www.countyhealthrankings.org/>

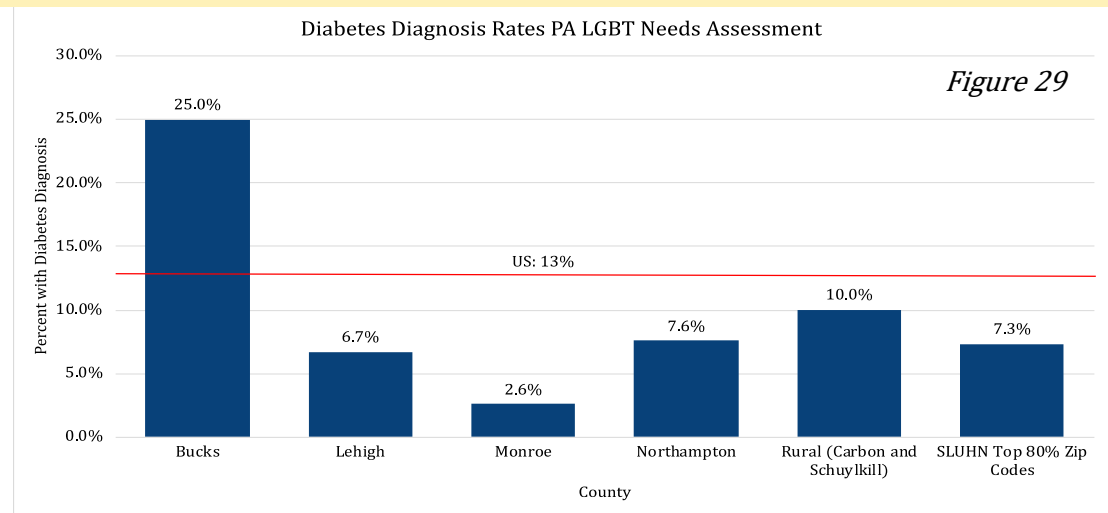
## ..... Mental Health .....

There are clear disparities statewide between and within the LGBT community. Over 30% of transgender, non-binary, or genderqueer Bradbury-Sullivan respondents have experienced homelessness compared to all Bradbury-Sullivan respondents (21.1%). Mental health disorders also pose an immense public health crisis. Among the most vulnerable are LGBT youth and transgender, non-binary, or genderqueer respondents. Of respondents under 18 years of age, 90% have experienced a mental health challenge in the past 12 months, compared to 72% for all respondents. Additionally, 3 in 4 transgender, non-binary, and genderqueer respondents have considered suicide in their lifetime. According to the CDC, 12 million of all U.S. adults have seriously thought about suicide (5.7% of the U.S. adult population).<sup>54</sup>



## ..... Chronic Disease .....

According to the HIV government response website,<sup>55</sup> 1.2 million people are living with HIV today. According to the CDC National Diabetes 2020 Statistics Report,<sup>56</sup> an estimated 34.2 million Americans (13.0% of all U.S. adults) have diabetes. According to the LGBT needs assessment, Bucks county had the highest rate of diabetes in the network (25%), while Monroe county had the lowest (2.6%).



<sup>54</sup> <https://www.cdc.gov/suicide/facts/index.html>

<sup>55</sup> <https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics>

<sup>56</sup> <https://www.cdc.gov/diabetes/data/statistics-report/index.html>

## ..... Disabled Population .....

Understanding the specific needs of the population in each service area provides insight into the types of specialized treatment needed in the region. The U.S. Census Bureau conducts the American Community Survey (ACS) collecting data from people across the United States. One of the questions asked pertains to disability. The six disability types considered in this category are hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty (serious difficulty walking or climbing stairs), self-care difficulty, and independent living difficulty.<sup>57</sup> The Rural West service area has the most amount of people who have a disability (16.3%) and Quakertown and Upper Bucks have the lowest amount of people who have a disability (10.3%).<sup>58</sup>

## ..... Veteran Population .....

The Census Bureau classifies a veteran as “a person 18 years old or over who has served (even for a short time), but is not now serving, on active duty in the U.S. Army, Navy, Air Force, Marine Corps, or the Coast Guard, or who served in the U.S. Merchant Marine during World War II.”<sup>59</sup> Geisinger St. Luke's has the most amount of veterans (9.4%) and Allentown and Sacred Heart have the least amount of veterans (6.4%).<sup>60</sup>

# Social and Economic Environment

## ..... Employment .....

Unemployment and underemployment have serious impacts on an individual's health. Income is a social determinant of health, and in addition to affecting one's income, unemployment and underemployment can leave individuals without health insurance, paid sick leave, and parental leave—exacerbating negative health outcomes when people are at their most vulnerable. According to the CDC National Health

<sup>57</sup> <https://www.census.gov/topics/health/disability/guidance/data-collection-ac.html>

<sup>58</sup> [data.census.gov/ Table \(S1810\)](https://data.census.gov/tables/s1810)

<sup>59</sup> <https://www.census.gov/content/dam/Census/topics/population/veterans/guidance/acs-topic-information-veterans.pdf>

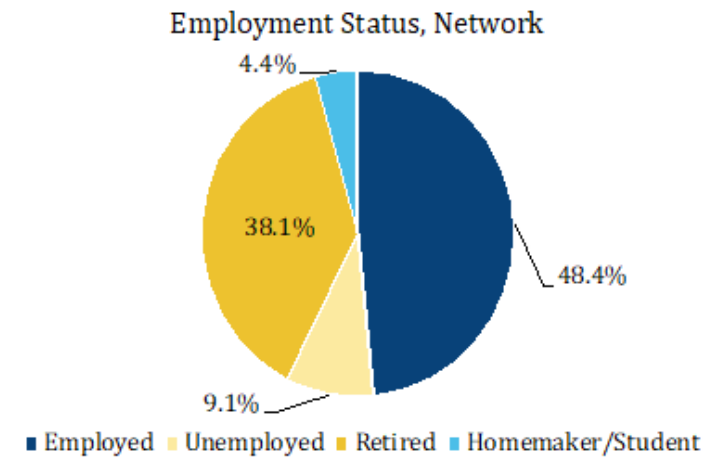
<sup>60</sup> [Data.census.gov/ Table \(S2101\)](https://data.census.gov/tables/s2101)


Interview Survey (2010), 51.9% of unemployed adults (of working age) were uninsured, compared to 18.6% of their employed counterparts.<sup>61</sup>

A lack of employment, and thus a lack of health insurance can further financially devastate individuals who seek medical care. As of 2017, the Kaiser Family Foundation (KFF) reported that 36% of uninsured adults worry about paying medical bills and 28% of uninsured adults delayed getting or went without medical care, compared to 9% of their insured counterparts.<sup>62</sup>

As of 2021, the unemployment rate is 4.4% in Pennsylvania and 3.6% in New Jersey.<sup>63</sup> However, unemployment rates varied widely within the year due to the COVID-19 pandemic. In January of 2020, Pennsylvania's unemployment rate was 4.7%, which then sky-rocketed to 16.1% by April of 2020—the highest observed since the U.S. Great Depression. Similarly, New Jersey's unemployment rate was 3.8% in January of 2020 and peaked in June with an employment rate of 16.8%. Both states reached unemployment rates below 10% by September of 2020, however, rates began to rise again in New Jersey toward the end of 2020 due to newly imposed COVID-19 restrictions during the worst surges of the second wave of the pandemic.<sup>64</sup>

When asked about employment status, most respondents in the network indicated employed (48.4%) or retired (38.1%), followed by unemployed (9.1%), and homemaker or student (4.4%). Rural West reported the highest percentage of respondents who are unemployed (13.7%) while Anderson and Easton reported the smallest percentage (7.6%).



 **Figure 30**

<sup>61</sup> <https://www.cdc.gov/nchs/products/databriefs/db83.htm>

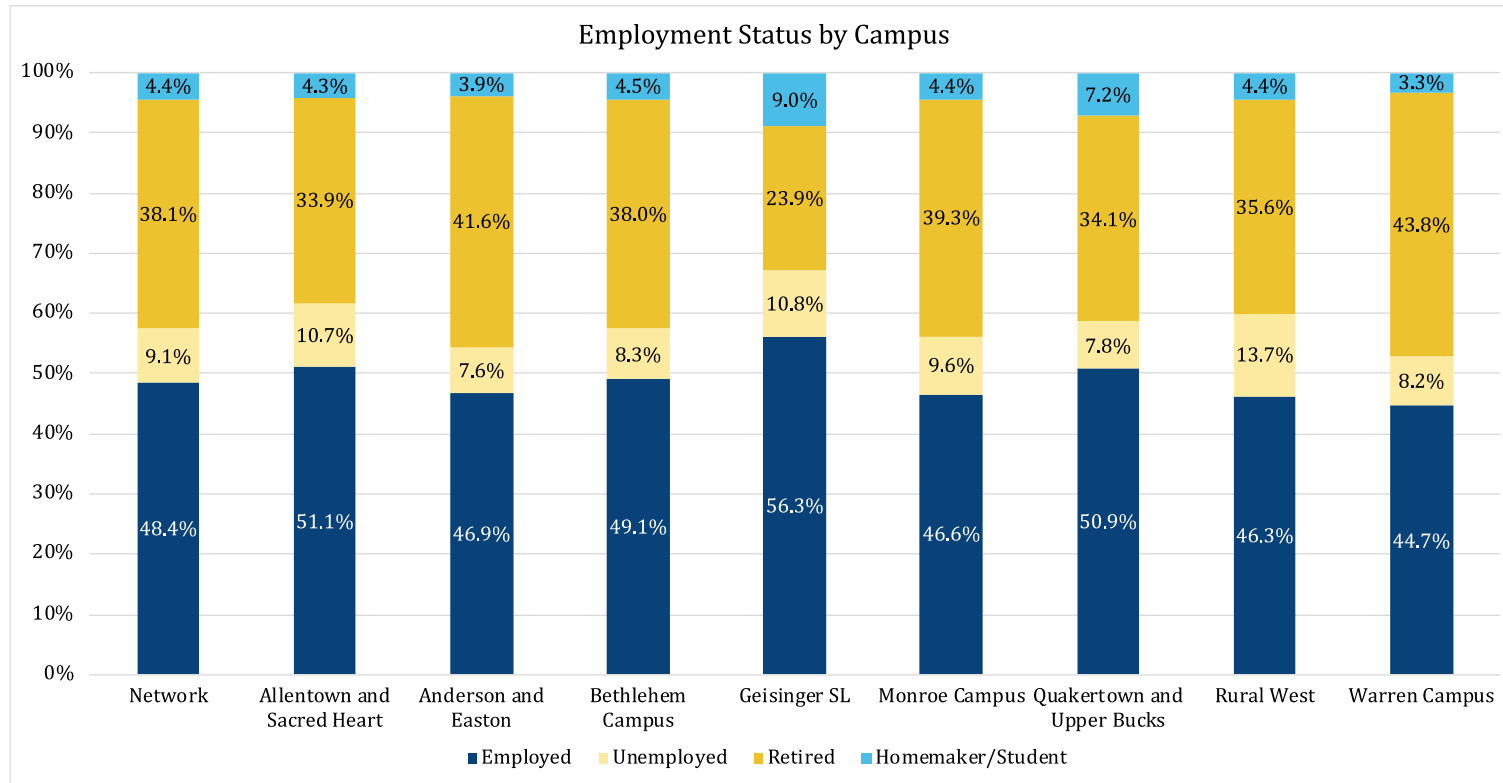
<sup>62</sup> [https://www.healthsystemtracker.org/chart-collection/cost-affect-access-care/#item-uninsured-adults-are-more-likely-to-delay-or-go-without-care-due-to-cost\\_2017](https://www.healthsystemtracker.org/chart-collection/cost-affect-access-care/#item-uninsured-adults-are-more-likely-to-delay-or-go-without-care-due-to-cost_2017)


<sup>63</sup> <https://www.countyhealthrankings.org/>

<sup>64</sup> [https://data.bls.gov/timeseries/LASST420000000000003?amp%253bdata\\_tool=XGtable&output\\_view=data&include\\_graphs=true](https://data.bls.gov/timeseries/LASST420000000000003?amp%253bdata_tool=XGtable&output_view=data&include_graphs=true)



## 2022 St. Luke's University Health Network Community Health Needs Assessment



 **Figure 31**

## ..... Household Income and Poverty .....

The 2021 Federal Poverty Level (FPL) guideline is measured at \$12,880 a year for one person and \$26,500 for a family of four.<sup>65</sup> If one person is 200% of the Federal Poverty Level, they make \$25,760; if a family of four is 200% of the Federal Poverty Level, they make \$53,000. In Pennsylvania, 28.3% of people live at or 200% below the FPL; 22.9% in New Jersey. The Allentown and Sacred Heart service area has the most people living at or 200% below the FPL (32%), and the Quakertown and Upper Bucks service area has the least amount (19.2%).<sup>66</sup> The

<sup>65</sup> <https://aspe.hhs.gov/2021-poverty-guidelines>

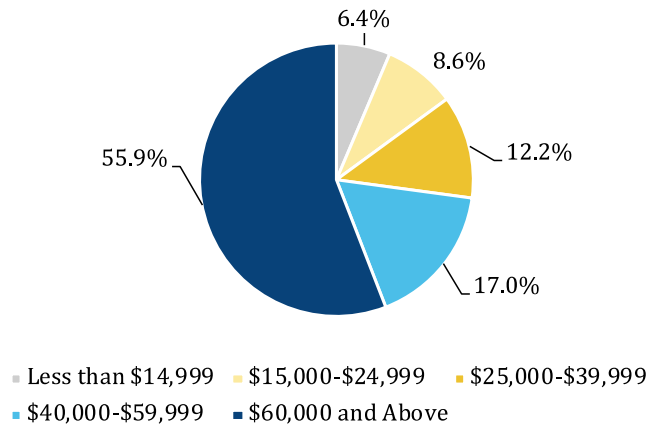
<sup>66</sup> <https://www.census.gov/programs-surveys/acs/>


## 2022 St. Luke's University Health Network Community Health Needs Assessment

ACS reported that the median household income in the U.S. is \$62,843. In Pennsylvania, the median household income is \$61,744 and \$82,545 in New Jersey.

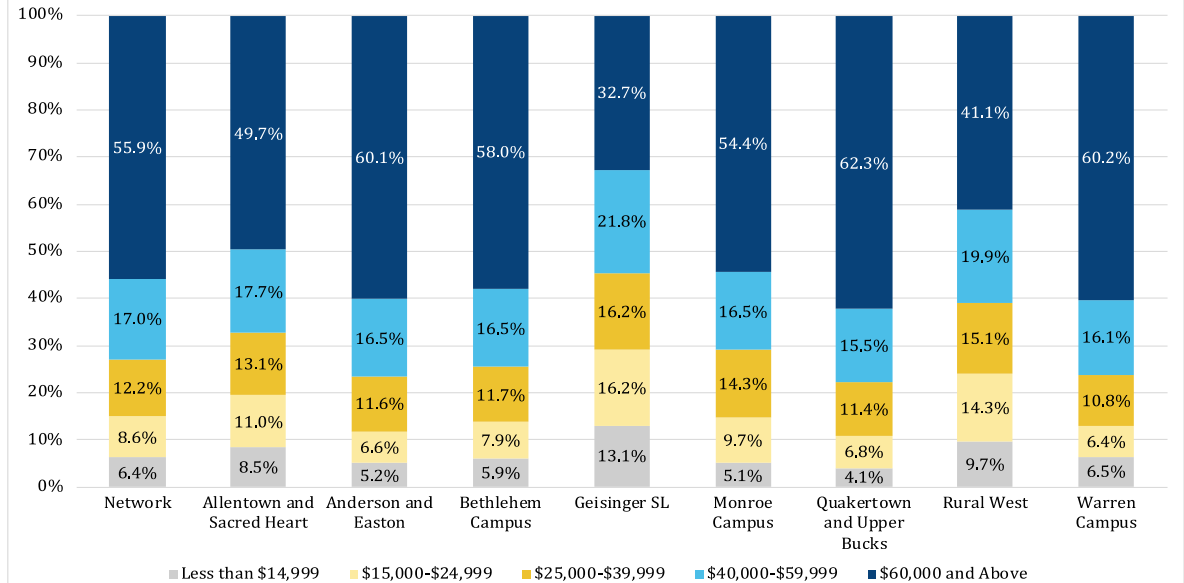
The majority of CHNA survey respondents make \$60,000 and above (55.9%), while 15% of respondents make \$24,999 or below, and 29.2% makes between \$25,000 and \$59,999. Geisinger St. Luke's has the highest percentage of respondents whose household income is less than \$14,999 (13.1%), and Quakertown and Upper Bucks has the lowest (4.1%). Conversely, Quakertown and Upper Bucks have the highest percentage of respondents whose household income is \$60,000 or above (62.3%), while Geisinger St. Luke's have the lowest (32.7%).


Household Income, Network



 *Figure 32*

Income Level, by Campus



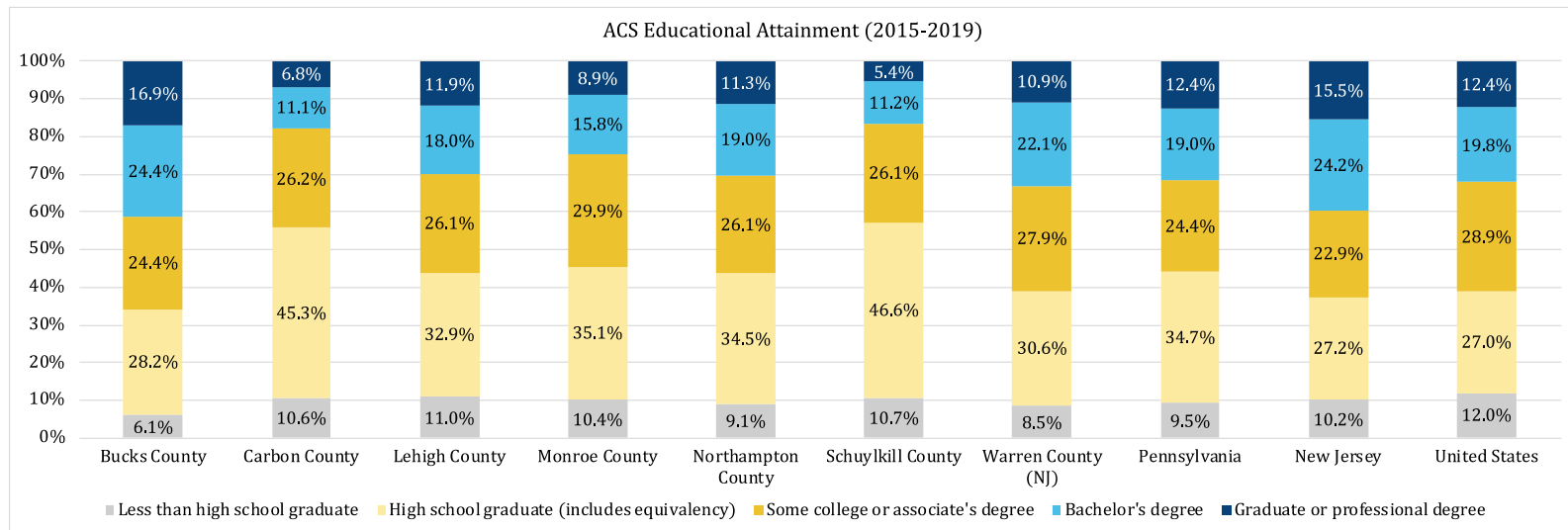
 *Figure 33*

## ..... Education .....

Educational attainment is linked to income and employment, laying the building blocks for the next generation to have an improved socioeconomic status and correlated positive health outcomes. Healthy People 2030 set a target goal for the percentage of students who graduate high school within four years at 90.7%.<sup>67</sup> In Pennsylvania, 91% of people have a high school diploma or equivalent. In New Jersey, 90% of people have a high school diploma or equivalent.<sup>68</sup>

Of all survey respondents, 97.1% have a high school degree or higher, 0.8% have less than a high school degree, and 2.1% have some high school education. Additionally, 22.3% of respondents have only a high school degree, 31.7% have some college or an associate's degree (19% have some college, 12.7% have an associate's), 20.6% have a bachelor's degree, and 22.4% have a post college or graduate degree. Survey results show that respondents have much higher rates of higher education than the general public (Figure 34). Additionally, CHNA survey results have lower percentages of respondents with less than a high school diploma compared to the general public. It should be noted that people with higher levels of education are more likely to live healthier and longer lives than those with lower education levels.<sup>69</sup> Healthy People 2030 states that children with less access to quality education are less likely to get safe, high-paying jobs and are more likely to develop health problems (e.g., heart disease, diabetes). This is a significant concern because it is crucial to identify and work with populations with lower access to education and healthcare to aid in healthy lifestyles and well-being.

Figure 34



<sup>67</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/adolescents/increase-proportion-high-school-students-who-graduate-4-years-ah-08>

<sup>68</sup> <https://www.countyhealthrankings.org/>

<sup>69</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/education-access-and-quality>

## ..... Language .....

English is the language that is most widely spoken in the Lehigh Valley area and surrounding areas of Pennsylvania. However, many people in our service area may be identified as having limited English proficiency.

Limited English proficiency is reported as the percentage of the population five years and older who speak a language other than English at home and speak English less than “very well.” Respondents were not instructed on how to interpret the meaning of “very well.”<sup>70</sup>

Speaking and understanding English is important in the SLUHN service area because most health services are provided in English.

Language can also be a large barrier to educational attainment, higher income, employment, and accessing healthcare. Allentown and Sacred Heart has the most amount of people considered to have limited English proficiency (10.8%) and Rural West has the lowest (1.1%).<sup>71</sup>

Translators and interpreters are required in locations where either 5% of the community speaks a different language or over 1,000 community members speak a different language.<sup>72</sup> A translator typically only translates the written word while interpreters translate orally. Figure 35 illustrates the network service area zip codes that require translator or interpreter services (highlighted in red). Of the network service areas, 13 zip codes require language services for Spanish speakers, 3 zip codes require services for Arabic speakers, and 2 zip codes require services for other Indo-European languages (not including West Germanic and Slavic languages).

<sup>70</sup> [https://www2.census.gov/programs-surveys/acs/tech\\_docs/subject\\_definitions/2019\\_ACSSubjectDefinitions.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf)

<sup>71</sup> <https://www.census.gov/programs-surveys/acs/>

<sup>72</sup> [https://www.hud.gov/program\\_offices/fair\\_housing\\_equal\\_opp/promotingfh/lep-faq#q3](https://www.hud.gov/program_offices/fair_housing_equal_opp/promotingfh/lep-faq#q3)

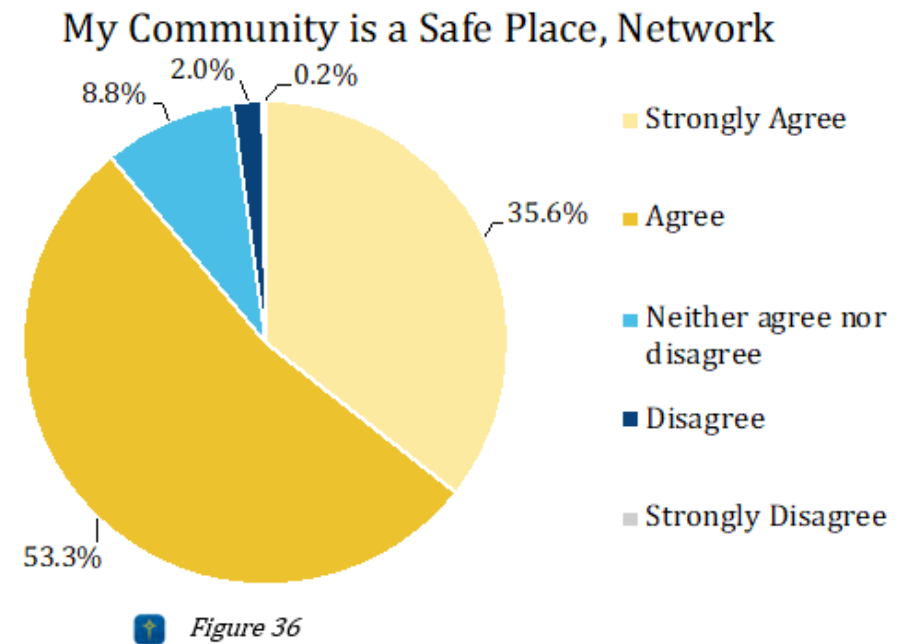
Network Service Area Languages			
Top Zip Codes	Percentage and Number of Spanish Speakers in Zip Code	Percentage and Number of Spanish Speakers in Zip Code Who Speak English Less than "Very Well"	Next Frequent Language
18102	50.3% (22,783 people)	47.3% (10,782 people)	Arabic (3.0%- 1,350 people)
18017	11.8% (4,399 people)	35.6% (1,564 people)	Other Indo-European languages (2.9%- 1,078 people)
18103	27.9% (12,237 people)	48.5% (5,931 people)	Other Indo-European languages (1.6%- 693 people)
18015	21.7% (6,857 people)	48.5% (3,329 people)	Chinese (incl. Mandarin, Cantonese) (1.9%- 609 people)
08865	6.8% (1,867 people)	56.2% (1,049 people)	Other Indo-European languages (2.0%- 538 people)
18042	12.8% (5,141 people)	42.6% (2,188 people)	Other Indo-European languages (1.5%- 591 people)
18235	2.7% (492 people)	6.9% (34 people)	Russian, Polish, or other Slavic languages (1.1%- 195 people)
18018	15.2% (4,519 people)	39.3% (1,775 people)	Other Indo-European languages (2.0%- 585 people)
18045	6.0% (1,547 people)	22.1% (342 people)	Other Indo-European languages (3.8%- 972 people)
18064	2.8% (692 people)	51.3% (355 people)	Other Indo-European languages (1.3%- 335 people)
18104	9.2% (3,913 people)	35.1% (1,372 people)	Other Indo-European languages (2.6%- 1,522 people)
18360	6.0% (1,564 people)	16.8% (262 people)	Other Indo-European languages (3.1%- 815 people)
18951	2.3% (771 people)	41.4% (319 people)	Other Indo-European languages (1.0%- 326 people)
18020	4.8% (934 people)	29.0% (271 people)	Other Indo-European languages (3.3%- 651 people)
18052	12.2% (3,205 people)	46.0% (1,474 people)	Arabic (6.0%- 1,569 people)
18252	1.3% (130 people)	21.5% (28 people)	German or other West Germanic languages (1.0%- 103 people)
18301	10.4% (2,942 people)	22.8% (672 people)	Russian, Polish, or other Slavic languages (2.3%- 653 people)
18040	3.5% (546 people)	18.9% (103 people)	Other Indo-European languages (1.4%- 227 people)
18109	33.6% (5,500 people)	46.5% (2,560 people)	Arabic (6.9%- 1,127 people)

Figure 35

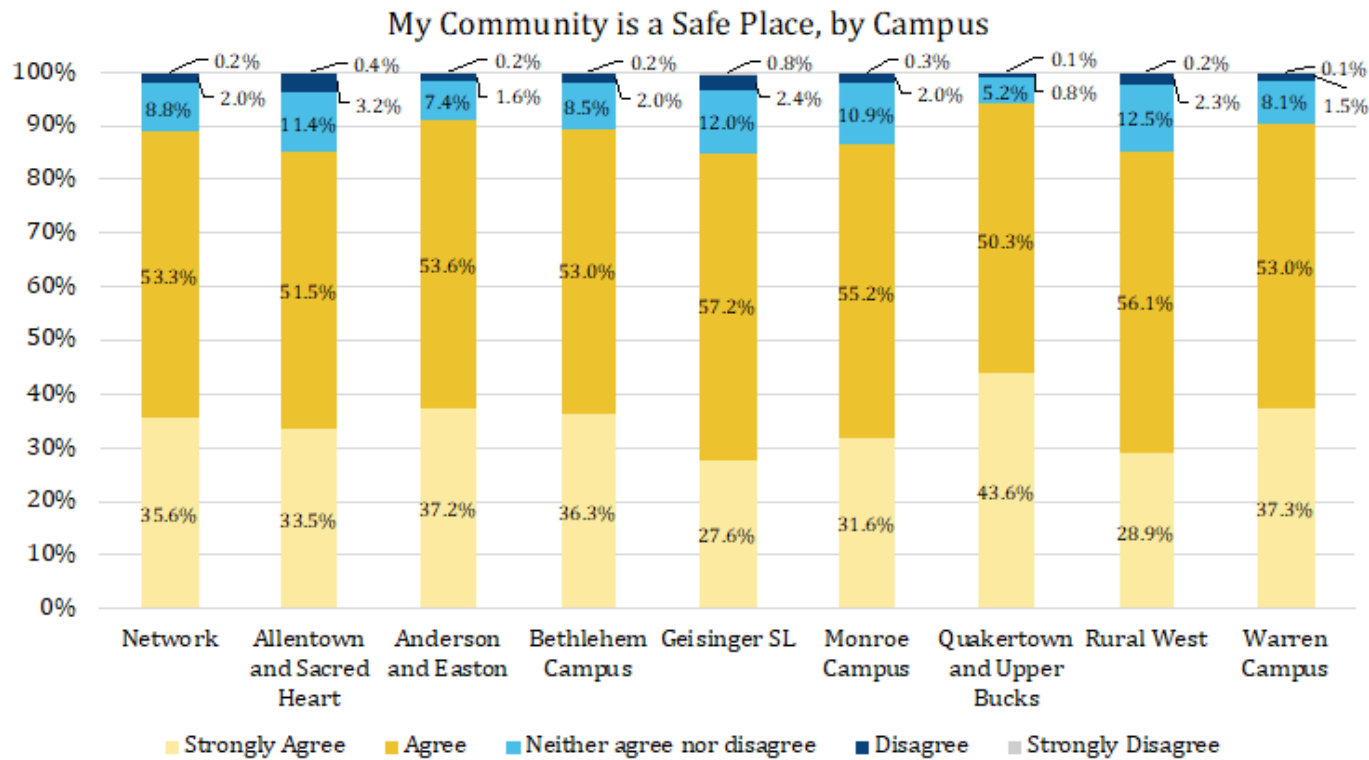
## ..... Safety .....


Perceived safety is an important component of integrating into one's community. People who do not feel safe in their neighborhood are less likely to participate in outdoor activities and are more likely to isolate themselves, which can have negative impacts on both physical and mental health. Violent crime, defined as "offenses that involve face-to-face confrontation between a victim and a perpetrator, including homicide, rape, robbery, and aggravated assault"<sup>73</sup>, is one measure of safety. According to Robert Wood Johnson 2021, the U.S. top performer rate is 63 per 100,000 and Pennsylvania has a rate of 315 violent crime offenses per 100,000 population. New Jersey has a rate of 253 violent crimes per 100,000 population. Out of the counties where a St. Luke's hospital is located, Schuylkill county has the highest rate of violent crimes (319 per 100,000) and Warren county (NJ) has the lowest (71 per 100,000).

Most CHNA survey respondents agreed that their community was a safe place to live (53.3%), followed by strongly agree (35.6%), neither agree nor disagree (8.8%), disagree (2%), and strongly disagree (0.2%). When looking at responses by service area, 43.6% of respondents from the Quakertown and Upper Bucks service area strongly agree that their community is a safe place, the most of any service area. In the Allentown and Sacred Heart service area, respondents either disagreed (3.2%) or strongly disagreed (0.4%) that their community is a safe place to live, the most out of any service area.



<sup>73</sup> <https://www.countyhealthrankings.org/app/new-jersey/2021/measure/factors/43/data>



 *Figure 37*

## ..... Social Associations .....

Related to safety, social association is a measure of the emotional and social support available to an individual. This indicator measures the number of membership associations per 10,000 population. U.S. top performers scored 18.2, while Pennsylvania and New Jersey social associations were 12.2 and 8.7 respectively<sup>74</sup>—falling below U.S. performers and bringing to light the need for more social supports and community building in our service areas. Carbon county has the most with 13.9 and Monroe county has the least with 7.6.

<sup>74</sup> <https://www.countyhealthrankings.org>

# Physical Environment

## ..... Food Insecurity .....

Food insecurity, according to the United States Department of Agriculture (USDA), is the lack of consistent access to a variety of foods for a quality diet.<sup>75</sup> A quality diet is one with access to foods that meet the individual's taste and nutritional needs. Very low food security (VLFS) is when normal eating patterns are disrupted and households lack money or other resources to obtain food. The USDA's annual report (2019) found that 10.5% of households nationwide are food insecure, 6.5% of which have low food security and 4.1% have VLFS.<sup>76</sup> Among households with children, 6.5% are food insecure and 0.6% have VLFS. The USDA report stated that households with children facing VLFS had to skip meals or not eat for entire days due to a lack of money for food.<sup>77</sup> In 2019, New Jersey had a food insecurity rate of 7.7% and VLFS rate of 3%, while Pennsylvania had a food insecurity rate of 10.2% and VLFS rate of 4.1%.

Government assistance programs aim to help reduce food insecurity through national programs such as the Supplemental Nutrition Assistance Program (SNAP), the National School Lunch Program (NSLP), and Women, Infants and Children (WIC). In 2019, an estimated 49.7% of households receiving SNAP were food insecure, 36.9% of households receiving free or reduced school lunches were food insecure, and 34.1% of households receiving WIC were food insecure.<sup>78</sup> Additionally, 57.7% of households classified as VLFS reported participating in one or more program, with SNAP having the largest number of participants (47.8%). The Allentown and Sacred Heart service area had the highest rate of SNAP recipients in the network (15.5%) and the Quakertown and Upper Bucks service area had the lowest (7.4%).<sup>79</sup>

The COVID-19 pandemic required shutdowns across the county in 2020, resulting in many people losing jobs and their ability to afford food and other essential items to survive. Feeding America (2021) projects the potential rates of food insecurity due to COVID-19, estimating more than 50 million people experiencing food insecurity because of the pandemic.<sup>80</sup> Feeding America projects the annual food insecurity rate to increase to 12.9% in 2021, meaning that 1 in 8 people will be food insecure, along with 1 in 6 children. Additionally, the report projects the unemployment rate to be approximately 6.7% and the annual poverty rate to be 12% in 2021, a 0.9% increase from 2020.<sup>81</sup>

<sup>75</sup> <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>

<sup>76</sup> <https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4>

<sup>77</sup> <https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4>

<sup>78</sup> <https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4>

<sup>79</sup> [data.census.gov/](https://data.census.gov/)

<sup>80</sup> <https://www.feedingamerica.org/research/coronavirus-hunger-research>

<sup>81</sup> <https://www.feedingamerica.org/research/coronavirus-hunger-research>



In respect to St. Luke's service area counties, Schuylkill county is projected to have the highest food insecurity rate (13%), and Montgomery county will have the lowest (8.3%).<sup>82</sup> The projected food insecurity rate in Pennsylvania is 12% and 11.7% in New Jersey. Bucks county has the highest increase in food insecurity in 2019-2020 of all Pennsylvania counties (45%), followed by Monroe (44%) and Montgomery (44%). It is also important to note that the pandemic affected BIPOC communities hardest in terms of unemployment and food insecurity. The Hispanic/Latino population had the highest unemployment rate among all racial and ethnic groups, spiking to 18.9% in April 2020. Additionally, Black individuals were already 2.4 times as likely to live in food insecure households than White individuals prior to the pandemic, and now 18 of the 25 counties in the U.S. projected to have the highest food insecurity rates in 2020 are predominantly Black.<sup>83</sup>

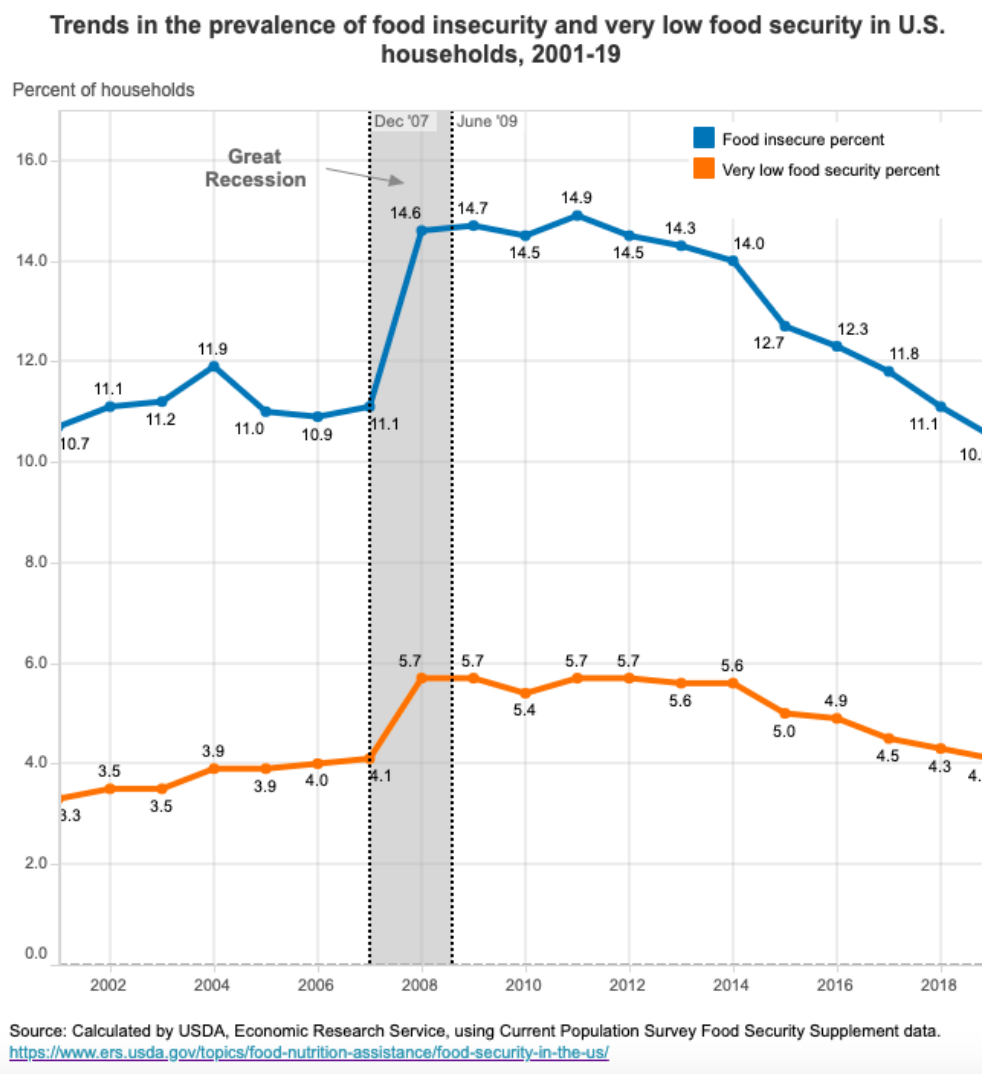


Figure 38: <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/interactive-charts-and-highlights/>

<sup>82</sup> <https://www.feedingamericaaction.org/the-impact-of-coronavirus-on-food-insecurity/>

<sup>83</sup> <https://www.feedingamerica.org/research/coronavirus-hunger-research>



Figure 39

Feeding America COVID-19 Food Insecurity Projections						
Geography	Rank 2021	2021	2020	2019	Change 2019-2020	2021 Child
Berks	52/67	10.9%	12.8%	9.4%	35.0%	15.8%
Bucks	65/67	8.6%	10.4%	7.2%	45.0%	10.6%
Carbon	34/67	12.6%	14.8%	11.7%	27.0%	18.4%
Lehigh	44/67	11.6%	13.5%	10.0%	34.0%	16.6%
Monroe	49/67	11.1%	13.5%	9.4%	44.0%	17.4%
Montgomery	66/67	8.3%	11.1%	6.9%	44.0%	10.2%
Northampton	62/67	9.8%	11.8%	8.6%	37.0%	13.9%
Schuylkill	28/67	13.0%	14.9%	12.0%	24.0%	18.0%
Warren	10/21	11.5%	12.0%	8.6%	40.0%	14.5%
PA	31/51	12.0%	13.8%	10.6%	31.0%	16.8%
NJ	34/51	11.7%	12.0%	8.6%	40.0%	15.3%

Research studies have found that stress from inconsistent access to food can play an active role in fat accumulation and chronic disease.<sup>84</sup> In non-senior adults, food insecurity is associated with decreased nutrient intakes, increased rates of mental health problems, hypertension, and poor sleep outcomes.<sup>85</sup> In children, food insecurity is associated with increased risks of asthma, lower nutrient intakes, cognitive problems, aggression, and anxiety. Food insecure children may also have higher risks of hospitalization, poor overall health, asthma, depression, and worsened oral health.<sup>86</sup> Food deserts also play a role in food insecurity and chronic disease. Typically, in food deserts, there is a large amount of fast food and corner stores with inexpensive, high calorie food that lacks nutritional value. Long term consumption of unhealthy food can increase likelihood of obesity, type 2 diabetes, heart disease, and other diet-related conditions.<sup>87</sup>

Additionally, availability of food can be a stressor for children. PAYS asked students if they have been worried about running out of food one or more times in the past year. Across Pennsylvania, 11.7% of students agreed with this statement. Out of the SLUHN service area counties, Carbon county has the highest percentage of students who agreed (16.8%) and Bucks county has the least (9.9%).

In 2015, Buy Fresh Buy Local, a Greater Lehigh Valley organization which aims to increase food access and consumption of locally grown food, stated that one third of the average Lehigh Valley family grocery bill is spent on sweeteners, jams, candy, frozen prepared meals, snack foods, and condiments.<sup>88</sup> To decrease this rate, the organization suggests families purchase locally grown, healthy foods that will promote a

<sup>84</sup> <https://doi.org/10.3945/an.112.002543>

<sup>85</sup> <https://www.healthaffairs.org/doi/10.1377/hlthaff.2015.0645>

<sup>86</sup> <https://www.healthaffairs.org/doi/10.1377/hlthaff.2015.0645>

<sup>87</sup> <https://foodispower.org/access-health/food-deserts/>

<sup>88</sup> <http://www.buylocalglv.org/wp-content/uploads/2016/01/Assessment-Report-LV-Food-Economy-FINAL-1.pdf>

healthy lifestyle and benefit the local economy, which creates approximately \$17 million of economic activity in the Lehigh Valley each year. Additionally, the percentage of SNAP benefits spent at local farmer's markets was extremely low. Increasing accessibility and educating communities about SNAP use at farmer's markets will help farmers and food insecure families to purchase healthy fruits and vegetables.

The Robert Wood Johnson county health rankings reports on each county's food environment index, which assess distance to a grocery store, the amount of healthy food options, and cost barriers to healthy food. The measure is ranked 0 to 10, with 10 as the best. New Jersey's overall food environment index is 9.4, while the Warren service area's is 8.7. Pennsylvania's overall food environment index is 8.4. The highest food environment index of the Pennsylvania service area counties is Bucks (9.1) and Monroe is the lowest (8.0).<sup>89</sup>

## ..... Housing and Blight .....

Stable and safe housing is an important factor that sets the foundation to achieve quality education, valuable social interactions, and access to nutritious foods. According to Healthy People 2030, safe housing is considered a social determinant of health, or the "conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks."<sup>90</sup> Housing affects other sectors including but not limited to education, health, racial equity, economic stability, homelessness, hunger, crime, the environment, and disability rights.<sup>91</sup> Over time, homeownership can help build wealth and savings, which are important in relation to health; but not everyone has had equal opportunity to own a home. Decades of discriminatory practices has led to a disproportionate homeownership rate between races.<sup>92</sup> Healthy People 2030 has made housing a focus, including efforts to reduce the proportion of families that spend 30% or more of income on housing, increase the proportion of homeless adults who get mental health services, and to increase the proportion of homes that have an entrance without steps to make it accessible for people with disabilities.<sup>93</sup>

In the 2020 Lehigh Valley Planning Commission (LVPC) housing report, the state of housing situations was assessed across the Lehigh Valley, which includes Allentown, Bethlehem, and Easton (Lehigh and Northampton counties). Using ACS data (2018), LVPC found that 38% of residents in the Lehigh Valley are cost-burdened.<sup>94</sup> In further analysis with the Federal Reserve of Philadelphia, LVPC identified 78,000 Lehigh Valley residents who work in jobs that require close physical contact, which puts them at greater risk for COVID-19.<sup>95</sup>

<sup>89</sup> <https://www.countyhealthrankings.org/app/pennsylvania/2021/measure/factors/133/data>

<sup>90</sup> <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>

<sup>91</sup> <https://www.opportunityhome.org/related-sectors/>

<sup>92</sup> <https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report>

<sup>93</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/housing-and-homes>

<sup>94</sup> <https://lvpc.org/data-lv-housing.html>

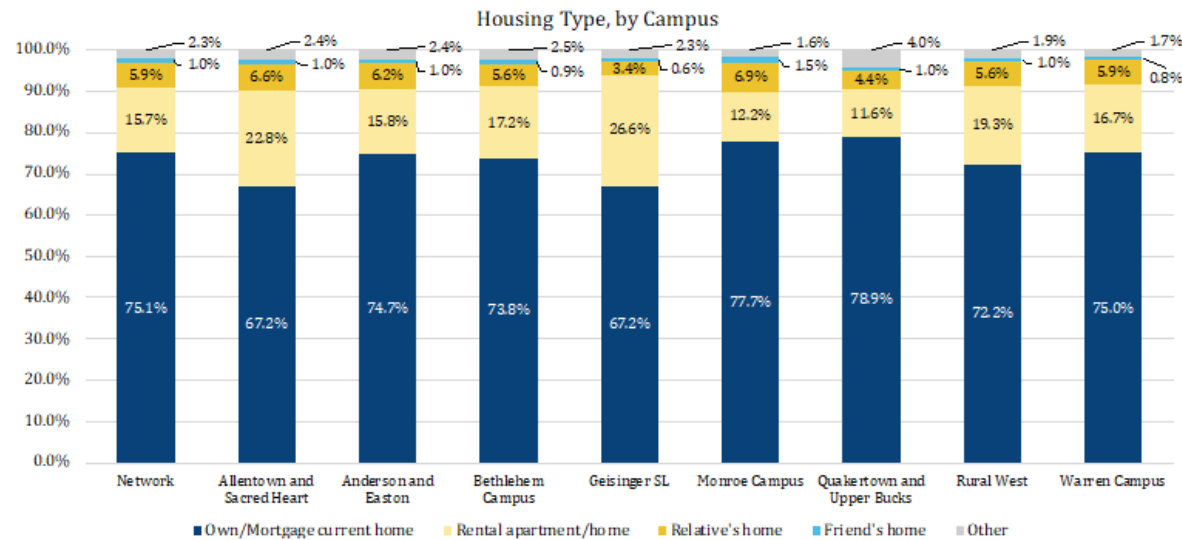
<sup>95</sup> <https://lvpc.org/data-lv-housing.html>

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Lehigh Valley residents who are considered cost-burdened owners, cost-burdened renters, or at-risk workers have the highest risk for experiencing displacement and or housing loss because of the COVID-19 pandemic.<sup>96</sup>

The COVID-19 pandemic has resulted in thousands of people losing jobs, leaving them vulnerable to evictions or foreclosures. The CDC issued a moratorium on September 4, 2020 temporarily halting evictions. The moratorium was set to end December 31, 2020; however it was pushed back until January 31, 2021 and was extended further to March 31, 2021 as the virus persisted.<sup>97</sup>

To get an understanding of how our service area population lives, we asked respondents to indicate their housing type. Due to small sample size, the group “Other” consists of individuals living in a shelter (.04%), group home (0.2%), senior living (0.71%), homeless (0.24%), or Other (1.12%). The majority of respondents own or have a mortgage on their home (75.1%), followed by renting a home (15.7%), living in a relative’s home (5.9%), Other (2.3%), and living in a friend’s home (1%).



**Figure 40**

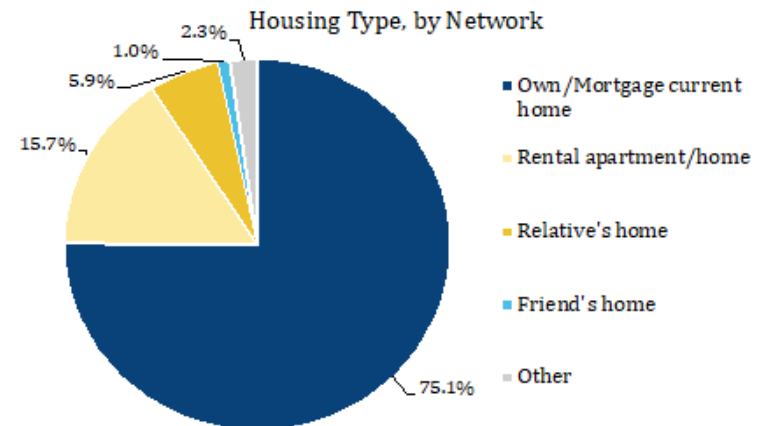
<sup>96</sup> <https://lvpc.org/data-lv-housing.html>


<sup>97</sup> <https://www.cdc.gov/coronavirus/2019-ncov/more/pdf/CDC-Eviction-Moratorium-01292021.pdf>

One indicator used to assess housing status is the percentage of households that are cost-burdened. According to the department of Housing and Urban Development (HUD), a household is considered cost-burdened if 30% or more of the income goes toward their mortgage or rent.<sup>98</sup> A household is severely cost-burdened if 50% or more of their income goes toward paying mortgage or rent. Both situations can be detrimental to an individual's overall well-being because there is less disposable income to pay for food, healthcare costs, transportation, and other out of pocket expenses. A 2019 report by the County Health Rankings and Robert Wood Johnson Foundation found that 1 in 10 households across the United States spend more than half of their income on housing costs (severe cost-burdened).<sup>99</sup>

The report also found that severe cost-burdened households are more likely to be affected by food insecurity, child poverty, and fair or poor health.<sup>100</sup> Additionally, segregated counties across the United States have higher cost-burdened rates for both Black and White households. However, nearly 1 in 4 Black households spend more than half of their income on housing.<sup>101</sup> Cost-burdened housing is a large problem in the St. Luke's service area as wages and housing costs are not always aligned.

Further assessing the wage disparities, the National Low Income Housing Coalition (NLIHC) released a report on fiscal year 2020's housing costs and wage. Out of all states, New Jersey ranks 7 of states with the highest housing wages and Pennsylvania ranks 26.<sup>102</sup> In Warren county, the fair market rent for a two-bedroom apartment is \$1,171, meaning the household would need to earn \$22.52 an hour or \$46,840 annually to afford the apartment and not be cost-burdened. Based on the estimated hourly mean wage that a renter in Warren county earns, \$13.08, the individual would need to work 1.7 full time jobs to afford rent. In Pennsylvania, the fair market rent for a two-bedroom apartment is \$1,000, meaning that for a household to not be cost-burdened, they must earn \$3,333 a month or \$39,992 annually. This translates into an hourly wage of \$19.23, however Pennsylvania's state minimum wage is only \$7.25 an hour. Someone living on the state minimum wage would need to work 106 hours a week to afford rent each month. The Lehigh Valley (Allentown, Bethlehem, Easton) is the fourth most expensive area in Pennsylvania, requiring \$19.73 an hour to afford an apartment and not be cost-burdened. Out of the St. Luke's Pennsylvania service areas, Bucks county is the most expensive to live in, with the fair market rent for a two-bedroom apartment at \$1,226,



 **Figure 41**

<sup>98</sup> [https://www.huduser.gov/portal/pdredge/pdr\\_edge\\_featd\\_article\\_092214.html](https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_092214.html)

<sup>99</sup> <https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report>

<sup>100</sup> <https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report>

<sup>101</sup> <https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report>

<sup>102</sup> <https://reports.nlihc.org/orr>

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requiring the individual to make \$23.58 an hour. The most inexpensive county is Schuylkill, with the fair market rent for a two bedroom at \$723 a month, requiring \$13.90 an hour to not be cost-burdened. With 36% of people in New Jersey and 31% of people in Pennsylvania renting, paying employees living wages and providing a market of affordable housing must be addressed.<sup>103</sup>

The 10 lowest income census tracts in the St Luke's service area have a cost burden rate higher than the Pennsylvania state average (28.9%) and the national average (31.8%). Additionally, 169 census tracts within the St. Luke's service area counties (Bucks, Carbon, Lehigh, Monroe, Northampton, Schuylkill, and Warren) have a cost burden rate above the national average cost burden percent (31.8%).

Network (Bucks, Carbon, Lehigh, Monroe, Northampton, Schuylkill & Warren [NJ])		
Geographic Area Name (Zip Code)	Median Household Income (lowest first)	% Cost Burdened
Census Tract 105, Northampton County, PA (18017)	\$ 25,000	44.8%
Census Tract 19, Lehigh County, PA (18052, 18102, & 18104)	\$ 25,201	41.6%
Census Tract 97, Lehigh County, PA (18101, 18102, & 18105)	\$ 26,327	45.5%
Census Tract 16, Lehigh County, PA (18102)	\$ 26,807	54.5%
Census Tract 19, Schuylkill County, PA (17901)	\$ 27,054	46.9%
Census Tract 10, Lehigh County, PA (18101 & 18102)	\$ 27,059	51.3%
Census Tract 6.02, Schuylkill County, PA (17976)	\$ 27,614	34.5%
Census Tract 111, Northampton County, PA (18015)	\$ 28,056	40.0%
Census Tract 6.01, Schuylkill County, PA (17976)	\$ 28,603	39.2%
Census Tract 12, Lehigh County, PA (18101 & 18102)	\$ 29,583	46.3%
Average 10 Census Tracts	\$ 27,130	44.5%
Pennsylvania	\$ 61,744	28.9%
New Jersey	\$ 82,545	38.7%
National	\$ 62,843	31.8%

Figure 42: Data is reported from the 5 year ACS (2015-2019) estimates

It is also important to include two counties that are serviced by St. Luke's but do not have hospitals within county borders, Berks county and Montgomery county. Berks county's ten lowest income census tracts have an average of 49.9% of houses meeting criteria for cost-burdened and 47% for Montgomery county's ten lowest income tracts.

Two other important metrics to look at are the percentage of households that lack complete kitchens and the percentage of households that lack complete plumbing. It is important to assess the conditions inside houses because they give an indication of living standards and assess the quality of household facilities.<sup>104</sup> According to the 2019 ACS subject definitions guide, a complete kitchen must possess all the following: a sink with a faucet, a stove or range, and a refrigerator.<sup>105</sup> If a household lacks any one or more of these facilities, the household is considered to lack a complete kitchen. The definitions guide defines a complete plumbing facility to have hot and cold running water and a bathtub or shower.<sup>106</sup> Again, if a household lacks one or both facilities, the house is considered to lack complete plumbing.

<sup>103</sup> <https://reports.nlihc.org/oor>

<sup>104</sup> [https://www2.census.gov/programs-surveys/acs/tech\\_docs/subject\\_definitions/2019\\_ACSSubjectDefinitions.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf)

<sup>105</sup> [https://www2.census.gov/programs-surveys/acs/tech\\_docs/subject\\_definitions/2019\\_ACSSubjectDefinitions.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf)

<sup>106</sup> [https://www2.census.gov/programs-surveys/acs/tech\\_docs/subject\\_definitions/2019\\_ACSSubjectDefinitions.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf)



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Without a complete kitchen, families are unable to cook nutritious meals and may rely more heavily on fast food or take out. For households lacking complete plumbing facilities, families may not be able to bathe regularly leading to poor hygiene.

Of the ten lowest income census tracts, two Schuylkill county tracts have the highest percentage of households lacking a complete kitchen, 12.4% in tract 6.02 and 14.3% in tract 6.01. These tracts are both well above the Pennsylvania (3.4%) and national averages (2.8%). Additionally, the average percentage of households lacking a complete kitchen in the ten lowest income census tracts (5.4%), is almost double the national average. For Berks county, an average of 4.6% of households lack a complete kitchen and 3.6% in Montgomery county's lowest ten income tracts. The percentage of households lacking complete plumbing follows a similar pattern to the percentage of households lacking a complete kitchen. For Berks county, an average of 2.5% of households lack complete plumbing and 3.6% in Montgomery county's lowest ten income tracts. Again, the two census tracts with the highest percentage of households lacking complete plumbing come from tracts 6.01 (19.6%) and 6.02 (20.4%) in Schuylkill county.

Homelessness is another important indicator when assessing housing. Each year, HUD collects homeless data across the country, also known as the Continuums of Care data. As of January 2020, an estimated 13,375 people in Pennsylvania experienced homelessness on any given day.<sup>107</sup>

Network (Bucks, Carbon, Lehigh, Monroe, Northampton, Schuylkill & Warren [NJ])		
Geographic Area Name (Zip Code)	Median Household Income (lowest first)	% Lacking complete kitchen
Census Tract 105, Northampton County, PA (18017)	\$ 25,000	2.6%
Census Tract 19, Lehigh County, PA (18052, 18102, & 18104)	\$ 25,201	0.5%
Census Tract 97, Lehigh County, PA (18101, 18102, & 18105)	\$ 26,327	7.8%
Census Tract 16, Lehigh County, PA (18102)	\$ 26,807	1.4%
Census Tract 19, Schuylkill County, PA (17901)	\$ 27,054	9.9%
Census Tract 10, Lehigh County, PA (18101 & 18102)	\$ 27,059	2.1%
Census Tract 6.02, Schuylkill County, PA (17976)	\$ 27,614	12.4%
Census Tract 111, Northampton County, PA (18015)	\$ 28,056	0.0%
Census Tract 6.01, Schuylkill County, PA (17976)	\$ 28,603	14.3%
Census Tract 12, Lehigh County, PA (18101 & 18102)	\$ 29,583	2.7%
Average 10 Census Tracts	\$ 27,130	5.4%
Pennsylvania	\$ 61,744	3.4%
New Jersey	\$ 82,545	2.2%
National	\$ 62,843	2.8%

Network (Bucks, Carbon, Lehigh, Monroe, Northampton, Schuylkill & Warren [NJ])		
Geographic Area Name (Zip Code)	Median Household Income (lowest first)	% Lacking complete plumbing
Census Tract 105, Northampton County, PA (18017)	\$ 25,000	0.0%
Census Tract 19, Lehigh County, PA (18052, 18102, & 18104)	\$ 25,201	0.0%
Census Tract 97, Lehigh County, PA (18101, 18102, & 18105)	\$ 26,327	1.9%
Census Tract 16, Lehigh County, PA (18102)	\$ 26,807	0.0%
Census Tract 19, Schuylkill County, PA (17901)	\$ 27,054	12.8%
Census Tract 10, Lehigh County, PA (18101 & 18102)	\$ 27,059	0.0%
Census Tract 6.02, Schuylkill County, PA (17976)	\$ 27,614	20.4%
Census Tract 111, Northampton County, PA (18015)	\$ 28,056	0.0%
Census Tract 6.01, Schuylkill County, PA (17976)	\$ 28,603	19.6%
Census Tract 12, Lehigh County, PA (18101 & 18102)	\$ 29,583	0.0%
Average 10 Census Tracts	\$ 27,130	5.5%
Pennsylvania	\$ 61,744	2.6%
New Jersey	\$ 82,545	1.4%
National	\$ 62,843	2.1%

<sup>107</sup> <https://www.usich.gov/homelessness-statistics/pa/>

*Figures 43-44: Data is reported from the 5-year ACS (2015-2019) estimates*

Of the 13,375 people who reported experiencing homelessness, 1,550 were family households, 977 were Veterans, 716 were unaccompanied young adults (ages 18-24), and 1,772 were individuals experiencing chronic homelessness.<sup>108</sup> New Jersey had an estimate of 8,862 people experiencing homelessness<sup>109</sup> and of that population, 993 were family households, 551 were Veterans, 496 were unaccompanied young adults (ages 18-24), and 1,419 were individuals experiencing chronic homelessness.

Each school year, the Pennsylvania Education for Children and Youth Experiencing Homelessness Program records the number of homeless students served by the program. The population includes children under the age of 5 and youth enrolled in pre-K through 12<sup>th</sup> grade.<sup>110</sup> The unique count is based on where the child was identified as homeless and attributed to the local education agency.<sup>111</sup>

Of the counties that house St. Luke's hospitals in Pennsylvania, 7,656 students were identified as homeless in the 2018-2019 school year. This number does not encompass the entire child homeless population as it does not include children who were not served by this program (i.e., students not in the Pennsylvania public school system). Figure 46 illustrates the number of homeless students by county. In New Jersey, the Stewart B. McKinney-Vento Education of Homeless Children and Youth Program ensures that homeless children have access to free and appropriate public education. In the 2017-2018 school year, the program identified 13,326 homeless students in the New Jersey public school system, 218 of which were from Warren county.<sup>112</sup>

PA SY 2018-19 Homeless Children Pop Identified by the Education for Children and Youth Experiencing Homelessness Program	
County	# of Students
Bucks	1,050
Carbon	111
Lehigh	1,278
Monroe	465
Northampton	890
Schuylkill	436
PA Network Total	7,656

*Figure 45*

The Robert Wood Johnson Foundation County Health Rankings measures many social determinants of health, including the percent of people living with severe housing problems. A household is considered to have a severe housing problem if one or more of these conditions is met: lacking a complete kitchen, lacking complete plumbing facilities, house is overcrowded, or the house is severely cost-burdened.<sup>113</sup> A

<sup>108</sup> [https://files.hudexchange.info/reports/published/CoC\\_PopSub\\_State\\_PA\\_2019.pdf](https://files.hudexchange.info/reports/published/CoC_PopSub_State_PA_2019.pdf)

<sup>109</sup> <https://www.usich.gov/homelessness-statistics/nj/>

<sup>110</sup> <https://www.education.pa.gov/Documents/K-12/Homeless%20Education/Reports/2018-19%20Pennsylvania%20ECYEH%20Counts%20by%20Region%20County%20State.pdf>

<sup>111</sup> <https://www.education.pa.gov/Documents/K-12/Homeless%20Education/Reports/2018-19%20Pennsylvania%20ECYEH%20Counts%20by%20Region%20County%20State.pdf>

<sup>112</sup> <https://www.nj.gov/education/homeless/counts/>

<sup>113</sup> <https://www.countyhealthrankings.org/app/pennsylvania/2020/measure/factors/136/description>

reported 15% of all households in Pennsylvania are considered to have severe problems. In the SLUHN service area, Schuylkill county has the least with 11% of households and Monroe county has the most with 18% of households.<sup>114</sup> In New Jersey, 21% of households are considered to have severe problems, 15% in Warren county.

Bethlehem Blight Betterment (B3) Initiative Plan took place in 2018 with the city of Bethlehem and other planning organizations to identify blighted areas to improve the city. The Market Value Analysis, a tool to understand local real estate markets, was used to precisely target intervention strategies in weak markets and support sustainable growth. This tool used data including housing characteristics, housing value, and distress. The analysis found that West Bethlehem is a middle market with some strong pockets, North Bethlehem is the strongest market in the city, Central Bethlehem is the most diverse in terms of market types, and South Bethlehem is the most distressed area in the city.<sup>115</sup> Using Census data, the analysis also found that the highest percentages of Bethlehem's Hispanic, Black, and youth populations live in neighborhoods that have the lowest market type, primarily South Bethlehem. Additionally, an overwhelming majority of families living in poverty live in the lowest market types. Some of the goals following the analysis are to stabilize deteriorating neighborhoods, improve housing conditions, provide consistent and transparent code enforcement and initiatives for repairing and or stabilizing properties, and effectively use limited resources.<sup>116</sup> Some of the action steps moving forward are to adopt data-driven strategic code enforcement, establish registration for vacant properties, establish tax sale eligibility standards, and develop neighborhood improvement plans in select areas.

## ..... Air and Water Quality .....

Air quality is a growing concern, especially in urbanized and industrialized areas. Poor air quality can irritate the eyes, nose, and throat, and cause long term negative health effects.<sup>117</sup> Air quality is typically assessed by two components, ozone (O<sub>3</sub>) and Particulate Matter (PM). Ozone is a gas molecule that is harmful to breathe and aggressively attacks lung tissue. Ozone is dangerous because it can be carried by wind far downstream, causing harm to people in multiple areas. Ozone can also cause premature death, acute breathing problems, long term exposure risks, and potential cardiovascular harm.<sup>118</sup> PM is a particle that occupies the air we breathe but is small enough that we cannot see it unless there are large amounts of PM in one area. Large amounts of PM result in reduced visibility, or haziness in the air. PM 2.5 is the smallest particle and most dangerous size because it can easily pass through lung tissue and into the blood stream.<sup>119</sup> Breathing PM can

<sup>114</sup>[https://www.countyhealthrankings.org/app/pennsylvania/2021/compare/snapshot?counties=42\\_017%2B42\\_011%2B42\\_025%2B42\\_077%2B42\\_089%2B42\\_091%2B42\\_095%2B42\\_107%2B34\\_041](https://www.countyhealthrankings.org/app/pennsylvania/2021/compare/snapshot?counties=42_017%2B42_011%2B42_025%2B42_077%2B42_089%2B42_091%2B42_095%2B42_107%2B34_041)

<sup>115</sup> [https://www.bethlehem-pa.gov/CityOfBethlehem/media/COBfiles/oldbeth/econdev/pdf/2018/Appendix\\_A\\_MVA\\_Results.pdf](https://www.bethlehem-pa.gov/CityOfBethlehem/media/COBfiles/oldbeth/econdev/pdf/2018/Appendix_A_MVA_Results.pdf)

<sup>116</sup> [https://www.bethlehem-pa.gov/CityOfBethlehem/media/COBfiles/oldbeth/econdev/pdf/2018/Bethlehem\\_Action\\_Plan\\_Final.pdf](https://www.bethlehem-pa.gov/CityOfBethlehem/media/COBfiles/oldbeth/econdev/pdf/2018/Bethlehem_Action_Plan_Final.pdf)

<sup>117</sup> <https://www.sparetheair.org/understanding-air-quality/air-pollutants-and-health-effects/whos-at-risk>

<sup>118</sup> <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/ozone>

<sup>119</sup> <https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/particle-pollution>



trigger illness, hospitalization, and premature death along with increasing the severity of asthma attacks in children. Both pollutants are especially dangerous in vulnerable groups like children and teens, anyone over the age of 65 years old, people with pre-existing lung diseases (e.g., asthma, COPD), and people with cardiovascular diseases. Ozone and PM can both lead to premature death, respiratory harm, and cardiovascular harm. Objectives for environmental health determined by Healthy People 2030 are to increase the proportion of people with safe water to drink, to reduce the amount of toxic pollutants in the environment, and to reduce the number of days people are exposed to unhealthy air.<sup>120</sup>

Ozone and PM are measured by the Environmental Protection Agency (EPA), the Department of Environmental Protection (DEP), and reported to the American Lung Association. The American Lung Association released a State of the Air (2020) report based on data collected in 2016-2018. Of the counties that SLUHN serves, Carbon and Schuylkill were the only counties that did not have reports on ozone and Bucks, Carbon and Schuylkill did not have reports on PM. Figure 46-47 highlight the reports for both high ozone days and high PM days. Bucks had the worst amount of ozone days with 30 days affecting sensitive groups and 3 days being unhealthy for everyone. Of the counties that reported PM, almost all counties had minimal negative impact, with Northampton having the highest (2 days being unhealthy for sensitive groups).

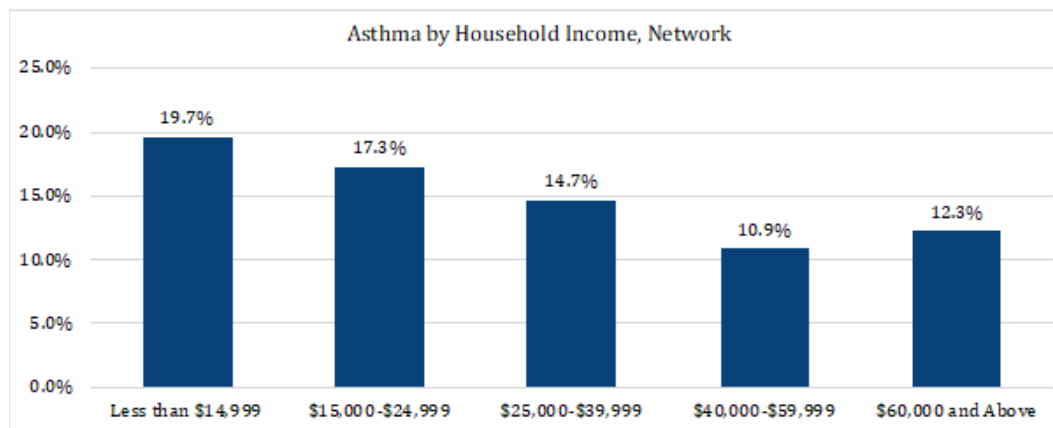
High Ozone Days				
	Weight average	Orange days	Red days	Purple days
Bucks	11.5	30	3	0
Carbon	DNC	DNC	DNC	DNC
Lehigh	2.7	8	0	0
Monroe	1.7	5	0	0
Northampton	4.3	13	0	0
Schuylkill	DNC	DNC	DNC	DNC
Warren	1.7	5	0	0


High Particulate Matter Days				
	Weight average	Orange days	Red days	Purple days
Bucks	DNC	DNC	DNC	DNC
Carbon	DNC	DNC	DNC	DNC
Lehigh	0	1	0	0
Monroe	0	0	0	0
Northampton	0.7	2	0	0
Schuylkill	DNC	DNC	DNC	DNC
Warren	0	0	0	0

*Figures [46-47] Orange- unhealthy for sensitive groups, Red- unhealthy, Purple- very unhealthy, DNC- Did Not Collect*

<sup>120</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/environmental-health>

Additionally, the community survey asked respondents to indicate if they had ever been diagnosed with asthma. When examined by income, 19.7% of respondents in the SLUHN service area who make less than \$14,999 have asthma. The rates of asthma generally decrease as household income increases, with the exception of \$60,000 and above (Figure 48). This is an important trend to note as respondents with lower incomes may not have access to air purifiers or live in areas with access to cleaner air.



 *Figure 48*

Water quality is another important aspect of the environment. Water is delivered in two ways, through wells and through municipalities. Each municipality is required to report water quality reports each year, but well quality is difficult to track because it is typically unregulated and typically owner-maintained. Pennsylvania's Department of Environmental Protection (2019) water report stated that 11% of Pennsylvania households use well water and 89% of households use community water systems.<sup>121</sup> The report tracks violations within the Maximum Contaminant Level (MCL) which is the highest level of contaminant allowed in drinking water. The water is permitted to have some contaminants as long as it does not exceed the MCL. This is important to note because even though a water system does not have violations, it does not necessarily mean the water is completely free of contaminants. The water report also tracks the Maximum Residual Disinfectant Level (MRDL) which limits the amount of disinfectants allowed in safe drinking water.<sup>122</sup> Some of the typical contaminants tested are chlorine, fluoride, radium, turbidity, organic carbon, lead, and copper.<sup>123</sup> Water contaminants can result in a variety of negative health impacts, like gastrointestinal illness, worsened nervous or reproductive systems, and a variety of diseases (e.g., cancer).<sup>124</sup> The effects can also be short term or long term, while also going unseen, potentially worsening the effects over time.

<sup>121</sup> [http://files.dep.state.pa.us/Water/BSBW/DrinkingWaterManagement/PublicDrinkingWater/PA\\_DEP\\_2019\\_Annual\\_Compliance\\_Report.pdf](http://files.dep.state.pa.us/Water/BSBW/DrinkingWaterManagement/PublicDrinkingWater/PA_DEP_2019_Annual_Compliance_Report.pdf)

<sup>122</sup> <https://www.state.nj.us/dep/watersupply/pdf/violations2019.pdf>

<sup>123</sup> [http://files.dep.state.pa.us/Water/BSBW/DrinkingWaterManagement/PublicDrinkingWater/PA\\_DEP\\_2019\\_Annual\\_Compliance\\_Report.pdf](http://files.dep.state.pa.us/Water/BSBW/DrinkingWaterManagement/PublicDrinkingWater/PA_DEP_2019_Annual_Compliance_Report.pdf)

<sup>124</sup> <https://www.epa.gov/report-environment/drinking-water>

Of the counties with a St. Luke's hospital location, Robert Wood Johnson indicates that every Pennsylvania county in the SLUHN service area had a drinking water violation in 2019 with the exception Warren county.<sup>125</sup> However, when looking at the individual county reports, only Monroe, Bucks, and Warren had violations in their 2019 report. Chlorine was the only contaminant that violated the water quality standards.

Chlorine is used to kill bacteria and viruses in drinking water and the maximum amount of chlorine allowed is 4 parts per million. In this level, harmful health effects are unlikely to occur.<sup>126</sup> While unlikely, if chlorine levels exceed this level, some effects include coughing, sore throat, airway irritation, and skin irritation. Warren county reported sodium levels exceeding the MCL and reported maximum levels of Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA), which are manmade chemicals that can cause adverse health effects (e.g., cancer, liver damage, thyroid problems, immune effects).<sup>127</sup> It is also important to understand the risk of lead in drinking water. While most counties in the St. Luke's service area do not have lead that contaminates drinking water from the source, lead pipes, faucets, and other risks of lead poisoning may exist in homes. Higher prevalence for lead poisoning is found in low income homes.<sup>128</sup>

## ..... Transportation .....

The type of transportation a person takes to work can be a good indicator of health. Walking, biking, or taking public transportation to work promotes regular physical activity and decreases air pollution, which in turn decrease chronic diseases and obesity rates.<sup>129</sup> A goal of

Healthy People 2030 is to increase the amount of people using public transportation to get to work.<sup>130</sup> People who drive to work are less likely to reach the recommended physical activity goal for the day. Driving to work can also have an effect on obesity, diabetes, and heart disease.<sup>131</sup> However, it is not always feasible for someone to walk, bike, or take public transportation to work as many cities lack the proper infrastructure.

Figure 49 illustrates the modes of transportation taken by the population in the St. Luke's service area.<sup>132</sup> Schuylkill county has the highest percentage of people who drive to work alone (83.4%) and Monroe county has the lowest percentage of people who drive to work alone (78.2%). Each of the counties served by St. Luke's has a higher percentage of people who commute to work alone than Pennsylvania, New Jersey, and the United States. Additionally, Montgomery county has the highest percentage of people who commute to work via public

<sup>125</sup> <https://www.countyhealthrankings.org/app/new-jersey/2021/measure/factors/124/map>

<sup>126</sup> [https://www.cdc.gov/healthywater/drinking/public/water\\_disinfection.html](https://www.cdc.gov/healthywater/drinking/public/water_disinfection.html)

<sup>127</sup> <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>

<sup>128</sup> [https://www.cdc.gov/nceh/lead/prevention/populations.htm?CDC\\_AA\\_refVal=https%3A%2F%2F](https://www.cdc.gov/nceh/lead/prevention/populations.htm?CDC_AA_refVal=https%3A%2F%2F)

<sup>129</sup> <https://ephtracking.cdc.gov/showCommunityDesignAddLinkTypesOfTransportationToWork>

<sup>130</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/transportation>

<sup>131</sup> <https://ephtracking.cdc.gov/showCommunityDesignAddLinkTypesOfTransportationToWork>

<sup>132</sup> Data.census.gov (Table B08301)

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transportation (5.3%) while Carbon and Schuylkill counties both have the lowest percent of people who commute via public transportation (.05%). Carbon and Schuylkill counties are both rural counties serviced by the Geisinger St. Luke's hospital. This is a specific area that should be targeted for better public transportation infrastructure.

Figure 49

Modes of Transportation to Work 2015-2019 ACS 5 Year Estimates									
Region	Drive Alone	Carpool	Public Transportation	Taxi	Motorcycle	Bike	Walk	Other	Work From Home
Berks County	80%	9%	1.6%	0.2%	0.2%	0.2%	3.3%	1.3%	4.2%
Bucks County	81.9%	6.4%	3.3%	0.1%	0.0%	0.2%	1.7%	0.5%	6.0%
Carbon County	83.3%	8.9%	0.5%	0.0%	0.0%	0.1%	1.9%	0.7%	4.6%
Lehigh County	80.6%	9.5%	2.1%	0.0%	0.0%	0.2%	2.3%	0.6%	4.6%
Monroe County	78.2%	10.1%	4.4%	0.4%	0.0%	0.0%	1.6%	0.7%	4.7%
Montgomery County	78.5%	6.4%	5.3%	0.1%	0.1%	0.2%	2.2%	0.5%	6.8%
Northampton County	82.8%	6.9%	1.6%	0.0%	0.1%	0.1%	2.5%	1.4%	4.5%
Schuylkill County	83.4%	9.7%	0.5%	0.2%	0.1%	0.1%	2.6%	0.6%	2.8%
Warren County (NJ)	81.4%	8.3%	1.5%	0.4%	0.0%	0.4%	2.4%	0.7%	4.8%
Pennsylvania	75.9%	8.5%	5.6%	0.1%	0.1%	0.5%	3.6%	0.8%	4.9%
New Jersey	71.2%	8.0%	11.7%	0.4%	0.0%	0.3%	2.8%	1.1%	4.5%
United States	76.3%	9.0%	5.0%	0.2%	0.2%	0.5%	2.7%	0.9%	5.2%

Additionally, Figure 50 highlights the amount of people who do not have access to a vehicle in the SLUHN service area.<sup>133</sup> Schuylkill county has the highest percentage of people who do not have access to a vehicle (9.0%) and Bucks county has the lowest (4.9%). This is an issue for each county because people who do not have access to a car are then required to rely on public transportation, walking, or biking to get to work, the doctor's office, the grocery store, and more. Schuylkill county has the lowest percentage of people who use public transportation but the highest percentage of people without a vehicle, indicating a high need for additional public transportation in the county.

Figure 50

Vehicles Available 2015-2019 ACS 5 Year Estimates	
Region	Percentage of People Who Do Not Have a Vehicle Available
Bucks County	4.9%
Carbon County	5.7%
Lehigh County	8.7%
Monroe County	5.3%
Northampton County	6.9%
Schuylkill County	9.0%
Warren County (NJ)	6.4%
Pennsylvania	10.9%
New Jersey	11.5%
United States	8.6%

<sup>133</sup> Data.census.gov (Table B25044)

# Clinical Care

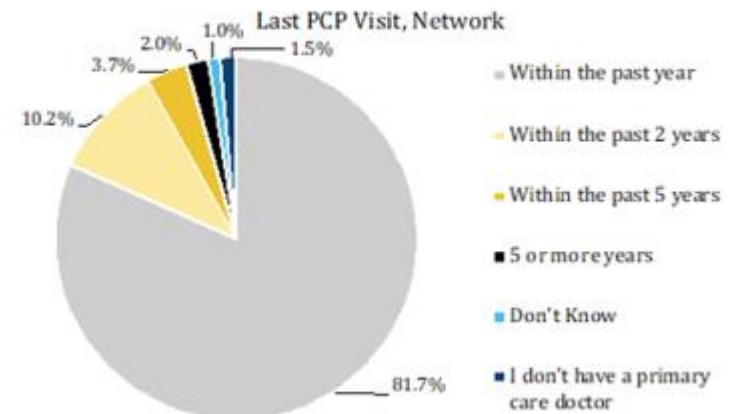
## ..... Access to Care .....


Data from this section is gathered from Robert Wood Johnson County Health Rankings<sup>134</sup> and the St. Luke's CHNA survey.

### ..... Primary Care Providers (PCPs) .....

Primary care providers (PCPs) are gatekeepers to the healthcare system. Often, they are a patient's first point of contact and referral to further care by specialists. The top performers in the United States (90<sup>th</sup> percentile) have a primary care indicator of 1,030:1, which denotes the ratio of individuals to PCPs. Pennsylvania has an overall ratio of 1230:1, but primary care accessibility in Pennsylvania varies widely based on location, with a range of 2,420:1 to 990:1 in SLUHN service area counties. New Jersey outperforms Pennsylvania with an overall primary care indicator of 1,180:1 and 1,680:1 in Warren county.

To assess the frequency of visits, the CHNA survey asked respondents when they last visited their PCP. The majority of respondents visited their PCP within the last year (81.7%), followed by within the past 2 years (10.2%), within the past 5 years (3.7%), and 5 or more years (2%), while 2.5% of respondents did not know the last time they saw a PCP or do not have a PCP. The Allentown and Sacred Heart service area had the highest percentage of respondents who did not know the last time they saw a PCP/do not have a PCP (2.9%); Geisinger St. Luke's had the smallest percentage (1.5%).

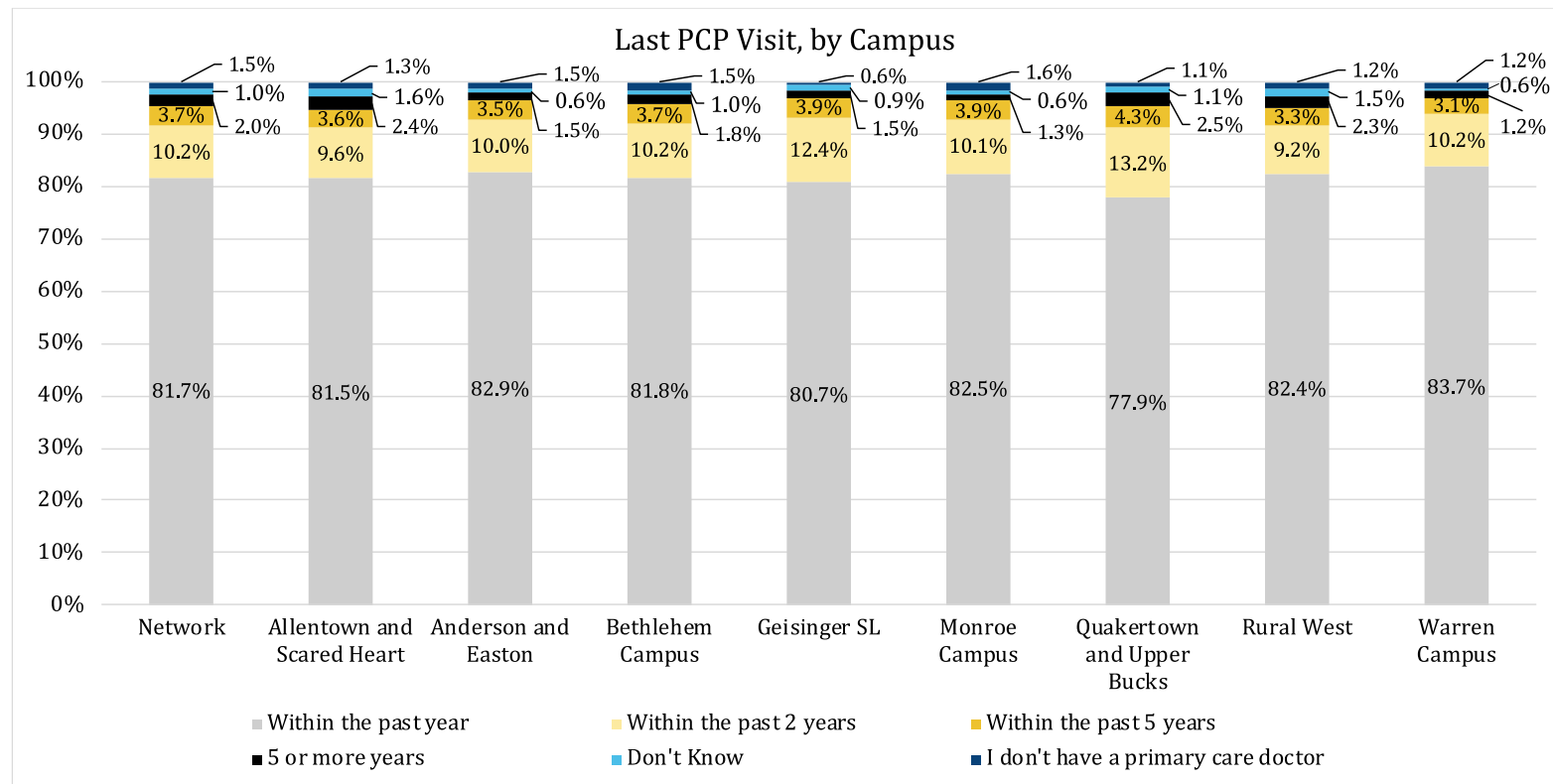


 *Figure 52*

<sup>134</sup> <https://www.countyhealthrankings.org/>

## 2022 St. Luke's University Health Network Community Health Needs Assessment

It is also important to look at an individual's last visit to a PCP by their type of insurance. Lack of insurance or high copays may hinder individuals from seeking medical attention, which could result in worsened health conditions. As seen in the CHNA survey results (Figure 53), lack of insurance hinders the frequency of doctor's visits. For respondents who do not have insurance coverage and pay cash, only 43% have seen a PCP in the past year, which is far below respondents who have Medicare (91%). Additionally, 12% of respondents without insurance coverage do not have a PCP, which is almost 10 percentage points higher than the other coverage types, not including those who do know their insurance type. This finding reinforces the need for Federally Qualified Health Centers (FQHC) that offer services on a sliding scale, making medical care affordable to all patients.



 **Figure 52**

Finally, the CHNA survey asks respondents where they go most often when they are sick or in need of medical advice to get and understanding of their use of service providers. The majority of respondents go to a doctor's office (81.5%), followed by an urgent care center (7.4%), using the Internet (5.7%), and using an emergency room (1.9%). While most respondents use a doctor's office, access to PCPs with diverse backgrounds and accept many types of insurances will allow more individuals to seek help at a doctor's office rather than on the Internet or an emergency room.

## 2022 St. Luke's University Health Network Community Health Needs Assessment

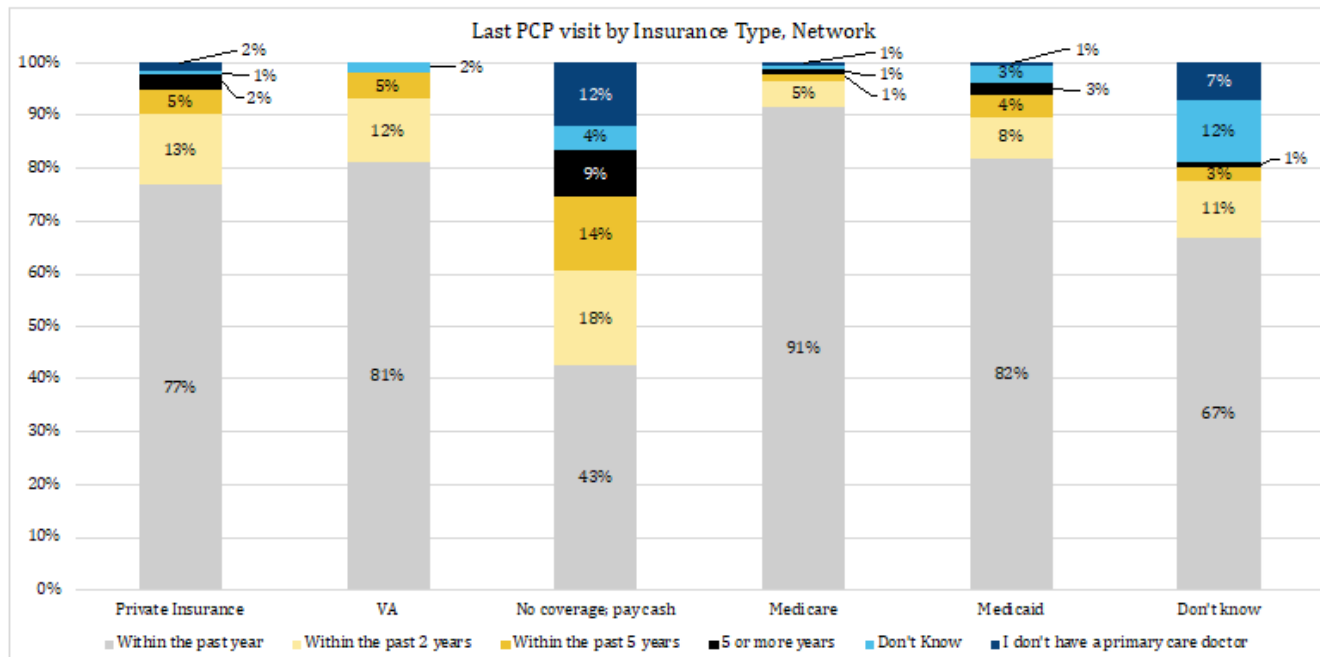


Figure 53

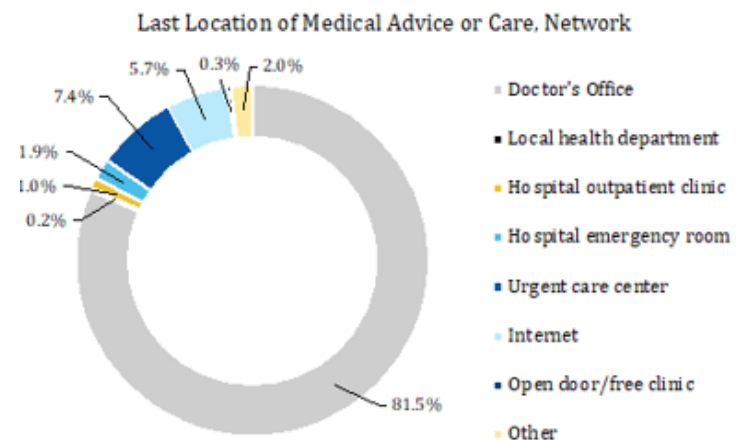

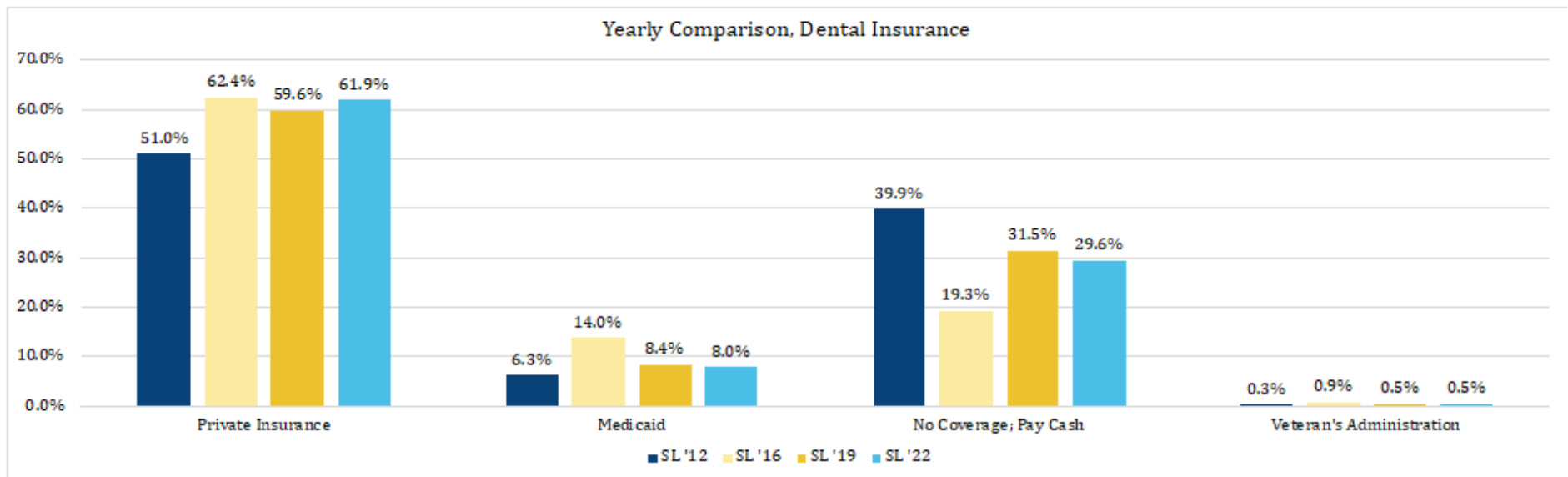
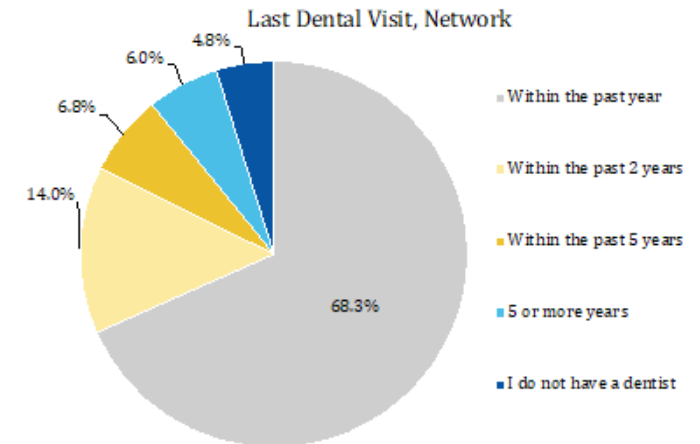


Figure 54


## ..... Dentists .....

The Mayo Clinic refers to dental health as “a window to your overall health.”<sup>135</sup> Oral pain can be debilitating, and oral health can affect one’s overall daily life, impacting their ability to go to work or school. Poor oral health can also lead to a host of other issues in the body, causing respiratory, digestive, and cardiovascular diseases. Top performers in the United States have an overall dental health indicator of 1,210:1, which denotes the ratio individuals in the population to dentists. New Jersey has an overall ratio of 1,140:1 and Warren county at 1,350:1. In comparison, Pennsylvania has fewer overall dentists at a ratio of 1,410:1 and a much larger range of 2,580:1 to 920:1 in SLUHN service area counties.

 *Figure 55*



<sup>135</sup> <https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/dental/art-20047475>

 *Figure 56*



In the 2022 CHNA survey, we assessed the last time respondents visited the dentist and the type of dental insurance that respondents use to gauge the limits of dentist availability and insurance coverage. Only 68.3% of respondents visited a dentist within the past year, 67% of which had private insurance. Additionally, 14% visited a dentist within the past 2 years, 6.8% within the past 5 years, 6% have gone 5 or more years ago, and 4.8% of all respondents do not have a dentist. When broken down by ethnicity, only 57% of Hispanic/Latino respondents visited the dentist in the past year compared to 70% of non-Hispanic/Latino respondents. It is crucial to increase access to dental care moving forward, which will help strengthen overall health outcomes. Private insurance continues to be the main type of insurance used for dental care (61.9%), followed by no coverage (29.6%), Medicaid (8%), and Veteran's Administration (0.5%). The number of people without coverage decreased since the 2019 CHNA. Affordable and accessible dental care remains a priority and need within our service area.

### ..... Mental Health Providers .....

Mental health has also been identified as a significant priority for the communities in the St. Luke's service area and the COVID-19 pandemic has greatly impacted access to mental healthcare. Access to mental health providers who take multiple kinds of insurance and have availability are in need in our service areas. The ratio of population to mental health providers for the top performers in the United States is 270:1. In Pennsylvania the ratio is 450:1 and in New Jersey 420:1. In our service area counties, Bucks county has the lowest ratio of 390:1, while Carbon county has the highest ratio of 1,600:1.

### ..... Health Insurance .....

Uninsured rates represent a major barrier in access to care. Often, uninsured patients get very ill before seeking care, leading to higher medical costs. An issue that is prevalent in many areas is the lack of providers ability to take a range of insurances. Federally Qualified Health Centers (FQHC) are a crucial step in treating people without insurance and insurance that has minimal coverage. The Health Resources and Services Administration (HRSA) defines a community-based health care provider as one who offers primary care services to underserved areas.<sup>136</sup> FQHCs must provide services on a sliding fee scale based on the patient's ability to pay. While FQHCs are crucial to addressing health needs, knowledge within the community that FQHCs exist and take all or no insurance is crucial. Community Health Workers (CHW) are the next step in bridging the health gap. CHWs are defined as "a frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served."<sup>137</sup> The CHW is the liaison between health and social services and the community.

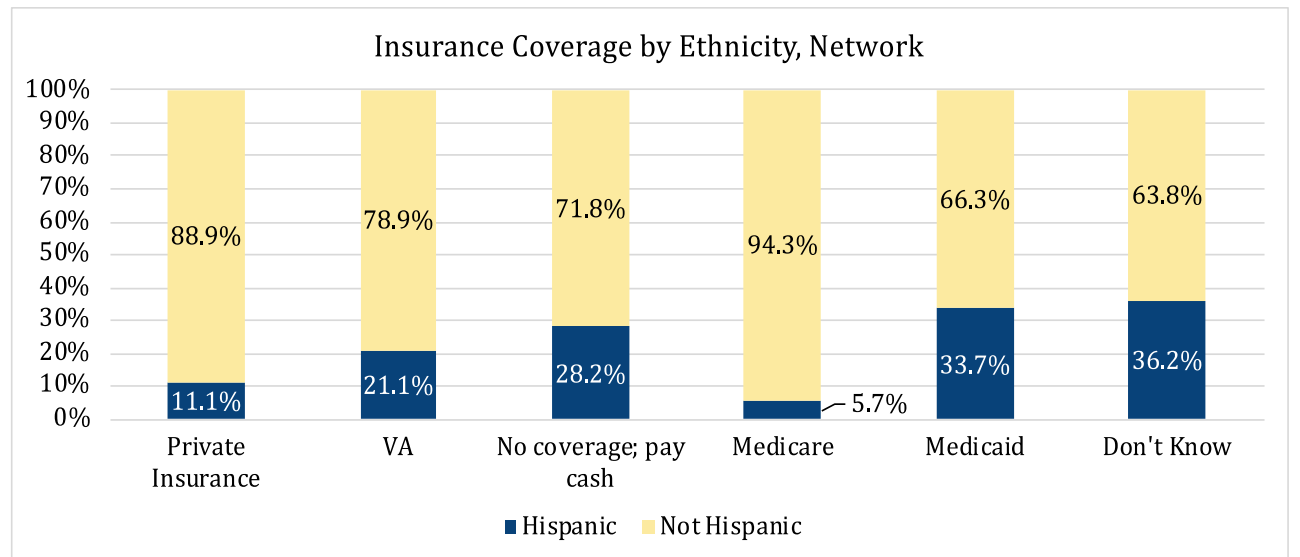
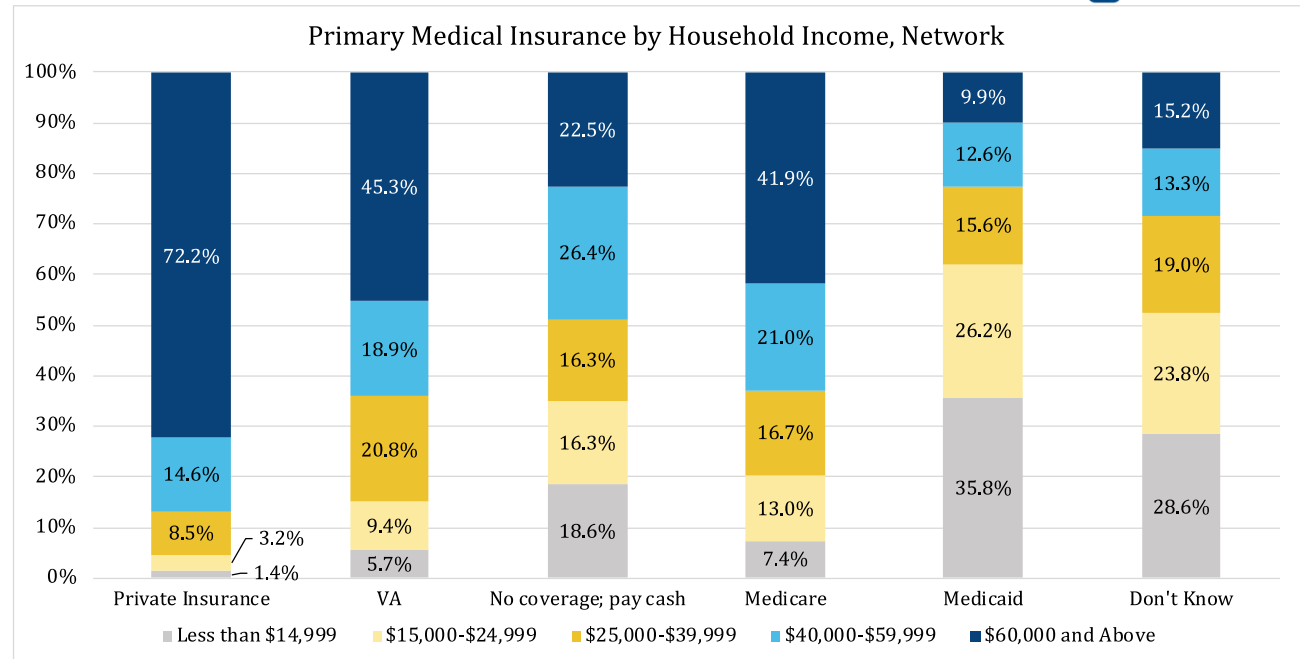
<sup>136</sup> <https://www.hrsa.gov/opa/eligibility-and-registration/health-centers/fqhc/index.html>

<sup>137</sup> <https://www.apha.org/apha-communities/member-sections/community-health-workers>

They serve an important role in improving quality of services with cultural competency, increasing health knowledge in the community, and by providing advocacy for universal quality care. CHWs help inform people of the services available, regardless of insurance type or being uninsured, helping to increase access for all. Overall, Pennsylvania has an uninsured rate of 5.7% and New Jersey has an uninsured rate of 7.8%. Both states outperform the United States, with a rate of 8.8%.<sup>138</sup>

When looking at survey data comparing respondent primary medical insurance by household income, there is a theme that emerges; respondents making less than \$14,999 primarily use Medicaid, do not know their primary insurance, or have no coverage.

Conversely, the majority of respondents whose household income is \$60,000 or above primary have private insurance, Medicare, or Veterans Administration. These findings reinforce the need for FQHCs in St. Luke's service areas along with doctors who accept Medicaid and uninsured patients.



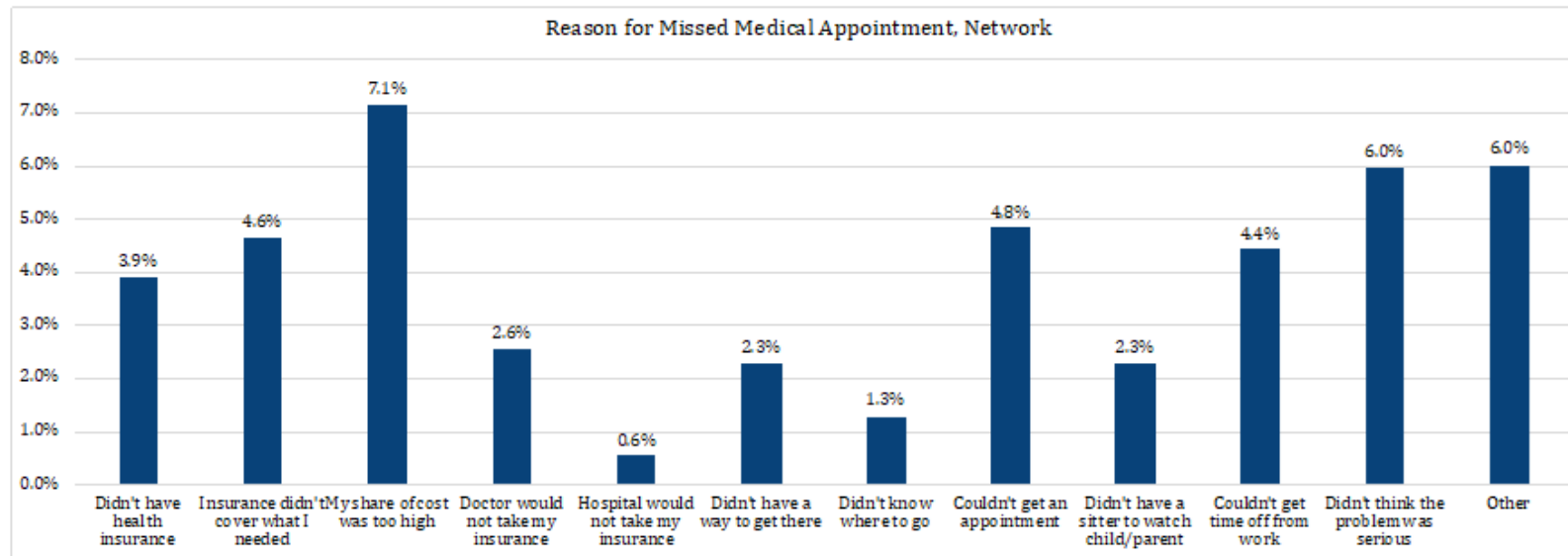
<sup>138</sup> <https://data.census.gov/cedsci/>

In addition to assessing the relationship between income and insurance, we also assessed the relationship between ethnicity and insurance (Figure 58). The highest ratio of Hispanic respondents didn't know their insurance (36.2%), use Medicaid (33.7%), followed by no coverage/pay cash (28.2%). These results indicate a need for increased access to care and services for our Hispanic population.

## ..... Hospital Data .....

St. Luke's is one of two major health networks in the Lehigh Valley with a variety of health services ranging from behavioral health to cardiology to gastroenterology and more. St. Luke's addresses the inequities in our service area through partnerships with nonprofits, schools, and businesses. Through these partnerships we implement enhanced care, health initiatives, support, and outreach for health education, healthy lifestyles, and preventative care.

When asked to indicate reasons for any recently missed medical appointments, the top three reasons reported in the network were: share of cost was too high (7.1%), didn't think the problem was serious enough (6%), and other (6%). Only 0.6% of respondents indicated their reason for missing an appointment was due to the hospital not taking their insurance. These findings further reinforce the need for more comprehensive health insurance and facilities that offer assistance or sliding scales to lessen the financial burden of taking care of one's health. In order to better support our service area population, St. Luke's provides charity care to help alleviate some of the financial burden. During the 2020 fiscal year, St. Luke's provided \$287.3 million dollars in charity care throughout the network.



## ..... Top Reasons for Hospitalization .....

Hospital data helps us to better understand the major health issues in our community. This allows us, from both a treatment and prevention standpoint, to focus efforts on priority areas most affecting the health of our patient population. The top 10 reasons for hospitalization in the SLUHN are listed in the table below. Sepsis is the most common diagnosis during an inpatient encounter; accounting for 4.1% of network total patient encounters. During the 2020 pandemic, COVID-19 has been ranked as the tenth highest cause for an inpatient encounter.

Principal Diagnosis	Ranking
Sepsis, unspecified organism	1
Single live born infant, delivered vaginally	2
Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	3
Acute kidney failure, unspecified	4
Single live born infant, delivered by cesarean	5
Other specified sepsis	6
Hypertensive heart disease with heart failure	7
Non-ST elevation (NSTEMI) myocardial infarction	8
Major depressive disorder, recurrent severe without psychotic features	9
COVID-19	10

*Figure 60*

## ..... Emergency Department Encounters .....

Emergency department (ED) utilization can be used as an indicator to gauge lack of PCP coverage. When comparing ED visits by household income, a clear finding emerges: those who make less than \$14,999 frequent emergency departments more than other income brackets. Additionally, those who make \$60,000 and above frequent the ED the lowest of any income bracket. These findings suggest that there needs to be more affordable PCP access for lower income patients.

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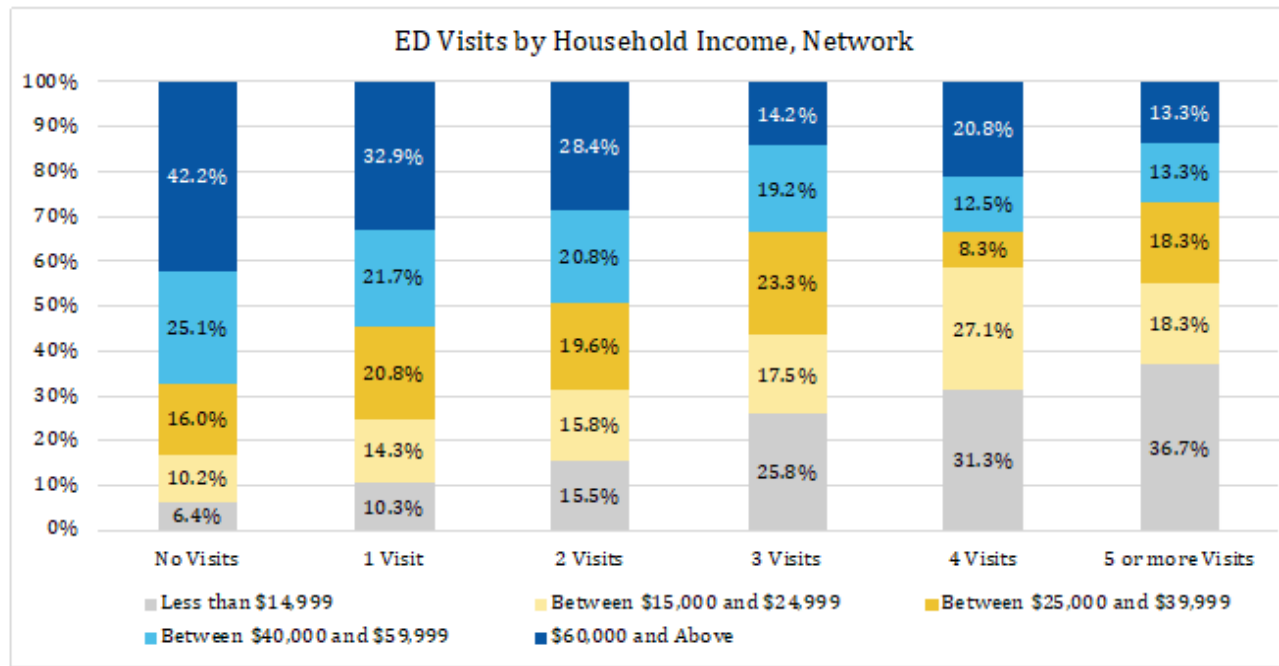


Figure 61

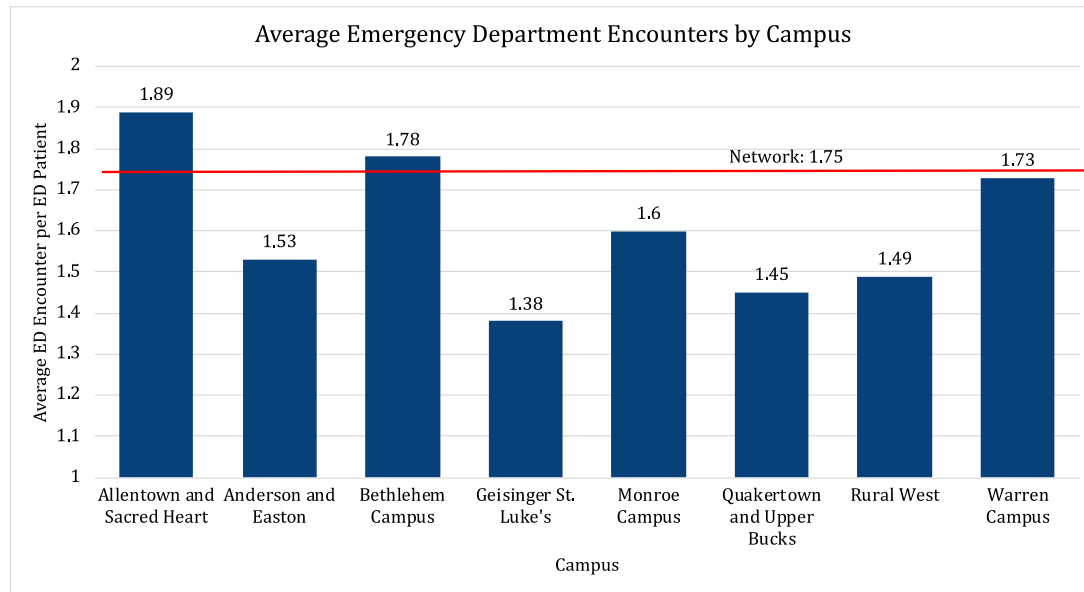


Figure 62

In fiscal year 2020, the average number of emergency department encounters per emergency department patient seen at the network was 1.75. This average varied across campuses (Figure 62) but remains consistently below an average of 2 encounters per emergency department patient. NOTE: Multiple service areas contain multiple hospitals and therefore multiple EDs. The ED encounters are an average of the encounters at those hospitals.

# Health Behaviors

## ..... Obesity .....

According to the CDC, obese adults have a higher risk for developing heart disease, type 2 diabetes and certain cancers, and as a result, obesity is estimated to cost the U.S. healthcare system \$147 billion annually.<sup>139</sup> Obesity-related medical costs are estimated to be \$1,429 higher per person than the medical costs of an individual whose BMI falls into the normal weight category. Many factors play a role in the obesity epidemic and its rapid increase over several decades including: lack of vegetable consumption, lack of physical activity, poor portion control, and poor access to outdoor recreational activities and healthy foods.

In 2018, a reported 42.4% of U.S. adults were obese—an increase of almost 12% since 2000.<sup>140</sup> In 2020, Trust for America's Health (TFAH) reported that, as of 2019, “socioeconomic factors such as poverty and discrimination have contributed to higher rates of obesity among certain racial and ethnic populations. Black adults have the highest level of adult obesity nationally at 49.6%; that rate is driven in large part by an adult obesity rate among Black women of 56.9%.”<sup>141</sup> Additionally, concerns have risen in recent years as obesity is an underlying health condition associated with some of the most serious consequences of COVID-19. This means that more than 42% of all Americans are at increased risk of serious, possibly fatal, health impacts from COVID-19 due to their weight and health conditions related to obesity.<sup>142</sup>

The TFAH reported that Pennsylvania ranks 22 out of 51 states (including Washington, DC) for percentage of adults with obesity and ranks 21 for adults who are overweight.<sup>143</sup> Additionally, 41.5% of Black adults, 31.3% of White adults, and 30.9% of Hispanic/Latino adults in Pennsylvania are obese. The age bracket with the highest percentage of adults with obesity in Pennsylvania is 45-64 years old, accounting for 38.2% of adults with obesity. TFAH did not report any adult obesity data for New Jersey. When assessing childhood obesity, the most recent TFAH reports found that 12.8% of children ages 2-4 and 17.4% of children ages 10-17 in Pennsylvania are obese. In New Jersey, 14.8% of children ages 2-4 and 15% of children ages 10-17 are obese.

Robert Wood Johnson's County Health Rankings also assess obesity by measuring the percentage of the adult population (age 20 and older) that reports a body mass index (BMI) greater than or equal to 30 kg/m<sup>2</sup>. According to the CDC, “Body Mass Index (BMI) is a person's weight

<sup>139</sup> <https://www.cdc.gov/obesity/adult/causes.html>

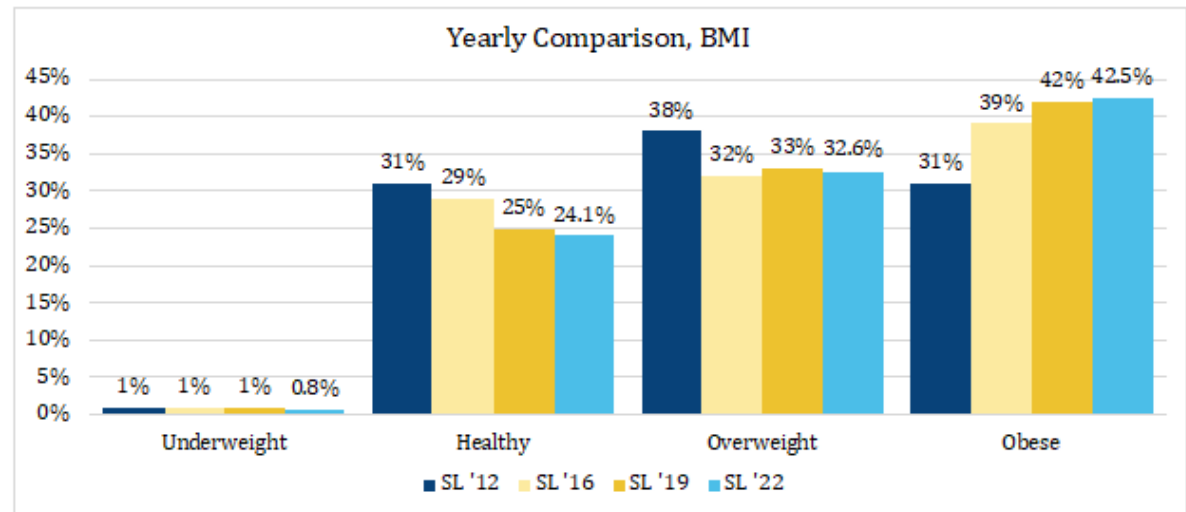
<sup>140</sup> <https://www.cdc.gov/obesity/data/adult.html>


<sup>141</sup> <https://www.tfah.org/report-details/state-of-obesity-2020/>

<sup>142</sup> <https://www.tfah.org/report-details/state-of-obesity-2020/>

<sup>143</sup> [https://www.tfah.org/wp-content/uploads/2020/09/TFAHObesityReport\\_20.pdf](https://www.tfah.org/wp-content/uploads/2020/09/TFAHObesityReport_20.pdf)

in kilograms divided by the square of height in meters. A high BMI can be an indicator of high body fatness. BMI can be used to screen for weight categories that may lead to health problems, but it is not diagnostic of the body fatness or health of an individual.”<sup>144</sup> A BMI below 18.5 is considered underweight, 18.5-24.9 is considered normal, 25.0-29.9 is considered overweight, and 30 or above is considered obese. The County Health Rankings reports that 27% of adults in New Jersey are obese and 31% of adults in Pennsylvania are obese. Schuylkill county reports that 37% of adults in the county are obese, the highest of all service area counties.



 *Figure 63*

Since 2019, CHNA survey results for BMI have stayed approximately the same: 0.8% of respondents are underweight, 24.1% are healthy, 32.6% are overweight, and 42.5% are obese.

## ..... Physical Inactivity .....

According to the CDC, fewer than 1 in 4 children get enough physical exercise and only 1 in 4 adults meet physical activity guidelines.<sup>145</sup> Healthy People 2030 aims to reduce the proportion of adults who “engage in no leisure-time physical activity” and increase the proportion of adults who meet current physical aerobic physical activity recommendations of exercising 5 or more days a week for 30 minutes.<sup>146</sup> County Health Rankings measure physical inactivity as the percentage of adults 20 years old and over reporting no leisure-time physical activity. Robert Wood Johnson reports that “physical activity improves sleep, cognitive ability, and bone and musculoskeletal health, as well as reduces risks of dementia.”<sup>147</sup>

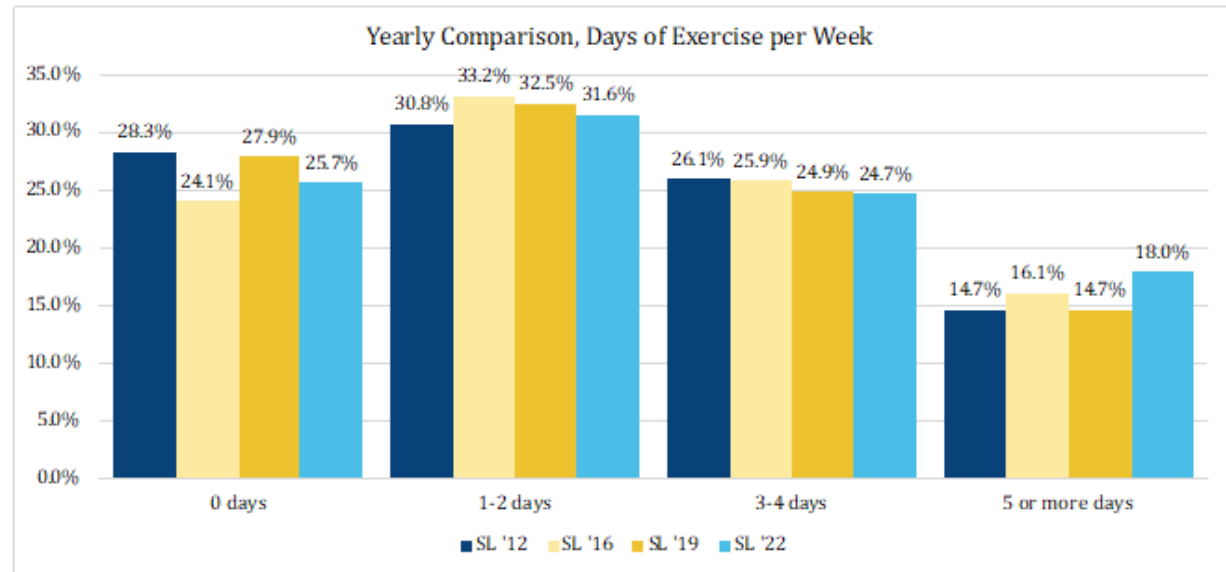
<sup>144</sup> <https://www.cdc.gov/healthyweight/assessing/bmi/index.html>


<sup>145</sup> <https://www.cdc.gov/physicalactivity/data/index.html>

<sup>146</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/physical-activity/>

<sup>147</sup> <https://www.countyhealthrankings.org/>

In Pennsylvania, 22% of adults have no leisure-time physical activity while New Jersey has a slightly higher rate (27%). Warren county has the most amount of people who report no physical activity (28%) and Lehigh county reports the lowest (17%). In the CHNA survey, 1 in 4 respondents (25.7%) reported no physical activity, a decrease from 2019 and 42.7% of respondents report 3 or more days of physical activity per week. Additionally, 18% of respondents report exercising 5 or more days a week, meeting the Healthy People 2030 recommendation. This is an increase from the previous CHNA in 2019.



 *Figure 64*

## ..... Diet .....

Diet (i.e., fruit and vegetable consumption) plays a large role in overall health and reducing chronic disease. The CDC states that eating a diet filled with a variety of fruits and vegetables can reduce the risk of type 2 diabetes, certain cancers, and cardiovascular disease,<sup>148</sup> all of which play a role in the top leading causes of death nationally.

Released in February 2021, the CDC surveyed adults 20 years and older, finding that the majority of adults consumed a serving of fruit (67.3%) or vegetable (95%) on a given day, with more women reporting eating a serving of a fruit and vegetable on a given day than men.<sup>149</sup> Compared to CHNA survey results, 93.3% of survey respondents report eating at least one serving of fruit or vegetables per day. Additionally, America's Health Rankings surveyed adults across the country asking respondents to indicate consuming two or more servings of fruit and three or more servings of vegetables daily (five servings total).<sup>150</sup> In Pennsylvania, 7% of adults consume two or more servings of fruit and three or more servings of vegetables daily along with 8.9% of adults in New Jersey and 8% of adults in the U.S.

<sup>148</sup> <https://www.cdc.gov/nccdphp/dnpao/division-information/media-tools/adults-fruits-vegetables.html>

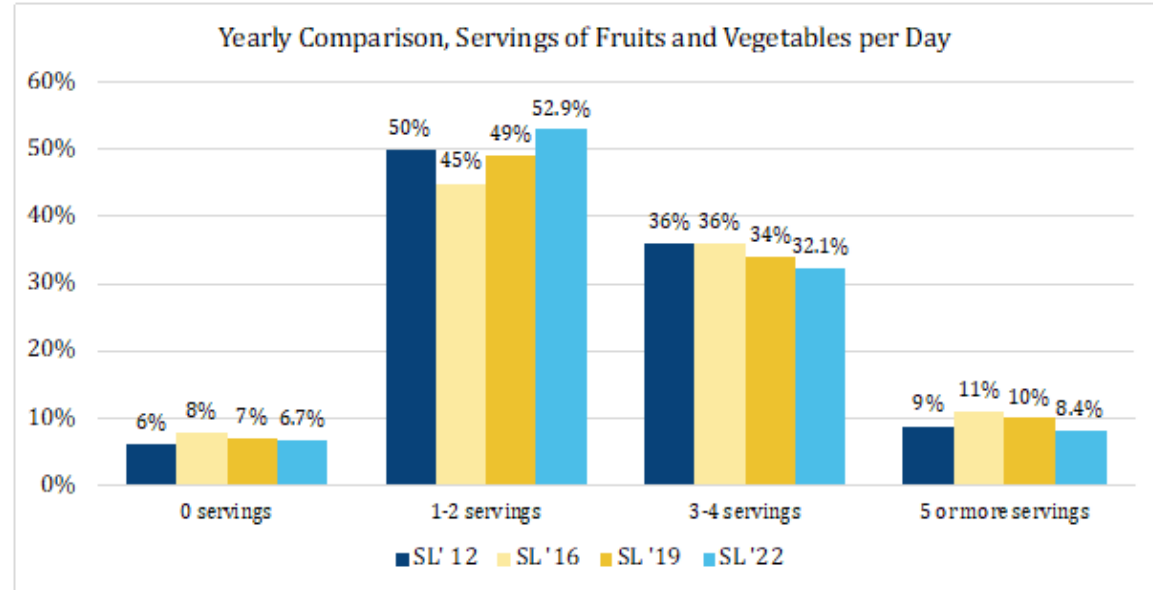
<sup>149</sup> <https://www.cdc.gov/nchs/data/databriefs/db397-H.pdf>


<sup>150</sup> <https://www.americashealthrankings.org/explore/annual/measure/fvcombo/state/U.S.>

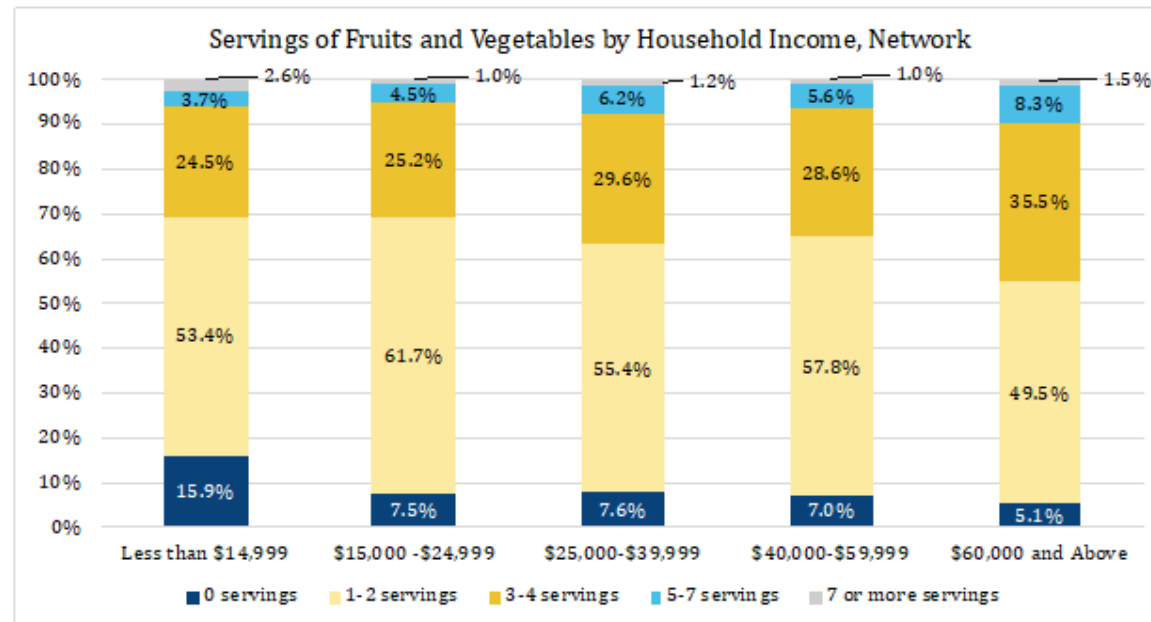



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In the CHNA survey, only 8.4% of respondents eat the recommended 5 or more servings of fruits and vegetables a day, a slight decrease from 2019. The majority of respondents eat 1-2 servings a day (52.9%), an increase from 2019. Additionally, 1.4% of respondents consumed 7 or more vegetables a day, which was combined with 5-7 servings a day as this answer choice was not given on the previous surveys. Furthermore, looking at fruits and vegetable consumption by income shows that serving size increases with income. Of respondents who make less than \$14,999, 15.9% do not consume any vegetables and only 6.3% consume the recommended amount of 5 or more fruits and vegetables a day. The majority of respondents in each income bracket consume 1-2 servings of fruits and vegetables a day.



 *Figure 65*



 *Figure 66*

The sweet food consumption NHANES survey assessed sweet food consumption of snack or meal bars, sweet bakery products, candy, and other desserts, but excluded fruit and all types of beverages. Sweet foods are typically a major source of energy, added sugar, and saturated fats with limited essential ingredients.<sup>151</sup> It is recommended to limit this consumption and emphasize a diet with nutrient-dense foods. The surveyed was asked to adults 20 and older, finding that 61% of adults ate sweet foods on any given day, with the percentage increasing among adults 60 years or older.<sup>152</sup> Sweet food consumption was also highest among the middle- and highest-income groups compared to the lowest income group.

## ..... Free or Reduced Lunch .....

During the 2018-2019 school year, 53.3% of students in Pennsylvania were eligible for free or reduced lunch.<sup>153</sup> During the 2019-2020 school year, 395,774 (29%) of students in New Jersey were eligible for free or reduced lunch.<sup>154</sup> Free or reduced lunch is a part of the National School Lunch Program (NSLP) which is a federally assisted meal program providing nutritionally balanced, low cost or free school lunches each day in public, private, and residential child care institutions.<sup>155</sup> To qualify for the NSLP, families must have an income at or below 130% of the poverty level. In 2019, the NSLP reached 29.6 million children nationwide each day, with a total cost of \$14.2 billion.<sup>156</sup> In Warren county 2019-2020, 3,339 (28.2%) students qualify for free or reduced lunch. The number of students eligible in Warren county had slowly declined since 2014-2015, but increased for the 2019-2020 school year.<sup>157</sup> Out of the Pennsylvania service area counties, Schuylkill county has the highest percentage of students eligible (57.2%) and Bucks county has the least (37.7%).

## ..... Sexual Activity .....

Healthy People 2030 reports that there are more than 20 million new cases of preventable sexually transmitted infections (STI) in the United States each year.<sup>158</sup> Healthy People 2030 objectives are to increase knowledge and education of sexual education across adolescents and adults and to decrease the rate of STIs and sexually transmitted diseases (STDs). Adolescents may experience developmental changes

<sup>151</sup> [https://www.ars.usda.gov/ARUserFiles/80400530/pdf/DBrief/34\\_Sweet\\_foods\\_children\\_1518.pdf](https://www.ars.usda.gov/ARUserFiles/80400530/pdf/DBrief/34_Sweet_foods_children_1518.pdf)

<sup>152</sup> [https://www.ars.usda.gov/ARUserFiles/80400530/pdf/DBrief/33\\_Sweet\\_foods\\_adults\\_1518.pdf](https://www.ars.usda.gov/ARUserFiles/80400530/pdf/DBrief/33_Sweet_foods_adults_1518.pdf)

<sup>153</sup> <https://datacenter.kidscount.org/data/tables/2720-school-lunch--students-eligible-for-free-or-reduced-price-lunch?loc=40&loct=10#detailed/2/any/false/1740/any/10325>

<sup>154</sup> <https://datacenter.kidscount.org/data/tables/2108-children-receiving-free-reduced-price-school-lunch#detailed/2/any/false/1769,1539/any/4420>

<sup>155</sup> <https://www.fns.usda.gov/nslp>

<sup>156</sup> <https://www.ers.usda.gov/topics/food-nutrition-assistance/child-nutrition-programs/national-school-lunch-program/>

<sup>157</sup> <https://datacenter.kidscount.org/data/tables/2108-children-receiving-free-reduced-price-school-lunch#detailed/2/any/false/1769,1539/any/4420>

<sup>158</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/sexually-transmitted-infections>

that affect physical and mental health, potentially increasing risky behaviors. Risky behaviors increase the chances of STIs and teen pregnancy. Healthy People 2030 objectives for teen pregnancy are to reduce pregnancies in adolescents, increase the percentage of adolescents using effective birth control, and to increase the proportion of adolescents who receive formal sexual education before age 18.<sup>159</sup>

The Robert Wood Johnson Foundation's County Health Rankings assess two sexual activity measures: STI and teen births. The 2021 rankings use STI data that reflects the number of new chlamydia cases per 100,000 population, and there was a 21% increase in both chlamydia and gonorrhea. These rates are important to assess because chlamydia is the "most common bacterial sexually transmitted infection (STI) in North America and is one of the major causes of tubal infertility, ectopic pregnancy, pelvic inflammatory disease, and chronic pelvic pain."<sup>160</sup> Chlamydia also disproportionately impacts adolescent women, with 1 in 20 sexually active women ages 14-24 have chlamydia.<sup>161</sup> In New Jersey, the rate of new cases is 405.5 per 100,000 population, while the rate in Warren county is 206.9. In Pennsylvania, the rate is 463.4 per 100,000 population. The highest rate by service area county in Pennsylvania is Lehigh county, 511.9, and the lowest is Carbon county, 175.4.

There are also strong connections between teen birth and poor socioeconomic and/or mental outcomes. Teenage mothers who give birth are less likely to achieve an education level beyond high school and are more likely to experience psychological distress.<sup>162</sup> The measure is represented by the number of births per 1,000 female population ages 15-19 years. In New Jersey, the rate is 12 teen births per 1,000 population and in Warren county the rate is 8. In Pennsylvania, the rate is 17 per 1,000 population. The highest rate by service area in Pennsylvania is Schuylkill county (22), and the lowest is Bucks county (6). In addition to the impact of teen pregnancy on mothers, the prevalence of low birthweight in teen pregnancy is significant. Low birthweight is when a baby is born weighing less than 5 pounds, 8 ounces. Approximately 1 in 12 babies (8%) in the United States is born with low birthweight. A low birthweight may have significant complications, including birth defects, infections, trouble eating, and trouble gaining weight.<sup>163</sup> Teen mothers (and mothers over 40) are most likely to have a low birthweight child. Between 2015-2019, Monroe County had the highest rate of low birthweight (9.3%), Northampton County and Lehigh County both had a rate of 8.2%, and Bucks County was the lowest at 7.7%.<sup>164</sup>

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<sup>159</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/adolescents>

<sup>160</sup> <https://www.countyhealthrankings.org/>

<sup>161</sup> <https://www.cdc.gov/std/chlamydia/stdfact-chlamydia-detailed.htm>

<sup>162</sup> <https://www.countyhealthrankings.org/>

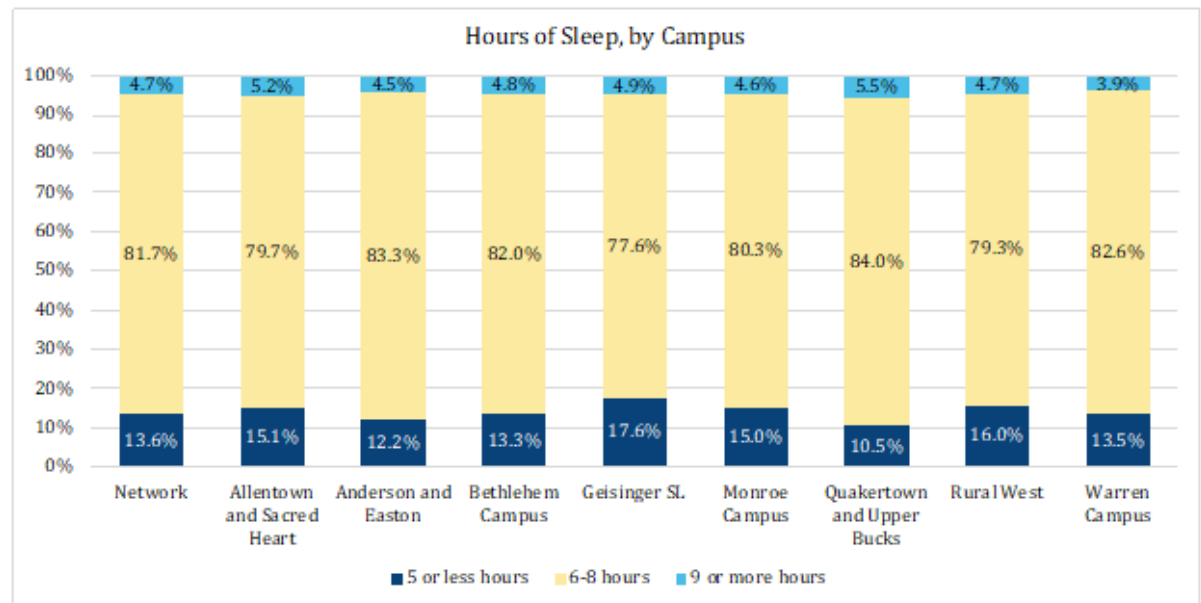
<sup>163</sup> <https://www.marchofdimes.org/complications/low-birthweight.aspx#>


<sup>164</sup> <https://www.health.pa.gov/topics/HealthStatistics/VitalStatistics/CountyHealthProfiles/Documents/current/maps-births.aspx#low-birth-weight>

## ..... Sleep .....

The Robert Wood Johnson Foundation indicated that sleep is an important part of a healthy lifestyle and a lack of sleep can have serious and negative health effects.<sup>165</sup> Healthy People 2030 also reports that approximately 1 in 3 adults do not get enough sleep.<sup>166</sup> Ongoing sleep deficiency has been linked to numerous health conditions such as heart disease, stroke, depression, and anxiety. Objectives for Healthy People 2030 include the reduction of motor vehicle crashes due to drowsy driving, to increase the proportion of children who get enough sleep, and to increase the proportion of adults who get enough sleep. The 2021 Robert Wood Johnson County Health Rankings assessed the percent of adults who report less than an average of 7 hours of sleep per night. In New Jersey, there are 38% of adults who get less than 7 hours of sleep on average and 38% in Warren county. In Pennsylvania, 39% of adults report less than an average of 7 hours of sleep per night. The counties with the highest percentage within Pennsylvania are Monroe and Northampton counties with 41% and the lowest is Bucks county (35%).

The 2019 PAYS survey asked students to indicate amount of sleep per night,<sup>167</sup> with 37.9% of students in Pennsylvania reported an average of less than 7 hours. The service area county with the highest percentage is Monroe county (43%) and the lowest is Carbon county (35.9%). The survey also asked if students “felt tired or sleepy during the day,” “every day,” or “several times” during the past two weeks. Across Pennsylvania, 64.7% of students indicated consistent sleepiness during the past 2 weeks. The service area county with the highest percentage is Lehigh county (67.2%) and the lowest is Carbon county (60%). The Warren Youth Survey did not ask any questions on sleep.



 **Figure 67**

<sup>165</sup> <https://www.countyhealthrankings.org/>

<sup>166</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/sleep>

<sup>167</sup> [https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-\(PAYS\)-2019.aspx](https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx)

To get an understanding of how many hours of sleep respondents get, we asked respondents to indicate, on average, the number of hours they sleep in a 24-hour period. The majority of respondents in the network, 81.7%, get approximately 8 hours of sleep a night (recommended), 4.7% of respondents get 9 or more hours, and 13.6% of respondents get 5 hours or less. Quakertown and Upper Bucks has the highest percentage of respondents who get more than the recommended 8 hours per night, with 5.5% of respondents.

## ..... Mental Health .....

Mental health has been an increasing issue during the last decade, even prior to COVID-19. Mental health disorders can affect people of all age and racial groups, but some populations have disproportionately higher rates of diagnosis.<sup>168</sup> Mental health disorders (e.g., anxiety, depression) can affect a person's ability to take part in healthy behaviors and result in physical health problems making it harder for them to get treatment for mental health disorders.<sup>169</sup> Goals related to improving mental health for Healthy People 2030 are to increase the proportion of people with substance use and mental health disorders who get treatment for both, increase the proportion of children and adolescents with symptoms of trauma who get treatment, increase quality of life for cancer survivors, reduce the suicide rate, and increase the proportion of public schools with a counselor, social worker, and psychologist. To help reach, educate, and connect people with mental health disorders to care, there is a local National Alliance on Mental Illness (NAMI) or related chapter in each St. Luke's service area. In Lehigh and Northampton counties, there is the Lehigh Valley NAMI;<sup>170</sup> NAMI Bucks county;<sup>171</sup> for Carbon and Monroe counties there is the Carbon-Monroe-Pike Mental Health and Developmental Services;<sup>172</sup> NAMI Warren county;<sup>173</sup> and NAMI Schuylkill county.<sup>174</sup>

According to the State of Mental Health in America 2021 Report, 19% of adults prior to COVID-19 experienced a mental illness. Now, 10.8% of Americans suffering from a mental illness are uninsured and 24% of adults with a mental illness report an unmet need for treatment.<sup>175</sup> The report ranks states on their prevalence rates and access to care for adults and youth. States ranked 1-13 have lower prevalence and higher access to care, while 40-51 (including The District of Columbia) have higher prevalence rates and lower access to care. For overall adult rankings, New Jersey ranks 3 and Pennsylvania ranks 5. For overall youth ranking, New Jersey ranks 6 and Pennsylvania ranks 2,

<sup>168</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders>

<sup>169</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders>

<sup>170</sup> <https://www.nami-lv.org/>

<sup>171</sup> <https://namibuckspa.org/>

<sup>172</sup> <http://www.cmpmhds.org/>

<sup>173</sup> <http://www.namiwarren.org/>

<sup>174</sup> <https://www.nami.org/Find-Your-Local-NAMI/Affiliate/Details?state=PA&local=0011Q000022G9N0QAK>

<sup>175</sup> <https://www.mhanational.org/issues/state-mental-health-america>

indicating a lower prevalence rate and higher access to care.<sup>176</sup> The 2021 report indicated that 19% of Americans report experiencing any mental illness (AMI) which is characterized as having a diagnosable mental, behavioral, or emotional disorder other than a developmental or substance use disorder. New Jersey ranks 1 with a 16.1% prevalence rate and Pennsylvania ranks 11 with a 18.2% prevalence rate. Additionally, 4.6% of adults experience a severe mental illness.

State of Mental Health in America 2021 State Adult Rankings					
	NJ %	NJ rank	PA %	PA rank	US
Adults with Any Mental Illness (AMI)	16.1%	1	18.2%	11	19.0%
Adults with Substance Use Disorder in the past year	7.0%	10	7.3%	15	7.7%
Adults with serious thoughts of suicide	3.5%	1	4.2%	12	4.3%
Adults with AMI who are uninsured	8.8%	22	6.0%	8	10.8%
Adults with AMI who did not receive treatment	60.0%	42	53.0%	21	57.0%
Adults with AMI reporting an unmet need	24.4%	26	26.8%	44	23.6%
Adults with disability who could not see a doctor due to costs	25.2%	17	22.5%	10	28.7%

Figure 68

The 2021 Report also ranked states by youth measures, with 13.8% of youth ages 12-17 reporting they suffered from at least one major depressive episode in the past year. A major depressive episode is “a period of two weeks or longer in which a person experiences certain symptoms of major depression: feelings of sadness and hopelessness, fatigue, weight gain or weight loss, changes in sleeping habits, loss of interest in activities, or thoughts of suicide.”<sup>177</sup> Additionally, 9.7% of youth cope with severe major depression.

State of Mental Health in America 2021 State Youth Rankings					
	NJ %	NJ rank	PA %	PA rank	US
Youth with at least on Major Depressive Episode (MDE) in the past year	12.0%	4	11.9%	3	13.8%
Youth with Substance Use Disorder in the past year	8.1%	7	7.1%	4	9.7%
Youth with severe MDE	3.4%	8	3.4%	8	3.8%
Youth with MDE who did not receive mental health services	55.7%	24	57.5%	28	59.6%
Youth with severe MDE who received some consistent treatment	32.5%	19	37.1%	10	27.3%

Figure 69

<sup>176</sup> <https://mhanational.org/issues/2021/ranking-states>

<sup>177</sup> <https://www.bridgestorecovery.com/major-depression/what-is-a-major-depressive-episode/>

During the COVID-19 pandemic, the National Center for Health Statistics (NCHS) partnered with the U.S. Census Bureau to survey (i.e., Household Pulse Survey) the frequency of anxiety and depression symptoms they experienced.<sup>178</sup> The survey has been ongoing, broken up into phases: Phase 1 ran April 23, 2020 to July 21, 2020, Phase 2 ran August 19, 2020 to October 26, 2020, Phase 3 ran October 28, 2020 to March 29, 2021. Phase 3.1 ran April 14, 2021 to July 5, 2021. Phase 3.2 ran July 21, 2021 to October 11, 2021. All phases had periods of break in between. Nationally, 27.3% of adults reported experiencing symptoms of an anxiety disorder within the past 7 days at mid-October 2021, with the highest percentage at 37.2% in November 2020 and the lowest at 25.5% at the beginning of July 2021. Additionally, 21.8% of adults report experiencing symptoms of a depressive disorder within the past 7 days at mid-October 2021, with the highest percentage at 30.2% in December 2020 and the lowest 20.9% at the beginning of July 2021. When anxiety and depression symptoms were surveyed together, 31.6% of adults report experiencing symptoms of either an anxiety disorder or depressive disorder in the past 7 days at mid-October 2021, with the highest 42.6% at the end of November 2020 and the lowest at 29% at the beginning of July 2021. However, in Pennsylvania at mid-October 2021, 31% of people reported symptoms of an anxiety disorder in the past 7 days, which ranks 7 out of 51 states including Washington, DC. The higher the ranking, the higher the percentage. At the same time point, 22.2% of people in New Jersey report experiencing symptoms of an anxiety disorder in the past 7 days, which ranks 47 out of 51. During this time in Pennsylvania, 24% of people report experiencing a depressive order in the past 7 days, ranks 13 out of 51. New Jersey reported 20.6% of people experiencing a depressive disorder in the past 7 days, ranking 35 out of 51. Lastly, when asked together, 33.8% of people in Pennsylvania report experiencing an anxiety disorder or depressive disorder, ranked 14 out of 51, and New Jersey reports 26.8%, ranked 41 out of 51.

Starting in Phase 2, the Household Pulse Survey began asking about mental health care. At mid-October 2021, 11% of people in the U.S. report needing counseling or therapy in the last 4 weeks but not receiving care, and 11% of people in Pennsylvania report needing counseling and not receiving care and 8.1% of people in New Jersey. Pennsylvania ranks 25 and New Jersey ranks 44. Additionally, as of July 5, 2021, 18.6% of respondents across the U.S. delayed or did not get care in the last 4 weeks. This has been on a downward trend since June 30, 2020 when 45.7% of people delayed or did not get care. This question did not get asked again after the completion of Phase 3.1. As of July 5, 2021, in Pennsylvania, 19% of people delayed or did not get care in the last 4 weeks along with 20.5% of people in New Jersey. Finally, in mid-October 2021, 10% of people in the U.S. at the time of the interview did not have health insurance. The uninsured rate at the time of the interview, since Phase 1, was consistently between 10% and 14%. At this time, in Pennsylvania, 8% of people were uninsured, ranking Pennsylvania 22 out of 51. In New Jersey, 7.4% of people were uninsured at the time of the interview, ranking the state 27 out of 51. In the St. Luke's community, 22.4% of survey respondents agreed that their mental health has been impacted by the pandemic.

Prior to COVID-19, depression was a significant issue facing the U.S. and the residents of our service area. The National Institute of Mental Health (NIMH) define depression as a mood disorder that causes "severe symptoms [that] affect how you feel, think, and handle daily activities, such as sleeping, eating, or working. To be diagnosed with depression, the symptoms must be present for at least two weeks."<sup>179</sup>

<sup>178</sup> <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>

<sup>179</sup> <https://www.nimh.nih.gov/health/topics/depression/index.shtml>

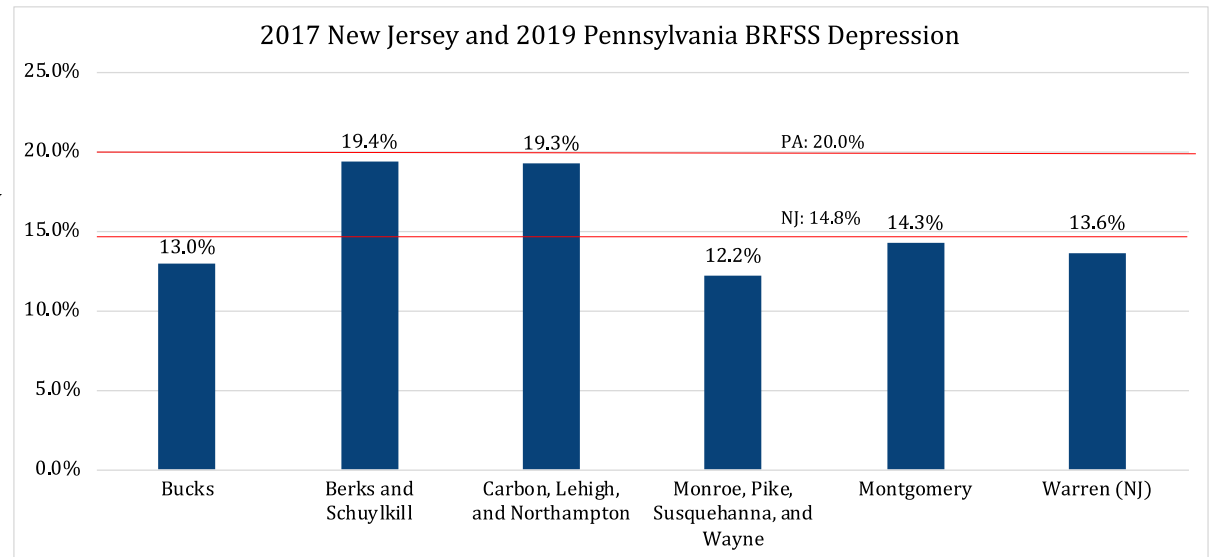


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Some signs of depression are, but not limited to: persistent sad mood; feelings of hopelessness or pessimism; decreased energy or fatigue; difficulty concentrating, remembering, or making decisions; and thoughts of death or suicide. Depression can happen at any age but is more common in adulthood.

In midlife or older adults, depression can co-occur with other serious medical illnesses like diabetes, cancer, heart disease, and Parkinson's disease.<sup>180</sup> Some risk factors include personal or family history of depression, major life changes, trauma, or stress, and certain physical illnesses and medications. Depression can be treated with medications, psychotherapy (counseling), or a combination of both.

Figure 70



The New Jersey Department of Health reported in 2017 that 14.8% of people in the state were diagnosed with depression, with 13.6% of Warren county residents diagnosed.<sup>181</sup> In Pennsylvania, the state asked about depression on their 2019 Behavioral Health Risk Factor Surveillance System (BRFSS), which included depression, major depression, and minor depression (dysthymia). The survey found that 20% of people in Pennsylvania were depressed. The survey broke the counties into clusters, finding that 13% of Bucks county, 19.4% of Berks and Schuylkill, 14.3% of Montgomery, 19.4% of Carbon, Lehigh, and Northampton, and 12.2% of Pike, Monroe, Susquehanna, and Wayne reported a depression diagnosis.<sup>182</sup>

2019 CDC Percent of Adults in US Experiencing Anxiety Symptoms

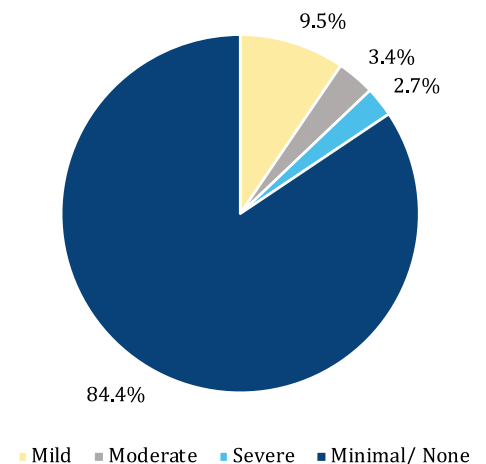


Figure 71

<sup>180</sup> <https://www.nimh.nih.gov/health/topics/depression/index.shtml>

<sup>181</sup> [https://www-doh.state.nj.us/doh-shad/query/result/njbrfs/DXDepress/DXDepressAA11\\_.html](https://www-doh.state.nj.us/doh-shad/query/result/njbrfs/DXDepress/DXDepressAA11_.html)

<sup>182</sup> <https://www.health.pa.gov/topics/HealthStatistics/BehavioralStatistics/BehavioralRiskPAAadults/Pages/BehavioralRisksPAAadults.aspx>



Anxiety is another common mental disorder that affects people across the country. Anxiety is a normal part of life, but for a disorder, it is more than temporary worry or fear. The NIMH says “for a person with an anxiety disorder, the anxiety does not go away and can get worse over time. The symptoms can interfere with daily activities such as job performance, schoolwork, and relationships.”<sup>183</sup> Risk factors for anxiety disorders differ for each disorder, but generally include temperamental traits of shyness or behavioral inhibition in childhood, exposure to a stressful or negative life or environmental events in early childhood or adulthood, a history of anxiety in relatives, and some health conditions.<sup>184</sup> Anxiety disorders can be treated with psychotherapy, medication, or a combination.

In 2020, the CDC released a report of symptoms of generalized anxiety disorder among adults in the U.S. Generalized Anxiety Disorder (GAD) displays excessive anxiety or worry, most days for at least 6 months, about a number of things, causing significant problems in areas of life like social interactions, school, and work.<sup>185</sup> The CDC survey found that 9.5% of adults experienced mild symptoms of anxiety, 3.4% experienced moderate symptoms of anxiety, 2.7% experienced severe symptoms of anxiety in the past 2 weeks, while 84.4% of people reported no or minimal symptoms.<sup>186</sup> The percentage of adults who experienced all types of symptoms was highest among those 18-29 years old and decreased with age. One significant finding in the study was that women are more likely to experience all levels of anxiety symptoms than men. Lastly, non-Hispanic Asian adults were least likely to experience any symptoms of anxiety, compared with Hispanic, non-Hispanic White, and non-Hispanic Black adults.

In addition to anxiety and depression, substance use is another disorder that has continued to affect many Americans. A substance use and suicide study done by Substance Abuse and Mental Health Services Administration (SAMHSA) in 2016 found that nearly 1 in 12 adults in the U.S. had a substance use disorder.<sup>187</sup> The NIMH describes substance use disorder as a mental disorder that affects a person's brain and behavior with drug use and can interfere with a person's ability to work, go to school, and have good relationships with family and friends.<sup>188</sup>

Substance use disorder vulnerability can be related to genetics, but physical and emotional trauma also puts people at a higher risk. The 2021 State of America report found that 7.7% of adults in America reported having a substance use disorder in the past year.<sup>189</sup> 7% of adults in New Jersey have a substance use disorder, which ranks 10 out of 51 (including Washington D.C.), and 7.3% of Pennsylvania, which ranks 15 out of 51. In 2016, the SAMHSA study found that opiates, including heroin and prescription pain killers, were present in 20% of suicide deaths in the United States. Additionally, 22% of all suicide deaths in 2016 involved alcohol intoxication. Alcohol is a commonly used

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<sup>183</sup> <https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>

<sup>184</sup> <https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>

<sup>185</sup> <https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml>

<sup>186</sup> <https://www.cdc.gov/nchs/products/databriefs/db378.htm>

<sup>187</sup> <https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4935.pdf>

<sup>188</sup> <https://www.nimh.nih.gov/health/topics/substance-use-and-mental-health/index.shtml>

<sup>189</sup> <https://mhanational.org/issues/2021/ranking-states>

substance, but its ability to increase aggressiveness and constrict cognition, which impairs coping strategies and may increase risk of suicidal behaviors.<sup>190</sup>

Suicide involves dynamic interactions between national and community issues, families and relationships, and individual health and/or well-being.<sup>191</sup> It has become a growing concern and is now the 10<sup>th</sup> leading cause of death among all ages in the United States, but second leading cause of death for 10-34 years and fourth for 35-54 years.<sup>192</sup> Suicide is likely to remain a significant issue during, and well beyond, the pandemic. The long-term effects of the pandemic on the general population, the economy, and vulnerable groups is unknown, but the impact on mental health and suicide risk may also be increased during the pandemic due to the stigma towards individuals with COVID-19 and their families.<sup>193</sup> Therefore, responses to suicide should target the whole population, focusing on particular risk factors like financial stressors, alcohol consumption, isolation, and access to care.<sup>194</sup>

A CDC Suicide Mortality report in the United States from 1999-2019 was released February 2021, outlining the suicide rate during a 10-year period. The age-adjusted rate in 2019 was 13.9 per 100,000 people, which is slightly lower than the rate in 2018 (14.2).<sup>195</sup> The 2019 crude rate is 24.5 per 100,000 people.<sup>196</sup> In 2018, the National Hospital Ambulatory Medical Care Survey (NHAMCS) reported 312,000 emergency visits for self-injury.<sup>197</sup> CDC WONDER data shows the 2019 crude rate of suicide by intentional self-harm from 1999-2019.<sup>198</sup> Schuylkill county records the highest rate of self-harm, 22.6. Unreliable is reported when the rate is calculated with a numerator 20 or less. In New Jersey, suicide is the 13<sup>th</sup> leading cause of death, which annually, there are more than twice as many suicides as homicides in the state (Figure 72).<sup>199</sup>

Released in September 2020, the National Vital Statistics Report and CDC published a report of suicide among adolescent and youth ages 10-24 years from 2000-2018. The average percent increase in suicide deaths among 10-24 years in the U.S. from 2007-2009 to 2016-2018 is 47.1%, 53.6% in Pennsylvania, and 39.0% for New Jersey.<sup>200</sup>

2019 Crude Rate of Intentional Self-Harm per 100,000	
County	Rate
Berks	17.1
Bucks	16.4
Carbon	Unreliable
Lehigh	11.9
Monroe	13.5
Montgomery	13.5
Northampton	12.1
Schuylkill	22.6
Warren (NJ)	Unreliable

Figure 72

<sup>190</sup> <https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4935.pdf>

<sup>191</sup> [https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019\\_National\\_Veteran\\_Suicide\\_Prevention\\_Annual\\_Report\\_508.pdf](https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf)

<sup>192</sup> <https://www.cdc.gov/nchs/products/databriefs/db398.htm>

<sup>193</sup> [https://doi.org/10.1016/S2215-0366\(20\)30171-1](https://doi.org/10.1016/S2215-0366(20)30171-1)

<sup>194</sup> [https://doi.org/10.1016/S2215-0366\(20\)30171-1](https://doi.org/10.1016/S2215-0366(20)30171-1)

<sup>195</sup> <https://www.cdc.gov/nchs/products/databriefs/db398.htm>

<sup>196</sup> <https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=BF94A69A2EA7B26A79CC60EBC4B1>

<sup>197</sup> <https://www.cdc.gov/nchs/fastats/suicide.htm>

<sup>198</sup> <https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=808281E7650E525FCF44896FE0B4> (code X60-X84)

<sup>199</sup> <https://www-doh.state.nj.us/doh-shad/indicator/view/Suicide.year.html>

<sup>200</sup> <https://www.cdc.gov/nchs/data/nvsr/nvsr69/nvsr-69-11-508.pdf>

After a period of stability from 2000-2007, the suicide rate among youth and adolescents increased 57.4%, increasing from 6.8 deaths per 100,000 in 2007 to 10.7 per 100,000 in 2018. The northeast states had among the lowest suicide rates in the country from 2016-2018, including New Jersey with 5.7 per 100,000. However, New Jersey had a 39.0% increase from 2007-2009 to 2016-2018. Pennsylvania's suicide rate in 2016-2018 was 10.6 per 100,000 deaths.<sup>201</sup>

In response to the growing suicide rates, both New Jersey and Pennsylvania have made state suicide prevention plans. New Jersey's prevention plan was released for 2014-2017 with 10 specific goals, including awareness that suicide is preventable; to improve and expand surveillance systems; and to develop and implement strategies to reduce the stigma.<sup>202</sup> Pennsylvania's prevention plan was released in September 2020, outlining 8 specific prevention goals, including increased suicide prevention awareness efforts that reduce stigma and promote safety, help-seeking, and wellness; promote trauma-informed approaches to support all Pennsylvania residents as part of upstream, universal suicide prevention efforts; and provide quality training on the prevention of suicide and management of suicide risk across multiple sectors and settings.<sup>203</sup> Some populations are more vulnerable than others to mental disorders, substance use, and suicide. A SAMHSA study published in June 2020 found that Hispanic populations are more likely to lack high-quality evidence-based cultural grounded treatment options and have disparities in treatment outcomes.<sup>204</sup> Additionally, 1 in 20 Hispanic people do not receive services from a mental health specialist due to stigma, discrimination and lack of knowledge about services. This is a population that should be targeted by providing culturally appropriate counseling and specialized advertising to encourage care-seeking behaviors.

Another population particularly vulnerable to suicide is Veterans. A 2019 National Veteran Suicide Prevention Report by the U.S. Veterans Affairs found that in 2017, veterans accounted for 13.5% of all deaths by suicide in the U.S.<sup>205</sup> Additionally, an average of 16.8 veterans died by suicide each day in 2017. Suicide rates in veterans tend to be affected by economic disparities, homelessness, unemployment, disability status, community connection, and personal health and well-being. Veterans served by the Veterans Health Administration (VHA) who die by suicide are more likely to have sleep disorders, traumatic brain injuries, or a mental health disorder diagnosis.<sup>206</sup> These suicide rates tend to be higher in individuals who live in rural areas and individuals who are isolated. Veterans ages 18-34 years old had the highest suicide rate in 2017 (44.5 per 100,000) which has increased 76% from 2005 to 2017.<sup>207</sup> Veterans are a group that require specialized services and care that addresses the needs of the population.

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<sup>201</sup> <https://www.cdc.gov/nchs/data/nvsr/nvsr69/nvsr-69-11-508.pdf>

<sup>202</sup> <https://sprc.org/sites/default/files/New%20Jersey%20Adult%20Suicide%20Prevention%20Plan%20Final%202014-17.pdf>

<sup>203</sup> <https://www.dhs.pa.gov/Services/Mental-Health-In-PA/Documents/PA%20Statewide%20Suicide%20Prevention%20Plan.pdf>

<sup>204</sup> [https://mhntcnetwork.org/sites/default/files/2020-06/Mh\\_Disparities\\_Booklet.pdf](https://mhntcnetwork.org/sites/default/files/2020-06/Mh_Disparities_Booklet.pdf)

<sup>205</sup> [https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019\\_National\\_Veteran\\_Suicide\\_Prevention\\_Annual\\_Report\\_508.pdf](https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf)

<sup>206</sup> [https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019\\_National\\_Veteran\\_Suicide\\_Prevention\\_Annual\\_Report\\_508.pdf](https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf)

<sup>207</sup> [https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019\\_National\\_Veteran\\_Suicide\\_Prevention\\_Annual\\_Report\\_508.pdf](https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf)

## ..... Substance Use .....

According to a 2019 U.S. Health CDC report, 11.7% of people in the United States have used an illicit drug in the past month.<sup>208</sup> An illicit drug is one that is highly addictive and forbidden by law. Some of these include marijuana, opioids (e.g., fentanyl, heroin), and stimulants (e.g., cocaine, methamphetamine). The Substance Use and Mental Health Services Administration (SAMHSA) defines substance use disorders as occurring “when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home.”<sup>209</sup> Substance use commonly co-occurs with mental health disorders. Please refer to the mental health section for more detailed information. Substance use is a growing concern in the United States and within our service areas, particularly related to the COVID-19 pandemic. To address the concerns with alcohol, drug and tobacco use, some of Healthy People 2030's objectives are to reduce the proportion of adults who used drugs in the past month, increase the proportion of people with a substance use disorder who got treatment in the past year, increase the proportion of adolescents who think substance use is risky, and to reduce the rate of opioid related emergency department visits.<sup>210</sup>

## ..... Alcohol .....

A 2019 CDC alcohol use report found that 25.1% of adults 18 and older had at least one heavy drinking day (five or more drinks for men and four or more drinks for women) in the past year.<sup>211</sup> The percentage for binge drinking in women is 19.8% and 30.9% for men.<sup>212</sup> Nationally, 1 in 4 adults heavily drank in the past year. In 2019, there were 24,110 alcoholic liver deaths in the U.S. and 39,043 alcohol-induced deaths, which do not include accidents and homicides. Pennsylvania's crude rate for alcohol-induced deaths was 8.2 per 100,000 population and New Jersey's 7.9 per 100,000 population. Northampton county had the highest rate of 10.2 per 100,000 and Berks county had the lowest reported at 5.0 per 100,000.<sup>213</sup>

<sup>208</sup> <https://www.cdc.gov/nchs/data/abus/2019/020-508.pdf>

<sup>209</sup> <https://www.samhsa.gov/find-help/disorders>

<sup>210</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/drug-and-alcohol-use>

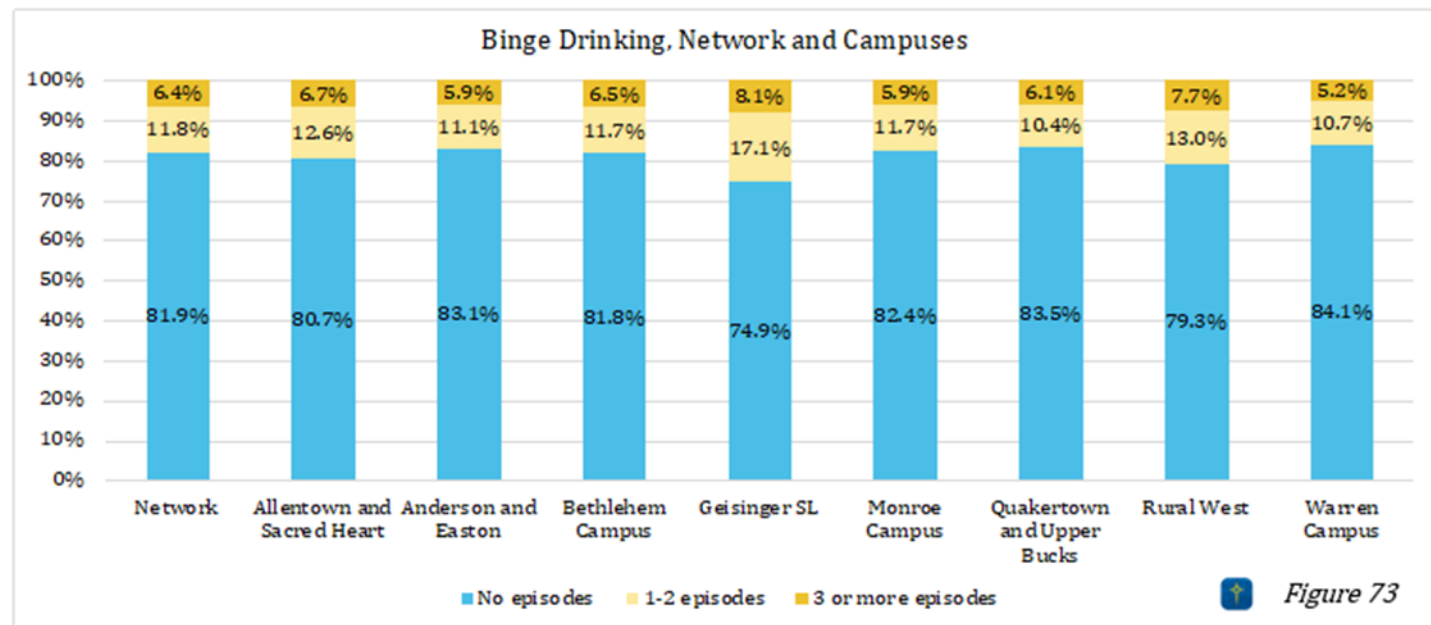
<sup>211</sup> <https://www.cdc.gov/nchs/fastats/alcohol.htm>

<sup>212</sup> [https://public.tableau.com/profile/tina.norris#!/vizhome/FIGURE9\\_1/Dashboard9\\_1](https://public.tableau.com/profile/tina.norris#!/vizhome/FIGURE9_1/Dashboard9_1)

<sup>213</sup> <https://wonder.cdc.gov/controller/saved/D76/D99F021>

Both Pennsylvania and New Jersey perform a Behavioral Risk Factor Surveillance System (BRFSS). Pennsylvania's BRFSS asked about binge drinking, chronic drinking, and made an assessment about how many people in each county cluster would be at risk for a drinking problem. Binge drinking is "defined as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 g/dl or above. This typically happens when men consume 5 or more drinks or women consume 4 or more drinks in about 2 hours."<sup>214</sup> The CDC reports that binge drinking is the most common, costly, and deadly pattern of excessive alcohol use in the United States.<sup>215</sup> Binge drinking can be associated with unintentional car crashes, violence, sexually transmitted diseases, fetal alcohol spectrum disorders, cancer, and more. Chronic drinking is when someone drinks more than the recommended one (women) or two (men) drinks a day, and more than seven (women) and fourteen (men) drinks in a week.<sup>216</sup>

In 2019, the binge drinking percentage in Pennsylvania was 17% and chronic drinking was 6%. The report clustered certain counties together and reported on risk for a drinking problem: Pike, Monroe, Susquehanna, and Wayne cluster was not reliable; Carbon, Lehigh, Northampton was 7%, Berks and Schuylkill counties 7.1%; Montgomery county 5.9%; and Bucks county 4.7%.<sup>217</sup>



New Jersey asked similar questions in their 2017 BRFSS, but using the term episodic heavy drinking in place of binge drinking. 17.9% of New Jersey and 18.4% of Warren county had episodic heavy drinking<sup>218</sup> and 5.4% of New Jersey and 4.6% of Warren county had chronic

<sup>214</sup> <https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>

<sup>215</sup> <https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>

<sup>216</sup> <https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking>

<sup>217</sup> <https://www.health.pa.gov/topics/HealthStatistics/BehavioralStatistics/BehavioralRiskPAAdults/Pages/BehavioralRisksPAAdults.aspx>

<sup>218</sup> [https://www-doh.state.nj.us/doh-shad/query/result/njbrfs/AlcoholBinge/AlcoholBingeAA11\\_.html.html](https://www-doh.state.nj.us/doh-shad/query/result/njbrfs/AlcoholBinge/AlcoholBingeAA11_.html.html)

drinking.<sup>219</sup> When asked how many binge drinking episodes a respondent had in the past month, 81.9% of respondents in the network indicated no episodes. However, 11.8% have had 1-2 episodes in the past month and 6.4% had 3 or more episodes. Geisinger St. Luke's has the highest percentage of respondents who had any episodes; 17.1% have had 1-2 episodes and 8.1% had 3 or more episodes. The Warren service area has the highest percentage of respondents who had no episodes (84.1%).

In 2018, the Census Bureau released a County Business Patterns (CBP) report. One of the businesses assessed were liquor stores. Liquor store access reports on places primarily engaged in retailing liquor and packaged alcoholic beverages (e.g., beer, wine). This excludes places preparing alcohol for consumption (e.g., bars, restaurants) or places that sell alcohol as a secondary retail product (e.g., gas stations, grocery stores). Research has found that liquor stores are disproportionately located in predominantly Black census tracts.<sup>220</sup> The number of liquor stores is reported per 10,000 population. Rural West and Geisinger St. Luke's service areas have the highest rate of liquor stores per population, 2.26 and 2.23, respectively.<sup>221</sup> It should also be noted that these campuses also have the smallest populations (Figures 74-75).

The Robert Wood Johnson Foundation published 2021 county health rankings on excessive drinking and alcohol impaired driving deaths.

Using data from 2018, excessive drinking measures the percentage of the county's adult population that reports binge or heavy drinking in the past 30 days. New Jersey reported 16% of the state's population and 21% in Warren county binge drank. Pennsylvania reported 20%, with Bucks county as the highest service area county with 23% with Monroe county at the lowest with 20%.<sup>222</sup> The alcohol impaired driving measure used data from 2015-2019 assessing the

percentage of motor vehicle deaths with alcohol impairment. This is important because alcohol reduces brain function and impairs thinking, which can hinder driving. Drivers 21-24 years old caused 27% of all alcohol impaired deaths in this time frame.<sup>223</sup> New Jersey reported 22% and Warren county reported 18% of all vehicle deaths with alcohol

Number of Liquor Stores per 10,000 population	
Service Area	Rate
Allentown and Sacred Heart	1.39
Anderson and Easton	1.31
Bethlehem	no data
Geisinger St. Luke's	2.23
Monroe	1.23
Quakertown and Upper Bucks	1.22
Rural West	2.26
Warren	1.76

Figure 74

Number of Liquor Stores per 10,000 population	
County	Rate
Berks	1.22
Bucks	1.15
Carbon	2.61
Lehigh	1.4
Monroe	1.18
Montgomery	1.18
Northampton	1.34
Schuylkill	2.36
Warren	2.3

Figure 75

<sup>219</sup> [https://www-doh.state.nj.us/doh-shad/query/result/njbrfs/AlcoholChrnHvy/AlcoholChrnHvyAA11\\_.html](https://www-doh.state.nj.us/doh-shad/query/result/njbrfs/AlcoholChrnHvy/AlcoholChrnHvyAA11_.html)

<sup>220</sup> DOI: 10.1016/s0277-9536(00)00004-6

<sup>221</sup> <https://www.census.gov/programs-surveys/cbp.html>

<sup>222</sup> <https://www.countyhealthrankings.org/>

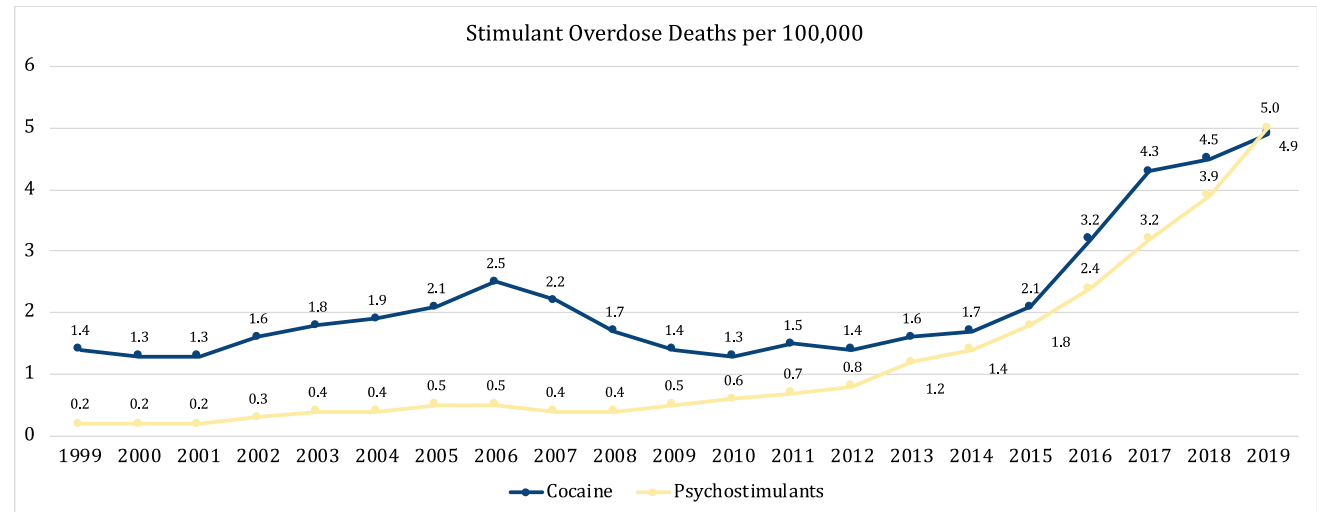
<sup>223</sup> <https://www.countyhealthrankings.org/>

impairment. Pennsylvania reported 26%, the highest are Bucks and Lehigh counties at 30% and Schuylkill county at the lowest (23%).

## ..... Stimulants .....

The CDC drug overdose report (1999-2019) indicates that the age-adjusted rate of drug overdose deaths involving cocaine increased from 1.4 per 100,000 population in 1999 to 4.9 in 2019.<sup>224</sup> It is also reported that the age-adjusted rate of drug overdose deaths involving psychostimulants (e.g., methamphetamine, methylphenidate), increased from 0.2 per 100,000 population in 1999 to 5.0 in 2019. Stimulants are dangerous and easily abused because they increase alertness, attention, and energy. An overdose of stimulants can result in symptoms such as rapid breathing, aggression, hallucinations, and overactive reflexes.<sup>225</sup> The 2019 Annual Surveillance Report of Drug-Related Risks and Outcomes from the CDC<sup>226</sup> reported that in 2018, an estimated 5,529,000, or 2.0% of people 12 years and older, reported cocaine use in the past year. This is highest among those 26–29 years (6.0%) and 18-25 years (5.8%). In 2018, an estimated 1,867,000, or 0.7% of people 12 years and older, reported methamphetamine use in the past year. This is highest among people 30–34 years (1.6%), people 26-29 years (1.2%), and 35-39 years (1.1%). In 2018, an estimated 5,109,000, or 1.9% of people 12 years and older, reported misuse of prescription stimulants in the past year. This is highest among people 18-25 years (6.5%), followed by 26-29 years (4.4%) and 30-34 years (3.4%). Most recently according to the CDC health alert, overdose deaths involving cocaine increased by 26.5% from the 12-months ending in June 2019 to the 12-months ending in May 2020.<sup>227</sup>

There is an average of 510 new methamphetamine users each day 12 years and older, 70 new users a day 12 to 17 years old, 170 new users a day 18 to 25 years old, and 260 new users a day 26 years and older.



<sup>224</sup> <https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf>

<sup>225</sup> <https://www.drugabuse.gov/publications/drugfacts/prescription-stimulants>

<sup>226</sup> <https://www.cdc.gov/drugoverdose/pubs/related-publications.html>

<sup>227</sup> <https://emergency.cdc.gov/han/2020/han00438.asp>

Figure 76



Using data from 2018 and 2019, SAMHSA reports that 27,000 people 18 years and older in New Jersey used methamphetamines in the past year. In the same time frame, 75,000 people 18 years and older in Pennsylvania used methamphetamines in the past year.<sup>228</sup>

## ..... Tobacco .....

The 2019 CDC Health Report indicated that in 2018, 21.5% of the population 12 years and older used any type of tobacco product.<sup>229</sup> The CDC and National Health Interview Survey of 2019 reported that 14.2% of adults 18 years and older currently smoke cigarettes<sup>230</sup> and 8.1% of youth grades 9-12 smoked cigarettes in the past 30 days.<sup>231</sup>

The Robert Wood Johnson 2021 County Health Rankings report on adult smoking using data from 2018. Cigarette smoking is an important data point to capture because it has been identified as a cause of various cancers, cardiovascular disease, and other adverse health outcomes.<sup>232</sup> Measuring tobacco use can help St. Luke's and other health networks identify needs for smoking cessation and other smoking reduction programs. Adult smoking is measured as the percent of the adult population that report currently smoking every day or most days and have smoked at least 100 cigarettes in their lifetime.<sup>233</sup> In New Jersey, 13% of adults (17% in Warren county) smoke cigarettes. In Pennsylvania, 18% of adults smoke cigarettes. The service area counties with the highest percentage are Carbon and Schuylkill counties both at 23%, and Bucks county with the lowest (16%). Additionally, the CDC National Center for Health Statistics (NCHS) released a secondhand smoke exposure report (2021) among nonsmoking adults during 2015-2018. During this time, 20.8% of nonsmoking U.S. adults 18 and over were exposed to secondhand smoke, which was measured by cotinine in their blood, a metabolite of nicotine.<sup>234</sup> Some negative effects of secondhand smoke exposure include acute respiratory effects, coronary heart disease, stroke, lung cancer, and premature death.

The prevalence of secondhand exposure was highest for adults 18-39 (25.6%) then for adults 40-59 (19.1%) and adults 60 and over (17.6%). The highest secondhand exposure for adults by race and ethnicity were for non-Hispanic Black adults (39.7%) and lowest for

Percent of Adults who are Current Smokers RWJ 2021	
Region	Percent
Berks	20.0%
Bucks	16.0%
Carbon	23.0%
Lehigh	18.0%
Monroe	20.0%
Montgomery	14.0%
Northampton	19.0%
Schuylkill	23.0%
Warren (NJ)	17.0%
US	16.0%
Pennsylvania	18.0%
New Jersey	13.0%

Figure 77

<sup>228</sup><https://www.samhsa.gov/data/sites/default/files/reports/rpt32879/NSDUHsaeTotal2019/2019NSDUHsaeTotal.pdf>

<sup>229</sup> <https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf>

<sup>230</sup> <https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf>

<sup>231</sup> <https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf#fig09>

<sup>232</sup> <https://www.countyhealthrankings.org/>

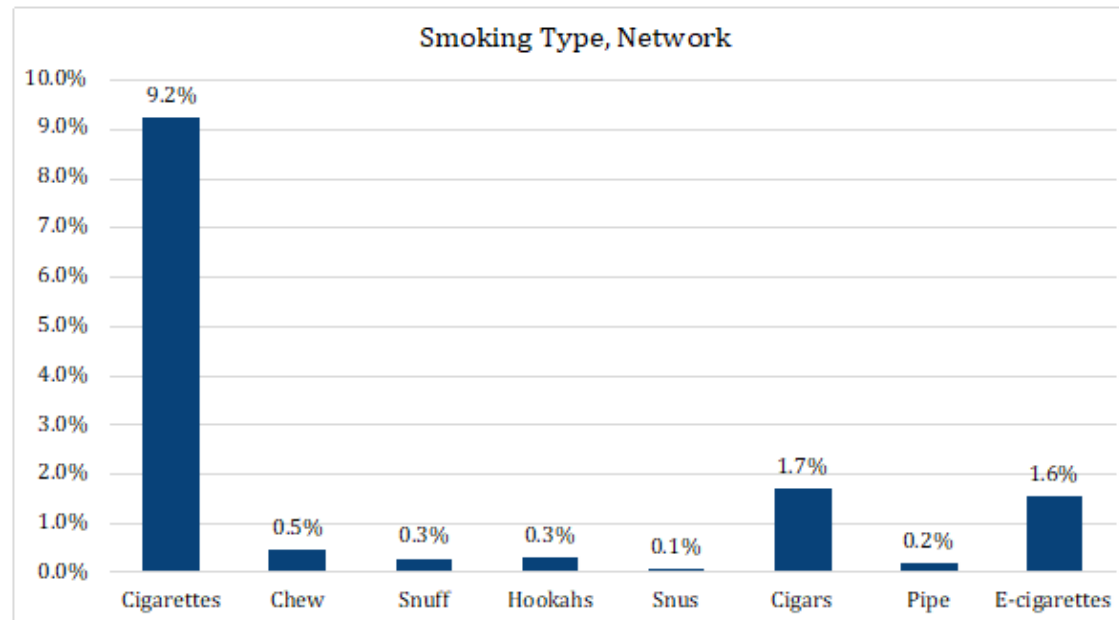
<sup>233</sup> <https://www.countyhealthrankings.org/>


<sup>234</sup> <https://www.cdc.gov/nchs/data/databriefs/db396-H.pdf>



Hispanic adults (17.2%). A promising finding from the report is that the prevalence of secondhand exposure declined from 27.7% in 2009 to 20.8% in 2018.

When asked if respondents smoke, 10.4% of respondents indicated they do smoke. Of those who do smoke, cigarettes are the most common form of tobacco (9.2%), followed by cigars (1.7%), e-cigarettes/vape (1.6%), chew (0.5%), snuff (0.3%), hookahs (0.3%), pipes (0.2%), and 0.1% use snus.



 **Figure 78**

## ..... Vape .....

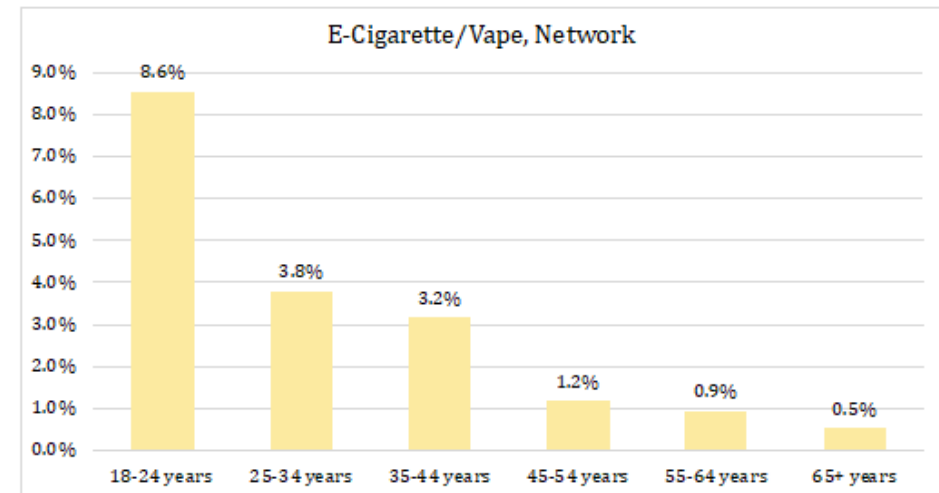
Vaping is another form of smoking nicotine, a highly addictive substance that is especially harmful to children and adolescents. Vapes, also known as e-cigarettes or electronic cigarettes, are “electronic devices that heat a liquid and produce an aerosol or mix of small particles in the air.”<sup>235</sup> The CDC and National Health Interview Survey in 2019 found that 4.4% of adults 18 years and older use e-cigarettes<sup>236</sup> and 20.8% of adolescents in grades 9-12 have used e-cigarettes in the past 30 days.<sup>237</sup>

<sup>235</sup> [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html)

<sup>236</sup> <https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf>

<sup>237</sup> <https://www.cdc.gov/nchs/data/hsr/hsr19-508.pdf#fig09>

Nicotine is most harmful for children and adolescents because the substance hinders brain development, which does not occur until approximately 25 years old. Particularly, nicotine impacts attention, learning, mood, and impulse control, all of which are built in and refined through childhood.<sup>238</sup> An e-cigarette study among middle and high school students in the United States was performed in accordance with the CDC in 2020. Results from this study found that 19.6% of high school students and 4.7% of middle school students reported current e-cigarette use.<sup>239</sup> Of the current users, 82.9% used flavored e-cigarettes, including 84.7% of high school users and 73.9% of middle school users. The introduction of flavors such as fruit, candy and mint has increased youth initiation into the use of tobacco products.<sup>240</sup>



Another CDC study found that 23.6% of high school students and 6.7% of middle school students reported 30-day use of any tobacco product.<sup>241</sup> According to PAYS data, 19% of students in Pennsylvania used an e-cigarette or vape within the last 30 days.<sup>242</sup> According to the Warren Youth Survey, 16.7% of students reported using e-cigarettes in the past 30 days.<sup>243</sup> Similar to other findings, the age group that uses e-cigarettes/vape most frequently are 18-24 year old (8.6%). The results from the CHNA survey show that as age increase, vape use decreases; 3.8% of respondents 25-34 years old use vapes, followed by 3.2% 35-44 years old, 1.2% 45-54 years old, 0.9% 55-64 years old, and 0.5% 65 years and older.

## ..... Marijuana .....

Marijuana is a psychotropic drug that is commonly used throughout the United States. In the short-term, marijuana can alter senses, change mood, impair memory, and impair body movement. In the long-term, marijuana can affect thinking, memory, and learning functions crucial

<sup>238</sup> [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html)

<sup>239</sup> [https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e1.htm?s\\_cid=mm6937e1\\_w%20](https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e1.htm?s_cid=mm6937e1_w%20)

<sup>240</sup> <https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a1.htm>

<sup>241</sup> <https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a1.htm>

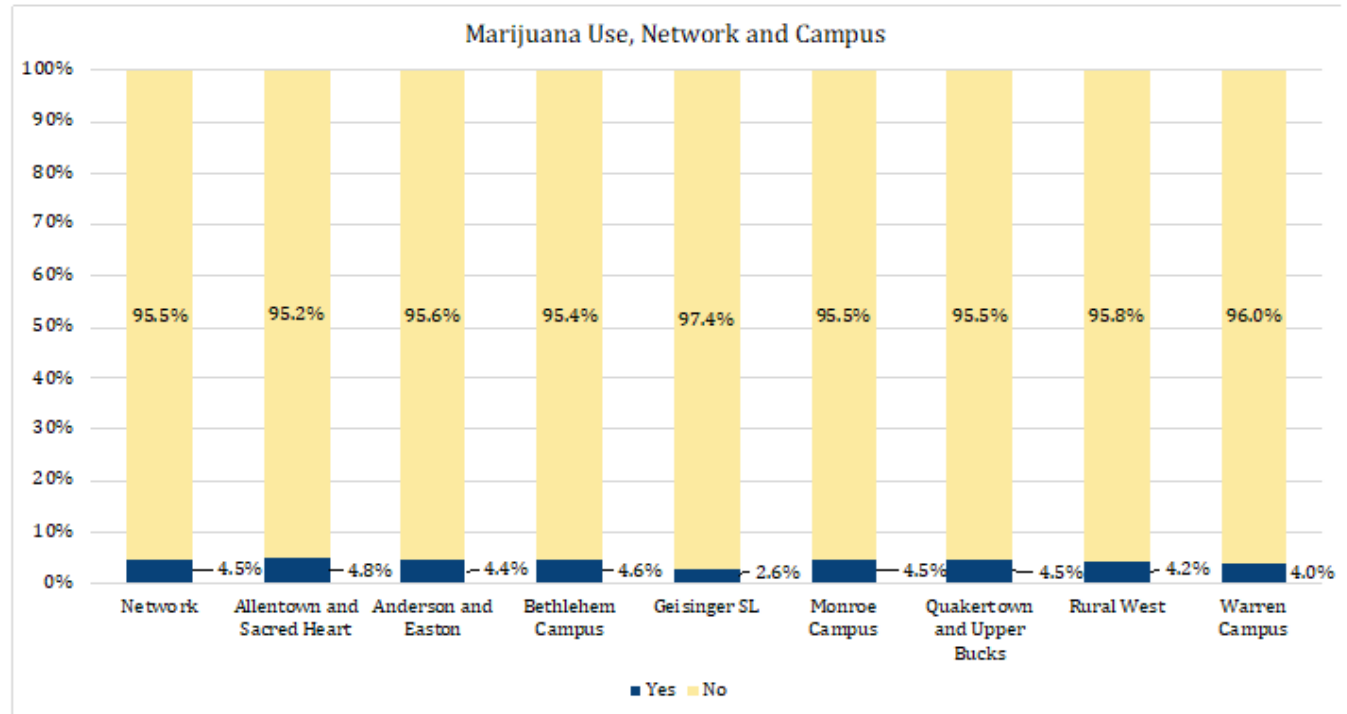
<sup>242</sup> [https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-\(PAYS\).aspx](https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS).aspx)


<sup>243</sup> <https://www.pridesurveys.com/>

to brain development.<sup>244</sup> Marijuana can also have physical effects which result in breathing problems and increased heart rate. The CDC 2019 U.S. Health Report indicated that 10.1% of people 12 and older used marijuana in the past 12 months during 2018.<sup>245</sup>

However, the 2019 Annual Surveillance Report of Drug-Related Risks and Outcomes reported that 15.9% of people in the U.S. during 2018 who are 12 years and older used marijuana in the past 12 months.<sup>246</sup> This usage was highest among people 18-25 (34.8%) and people 26-34 (29.6%).

Out of all network respondents, 4.5% indicated that they use marijuana. Out of our service areas, Allentown and Sacred Heart have the highest percentage of respondents who use marijuana (4.8%) and Geisinger St. Luke's has the lowest (2.6%).



 *Figure 80*

## ..... Opioids .....

The CDC reports that the opioid epidemic has occurred in three phases.<sup>247</sup> First, prescription opioids increased in the 1990s with overdose deaths continually increasing since 1999. The second phase began around 2010 with increased overdoses involving heroin. Heroin is an

<sup>244</sup> <https://www.drugabuse.gov/publications/drugfacts/marijuana>

<sup>245</sup> <https://www.cdc.gov/nchs/data/hsr/2019/020-508.pdf>

<sup>246</sup> <https://www.cdc.gov/drugoverdose/pubs/related-publications.html>

<sup>247</sup> <https://www.cdc.gov/drugoverdose/epidemic/index.html>

alternative to prescription opioids due to its similar effect on the body. The third phase began in 2013 with the introduction of synthetic opioids (e.g., illicitly manufactured fentanyl). The CDC provides descriptions on the most commonly used opioids: prescription opioids, fentanyl, and heroin. Prescription opioids can be used to treat pain and are often prescribed following surgery, an injury or to manage a disease like cancer. However, there has been a dramatic increase in the prescription of opioids for chronic pain such as back pain or osteoarthritis, “despite serious risks and the lack of evidence about their long-term effectiveness.”<sup>248</sup> Prescription opioids are highly addictive and incredibly difficult to stop using. As many as one in four patients receiving long-term opioid therapy in a primary care setting struggle with an opioid addiction.<sup>249</sup> Common prescription opioids are Methadone, Oxycodone (OxyContin), Hydrocodone (Vicodin), and Benzodiazepines such as alprazolam (Xanax) and diazepam (Valium).

Fentanyl produced pharmaceutically is a synthetic opioid used to treat severe pain. It is 50 to 100 times more potent than morphine. However, the increase in overdose has been linked to illegally made fentanyl which has a heroin-like effect.<sup>250</sup> The CDC reports that rates of overdose deaths involving synthetic opioids other than methadone, which includes fentanyl and fentanyl analogs, increased more than 16% from 2018 to 2019. Overdose deaths involving synthetic opioids were nearly 12 times higher in 2019 than in 2013.”<sup>251</sup> Lastly, heroin is an illegal and highly addictive drug that is typically injected. This increases the risk of serious infections like HIV, Hepatitis C, Hepatitis B, and bacterial infections. Heroin use has increased by 5 times from 2010 to 2018.<sup>252</sup> This is problematic because heroin is typically used with other substances, which can increase the risk of an overdose. The CDC released a report (2020) on drug overdose in the United States from 1999-2019.<sup>253</sup> The age-adjusted rate of drug overdose deaths involving synthetic opioids increased from 1.0 per 100,000 population in 2013 to 11.4 in 2019. The average annual increase rate was lower from 2017-2019 (9%) than 2013-2017 (75%). The age-adjusted rate of drug overdose deaths involving natural and semisynthetic opioids, like oxycodone and hydrocodone, increased from 1.0 per 100,000 population in 1999 to 2.7 in 2011, then increased again to 4.4 in 2016 and 2017. The rates in 2018 (3.8) and 2019 (3.6) were lower than 2017.<sup>254</sup>

Rate of Hospital Admissions with Opioid Use Disorder per 100,000 People CY 2019	
County	Rate
Berks	212.2
Bucks	271.3
Carbon	589.1
Lehigh	336.9
Monroe	430.9
Montgomery	145.4
Northampton	380.8
Schuylkill	285.5
PA	293.2

*Figure 81*

The Pennsylvania Health Care Cost Containment Council (PHC4) collects data for each calendar year (CY) on opioid overdose hospital admissions and opioid use disorder (OUD) hospital admissions. In CY 2019, there were 23.2 hospital admissions for an opioid overdose per

<sup>248</sup> <https://www.cdc.gov/drugoverdose/opioids/prescribed.html>

<sup>249</sup> <https://www.cdc.gov/drugoverdose/opioids/prescribed.html>

<sup>250</sup> <https://www.cdc.gov/drugoverdose/opioids/fentanyl.html>

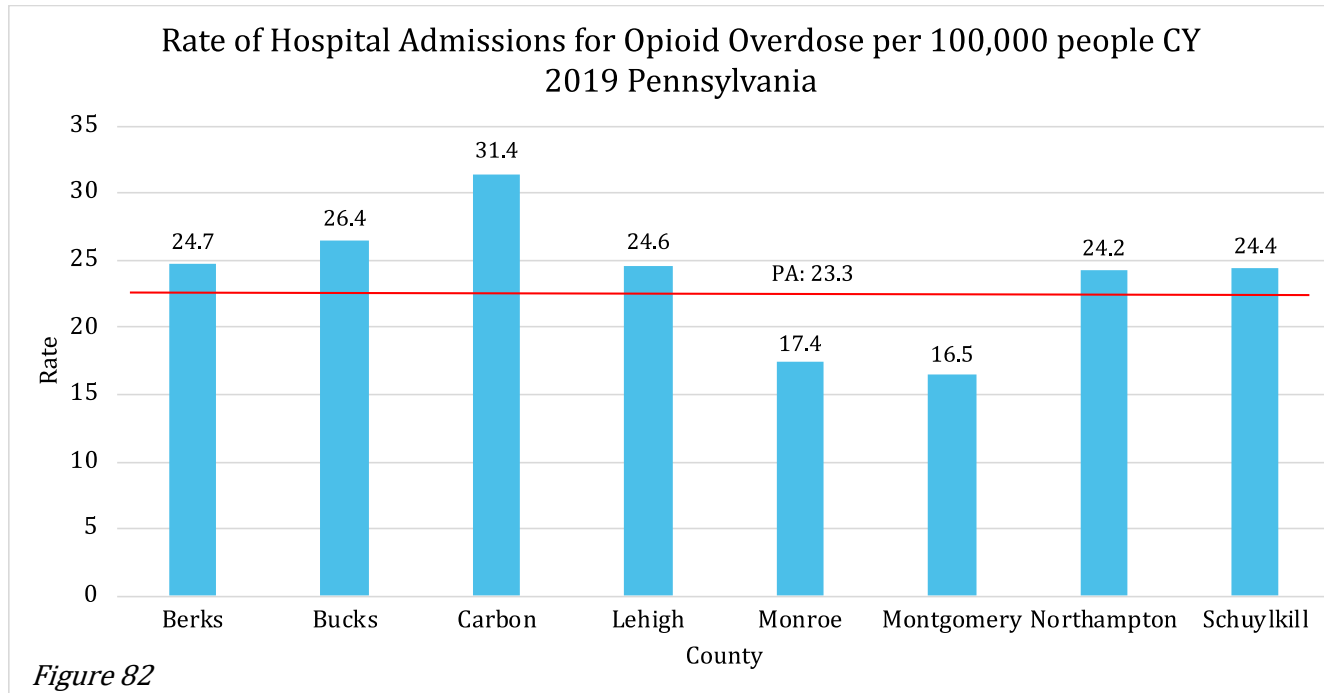
<sup>251</sup> <https://www.cdc.gov/drugoverdose/opioids/fentanyl.html>

<sup>252</sup> <https://www.cdc.gov/drugoverdose/opioids/heroin.html>

<sup>253</sup> <https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf>

<sup>254</sup> <https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf>

100,000 people and 293.2 hospital admissions with opioid use disorder per 100,000 people in Pennsylvania.<sup>255</sup> The county with the highest rate of both overdose and OUD is Carbon county. Monroe has the lowest rate of overdose admissions (17.4) and Bucks has the lowest rate of OUD admissions (271.3).



Opioid use while pregnant can have severe negative outcomes for the child, potentially resulting in Neonatal Abstinence Syndrome (NAS). NAS births occur “in a newborn who was exposed to addictive substances while in the mother’s womb. The most common opiate drugs that are associated with NAS are heroin, codeine, oxycodone (oxycontin), methadone and buprenorphine.”<sup>256</sup> The effects of NAS usually occur within 48-72 hours of birth and newborns can suffer from symptoms including withdrawal, tremors, vomiting, and fever. In New Jersey (2019), there were 578 NAS cases, a rate of 6.3 per 1,000 births.<sup>257</sup> In

Warren county, there were 8 NAS cases with the rate of 10.5 per 1,000 births. Since 2008, there have been 56 cases in Warren county at a rate of 6.5 per 1,000 births. In Pennsylvania, there have been 5,596 NAS births from January 1, 2018 to March 6, 2021.<sup>258</sup> Carbon county has the highest rate of NAS births per 1,000 births (20.8) and Northampton county has the lowest rate (11.9).

<sup>255</sup> Phc4.org/m/Opioids/

<sup>256</sup> [https://nj.gov/health/populationhealth/opioid/opioid\\_nas.shtml](https://nj.gov/health/populationhealth/opioid/opioid_nas.shtml)

<sup>257</sup> [https://nj.gov/health/populationhealth/opioid/opioid\\_nas.shtml](https://nj.gov/health/populationhealth/opioid/opioid_nas.shtml)

<sup>258</sup> <https://data.pa.gov/stories/s/9q45-nckt/>

As a result of the COVID-19 pandemic, the CDC issued a health alert on December 17, 2020 indicating an increase in fatal drug overdoses across the United States driven by synthetic opioids before and during the pandemic. The alert indicated that overdose deaths increased 18.2% from the 12-month period ending in June 2019 to the 12-months ending in May 2020. Overdose deaths went from 74,185 in February 2020 to 75,696 deaths in March 2020 to 77,842 deaths in April 2020, which is the largest monthly increases documented since monthly provisional estimates began in January 2015.<sup>259</sup> Provisional state data is available based on records that meet certain data quality criteria. They should not be considered comparable with the final data and are subject to change. The 12 month-ending provisional counts of drug overdose deaths ending August 2020 for New Jersey is 2,919 and 5,008 for Pennsylvania.<sup>260</sup> To prevent overdose deaths, the CDC recommends states expand provision and use of naloxone overdose prevention education; expand access to and provision of treatment for substance use disorders; intervene early with individuals at high risk for overdose; and improve detection of overdose outbreaks.

## ..... Overdose .....

Overdose is inextricably linked to substance use disorders, and is a growing concern with increasing prevalence rates, especially during the pandemic.<sup>261</sup> Drug overdose deaths are the leading contributor to premature death and are largely preventable.<sup>262</sup> Since 2000, the rate of drug overdose deaths has increased by 137% across the county, which can be largely attributed to opioids, as there has been a 200% increase in opioid overdose deaths since 2000.<sup>263</sup> The NORC, National Opinion Research Center, reports on drug overdose deaths in the United States. From 2015-2019, there has been a rate of 28.7 drug overdose deaths per 100,000 people in the U.S. aged 15-64 years old.<sup>264</sup> The rate in New Jersey is 39.5, with Warren county at 49.7 per 100,000 people.<sup>265</sup> In Pennsylvania, the rate is 53.3, which ranks 4 overall. Out of the Pennsylvania service area counties, Carbon county has the highest rate (69.0) and Monroe county has the lowest rate (32.6).

The CDC also published a drug overdose death report for 1999-2019 in December 2020. They report that the age adjusted rate of drug overdose deaths in 2019 was 21.6 per 100,000, which is higher than in 2018, 20.7 per 100,000 population.<sup>266</sup> Adults 35-44 had the highest rate of drug overdose deaths of any age group in 2019, which was 40.5 per 100,000 population.

<sup>259</sup> <https://emergency.cdc.gov/han/2020/han00438.asp>

<sup>260</sup> <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

<sup>261</sup> <https://emergency.cdc.gov/han/2020/han00438.asp>

<sup>262</sup> <https://www.countyhealthrankings.org/>

<sup>263</sup> <https://www.countyhealthrankings.org/>

<sup>264</sup> <https://opioidmisusetool.norc.org/>

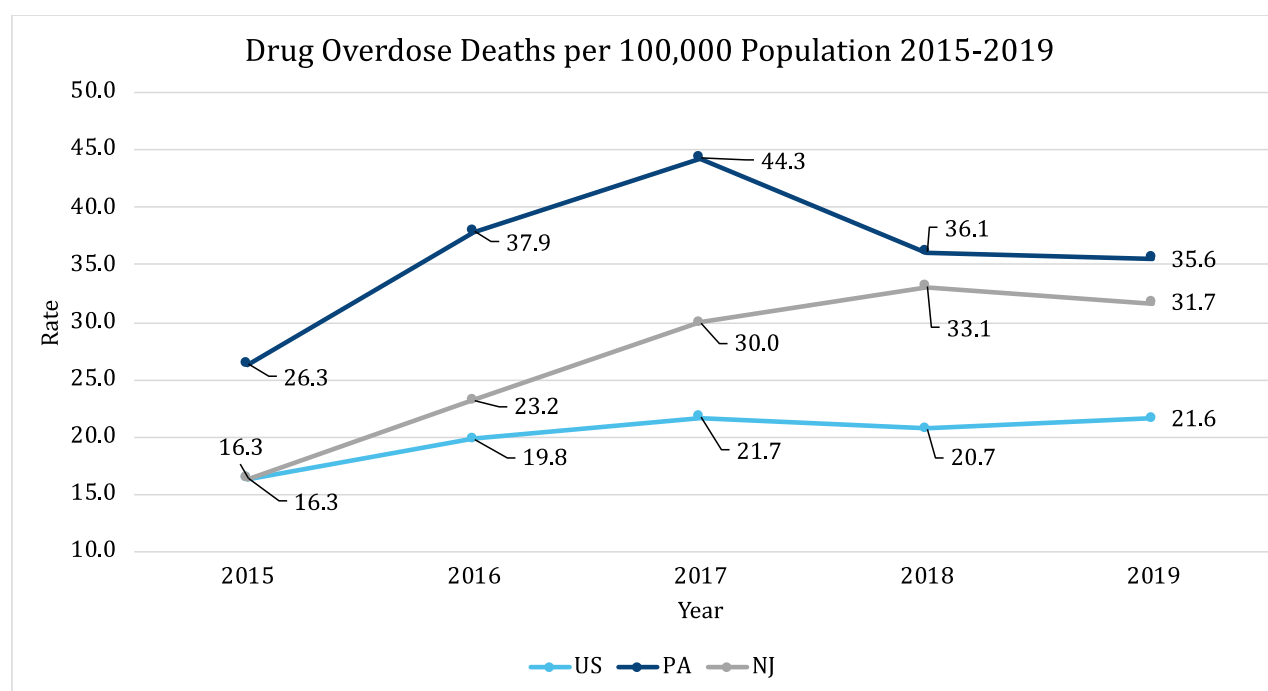
<sup>265</sup> <https://opioidmisusetool.norc.org/>

<sup>266</sup> <https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf>

Rate of Overdose Mortality per 100,000 Population Ages 15-64 2015-2019	
Region	Rate
Berks County	35.4
Bucks County	57.3
Carbon County	69.0
Lehigh County	39.4
Monroe County	36.2
Montgomery County	39.7
Northampton County	47.6
Schuylkill County	52.5
Warren County (NJ)	49.7
US	28.7
Pennsylvania	53.3
New Jersey	39.5

*Figure 83: Note that state rates may appear different than Figure 90 84 due to range of reported rate*

Increasing from 2012, drug overdose deaths involving cocaine increased from 1.4 to 4.9 in 2019 and those deaths involving psychostimulants with abuse potential, such as methamphetamine and amphetamine, increased from 0.8 to 5.0, more than 6-fold.<sup>267</sup> As of 2018, Pennsylvania ranks 4 overall and New Jersey ranks 8 overall for age-adjusted drug overdose deaths in the United States.<sup>268</sup> During this time, Pennsylvania had 4,415 drug overdose deaths and New Jersey had 2,900. Of the total drug overdose deaths in Pennsylvania, 65% involved opioids, a total of 2,866 deaths. Of the total drug overdose deaths in New Jersey, nearly 90% involved opioids, a total of 2,583 deaths.<sup>269</sup> Figure 84 describes drug overdose deaths reported by the CDC over 5 years.<sup>270</sup>



*Figure 84*

<sup>267</sup> <https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf>

<sup>268</sup> <https://www.cdc.gov/drugoverdose/data/statedeaths/drug-overdose-death-2018.html>

<sup>269</sup> <https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state>

<sup>270</sup> <https://www.cdc.gov/drugoverdose/data/statedeaths.html>



## ..... Stigma .....

Stigma is another important component to substance use disorder regarding usage and receiving or accessing help. The Cambridge Dictionary defines stigma as “a strong feeling of disapproval that most people in a society have about something.”<sup>271</sup> Stigma may be a barrier to seeking help for people suffering from substance use disorders due to shame or fear of disapproval from family, friends, or others. St. Luke's has worked with our own staff and other community organizations to educate the population about stigma and how it can be minimized to help the most amount of people.

In the Fall of 2019, a stigma reduction survey was sent to all St. Luke's campus employees as part of the Opioid Stewardship Program. A total of 2,898 of 4,500 inpatient and outpatient network providers, nurses, and support staff received and completed the confidential stigma survey and related education/training. Stigma campaigns are being piloted with phase two involving the entire network.

Beginning in the Fall of 2020, St. Luke's Rural Community Opioid Response committee partnered to develop Community Stigma Presentations. The presentations have reached 299 people and includes stigma education for partners from child development organizations, business organizations, churches, first responders, and mental health service organizations.

## ..... Naloxone .....

Naloxone is a drug that can quickly reduce the effects of an opioid overdose. The National Institute of Drug Abuse define naloxone as “an opioid antagonist—meaning that it binds to opioid receptors and can reverse and block the effects of other opioids. It can very quickly restore normal respiration to a person whose breathing has slowed or stopped because of overdosing with heroin or prescription opioid pain medications.”<sup>272</sup> Naloxone is safe and can be administered in three ways: injected, auto injected, or as a nasal spray. It is important to train people in numerous contexts (e.g., healthcare workers, community members, first responders, family members) to understand how to administer naloxone as it can quickly save someone's life. In response to opioid use and substance use, St. Luke's was awarded a Health Resource Service Administration (HRSA) Rural Community Opioid Response Planning (RCORP) grant in 2018 to work within a consortium to improve OUD prevention, treatment, and recovery response. With the grant, along with funding from Lehigh County Authority on Drugs and Alcohol to fund our Sacred Heart Initiative, St. Luke's ran an urban (St. Luke's Sacred Heart) and rural (St. Luke's Miners Campus) pilot, which has educated and distributed naloxone to 730 and 255 people, respectively.

<sup>271</sup> <https://dictionary.cambridge.org/us/dictionary/english/stigma>

<sup>272</sup> <https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-reversal-naloxone-narcan-evzio>



## ..... Warm Hand Off .....

A warm hand off is a process implemented in St. Luke's service areas and defined as "a transfer of care between two members of the health care team, where the handoff occurs in front of the patient and family. This transparent handoff of care allows patients and families to hear what is said and engages patients and families in communication, giving them the opportunity to clarify or correct information or ask questions about their care."<sup>273</sup> Screening, Brief Intervention, and Referral to Treatment (SBIRT) is another approach adopted in St. Luke's approach to care. SBIRT is used for early intervention in substance use disorders to quickly assess the severity of substance use and identify the appropriate level of care.<sup>274</sup> During CY 2021, a total of 2,637 patients received full SBIRT throughout 11 of St. Luke's campuses. Of those SBIRT patients, 56% were referred with warm hand off and 32% entered substance use treatment.

## ..... Opioid Encounters .....

As mentioned previously, opioid use and overdoses have been increasing, especially related to the COVID-19 pandemic. St Luke's has been responding to meet the needs of the community with the services mentioned above: stigma training, naloxone education and distribution, SBIRT, and warm hand offs. From July 2019 to January 2021, St Luke's has encountered 6,319 opioid use disorder cases and 2,097 overdose encounters. Encounters have fluctuated each month for both OUD and overdose, with no significant changes.

SUD Response at St. Luke's Monroe, St. Luke's Lehighton, St. Luke's Miners, and Geisinger St. Luke's is sponsored in part by the Pocono Mountains United Way and the All One Foundation as well as the Health Resource and Service Administration (HRSA)\* Rural Community Opioid Response Program.

\*This program was sponsored in part and supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling \$1,000,000 (implementation grant) with approximately 50% financed with nongovernmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS or the U.S. Government.

<sup>273</sup> <https://www.ahrq.gov/patient-safety/reports/engage/interventions/warmhandoff.html>

<sup>274</sup> <https://www.samhsa.gov/sbirt>

# Health Outcomes

According to the 2021 America's Health rankings, New Jersey ranks 6 out of 50 states and Pennsylvania 34 out of 50 for overall health outcomes. A ranking closest to 1 indicates healthier outcomes.

## ..... Morbidity, Mortality, and Life Expectancy .....

Morbidity, mortality, and life expectancy are key health outcomes that help determine the overall health of the populations we serve. According to the National Vital Statistics System, there was a death rate of 869.7 per 100,000. The average life expectancy in the U.S. is 78.8 years old<sup>275</sup> and the age adjusted death rate in 2019 nationally was 715.2 per 100,000.<sup>276</sup> In Pennsylvania, the life expectancy is 78.4 and 80.5 in New Jersey. The range of life expectancy in the counties of Pennsylvania is 74.9-83 and 75.3-83.5 in New Jersey. There were 133,932 total deaths registered in the state of Pennsylvania<sup>277</sup>, representing an age adjusted rate of 750.6 per 100,000 population.<sup>278</sup> In 2019, there were 75,072 total deaths registered in the state of New Jersey, representing an age-adjusted death rate of 657.9 per 100,000 population.<sup>279</sup>

In 2018, the 10 leading causes of death made up 73.8% of all deaths in the U.S. The top 10 leading causes of death are (in order)<sup>280</sup>: heart disease; cancer; accidents (unintentional injuries); chronic lower respiratory diseases; stroke (cerebrovascular diseases); Alzheimer's disease; diabetes; nephritis, nephrotic syndrome, and nephrosis; influenza and pneumonia; intentional self-harm (suicide).

Robert Wood Johnson Foundation County Health Rankings data (2021) reports a premature death health outcome, which measures the age-adjusted years of potential life lost before age 75 per 100,000 population. Years of potential life lost rate in Pennsylvania was 7,500 deaths per 100,000, 5,900 deaths in New Jersey, and 5,400 deaths for U.S. top performers. Of our service area counties, Northampton county has the lowest rate with 6,000 deaths per 100,000 and Schuylkill county has the highest rate with 9,800 deaths per 100,000.<sup>281</sup>

Finally, low birthweight is another health outcome that can contribute to life expectancy. Low birthweight is measured by the percentage of live births who are under 2,500 grams (5 pounds, 8 ounces), which can be an indicator for future health problems such as cardiovascular

<sup>275</sup> <https://www.cdc.gov/nchs/fastats/deaths.htm>

<sup>276</sup> <https://www-doh.state.nj.us/doh-shad/indicator/view/DeathRateAA.Trend.html>

<sup>277</sup> <https://www.health.pa.gov/topics/HealthStatistics/VitalStatistics/DeathStatistics/Pages/death-statistics.aspx>

<sup>278</sup> <https://www.phaim1.health.pa.gov/EDD/WebForms/DeathCntySt.aspx>

<sup>279</sup> <https://www-doh.state.nj.us/doh-shad/indicator/view/DeathRateAA.Trend.html>

<sup>280</sup> <https://www.cdc.gov/nchs/products/databriefs/db355.htm>

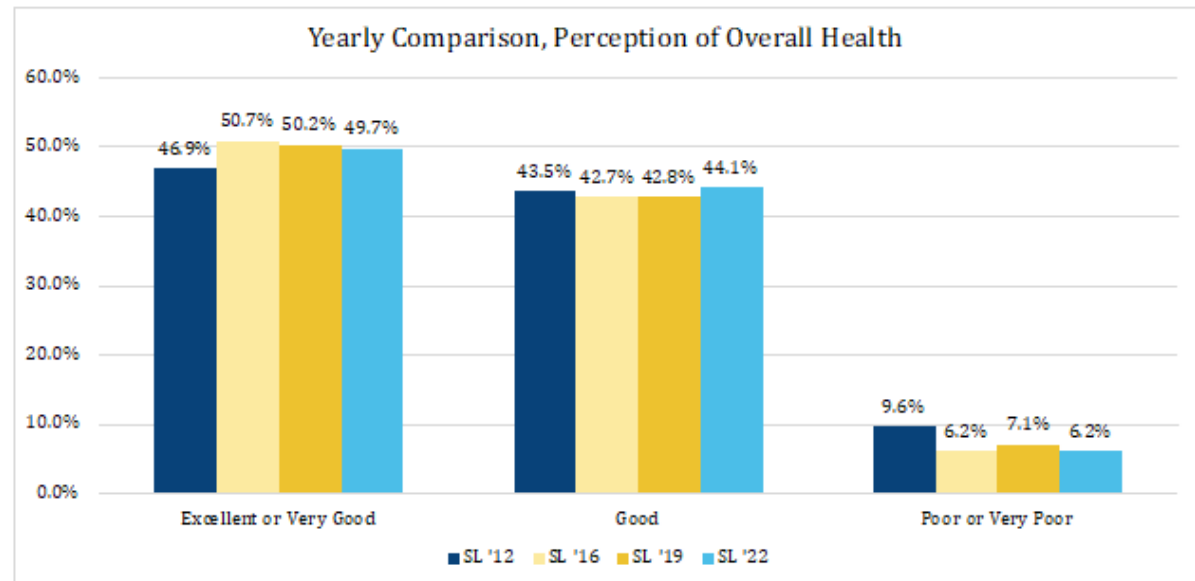
<sup>281</sup> <https://www.countyhealthrankings.org/>


disease, respiratory conditions, and visual, auditory, intellectual, and developmental impairments.<sup>282</sup> The overall low birthweight percentage is 8% in both Pennsylvania and in New Jersey. The low birthweight percentage for U.S. top performers is 6%.

COVID-19 has also impacted mortality rates around the world. While we have yet to understand the impact the premature death rate due to pandemic, as of the end of December 2021 there were more than 57 million confirmed cases in the United States and more than 800,000 deaths, a mortality rate of 1.4%.<sup>283</sup> In Pennsylvania, there were 2,147,482 cases reported (16,774.6 per 100,000), 37,111 deaths, and a mortality rate of 1.7%.<sup>284</sup> In New Jersey, there were 1,474,871 cases reported (16,604.8 per 100,000), 26,204 deaths, a mortality rate of 1.8%.<sup>285</sup>

## ..... Perceptions of Health .....

It is important to assess a community's perceived sense of health status to interpret their overall well-being, as well as highlight areas where health education would be beneficial. According to the CHNA survey, most individuals in the service area reported excellent or very good health (49.7%), followed by good (44.1%), and poor or very poor (6.2%). Ratings remained similar to previous years.



 *Figure 85*

<sup>282</sup> <https://www.countyhealthrankings.org/>

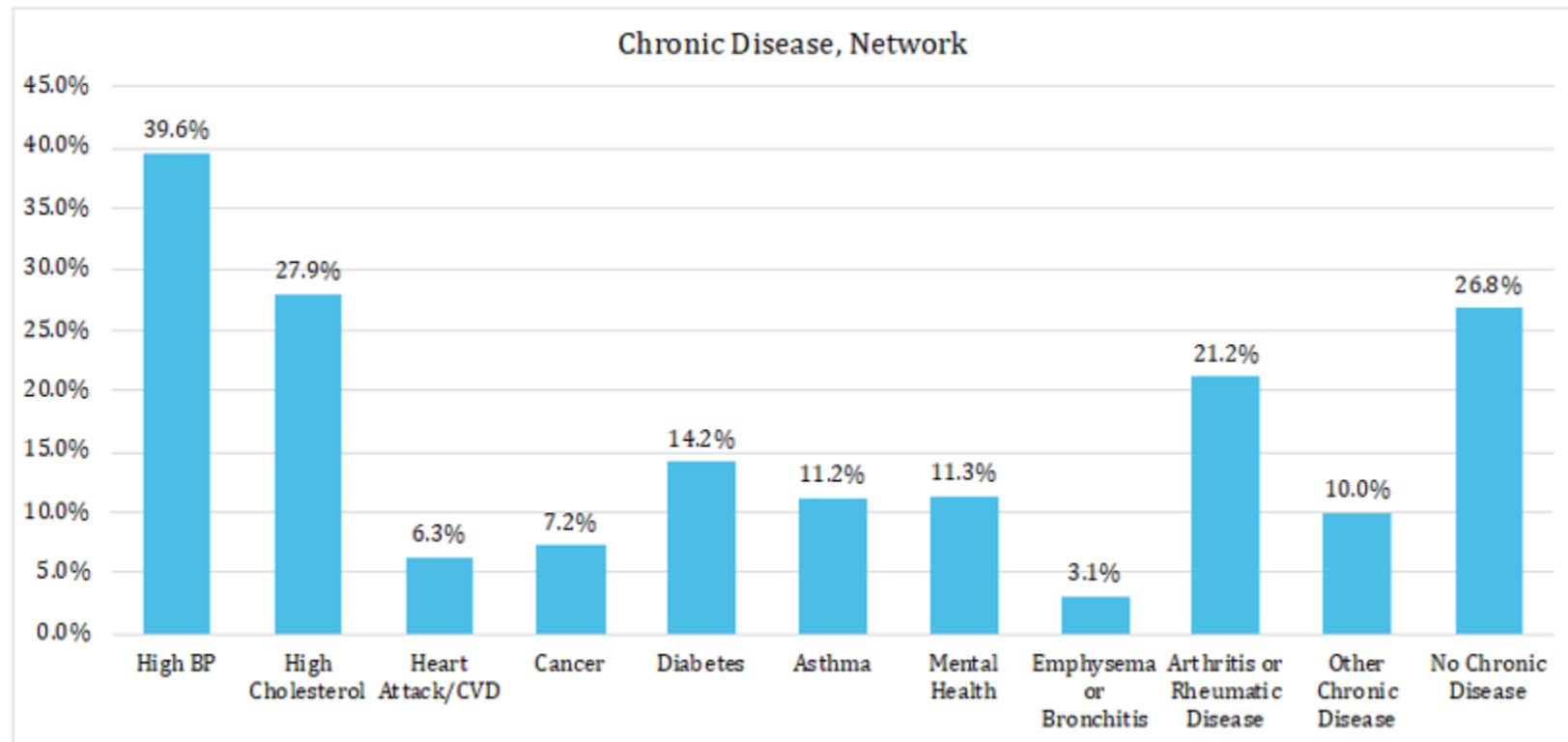
<sup>283</sup> <https://coronavirus.jhu.edu/map.html>


<sup>284</sup> <https://www.health.pa.gov/topics/disease/coronavirus/Pages/Cases.aspx>

<sup>285</sup> [https://www.nj.gov/health/cd/topics/covid2019\\_dashboard.shtml](https://www.nj.gov/health/cd/topics/covid2019_dashboard.shtml)

## ..... Chronic Disease .....

A 2020 study, analyzing data from the 2018 National Health Interview Survey (NHIS) concluded that more than half of all U.S. adults have at least one chronic disease, and more than 1 in 4 have multiple chronic conditions.<sup>286</sup> Among the most common chronic conditions, diabetes, hypertension, and hyperlipidemia frequently plague U.S. adults leading to a myriad of health complications and a heavy burden on the healthcare system. The CHNA survey results conveyed that the highest percentage of respondents in the service area have high blood pressure (39.6%), followed by high cholesterol (27.9%), arthritis or a rheumatic disease (21.2%), and 26.8% of respondents reported no to have any chronic diseases. For respondents age 45 and older, only 21.2% reported they did not have a chronic disease of any kind.



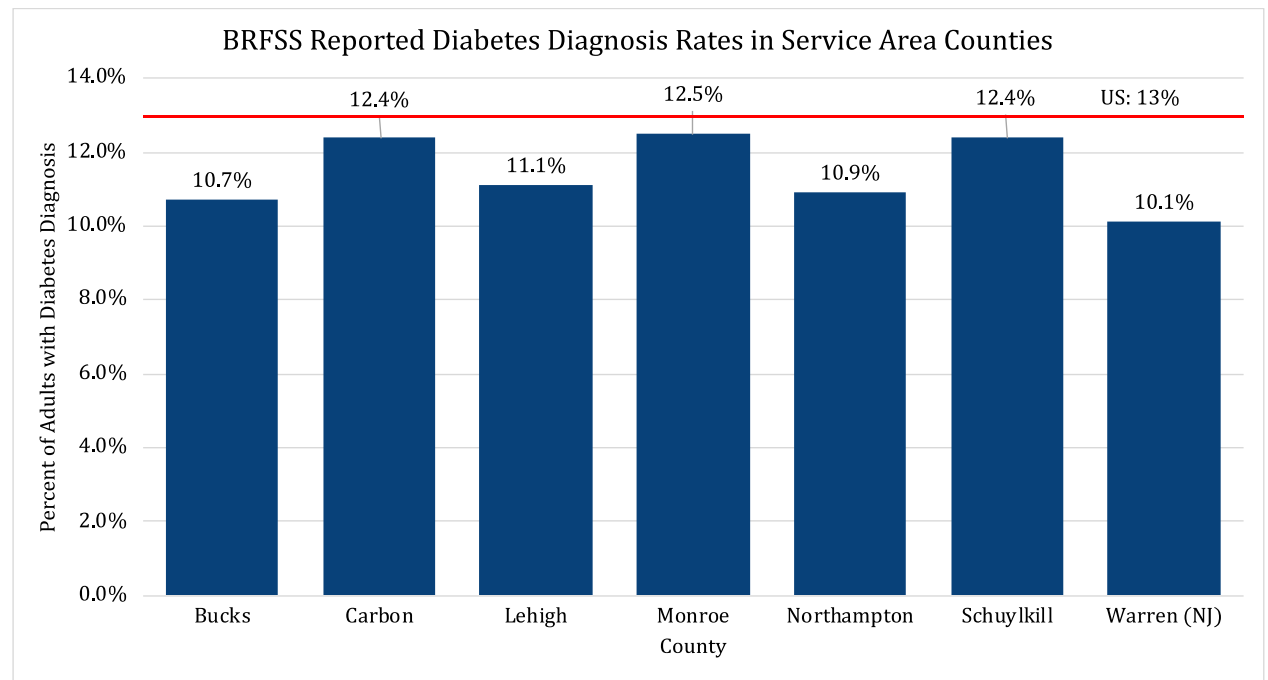
 *Figure 86*

<sup>286</sup> [https://www.cdc.gov/pcd/issues/2020/20\\_0130.htm](https://www.cdc.gov/pcd/issues/2020/20_0130.htm)

## ..... Diabetes .....

According to the 2020 CDC National Diabetes Statistics Report, an estimated 34.2 million Americans (13.0% of all U.S. adults) have diabetes, with 90-95% of all diagnoses classified as type 2 diabetes. The undiagnosed type 2 diabetes rate was 21.4%. In contrast to the current rates, the prevalence of diabetes was between 1.5 to 6.4% in 2004. Type 2 diabetes, once called adult-onset diabetes, because it was previously a rare diagnosis in youth, has increased significantly in ages 10-19 since 2002.<sup>287</sup> In addition, 88 million U.S. adults (34.5% of all U.S. adults) are prediabetic. Among them, 89.0% were either overweight or obese. In 2016, diabetes was responsible for 16 million ER visits and 7.8 million hospital discharges nationally. According to the Pennsylvania Vital Statistics report (2018), an average of 10 people die of diabetes each day making it the 7th leading cause of death in the state.<sup>288</sup>

Disparities in diabetes exist among racial and ethnic groups: 15.1% of American Indian/Alaska Natives are diagnosed with diabetes—the highest rate among any racial or ethnic group, followed by 12.7% of Hispanics and 12.1% of Black non-Hispanics. Asians and White non-Hispanics have the lowest prevalence of diabetes at 8.0% and 7.4% respectively.<sup>289</sup> These disparities also exist on an educational level: those with less than a high school education have a diabetes prevalence of 12.6%, while those with more than high school education have a diabetes prevalence of 7.2%. Warren county has the lowest percentage of adults with diabetes and Monroe county has the highest percentage of adults with diabetes in our service area (Figure 87).



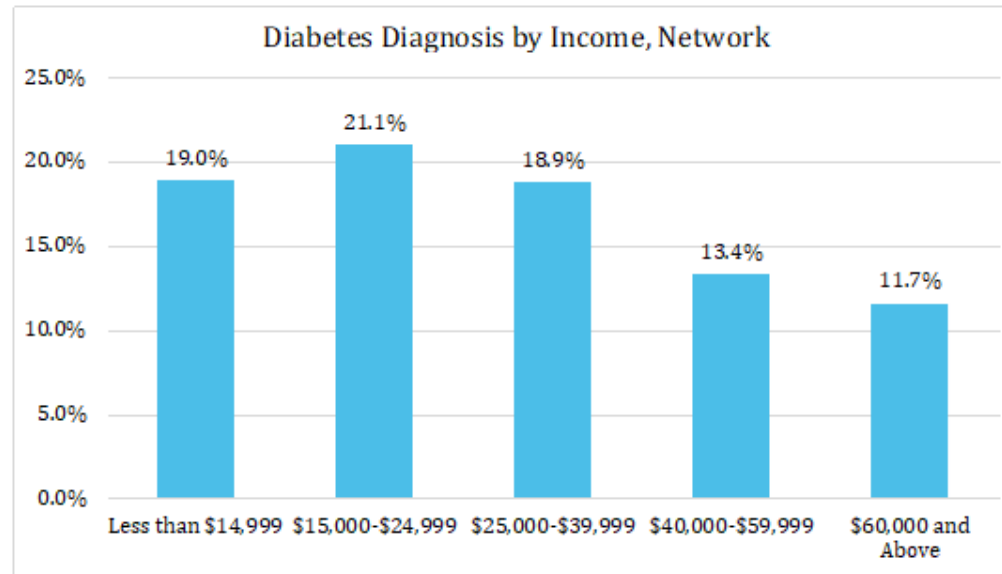
*Figure 87*


<sup>287</sup> <https://www.cdc.gov/diabetes/library/features/diabetes-stat-report.html>

<sup>288</sup> <https://www.health.pa.gov/topics/HealthStatistics/VitalStatistics/PAVitalStatistics/Pages/vital-statistics-report.aspx>

<sup>289</sup> <https://www.cdc.gov/diabetes/disparities.html>

From our previous question of chronic disease presence, we know that 14.2% of respondents in the network have diabetes. Our survey also looks at the relationship between diabetes and income as it can give more insight into the contributing factors to incidence rates. In the network, the \$15,000-\$24,999 income bracket has the highest percentage of respondents with diabetes (21.1%) and the \$60,000 and above bracket has the lowest (11.7%).



 *Figure 88*

## ..... Hypertension .....

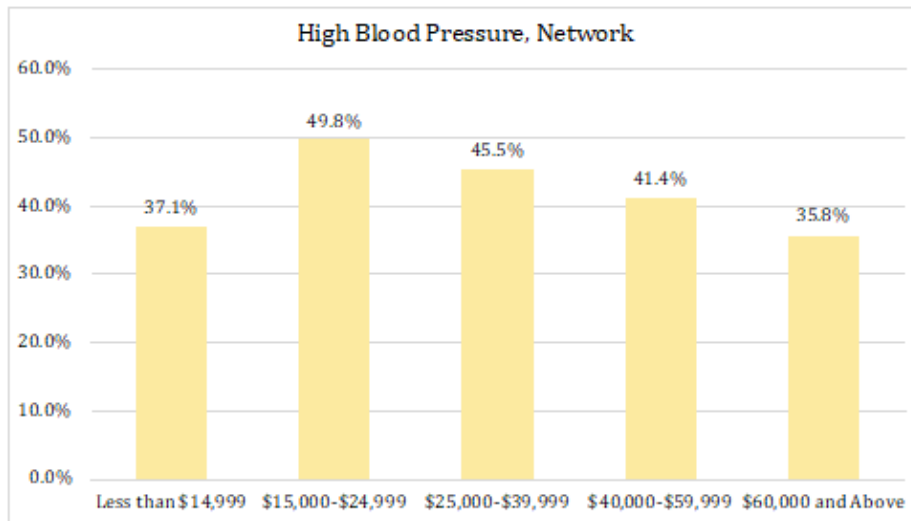
Hypertension is defined as having a blood pressure that is at or above a systolic value of 130 mm Hg, which measures the pressure in your arteries when your heart beats,<sup>290</sup> and a diastolic value of 80 mm Hg, which measures the pressure in your arteries when your heart rests between beats. In comparison, a normal blood pressure is less than 120/80 mmHg. Data regarding hypertension also includes individuals who are taking medications for hypertension that would otherwise be uncontrolled. According to the CDC (2019), the crude prevalence of hypertension in U.S. adults aged 20 and older is 49.6%. These numbers are even more alarming because they are likely underreported. According to research cited by the CDC, it is estimated that 1 in 5 adults with high blood pressure do not know they have this condition.<sup>291</sup>


<sup>290</sup> <https://www.cdc.gov/bloodpressure/about.htm>

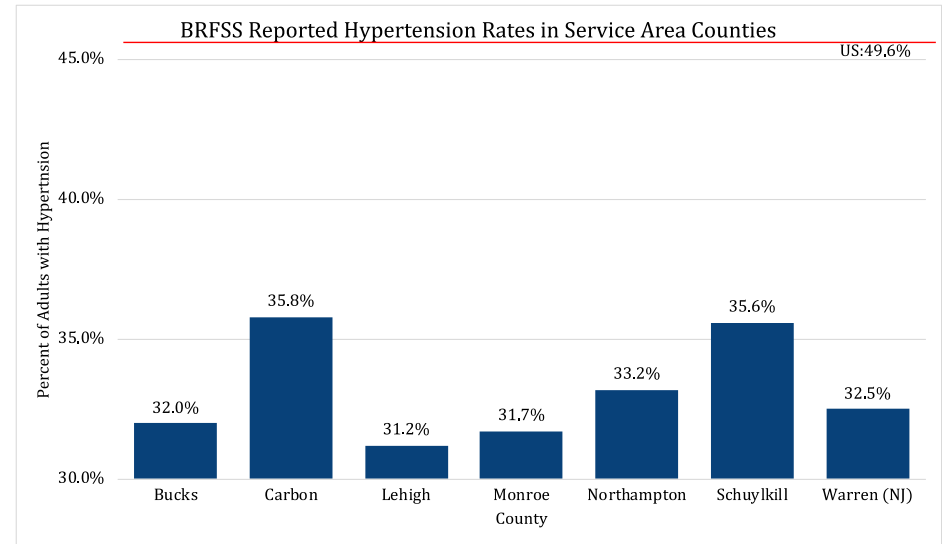
<sup>291</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0749379710002072?via%3Dihub>

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Poorly controlled hypertension is a serious condition that can affect many bodily systems over time including the heart, kidneys, vision, and blood vessels. According to the American Heart Association, hypertension can increase risk for heart attack, stroke, and kidney failure among other complications.<sup>292</sup> Due to the serious impacts it can have on health, hypertension contributes to an increased burden on our healthcare system, with hypertension accounting for 1.1 million emergency department visits each year in the U.S. alone.<sup>293</sup> The U.S. hypertension rate is much higher than in our service area counties, but Carbon county has the highest rate (35.8%) and Lehigh county has the lowest rate (31.2%).



 *Figure 89*



*Figure 90*

In the SLUHN network, 39.6% of CHNA survey respondents have been diagnosed with high blood pressure. When compared to income, the greatest number of respondents who have high blood pressure have a household income between \$15,000-\$24,999. The least number of respondents with a high blood pressure diagnosis have a household income of \$60,000 and above. While there are disparities in diagnosis by income, it is important to note that all income categories are high.

<sup>292</sup> <https://www.heart.org/en/health-topics/high-blood-pressure/health-threats-from-high-blood-pressure>

<sup>293</sup> <https://www.cdc.gov/nchs/fastats/hypertension.htm>

## ..... Hyperlipidemia .....

Hyperlipidemia, or high cholesterol, is defined as a total serum cholesterol at or above 240 mg/dL, which stands for milligrams per deciliter and is a unit of measure that shows the concentration of a substance in a fluid. Data regarding hyperlipidemia also includes individuals who are taking medications to control their high cholesterol.

According to the 2019 CDC report, 26.7% of U.S. adults aged 20 and over have been diagnosed with hyperlipidemia; more than 1 in 4 U.S. adults. This has been steadily increasing in most recent decades, with only 1 in 5 U.S. adults having hyperlipidemia in the 1995 CDC report.<sup>294</sup> High cholesterol can lead to plaque buildup in one's blood vessels, which can lead to increased risk of carotid artery disease, coronary heart disease, heart attack and stroke among other complications.<sup>295</sup> In addition to adults, 7.4% of all U.S. children and adolescents have high total cholesterol. The risk of high total cholesterol significantly increases with a risk factor of obesity, and 6.3% of children 6-19 years old have high cholesterol at a healthy weight compared to 11.6% at a weight that is considered obese.<sup>296</sup> Carbon county has the highest rates of high cholesterol (37.4%) and Northampton county has the lowest (33.3%).

In our network, 27.9% of respondents have high cholesterol. When looking at high cholesterol by income, we see those respondents whose household income is \$15,000-\$24,999 have the highest rates (31.1%) and respondents whose household income is less than \$14,999 have the lowest rates (26.5%).

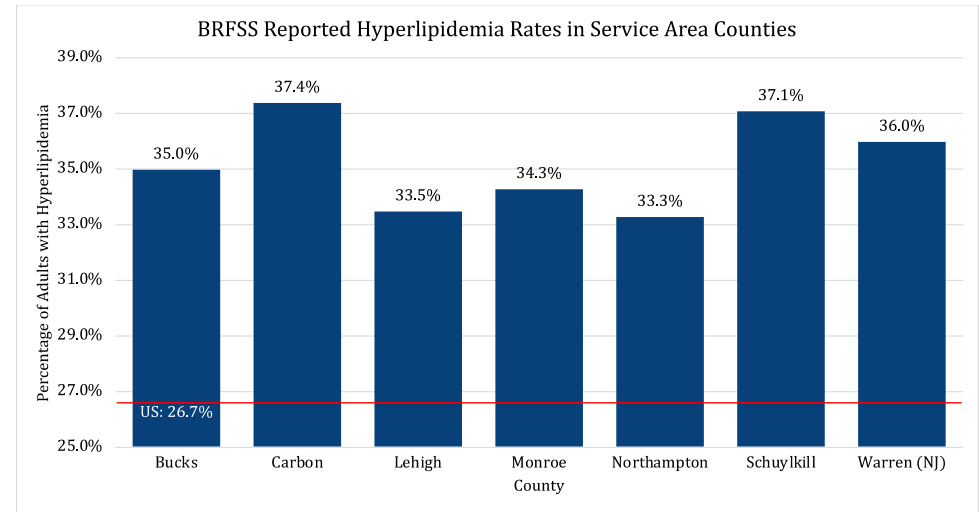


Figure 91

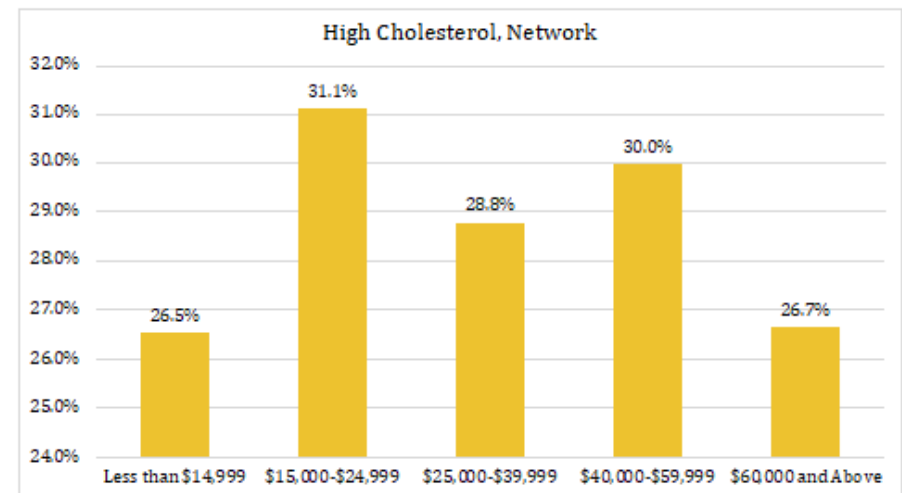


Figure 92

<sup>294</sup> <https://www.cdc.gov/nchs/fastats/cholesterol.htm>

<sup>295</sup> <https://www.nhlbi.nih.gov/health-topics/blood-cholesterol>

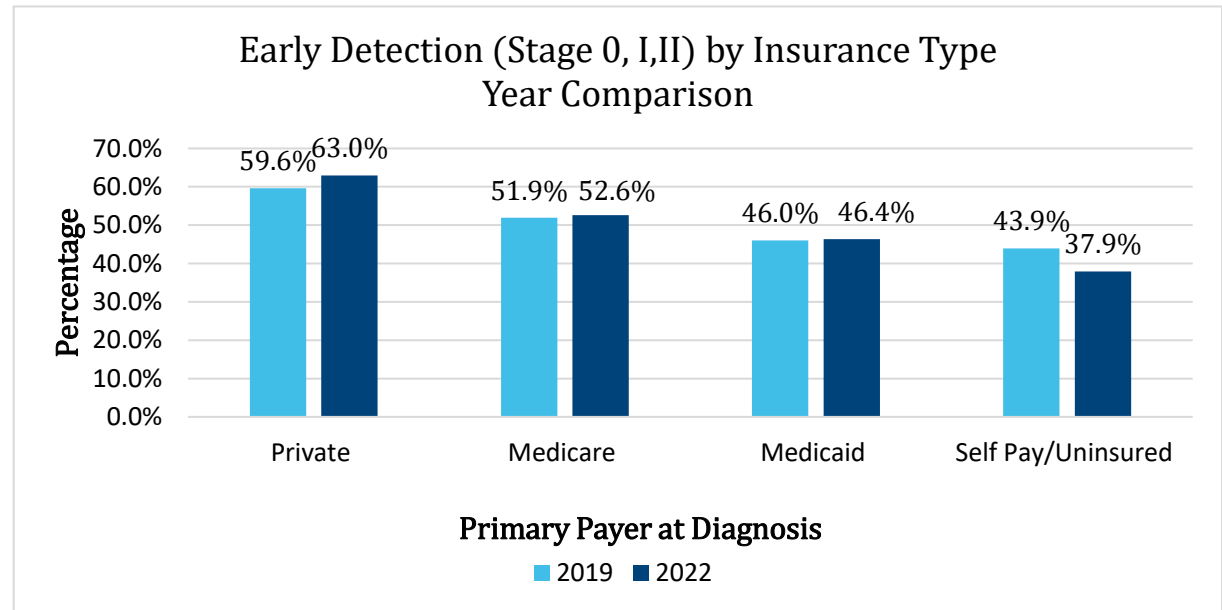
<sup>296</sup> <https://www.cdc.gov/nchs/products/databriefs/db228.htm>



## ..... Cancer .....

In the U.S., 1.7 million people are diagnosed with cancer each year and the estimated health care cost of cancer (e.g., diagnosis, care, treatment) is \$174 billion.<sup>297</sup> Cancer is the 2<sup>nd</sup> leading cause of death nationally with over half a million deaths each year.<sup>298</sup> According to the National Cancer Institute, cancer incidence in the U.S. is 448.7 per 100,000.<sup>299</sup> Pennsylvania and New Jersey have a cancer incidence of 484.6 per 100,000 and 485.9 per 100,000 respectively—both of which fall higher than the U.S. overall. There are certain risk factors that increase the risk of getting cancer, including obesity, smoking, secondhand smoke exposure, exposure to sun and tanning beds, excessive alcohol use, and some infectious diseases. These health behaviors have been discussed in earlier sections of this document and are also discussed in detail, as they relate to cancer, in the St. Luke's Cancer Needs Assessment (CNA). The CNA helps set the strategy around cancer outreach and education in our communities.

In addition to certain health behaviors, access to care can play a significant role in cancer screening, diagnosis, and mortality rates. Early vs. late-stage detection can impact cancer mortality, and we observe that uninsured patients and Medicaid recipients have a much lower rate of early detection than their privately insured counterparts. For many cancers, Black men and women have the highest mortality rates.<sup>300</sup> For example, Black women have a 40% higher chance of mortality from breast cancer than White women despite comparable levels of incidence.<sup>301</sup> Black men are twice as likely to die of prostate cancer than White men.



*Figure 93*

<sup>297</sup> <https://www.cdc.gov/chronicdisease/about/costs/index.htm>

<sup>298</sup> <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/cancer.htm>

<sup>299</sup> National Cancer Institute's State Cancer Profiles, 2013-2017

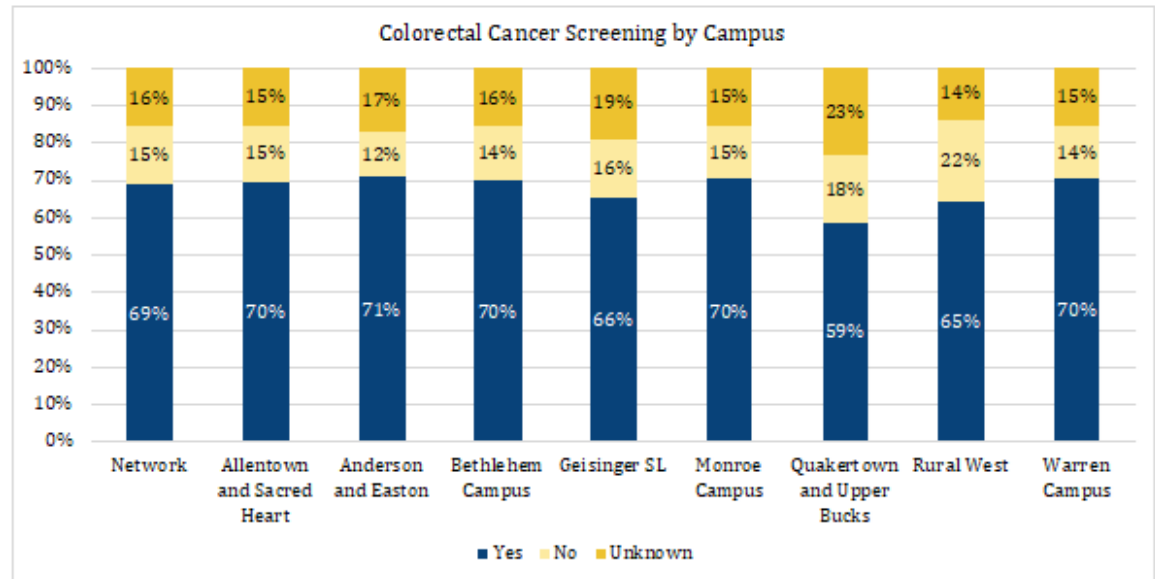
<sup>300</sup> <https://www.cancer.gov/about-cancer/understanding/disparities>


<sup>301</sup> <https://www.cancer.org/research/cancer-facts-statistics/breast-cancer-facts-figures.html>

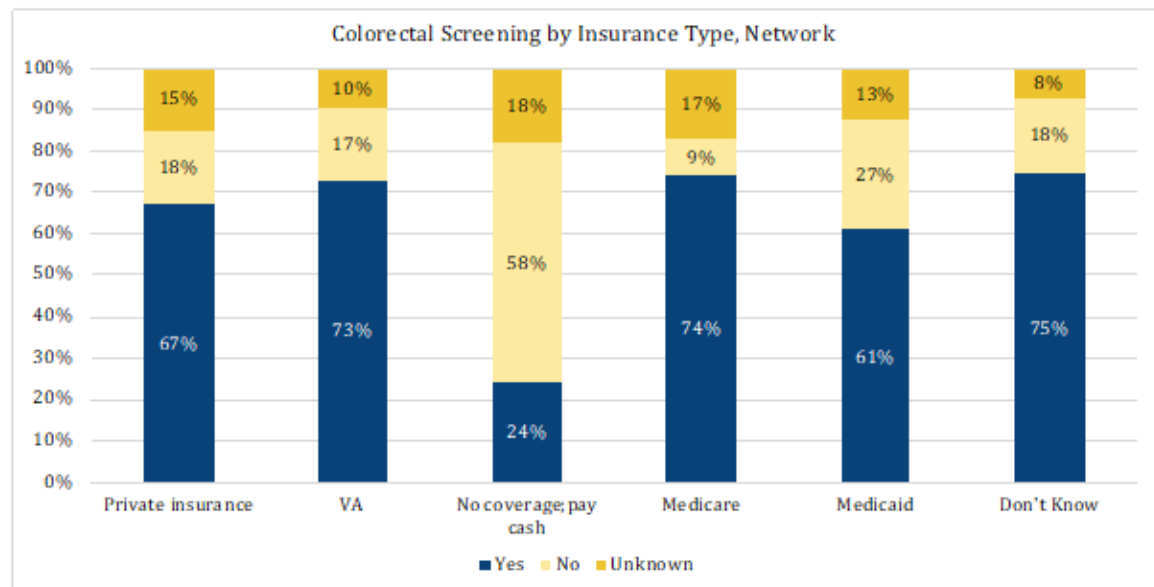
Educational attainment, regardless of race or ethnicity, also appears to play a role in cancer mortality for certain cancers.


In order to be considered up to date with screenings for this analysis, respondents must have had a screening date fall in the recommended time frame for their screening type and age (Figure 97). If a respondent was missing an answer to one of the questions, their screening status was marked "Unknown." Our survey asked respondents ages 50-74 to indicate their most recent colon cancer screening. Of all network respondents, 69% have been screened, 15% have not been screened, and 16% do not know.

The CHNA survey also assesses colon cancer screening by insurance type to uncover any disparities and perhaps see if insurance is a barrier to cancer screenings. A large percentage (58%) of respondents ages 50-74 who do not have insurance have never been screened for colon cancer. Since colon cancer can be prevented or caught early with screenings, this is a large gap in care. Additionally, 27% of respondents who use Medicaid have never been screened.

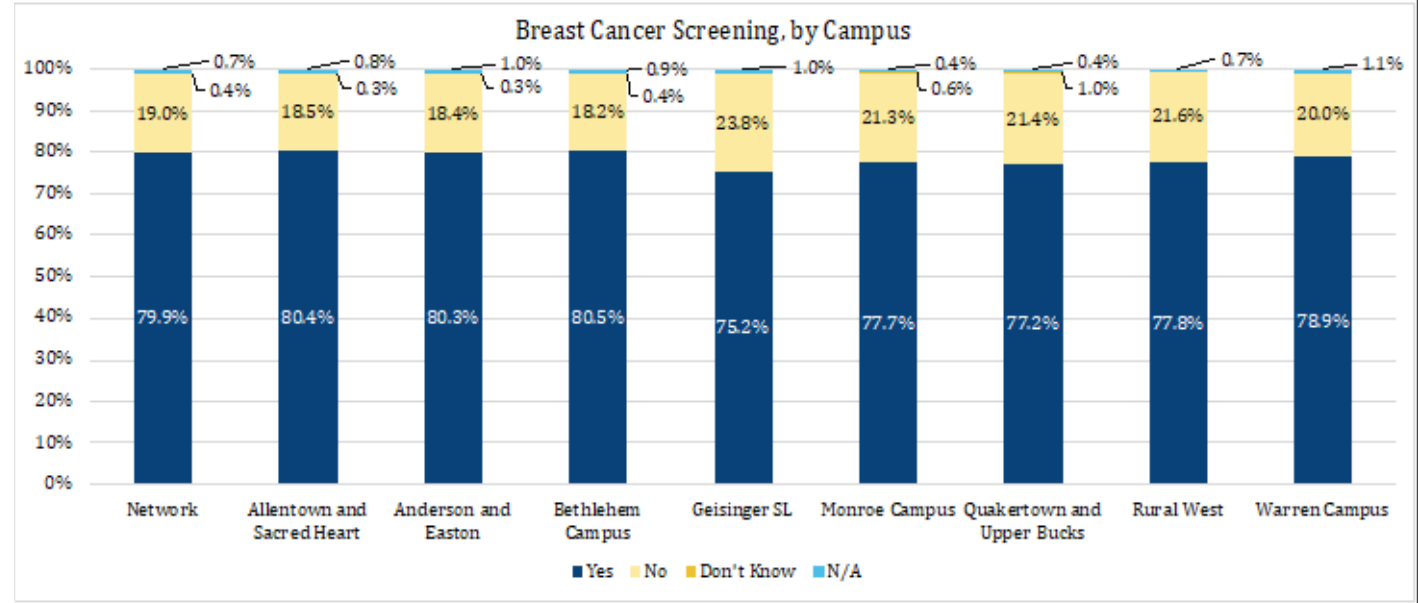


 *Figure 94*



 *Figure 95*

The CHNA survey also asks respondents about breast cancer screening and compares breast cancer screenings by insurance. In the network, 79.9% of respondents ages 40-74 years old had a mammogram, 19% have not, 0.4% do not know, and 0.7% was not applicable. When looking at breast cancer screening by insurance, only 26.4% of respondents who do not have insurance had a mammogram, which is drastically lower than any other type of insurance.



#### Time Frame for Colorectal Screening based on Screening Type

Colonoscopy	Within 10 years
Sigmoidoscopy	Within 5 years
Stool Blood Test (i.e.: FIT/FOBT)	Within 1 year

Figure 97

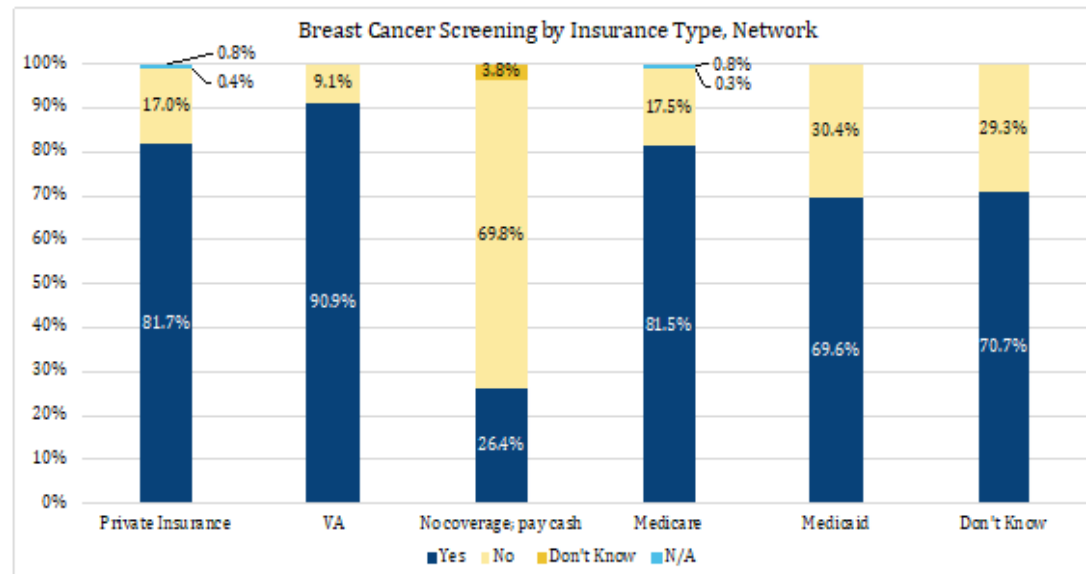
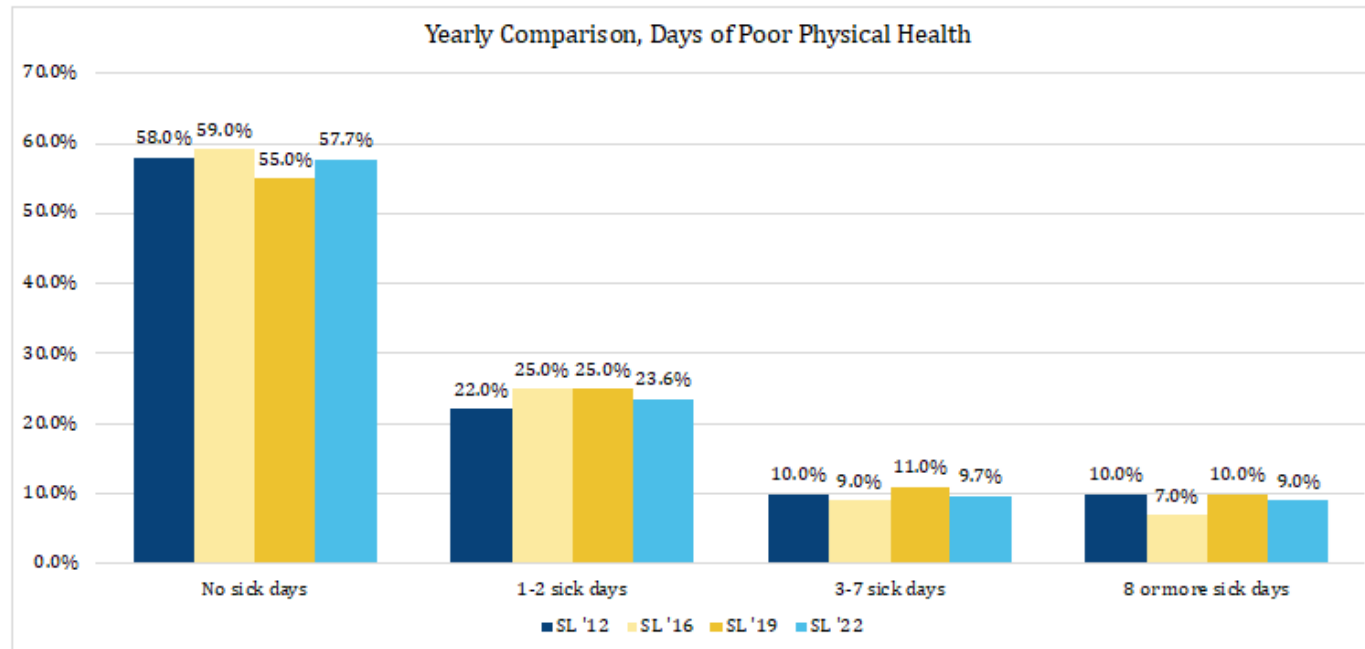



Figure 98

## ..... Days of Poor Physical Health .....

According to Healthy People 2030, daily physical activity can prevent disease, disability, injury, and premature death.<sup>302</sup> Robert Wood Johnson County Health Rankings assesses the number of poor physical health days people have because it can be a predictor for negative outcomes associated with health such as unemployment, poverty, and mortality. The poor physical health days question is measured by the average number of physical unhealthy days in the past 30 days. In New Jersey, the average is 3.7 unhealthy days and in Warren county the average is 3.9 unhealthy days. In Pennsylvania, the average is 4.0 unhealthy days, with Schuylkill county as the highest (4.5) and Bucks county has the lowest (3.1). The majority of respondents indicated no sick physically unhealthy days in the past 30 days (57.7%), 23.6% indicated 1-2 sick days, 9.7% indicated 3-7 sick days, and 9% indicated 8 or more sick days in the past 30 days.

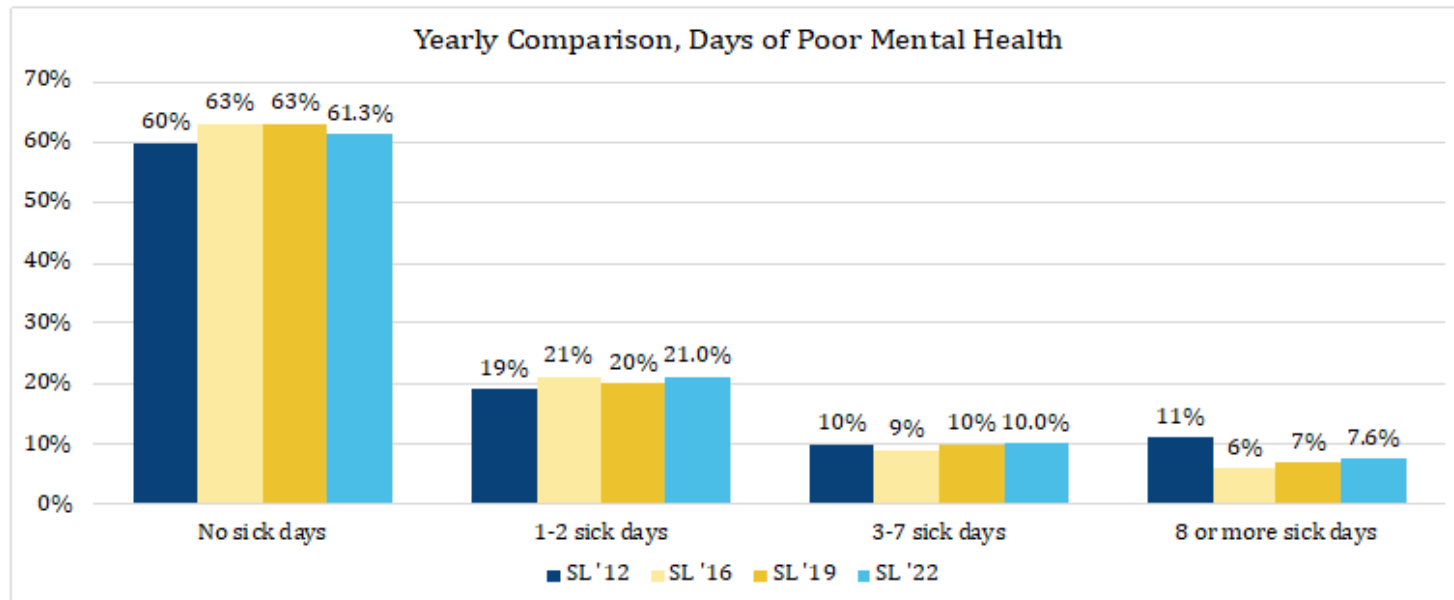



 Figure 99

<sup>302</sup> <https://health.gov/healthypeople/objectives-and-data/browse-objectives/physical-activity>

## ..... Days of Poor Mental Health .....

Poor mental health days is important to assess because it can be a good indicator for overall well-being. The Robert Wood Johnson County Health Rankings assess poor mental health days by the average number of mentally unhealthy days in the past 30 days.<sup>303</sup> The poor mental health days question is measured by the average number of mentally unhealthy days in the past 30 days. The New Jersey overall average is 3.8 unhealthy days and Warren county's is 4.6 unhealthy days. In Pennsylvania, the overall average is 4.7 unhealthy days, with Schuylkill county as the highest (5.2) and Bucks as the lowest (4.4). The majority of respondents indicated no mentally unhealthy days in the past 30 days (61.3%), 21% indicated 1-2 sick days, 10% indicated 3-7 sick days, and 7.6% indicated 8 or more sick days in the past 30 days. These rates fare similar to previous years.



 *Figure 100*

<sup>303</sup> <https://www.countyhealthrankings.org/app/new-jersey/2021/measure/outcomes/42/description>

## ..... Unintentional Injury .....

In 2019, the United States had 52.7 unintentional injury deaths per 100,000 population, which was the third ranked cause of death.<sup>304</sup> In 2018, there were 24.5 million visits to the emergency room for unintentional injuries and in 2016, there were 39.5 million visits to physician offices for unintentional injuries.<sup>305</sup> Unintentional injuries are unplanned and preventable when using proper safety precautions; they are also a substantial contributor to premature death. When broken down further for the United States, there were 12 per 100,000 population unintentional fall deaths, 11.5 per 100,000 population motor vehicle traffic deaths, and 20 per 100,000 population unintentional poisoning deaths.<sup>306</sup> In Pennsylvania, there were 67.1 unintentional deaths per 100,000 and 52.4 in New Jersey.<sup>307</sup> Because unintentional injury deaths are so prominent, Healthy People 2030 has set objectives for injury deaths, some of which are to reduce unintentional injury deaths, reduce deaths involving opioids, reduce emergency department visits for non-fatal injuries and unintentional injuries.

Figure 101

Unintentional Injury Deaths 2019 via CDC Wonder	
Region	Rate per 100,000 population
Bucks	62.2
Carbon	90.4
Lehigh	65.5
Monroe	60.5
Northampton	56.0
Schuylkill	63.7
Warren (NJ)	43.7
PA	67.1
NJ	52.4
US	52.7

## COVID-19 Impact

### ..... COVID-19 .....

In December 2019, the SARS-CoV-2 virus (i.e., COVID-19), was discovered in Wuhan, China and quickly spread across the world. COVID-19 spreads when an infected person breathes out droplets that contain the virus, which can then be breathed in by other people or land on their eyes, nose, and mouth, resulting in quick transmission from person to person. On March 11, 2020, the World Health Organization declared

<sup>304</sup> Wonder.cdc.gov

<sup>305</sup> <https://www.cdc.gov/nchs/fastats/accidental-injury.htm>

<sup>306</sup> Wonder.cdc.gov

<sup>307</sup> wisqars.cdc.gov/

COVID-19 a pandemic, resulting in worldwide shutdowns of workplaces, schools, and stores. To stop the transmission of the virus, the CDC recommended wearing a mask indoors, social distancing at least 6 feet away from other people, and to get vaccinated.<sup>308</sup> Many pharmaceutical companies worked on vaccines to fight the virus and multiple vaccines were approved by the Food and Drug Administration (FDA) across all age groups and were readily available to everyone in the U.S. On July 27, 2021, the CDC recommended stricter guidelines in response to the Delta variant, which showed to be more contagious and caused more severe illness compared to previous COVID-19 strains. In late 2021, the Omicron variant emerged, proving to be more contagious than the original COVID-19, but not necessarily more deadly.<sup>309</sup> The most common symptoms of COVID-19 include fever or chills, cough, shortness of breath, headache, and new loss of taste or smell.

From March 2020 to December 2020, there were 234,296 total cases and 9,024 total deaths in Pennsylvania, as well as 1,829 total cases and 158 total deaths in Warren County, New Jersey. The pandemic greatly impacted every county in our service area. Initially, there was a large peak of cases in our service area during April and early-May of 2020. Most counties experienced substantial community transmission (defined as more than 100 new cases per 100,000 in the last 7 days). During the later spring and summer months of 2020, new cases and deaths declined dramatically. However, as predicted by most health experts, a second-wave appeared during the Fall of 2020. All counties sky-rocketed into substantial transmission, urban and rural areas alike.

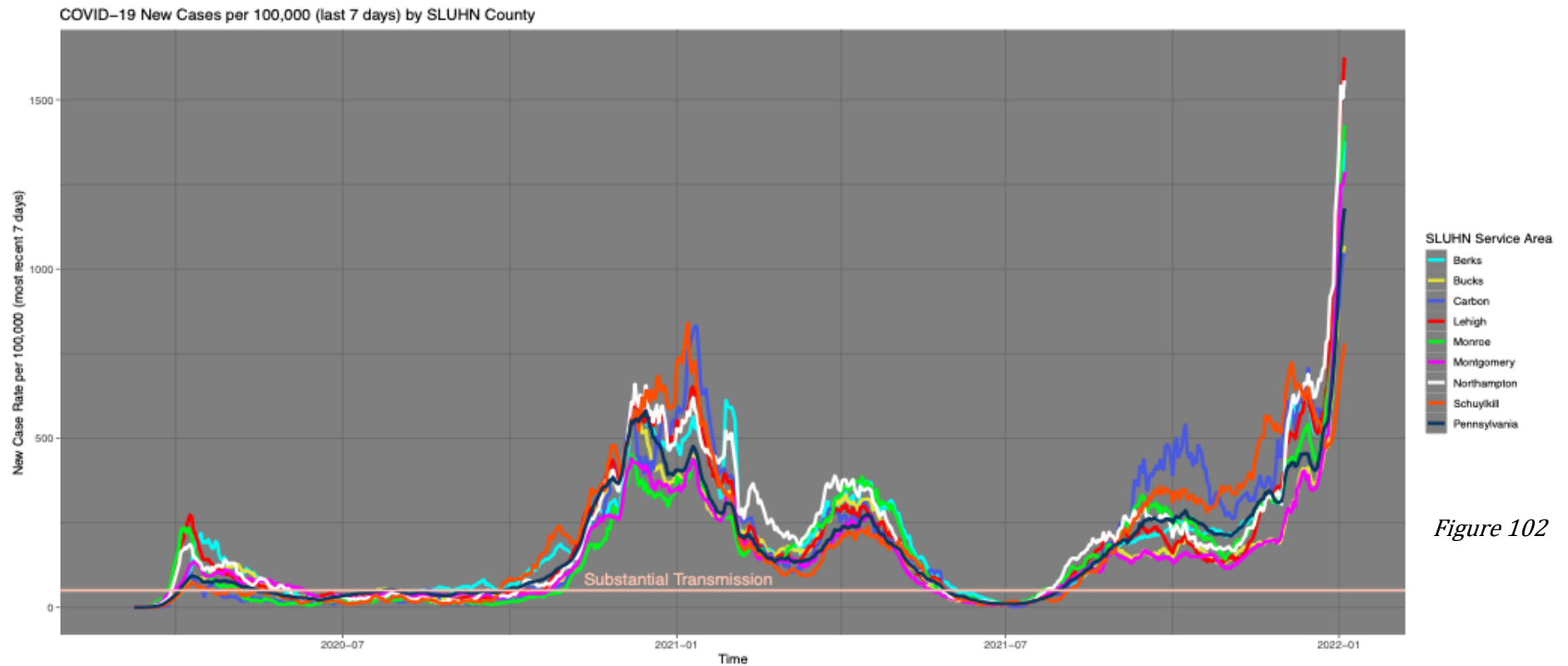
During the first wave, Lehigh county was among the counties with the highest level of community transmission. Early in the second-wave, Schuylkill county experienced a large surge in cases. At this time, many school districts were uncertain of how to respond to the uptake in cases. Recommendations from the PA and NJ Departments of Health proposed a full remote learning model for communities experiencing substantial transmission and a hybrid learning model for communities experiencing moderate transmission—these recommendations were not requirements and some school districts chose to adopt them, while others did not. Disparities between race and COVID-19 are well established. According to the COVID Tracking Project, 20% of COVID-19 deaths are Black Americans, though they make up only 11% of the population; 9% of deaths are among the Hispanic population despite being only 4% of the total population. Challenges have arisen in tracking these disparities in our service area. Large portions of race/ethnicity data have gone unreported by Pennsylvania for long periods of time. As of November 2020, only 57% of race data and 34% of ethnicity data were released by Pennsylvania.

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<sup>308</sup> <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>

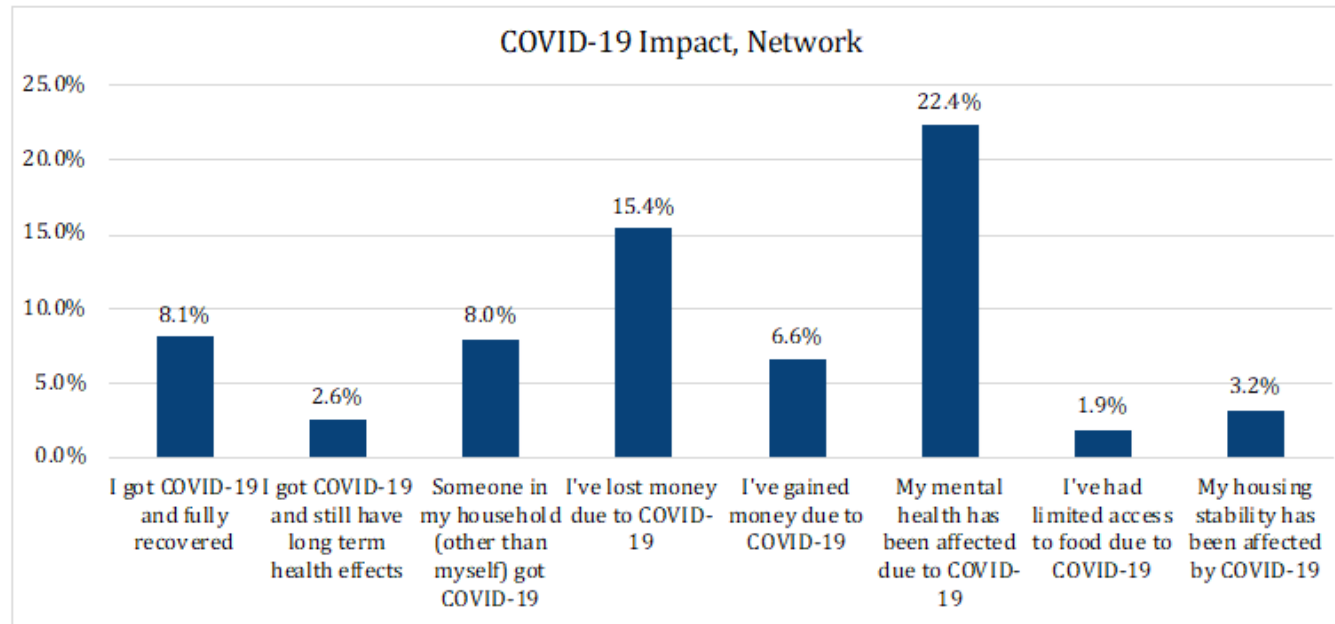
<sup>309</sup> <https://www.cdc.gov/coronavirus/2019-ncov/variants/omicron-variant.html>


## 2022 St. Luke's University Health Network Community Health Needs Assessment



To get an understanding as to how COVID-19 impacted the St. Luke's service areas, we asked respondents to indicate if any of the categories in Figure 103 applied to them. Of those who indicated they had been impacted by COVID-19, the highest number of respondents say their mental health has been affected (22.4%), 15.4% of respondents say they have lost money due to the pandemic, 8.1% say they got COVID-19 and fully recovered, while 8% say someone else in their household got COVID-19. However, 2.6% say they got COVID-19 and are still having long term effects; 1.9% have had limited food access, 3.2% have had housing instability due to the pandemic, and 6.6% have gained money due to the pandemic.





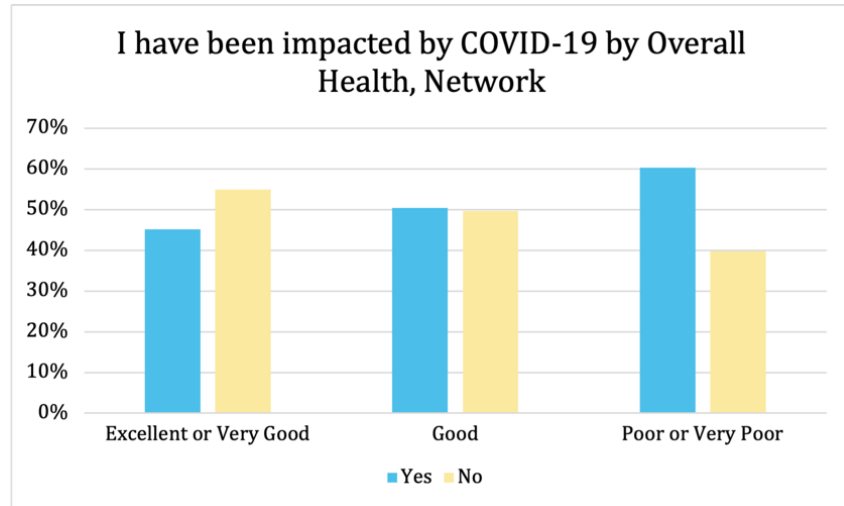
 *Figure 103*


## ..... Overall Health and COVID-19 .....

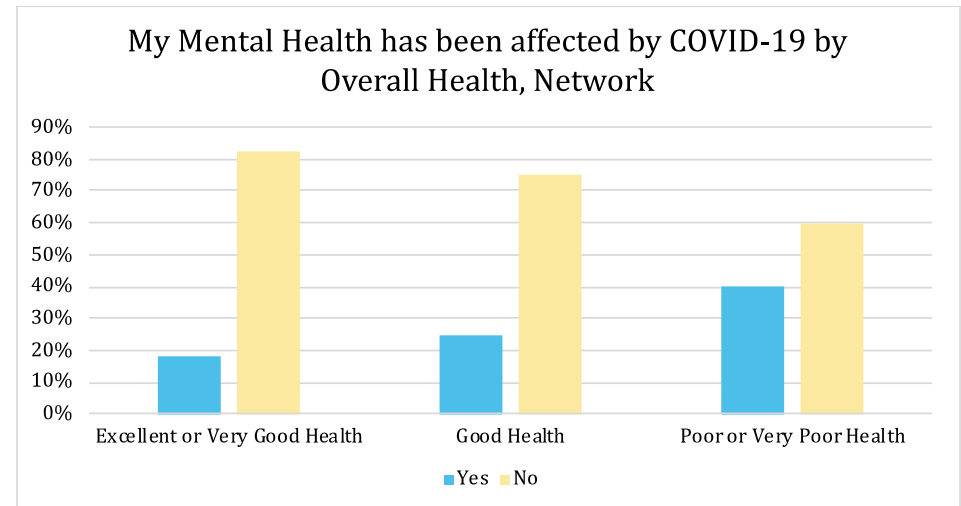
Overall health status can be an indicator of the ways COVID-19 affects individuals. Poor health, including cancer, illness, and chronic conditions, can make some individuals more susceptible to complications, hospitalization, and death compared to those in overall good health.<sup>310</sup> Network survey respondents that reported excellent/very good health were less likely (45%) to report being impacted by COVID-19 compared to respondents reporting good health (50%) or poor/very poor health (60%). This is also the case when reporting the impacts of COVID-19 on mental health, with 18% of respondents in excellent/very good health, 25% in good health, and 40% in poor/very poor health reporting mental health issues due to the pandemic. The relationship between overall perceived health and the impacts of COVID-19 must be considered when analyzing the impact of the pandemic on the health of our already vulnerable populations.


<sup>310</sup> <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html>

## 2022 St. Luke's University Health Network Community Health Needs Assessment



 *Figure 104*



 *Figure 105*


## ..... Gender and COVID-19 .....

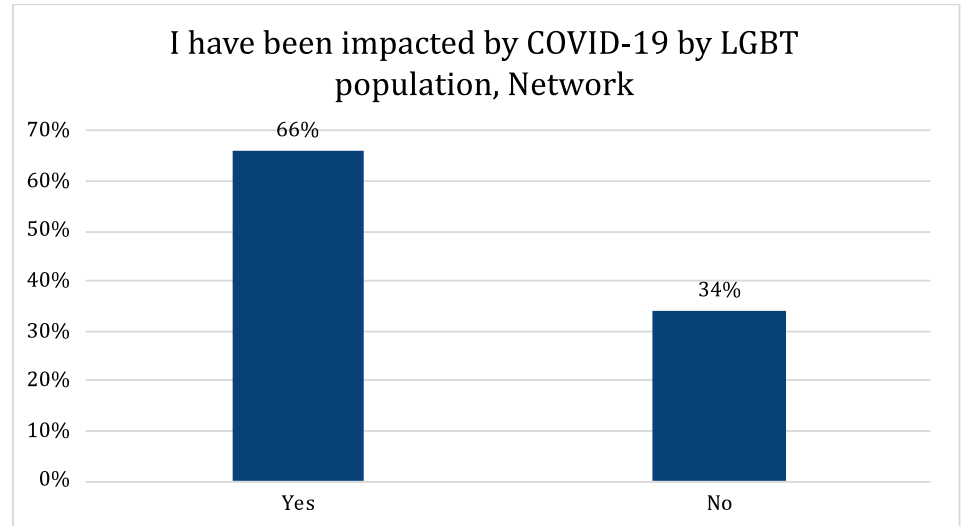
When assessing the impact of COVID-19 based on gender (i.e., sex assigned at birth), national findings indicate that women are more likely than men to worry about COVID-19 (e.g., if someone will get sick, financial burdens, children schooling). Almost 4 in 10 women (compared to 3 in 10 men) reported anxiety and other mental health concerns because of the pandemic.<sup>311</sup> Findings from the CHNA survey in the SLUHN service area reported similar outcomes between gender, with female respondents more likely to be impacted by COVID-19 (52%) than males (42%). These findings are further supported when looking at the impact of COVID-19 on mental health, with female respondents having their mental health impacted by COVID-19 at higher rates (26%) than males (16%).

<sup>311</sup> <https://www.kff.org/coronavirus-covid-19/issue-brief/coronavirus-a-look-at-gender-differences-in-awareness-and-actions>

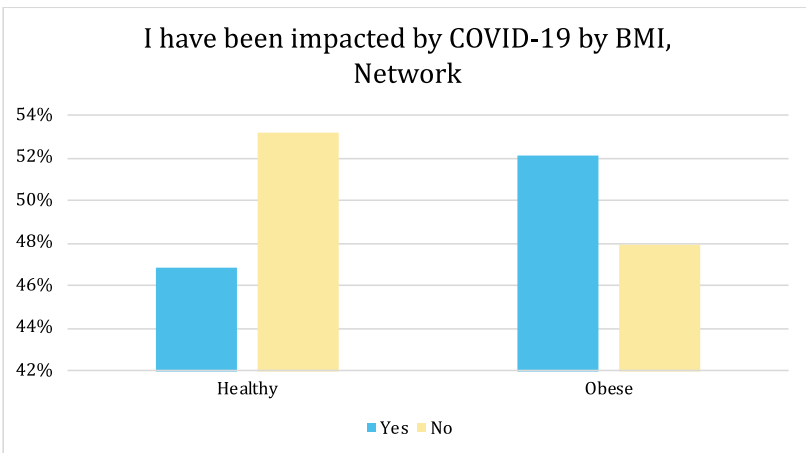
## ..... LGBT and COVID-19 .....


The LGBT population also faces significant challenges related to the COVID-19 pandemic, and nationally the LGBT population faces more economic hardships and mental health issues than their peers.<sup>312</sup> Survey results from the SLUHN service area also reflect these differences, with more than 66% responding that they had been impacted by the pandemic, compared to 48% of non-LGBT respondents. In addition, 47% of the LGBT respondents said their mental health had been affected by the COVID-19 pandemic, compared to 22.4% of total respondents in the network service area.

 **Figure 106**



## ..... Obesity and COVID-19 .....



 **Figure 107**

Obesity puts people at risk for having serious complications and illness from COVID-19 and triples the risk of hospitalization when infected.<sup>313</sup> Obesity is shown to have negative impacts on COVID-19 recovery and outcomes. With a large population of the SLUHN service area struggling with obesity (42%), the survey results reflect the correlation between obesity and COVID-19, with only 47% of respondents with a healthy weight being impacted, compared to 52% of people living with obesity.

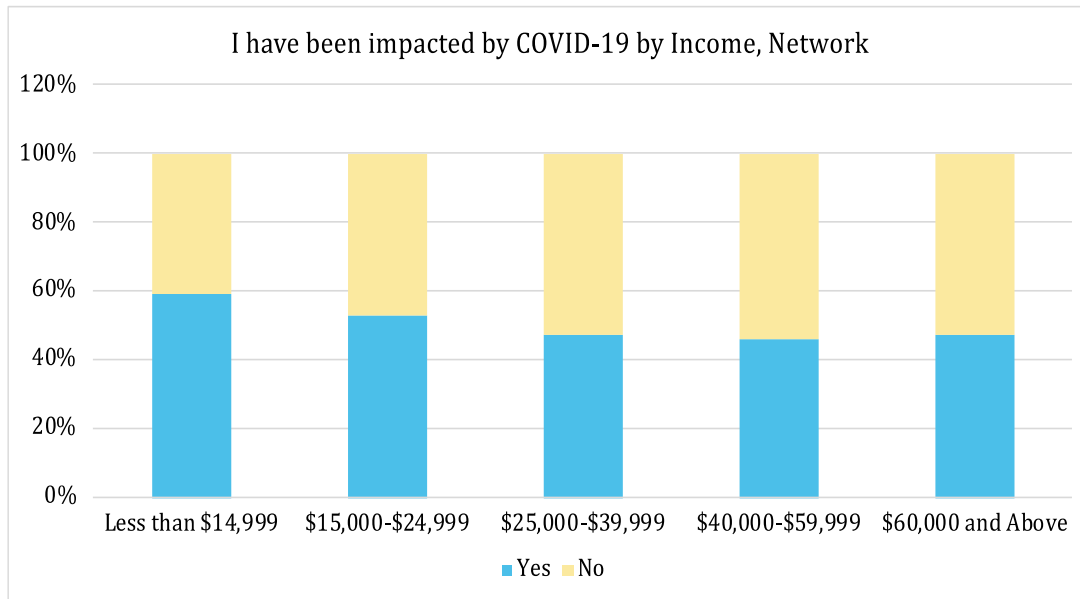
<sup>312</sup> <https://www.kff.org/coronavirus-covid-19/poll-finding/the-impact-of-the-covid-19-pandemic-on-lgbt-people/>

<sup>313</sup> <https://www.cdc.gov/obesity/data/obesity-and-covid-19.html>

## ..... Ethnicity and COVID-19 .....

The COVID-19 pandemic highlights the systemic issues of inequity in the public health sector, and the rates of illness and death are significantly higher for minority populations. While social determinants of health and health equity historically illustrate the marginalization of minority populations, issues such as discrimination, employment, education, and housing all contribute to the discrepancies in rates of illness and access to care during the pandemic.<sup>314</sup> When asked if the COVID-19 pandemic had impacted their lives, 57% of Hispanic respondents said yes, compared to 47% of non-Hispanic respondents.

## ..... Income and COVID-19 .....



 **Figure 108**

Income is often seen as one of the most significant social determinants of health, as financial status either provides or denies access and opportunity to everything from housing to education to healthcare. Income also correlates with the impact of COVID-19 on individuals, and a recent study in the Journal of the American Medical Association found that income and COVID-19 illness and mortality rates are correlated with income.<sup>315</sup> These findings were also seen in the CHNA survey, with 59% of respondents earning \$14,999 or less responding that they were impacted by COVID-19, compared to 46% of respondents making \$60,000 and above.

<sup>314</sup> <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>

<sup>315</sup> <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2779417>

## ..... Social Vulnerability .....

Figure 110 displays the CDC Social Vulnerability Index map, which considers factors such as socioeconomics, housing/transportation, language barriers, etc. in determining how vulnerable a population is to an unforeseen disaster, like COVID-19. Social vulnerability is defined by the CDC as “the resilience of communities (the ability to survive and thrive) when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks.”<sup>316</sup>

Reducing social vulnerability can minimize the impacts of stressors and or disasters, decreasing human suffering and economic loss. The index is scored from 0 (lowest vulnerability) to 1 (highest vulnerability). Bucks county has the lowest overall social vulnerability with only .08 index, while Lehigh county has the highest with .64. Several of these factors are associated with higher rates of COVID-19 infection.<sup>317</sup> Some of the most vulnerable populations during the pandemic crisis included the homeless population, who faced challenges being exposed to COVID-19 and not having private shelter to quarantine.

Social Vulnerability Index					
County	Overall	Socioeconomic	Housing Composition and Disability	Minority Status and Language	Housing Type and Transportation
Berks	0.62	0.48	0.43	0.84	0.62
Bucks	0.08	0.04	0.05	0.63	0.2
Carbon	0.3	0.48	0.32	0.33	0.22
Lehigh	0.64	0.4	0.51	0.87	0.72
Monroe	0.31	0.46	0.15	0.78	0.12
Montgomery	0.17	0.04	0.06	0.73	0.4
Northampton	0.29	0.21	0.13	0.73	0.45
Schuylkill	0.45	0.49	0.57	0.31	0.47
Warren NJ	0.22	0.21	0.06	0.72	0.34

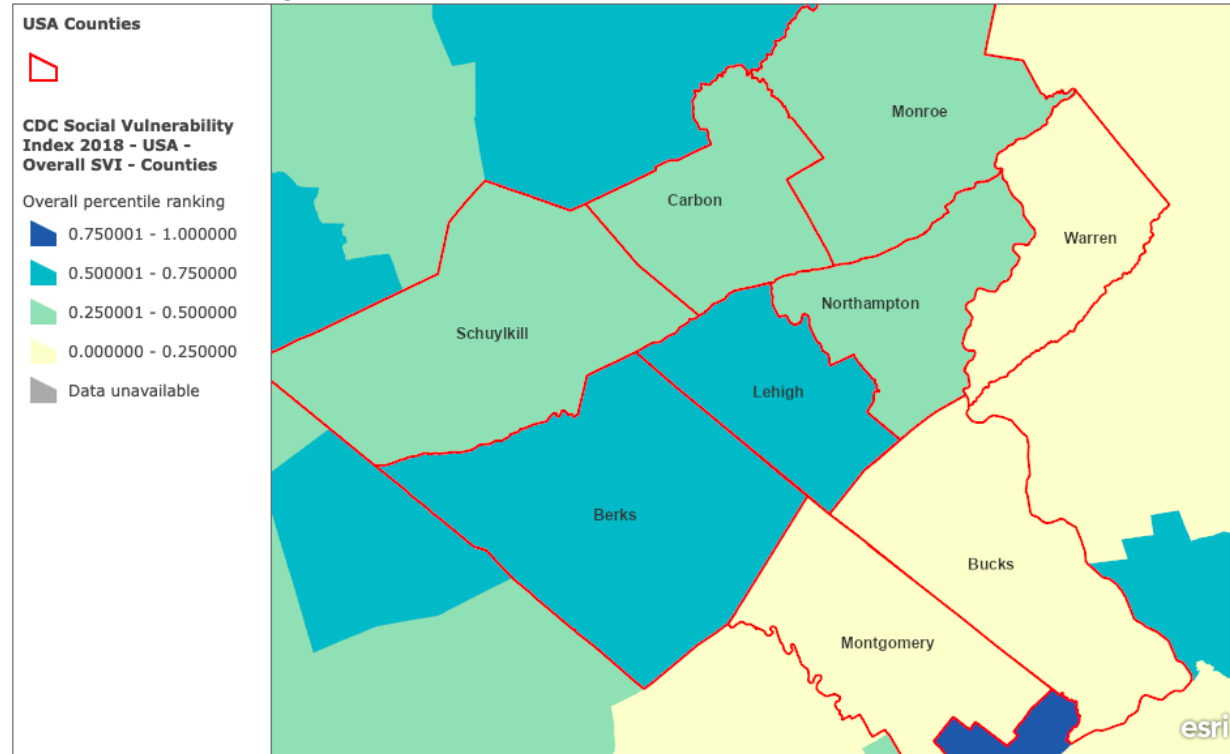
*Figure 109*

Additionally, school-aged children and their parents who had to undertake the momentous task of virtual learning, most for the very first time; those experiencing mental/behavioral health problems or substance use disorder, as challenging times not only exacerbated these issues but exhausted the number of resources available to deal with them. To address these challenges, homeless individuals who tested positive for COVID-19 or needed to quarantine due to exposure were provided temporary housing at hotels; the summer feeding programs for school-aged children continued even as schools went virtual; and, a lot of work has been done to track the number of overdose deaths during the pandemic, even as many were not going to the hospital in fear of contracting the coronavirus.

<sup>316</sup> [https://www.atsdr.cdc.gov/placeandhealth/svi/at-a-glance\\_svi.html](https://www.atsdr.cdc.gov/placeandhealth/svi/at-a-glance_svi.html)

<sup>317</sup> <https://www.sciencedirect.com/science/article/pii/S0749379720302592>

**CDC Social Vulnerability Index: St. Luke's Service Area**



Lehigh County PA, data.pa.gov, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

*Figure 110*

## Conclusion

Through this extensive review of the primary and secondary data, it is evident that there are significant needs to address within our communities. For the upcoming three-year (FY 2023-2026) cycle, St. Luke's University Health Network will continue to work toward addressing the health priorities identified network-wide to improve the community's overall health and well-being. The three main priorities identified include: reducing health disparities; preventing chronic disease; and improving mental and behavioral health.

To analyze our findings in these areas, SLUHN has adopted the categorization system from the Robert Wood Johnson Foundation (Figure 111). The social determinants of health shape the status of a person's health. When addressing the priority health needs, it is crucial to

consider the social determinants of health and lifestyle behaviors to effectively tackle the service area's health disparities. Some significant survey findings, which are consistent with trends seen widely, are related to health outcomes and income, access to care for minority and marginalized populations, healthy eating (i.e., fruit and vegetable consumption), diabetes and other chronic illnesses, the opioid epidemic, and other substance abuse.

From our analysis of primary and secondary data, as well as the key CHNA informant interviews and work with our community members, we see significant issues facing our communities that impede healthy lifestyles. Our efforts in prevention, care transformation, research, and partnerships help support our work to promote sustainable programs and opportunities for our reach to focus on a wide range of health promotion and quality of life initiatives.

While there are many that need to be addressed, the results from the 2022 CHNA found the most pressing needs to be specifically in areas related to:

- o COVID-19
- o Access to Care
- o Food Insecurity
- o Obesity reduction
- o Physical Activity Promotion
- o Mental Health
- o Opioids and other Substance Use
- o Housing
- o Transportation

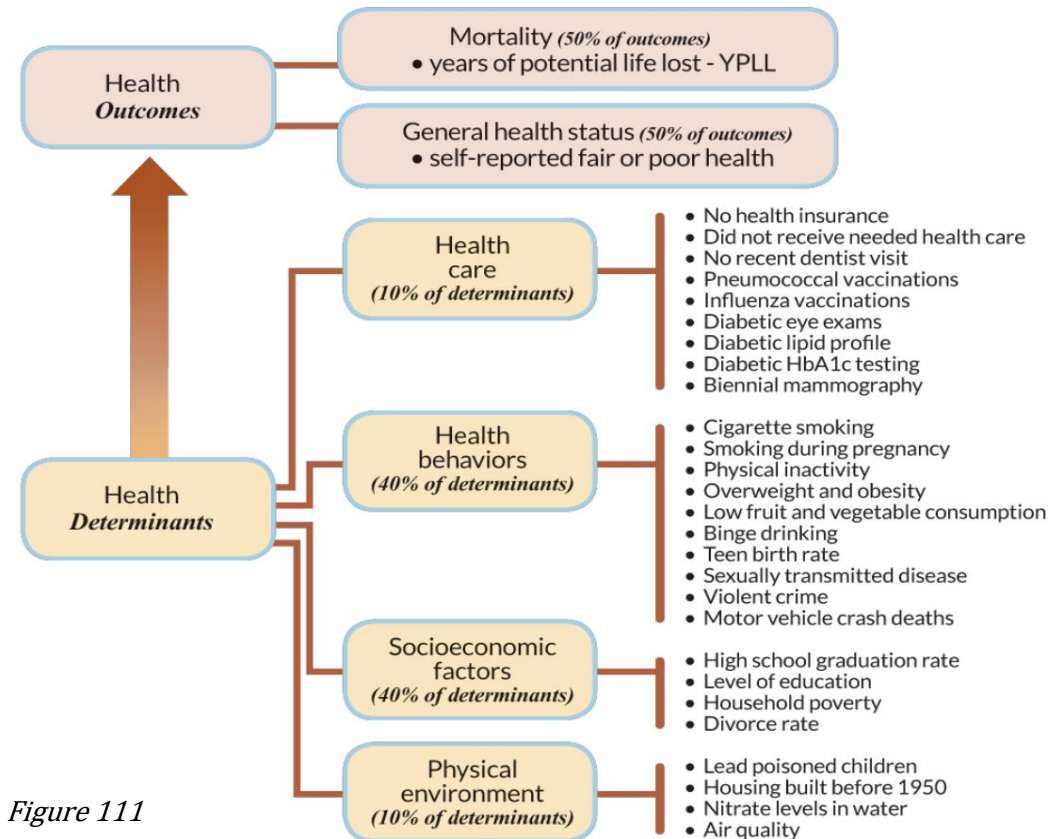


Figure 111

The needs discussed within the health categories outlined in this document will serve as our guide in creating a detailed campus-specific implementation plan to best address the specific needs of the St. Luke's Network service area using the three pillars of: Wellness and Prevention; Care Transformation; and Research and Partnerships using best practices and evidence-based public health models informed by lifestyle medicine. We will work collaboratively in partnership with our community and network partners to create a more equitable society with better health outcomes, especially among our most vulnerable populations such as our Hispanic communities, seniors, women, and children.



Appendix A

**2022 CHNA Key Informant Interview**

St. Luke's University Health Network (SLUHN) is a nationally recognized non-profit health network that has facilities serving counties in both Pennsylvania (Lehigh, Northampton, Carbon, Schuylkill, Bucks, Monroe) and New Jersey (Warren). As part of the Patient Protection and Affordable Care Act, all non-profit hospitals are required to conduct a Community Health Needs Assessment (CHNA) every three years. In order to accomplish our goals, St. Luke's is conducting key informant interviews to identify health needs within the community. Since you are a vital member of our community, you are being asked for your feedback to assist us in data collection. Your answers will be compiled by St. Luke's to determine health needs in the community.

Please note that your name will not be associated with your responses. Additionally, please complete your responses in a word document and email responses to the Community Health Needs Assessment Liaison for facilitated follow up during the interview.

1. Name:
2. Title:
3. Organization:

Please answer the following by including pre-covid and current covid impacts

4. How long have you been a part of this community and in what capacities?
5. When thinking about others you interact with here, do you feel a sense of community?
6. How would you describe your community?
7. What are the major needs/challenges within this community?
8. What are some of the challenges specific to your organization?
9. How do you feel this community has been successful in meeting its needs?
10. What improvements in policy and community infrastructure would assist you in meeting community needs?
11. Who are some of the key players in your community and what organization do they belong to?

12. What are some of the strengths and resources of your community?
13. Do you feel these strengths are shared and evenly distributed throughout the community? Please explain.
14. What are some concrete examples of strengths and challenges across the lifespan related to the following topics in your community?
  - a. Health disparities/Access to care  
(example: access to medical, mental, dental and vision care)
  - b. Healthy Living (example: diet and physical activity)
  - c. Chronic Disease (example: diabetes, heart disease and cancer)
  - d. Mental/Behavioral Health (example: substance misuse/use disorder, depression and anxiety)
15. What are the **top three issues** that need to be addressed in your community?
16. Any additional comments?

Appendix B

**2022 CHNA Community Forum Invited Organizations- All Campuses**

- Abilities of Northwest Jersey
- AHUB
- Air Products Foundation
- Allentown City Council
- Allentown Health Bureau
- Allentown School District
- Alliance for Building Communities
- Alvernia College
- ArtsQuest
- Avenues of Pennsylvania
- Bangor Area School District (BASD)
- BCOC (Housing Location)
- Behavioral Health Associates
- Bethlehem Area School District
- Bethlehem campus
- Bethlehem Health Bureau
- Blue Mountain Area School District
- Bradbury-Sullivan
- Bridgeway PACT
- Bucks Career Link
- Bucks County Drug and Alcohol
- Buy Fresh Buy Local
- CACLV
- CAI INC.
- Carbon Adult Probation
- Carbon Career and Technical Institute
- Carbon Chamber of Commerce
- Carbon County Action Committee for Human Services
- Carbon County Area Agency on Aging
- Carbon County Children and Youth
- Carbon County Commissioners
- Carbon County Community Foundation
- Carbon County Coroner
- Carbon County Workforce
- Carbon Veterans Affairs
- Homelessness Task Force
- St. Vincent DePaul Society
- Carbon-Monroe-Pike Drug and Alcohol
- Carbon-Monroe-Pike Mental Health and Development Services
- Center for Humanistic Change
- CHC
- Cheston Elementary
- City of Easton
- Clear Run Elementary
- Clinical Outcomes Group, Inc.
- Coaldale CHOSE (Church, Home, Organization, School, Environment)
- Code Blue Shelter
- Community Action Committee of the Lehigh Valley
- Community Action Development Corporation of Allentown
- Community Church
- County Director of Emergency Management
- Culture2Culture
- DeSales University
- Domestic Abuse and Sexual Assault Crisis Center
- East Stroudsburg School District
- East Stroudsburg University
- Eastcentral Pennsylvania Area Health Education Center
- Easton Area Community Center

## 2022 St. Luke's University Health Network Community Health Needs Assessment

- Easton Area Neighborhood Center
- Easton Area School District
- Easton Boys and Girls Club
- Easton City Pubic Service
- Easton Community Member
- Easton Hunger Coalition
- Easton Main Street Initiative
- Easton Main Street Newsletter
- Easton Safe Harbor
- Easton YMCA
- Faces International
- Family advocate and Summer Camp
- Family Guidance Center of Warren County
- Family Promise
- Family Services Assoc of Bucks
- Food Bank, NORWESCAP
- Gillingham Charter School
- Good Shepherd Rehabilitation Hospital
- Great Easton Development Project
- Habitat for Humanity
- Head Start, NORWESCAP
- Hispanic Center of the Lehigh Valley
- Hope and Coffee
- HUBBUB
- Indian Valley Chamber
- Interfaith Health Network
- Jim Thorpe Area School District
- Kellyn Foundation
- Lafayette College
- Lansford Alive
- Lansford Townhouses
- Law Enforcement Treatment Initiative (LETI)
- Lehigh and Northampton Transportation Authority (LANTA)
- Lehigh Carbon Community College
- Lehigh Conferences of Churches
- Lehigh County
- Lehigh University
- Lehigh Valley Community Foundation
- Lehigh Valley Food Council
- Lehigh Valley Health Network
- Lehigh Valley Intake
- Lehigh Valley School District
- Liberty High School
- LVACT
- Mahanoy Area School District
- Marian High School
- MARS Treatment Center
- Mid-Penn Legal Services
- Minersville Area School District
- Monroe Business Development
- Monroe County Area Agency on Aging
- Monroe County CareerLink
- Monroe County Mental Health Systems Care
- Moravian College
- Muhlenberg College
- National Association for the Advancement of Colored People (NAACP)
- Nativity B.V.M. High School
- Nature Nurture Center
- Neighborhood Health Centers of the LV
- New Bethany Ministries
- North Jersey Health Care Collaborative
- North Schuylkill Area School District

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- Northampton Community College
- Northampton County
- Northampton County Drug & Alcohol
- Northampton County Mental Health
- Northampton County Veteran's Association
- Northern Valley Medical Center Board (Ringtown)
- Nurse Family Partnership
- PA Career Link Schuylkill County
- PA Department of Health
- PA State Constable
- Palisades School District
- Palmerton Area School District
- Panther Valley Food Pantry
- Panther Valley School District
- Path To Change Treatment Center
- Pathstone Head Start
- Peaceful Knights
- Penn Community bank
- Penn Foundation
- Penn State Extension
- Penn State Schuylkill Campus
- Phillipsburg Area School District
- Phillipsburg School District
- Pine Grove Area School District
- Pinebrook Family Answers
- Pocono Mountain Economic Development
- Pocono Mountain School District
- Pocono Mountain United Way
- Pocono Services for Family and Children
- Pottsville Area School District
- Pottsville Free Public Library
- Pottsville Housing Authority
- Project Easton
- Promise Neighborhoods LV
- QNB Bank
- Quakertown Alive
- Quakertown Borough
- Quakertown Community School District
- Quakertown Food Pantry
- Quakertown Trolley Market
- Recovery Revolution
- Red Cross
- Representative Craig Staat's Office
- Representative Machenzie's Office
- Representative Pennycuick's office
- Resources for Human Development Inc
- Retired and Senior Volunteer Program (RSVP) of Monroe County
- Retreat Premiere Treatment Centers
- Richland Township Parks & Rec
- Ripple Community Inc.
- Salvation Army
- Schuylkill Access and Management Inc.
- Schuylkill Area Community Foundation (SACF)
- Schuylkill Chamber of Commerce
- Schuylkill Community Action
- Schuylkill County Area Agency on Aging
- Schuylkill County Child Development
- Schuylkill County Cooperative Extension
- Schuylkill County Drug & Alcohol Prevention
- Schuylkill County Emergency Management
- Schuylkill County Housing Authority
- Schuylkill County IU 29

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- Schuylkill County Juvenile Justice Department
- Schuylkill County Mental Health and Developmental Services
- Schuylkill County VISION
- Schuylkill County Volunteer Firefighters Association
- Schuylkill Haven Area School District
- Schuylkill Transportation System
- Schuylkill United Way
- Schuylkill Veterans Clinic
- Schuylkill Women In Crisis
- Second Harvest Food Bank
- Self Determination Housing of Pennsylvania
- Senator Bob Mensch's Office
- Senior Care
- Servants to All – My Father's House
- Sexual Assault Resource & Counseling Center (SARCC)
- Shanti Project
- Shenandoah Valley School District
- Shepherd House
- SHINE
- Silverline and Hope and Coffee
- Slater Family Network
- SLUHN Warren Emergency Department
- St. Clair Area Elementary School
- St. Isodore's Parish
- St. Jerome's/Marian
- St. Luke's Parish Nursing
- Star Community Health
- Suicide Prevention Task Force
- Summit Schools
- Swamp Mennonite Church
- TACP
- Tamaqua Area School District
- Tamaqua Chamber of Commerce
- The Friendly Community Center
- The Literacy Center LV
- The Open Link
- The Ortiz Ark Foundation
- The Perkiomen School
- Third Street Alliance
- Treatment Trends
- Tri-Valley Area School District
- Turn To Us
- Two Rivers Health & Wellness Foundation
- Unidos Foundation
- United Disabilities Services, Independent Living Services
- United Friends School
- United Way Bucks County
- United Way Carbon County
- United Way of the Greater Lehigh Valley
- Upper Bucks Chamber of Commerce
- Upper Bucks YMCA
- Upper Perk Valley Chamber of Commerce
- Upper Perk YMCA
- Upper Perkiomen School District
- Volunteer Center LV
- Warren County Health Department
- Weatherly School District
- Williams Valley Area School District
- Wilson Borough
- Women's Resources of Monroe County
- WorkForce LV
- Youth Empowerment Services
- Zufall Health Center