St Luke's
UNIVERSITY HEALTH NETWORK

Anderson and Easton Campuses and
Star Community Health
Community Health Needs Assessment
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Table of Contents

Icon Legend

St. Luke's and Star Community Health Partner Quote (Key Informant/Community Forum Attendee)

St. Luke's and Star Community Health 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 and Star Community Health 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 campus-specific implementation plan to best address the specific needs of the St. Luke's Anderson, Easton, and Star Community Health service area 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. 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 community health surveys were administered throughout our fourteen campus geographic regions, where the main priority health needs were identified for each entity. For the Anderson and Easton campuses, with 3,232 surveys collected from the top 80 percent of zip codes in the service area. This assessment and data collection was also conducted in collaboration with Star Community Health, as the service areas and populations overlap. 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 Anderson and Easton Community Assets ············

When asking key informants to describe the Anderson and Easton communities, respondents indicated that the area is blue collar with a strong sense of community. The informants generally described Easton as a small, walkable, historic, charming city composed of small businesses where nature meets city life. One key informant said that Easton is a "very tight community, but it is a very small community. It has a small-town feel. Your greatest strength can be your greatest weakness." Despite the pandemic and other adversity, one informant responded: "people up here are very resilient. If there is a will, there's a way. They're going to make it work one way or the other."

The Anderson campus has a variety of wellness programming including yoga classes, strength training classes, and the Farm to Fork program where participants volunteered at Anderson campus's organic farm and then enjoyed a cooking class incorporating the plants they harvested. The hospital also hosts adolescent career mentoring which connected 15 students from Bangor High School to a year-long job skills training. 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.

Despite the COVID-19 pandemic, programming at Anderson was able to continue. The Get Your Tail on the Trail program was held as self-paced and virtual, allowing 1,102 people to complete the 165-mile challenge logging a combined 497,999 miles and a total of 838 people to complete the winter mini-challenge, with a combined 61,697 miles logged by program participants. The Walk with a Doc program was also held virtually, with a pre-recorded video of a provider that participants could watch and then go on their walk. Additionally, the Older Adult Meal program closed for four months due to the pandemic but had served an average of 42.4 meals per day in 2020, nearly double the totals of the previous year. Throughout the pandemic, SLUHN has been able to pivot and meet the needs of the population through existing relationships built with nonprofits, schools, and community-based organizations who have assisted in events, 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 U.S. top performers being the counties at the 90th percentile in the nation. The indicators are color-coded using a stoplight approach, in which green indicates that the value is better 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. In looking at the 2021 data table out of 180 values, 60% of values are red (108), 21% are yellow (38), and 19% are green (34). There has been a 47.8% overall increase in green tiles, since 2018 during the last CHNA cycle. Additionally, in Northampton county, there are 55% red values, 25% yellow values, and 20% green values. In 2018, there were 30% red values, 65% yellow values, and 5% green values. From 2018 to 2021, there was an 83.3% increase in red values, a 61.5% decrease in yellow values, and a 300% increase in green values.

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

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.

Demographics

For the purposes of the CHNA, we define the top zip codes as those that account for 80% of the population served by the Anderson and Easton campuses and Star Community Health (i.e., service area) in Northampton county (Figure 2). In the Anderson, Easton, and Star Community Health service area, 31% of the patients served reside in 18042 (Easton), 18045 (Easton), and 18064 (Nazareth), all within Northampton county. These areas remained the same as the previous 2019 CHNA.[1]

A total of 362,200 people live in the 503.31 square mile area outlined in Figure 3 according to the U.S. Census Bureau American Community Survey (ACS) 5-year estimates (2015-2019). The population density for this area is estimated at 719.64 persons per square mile, compared to 285.89 persons per square mile in Pennsylvania and 91.93 persons per square mile nationally. The 2010 Decennial Census reported that 85.1% of the Anderson, Easton, and Star Community Health service area lives in an urban setting and 14.9% of the service area lives in a rural setting. Urban areas are defined by population density, count, size thresholds and the amount of impervious surface or development (i.e., areas impervious to water seeping into the ground, concrete-heavy areas).

FY20 SLRA - Zip Codes Comprising Top 80% of Facility Encounters		
Zip Code	% SLRA Total (n = 226,175)	% Network Total (n = 1,554,201)
18042	12%	1.7%
18045	11%	1.7%
18064	8%	1.2%
18020	7%	1.1%
18013	6%	0.8%
18017	5%	0.8%
18091	4%	0.6%
18040	4%	0.6%
18301	4%	0.6%
18360	4%	0.5%
18072	3%	0.5%
18353	3%	0.4%
18014	2%	0.3%
18302	2%	0.3%
18018	2%	0.3%
18015	2%	0.3%
Total	80%	11.7%

Figure 2

[1] https://www.slhn.org/community-health/community-health-needs-assessment/-/media/0EDAD71D8AE940B9BE9F599DBE548EF1.ashx

Rural areas are all other areas not defined as urban. The Pennsylvania percentages for urban and rural living are 78.7% and 21.3%, respectively. The United States urban and rural percentages are 80.9% and 19.1%, respectively.

The following sections give a brief overview of the populations that St. Luke's Anderson and Easton campuses and Star Community health serves. Understanding the demographics of the service area is essential to addressing needs and improving upon the region's health services. The following data comes from ACS 5-year estimates (2015-2019) by the Census Bureau[2] and St. Luke's CHNA survey data unless otherwise noted. Please refer to the Network and Campus Community Health Needs Assessment Survey Findings document for more detailed information from the survey.

Figure 3

Population Density Anderson & Easton

Map Legend

Population, Density (Persons per Sq Mile) by Tract, ACS 2015-19
- Over 5,000
- 1,001 - 5,000
- 501 - 1,000
- 51 - 500
- Under 51
- No Data or Data Suppressed

Report Location, ZIP code

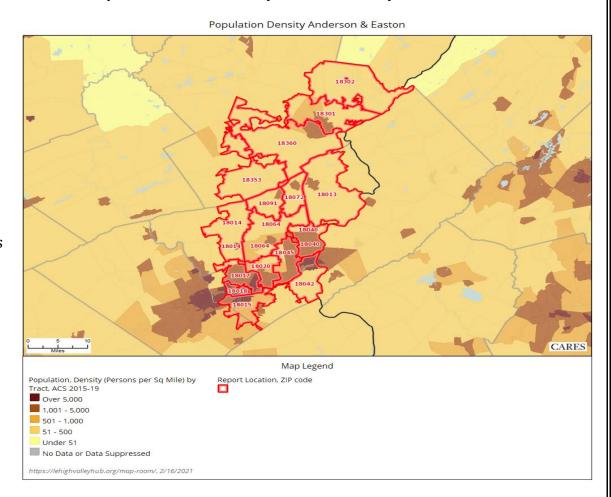https://lehighvalleyhub.org/map-room/, 2/16/2021

·············· Age ··············

The ACS reports 19.8% of the service area population are people under 18 years old and 18% are 65 years and older (Figure 4). Combined, these groups account for 37.8% of the service area population, leaving 62.2% between the ages of 18 and 64.

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[2] https://data.census.gov/cedsci/

In Northampton county, 20.1% of the population are under 18, 18.6% are 65 and older, and 61.3% of the population is between the ages of 18 and 64. In the City of Easton, 19.9% of people are below 18 years old, 66.2% are ages 18-64, and 13.9% are 65 years and older.

The majority of CHNA survey respondents from the Anderson, Easton, and Star Community Health service area were 55 years and older; 22% ages 55-64 years and 43% 65 years and older. The smallest age group was 18-24 (2%), followed by 23-34 (7%), 35-44 (11%), and 45-54 (15%). The survey was administered to people 18 and older, therefore, ages under 18 are not represented in the sample. The median age of respondents was 62 years old.
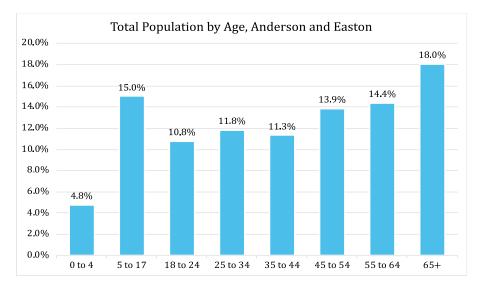

Total Population by Age, Anderson and Easton

Figure 4

Sex

According to 5-year estimates by the ACS, 51.1% of people identified as female and 48.9% identified as male in the St. Luke's Anderson, Easton, and Star Community Health service area (Figure 5). This is similar to the national average, 50.8% and 49.2%, respectively. In Northampton county, 50.8% of people identified as female and 49.2% as male. In the City of Easton, 50.4% of people identify as female and 49.6% as male. When asked about sex assigned at birth in the CHNA survey, 62% of Anderson, Easton, and Star Community Health service area respondents indicated female and 38% indicated male.
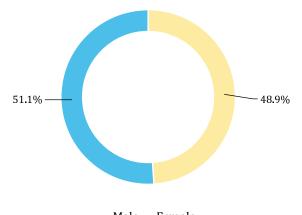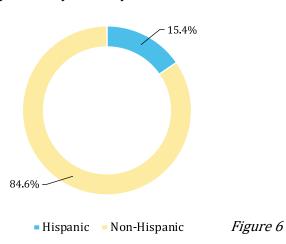

Total Population by Sex, Anderson and Easton

51.1%   48.9%

Figure 5

■ Male ■ Female

Ethnicity

Total Population by Ethnicity, Anderson and Easton

Figure 6

According to the ACS, in the St. Luke's Anderson, Easton, and Star Community Health service area, 84.6% of the population identifies as non-Hispanic and 15.4% identifies as Hispanic (Figure 6). The population in Pennsylvania is 92.7% non-Hispanic and 7.3% Hispanic; the United States population is 82% and 18%, respectively. In Northampton county, 86.8% of people identify as non-Hispanic while 13.2% identify as Hispanic. In the City of Easton, 77.4% of people identify s non-Hispanic while 22.6% identify as Hispanic.

When asked about ethnicity, 88% of CHNA respondents in the Anderson, Easton, and Star Community Health service area identify as non-Hispanic and 12% identify as Hispanic.

Race

The ACS reports 82% of the service area population identifies as White, followed by Black (8.1%), Other Race (6.9%), and Asian (3%). Data for individuals identifying as Native Hawaiian/Pacific Islander, Native American/Alaska Native, and Multiple Races were combined with Other Race due to small sample sizes. In Northampton county, 85.6% of the population identifies as White, followed by Black (5.7%), Other Race (5.7%), and Asian (2.8%). In the City of Easton, 69.3% of people identify as White, followed Black (14.9%), Other Race (13.1%), and Asian (2.7%).

The majority of CHNA survey respondents from the Anderson, Easton, and Star Community Health service area were White (88%), followed by Other Race (7%), Black (4%), and Asian (1%).
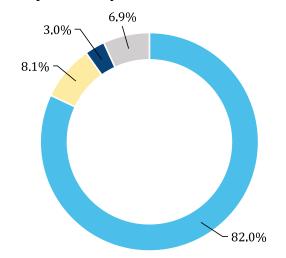
Total Population by Race, Anderson and Easton
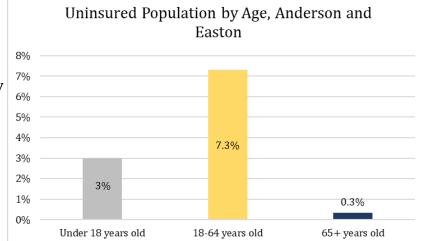

Figure 7

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Vulnerable Populations

The following data was retrieved from the 5-year American Community Survey (2015-2019) by the Census Bureau.[3]

Black, Indigenous, People of Color (BIPOC)

It is important to identify the BIPOC communities within the SLUHN network in order 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.[4] Additionally, in regard to the COVID-19 pandemic, more than half of the infections have occurred among Black Americans, despite only comprising approximately 14% of the United States Population.[5,6] Disparities in access to care for BIPOC communities can be detrimental to health outcomes and generate mistrust in healthcare.[7] In the Anderson, Easton, and Star Community Health service area, 8.1% of the total population identifies as Black and 15.4% of the total population identifies as Hispanic. Out of the BIPOC individuals who were surveyed for the network, 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 and 0.8% in the United States ages 65 years and older uninsured.

Figure 8

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[3] https://www.census.gov/programs-surveys/acs/
[4] https://www.bsr.org/en/our-insights/blog-view/respecting-the-rights-of-vulnerable-groups
[5] https://www.bsr.org/en/our-insights/blog-view/respecting-the-rights-of-vulnerable-groups
[6] https://covid.cdc.gov/covid-data-tracker/
[7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4194634/

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 less than 65 years old, 7% in Pennsylvania and 10.2% in the United States are uninsured. In the Anderson, Easton, and Star Community Health service area, only 0.3% of the 65 and older population are uninsured, 7.3% of ages 18 to 64 are uninsured, and 3% of children 18 years and younger are uninsured. According to CHNA survey results, 3.4% of all surveyed respondents in the network 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.[8] 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. Problems that ALICE families face are often intertwined and affect each other, all of which can pose risks to health, safety, and financial stability.[9] These areas often include housing, childcare, education, food, transportation, health care, technology, and taxes. The most recent ALICE report (2018) found that 31% of households in Northampton county were considered ALICE[10], 4% higher than the Pennsylvania state average of 27%. In Northampton county, 13,746 single or cohabitating households were ALICE, 6,689 families with children were ALICE, and 15,786 people 65 years and older were ALICE. This is partially due to the increase in living costs while wages have stayed stagnant. In 2018, the average cost of living for a single adult in Northampton county was $2,335 a month and $28,020 a year, while the average hourly wage was $14.01.[11] Out of the cities, boroughs and townships in Northampton county, the Wind Gap borough has the highest percent of ALICE households (58%), followed by the Portland borough (55%).

Children and Adolescents

In the Anderson, Easton, and Star Community Health service area, 19.8% of the population is below the age of 18. 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

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[8] https://www.unitedforalice.org/
[9] https://www.unitedforalice.org/consequences
[10] https://www.unitedforalice.org/pennsylvania
[11] https://www.unitedforalice.org/pennsylvania

patterns in youth. The 2019 Pennsylvania Youth Survey (PAYS)[12] is run by the Pennsylvania Commission on Crime and Deliquency 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. According PAYS, 41.2% of students in Northampton county report lifetime alcohol use and 17.9% report lifetime marijuana use.[13] Additionally, 26.2% of students in Northampton county reported experiencing some type of bullying within the last 12 months of when they were surveyed. The data in this section is reported from PAYS unless stated otherwise.

"Students are experiencing a hangover from the pandemic. They are struggling without the school support and connections and the isolation they have experienced."

Tobacco, Nicotine, and Vaping

In Northampton county, 7.1% of students report lifetime usage of cigarettes and 1.7% report 30-day usage. Lifetime use refers to using the drug at any point in their life and 30-day use refers to using the drug in the past 30 days. Cigarette use continues to decline among all grades and 16.3% of students report vaping in the past 30 days, which is much lower than the state average of 19%. For students that vape, 46.5% use nicotine in their vape (26.2% increase since 2017) and 31.2% of Northampton county students use marijuana/hash oil in their vape, a 16.7% increase from 15.4% of students in 2017.

Other Substance Use

Substance use in children and adolescents can have a significant impact on their health and well-being.[14] Substance use can affect their 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).[15] 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. In Northampton county, 41.2% of students reported lifetime alcohol use and 17.9% lifetime marijuana use. In the state, lifetime prescription pain medication use was 4.1% and 3.9% for over the counter drugs. In Northampton county, lifetime prescription use was 4.9% and 4.3% for over-the-counter drugs. Students often view these drugs as safer than illicit drugs because they are prescribed by a doctor or available to adults legally. Small portions of the state used cocaine, methamphetamines, heroin, ecstasy, and synthetic drugs. However, the

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[12] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx
[13] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS).aspx
[14] https://www.cdc.gov/ncbddd/fasd/features/teen-substance-use.html
[15] https://www.cdc.gov/ncbddd/fasd/features/teen-substance-use.html

most frequent "other drug" used were hallucinogens, with a 2.7% lifetime use. Northampton county students had a 2.5% lifetime use of hallucinogens.

Regarding risky behavior while under the influence of drugs and other substances, 7.4% of students in Pennsylvania engaged in binge drinking in the past two weeks and 1.5% of students reported driving while or shortly after drinking. Additionally, 3% of students indicated driving after using marijuana in the past year. In Northampton county, 5.9% of students engaged in binge drinking in the past 2 weeks, 1.3% of students reported driving while or shortly after drinking, and 3.3% report driving after using marijuana in the past year. Finally, 34.3% of students in the state and 34.7% of students in Northampton county reported *taking without permission* as their most frequent source/method of obtaining alcohol. The next highest source was *parents providing it for them*, which was 25.7% of students in the state and 28.6% of students in Northampton county. For prescription drugs, the most common method for obtaining was a *family member giving it to them*, a method used by 38.7% of students in the state and 43% of students in Northampton county. For willingness to use, 24.5% of students across the state and 22.5% of students in Northampton county indicated a willingness to use alcohol if presented with the chance.

························ Violence and Bullying ························

It is important for all children to feel safe at school in order to learn, socialize, and develop. However, PAYS has found that violence on school property is a concern, with 20% of Northampton county students report being threatened with violent behavior on school property in the past year, slightly higher than the state level (18.9%). Additionally, 7.7% of Northampton county students report being attacked on school property, 1.1% with a weapon. Additionally, 0.8% of Northampton county students reported bringing a weapon to school in the past 30 days, which is on par with the state (0.9%) and has decreased since 2017.

Bullying is also a factor contributing to violence in schools, prompting some students to skip school, and potentially lowering self-esteem. In Northampton county, 26.2% of students experienced bullying in the past 12 months. This is slightly higher than the state (25.1%) but has decreased by 2.4% since 2017. The most common way students reported being abused was emotional abuse, insults, and name calling (62.6%), followed by physical injury (21.7%), and threats (20.3%). Of students who experienced bullying, 15.1% reported it occurring via text or social media. Of the students in Northampton county that indicated having been cyberbullied, 54.5% indicated feeling so sad or hopeless every day for the past 2 weeks they stopped doing usual activities; and in the past year, 39.4% of those students seriously considered suicide, 31.3% made a suicide plan, and 27.6% attempted suicide.

·························· Mental Health ··························

Mental health is an important indicator for children and adolescents social and emotional development. Important mental health habits such as resilience and good judgment aid in overall well-being. When asked about depression, the most common depressed thought expressed by Northampton county students was "at times I think I am no good at all." 36.3% of Pennsylvania students thought this and 38.5% of Northampton county students. Additionally, 38.0% of students in Pennsylvania report feeling sad or depressed MOST days in the past 12 months. 41.1% of Northampton county students thought this.

PAYS also asks question about self-harm and suicide. In Pennsylvania, 14.4% of students indicated using self-harm (e.g., cutting, scraping, burning) in the past 12 months and 15.7% in Northampton county indicated using self-harm. Additionally, 16.2% of students across the state indicated seriously considering suicide, 12.9% planned suicide, 9.7% attempted suicide, and 2.0% needed medical treatment as a result. In Northampton county, 17.9% of students seriously considered suicide, 13.6% planned suicide, 10.4% attempted suicide, and 1.9% needed medical treatment as a result.

"The growing mental health problems in the community, particularly among adolescents, has gotten even more expansive during the pandemic."

·························· Risk and Protective Factors ··························

Concerning trends related to perceived importance of school indicate that half of all students in Northampton county feeling that school is going to be important for their future. Only 37.1% of students in 2019 reported enjoyed being in school during the past year and 77.5% of all Northampton students report feeling safe at school which is below the state overall (80%).

Many risk and protective factors come into play when understanding observed rates of drug use and mental health issues explored in the CHNA. 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. When looking at aggregate grade data, highest reported risk factors include perceived risk of drug use, low commitment toward school and parental attitudes encouraging antisocial behavior. The highest reported protective factors include family attachment, prosocial involvement, and family rewards for prosocial involvement.

·························· Seniors ··························

According to the 5-year ACS (2015-2019), there are an estimated 66,007 people 65 years and older living in the Anderson, Easton, and Star Community Health service area.[16] In Northampton county, there is an estimated 56,396 people 65 years and older. The U.S. Census Bureau reports the 65 and older population grew 34.2% in the last ten years and by 3.2% from 2018 to 2019.[17] And it is expected that the senior population will outnumber children by the year 2034.[18] By 2060, adults 65 and older will account for 23.4% of the population, which is approximately 94.7 million people.

In 2018, 19.5% of Medicare beneficiaries in the Anderson, Easton, and Star Community Health service area report suffering from depression. In the same time frame, 19.8% of Medicare beneficiaries in Northampton county report suffering from depression.[19] Both of these numbers are higher than the Pennsylvania state average (19.3%), and the United States average (18.4%).

Other important factors to observe in the senior population are the prevalence of diseases that begin to appear or worsen with age. Examples include diabetes, heart disease, high blood pressure, and high cholesterol. Figure 9 illustrates the number of Medicare beneficiaries within the Anderson, Easton, and Star Community Health service area that report having these diseases.[20] The Anderson, Easton, and Star Community Health service area percentage for diabetes is on par with the United States average, but there is still more work to be done to improve heart disease, high blood pressure and high cholesterol.

Percent of Medicare Beneficiaries					
	St. Luke's Survey	Anderson and Easton Service Area	Northampton County	Pennsylvania	United States
Diabetes	17.7%	26.9%	26.4%	25.8%	27.0%
Heart Attack and other Disease	9.2%	26.9%	27.5%	27.3%	26.8%
High Blood Pressure	53.1%	63.0%	64.4%	58.5%	57.2%
High Cholesterol	37.3%	57.6%	58.6%	52.7%	47.7%

Figure 9: Data reported from CHNA, Centers for Medicare and Medicaid Services 2018, and lehighvalleyhub.org

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[16] https://www.census.gov/programs-surveys/acs/
[17] https://www.census.gov/newsroom/press-releases/2020/65-older-population-grows.html
[18] https://www.census.gov/library/visualizations/2018/comm/historic-first.html
[19] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV_PUF
[20] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Geographic-Variation/GV_PUF

Results from adults 65 and older from the Anderson, Easton, and Star Community Health service area are much lower than data reported previously. While the results differ from other findings, chronic disease in the senior population continues to be a focus area for healthy aging.

Food insecurity is another important factor in terms of senior health. Feeding America released a 2020 food insecurity report on seniors in America and found that 7.3% of seniors are food insecure.[21] The report found that of the food insecure senior population, the highest insecure rates were found in racial and ethnic minorities, those with lower incomes, those who are younger seniors (ages 60-69), and those who are renters. In relation to consuming healthy foods, access to healthy foods is just as important.

Each year, America's Health Rankings produces senior health reports assessing each state in the United States. The organization ranks the state on six categories: overall, behaviors, social and economic, physical environment, clinical care and health outcomes, on a scale from 1-50 with a score of 1 as the best. Pennsylvania's best ranking appeared in clinical care (19), and worst in physical environment (46).[22] Clinical care assesses factors like access to care, quality of services provided, and preventive services. Physical environment assesses factors like air and water quality, pollution, and housing conditions.

Senior mental health is a growing concern in the United States, especially with isolation during the COVID-19 pandemic. According to the America's Health Rankings, 8.3% of senior adults in Pennsylvania experience frequent mental health distress compared to the national average of 7.9%.[23] 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.[24] One reason that the senior population may not receive adequate mental care is due to the fact that symptoms of some mental health issues like depression or lapses in memory often get dismissed as typical aspects of aging.[25] Other health conditions related to aging also impact mental health in seniors; older adults with diabetes have a higher risk of developing depression or cognitive impairment while adults with coronary heart disease or whom have had a stroke are more likely to have frequent mental distress.[26,27]

[21] https://www.feedingamerica.org/research/senior-hunger-research/senior
[22] https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/PA
[23] https://www.americashealthrankings.org/explore/senior/measure/overall_sr_3/state/PA
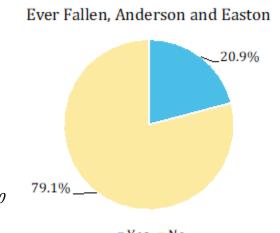[24] https://www.americashealthrankings.org/explore/senior/measure/mental_distress_sr/state/NJ
[25] https://www.agingcare.com/articles/understanding-mental-health-issues-in-seniors-209387.htm
[26] https://www.cdc.gov/aging/publications/coronary-heart-disease-brief.html
[27] https://www.nia.nih.gov/health/diabetes-older-people

Falls are an important warning sign to look at in senior populations because falls are costly in dollars but also in quality of life. Falls are the leading cause of fatal and nonfatal injuries in older Americans.[28] The 2020 senior health report found that 24.2% of older adults in Pennsylvania had fallen within the last 12 months.[29] One in five falls among older adults causes serious injury, including hip fractures and head injuries.[30] Common factors that can lead to falls are balance and gait, vision, medications, environment, and chronic conditions.[31] However, the number of falls can be reduced through practical lifestyle adjustments, educational programs, and community partnerships.[32] Of adults 65 and older who were surveyed in the Anderson, Easton, and Star Community Health service area, 20.9% indicated to have ever fallen. Of this group, 17% fell 1-2 times, 2% fell 3-4 times, and 2% fell 5 or more times.

Figure 10

Ever Fallen, Anderson and Easton

20.9%
79.1%

■ Yes ■ No

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.[33] This is common among the senior population because of the need to treat various diseases and injuries that increase with age. Some symptoms of polypharmacy include tiredness, decreased alertness, incontinence, lack of appetite, falls, depression, tremors, hallucinations, and more.[34] 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.[35] Polypharmacy has severe negative impacts on patient care and increases the risk for adverse drug reactions.[36]

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 risk of vulnerability.[37] Engaging in physical activities or hobbies and eating well can have a positive impact on senior well-being. Regular exercise can reduce the

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[28] https://www.ncoa.org/healthy-aging/falls-prevention/preventing-falls-tips-for-older-adults-and-caregivers/

[29] https://www.americashealthrankings.org/explore/senior/measure/falls_sr/state/PA

[30] https://www.americashealthrankings.org/explore/senior/measure/falls_sr/state/NJ

[31] 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/

[32] https://www.ncoa.org/healthy-aging/falls-prevention/

[33] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295469/

[34] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4295469/

[35] https://www.uspharmacist.com/article/polypharmacy-and-drug-adherence-in-elderly-patients

[36] https://www.npjournal.org/article/S1555-4155(19)31051-7/fulltext

[37] https://www.respectaging.ca/training/Participant_Manual_-_Module_08.pdf

risk of some diseases, lower blood pressure, and help cognitive function.[38] 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 was related to increased energy, better sleep, decreased pain or discomfort, and increased overall satisfaction with life.[39] Engaging seniors in meaningful relationships and coordinating resources in the community can help their overall well-being and protect against some negative effects from aging. Healthy People 2030 also sets outcome objectives for a variety of groups and illnesses. For the senior population, Healthy People 2030 seeks to reduce the rate of hospital admissions for diabetes among older adults, to reduce fall related deaths, and to reduce the proportion of older adults who use inappropriate medicines.[40]

·········· Lesbian, Gay, Bisexual, Transgender (LGBT) ··········

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 (N= 6,582). Results showed that 23.6% of Bradbury-Sullivan respondents have not visited the doctor for a routine check-up in a year or longer and 36% have not visited the dentist in the past year. Additionally, 1 in 3 Bradbury-Sullivan respondents fear seeking healthcare services because of past or potential negative reactions from healthcare providers.

In Northampton county, 27.6% of all respondents reported being dissatisfied with their life and 57.3% report considered suicide at some point in their life.

In the Pennsylvania LGBT Health Needs Assessment, there were a total of 213 respondents from Northampton County. The mean age of respondents was 38 years, and the ages ranged from 13 years to 73 years old, including 57 transgender or non-binary respondents. From the CHNA survey, we found that 4.3% of respondents from the Anderson, Easton, and Star Community Health service area identify as LGBT. Additionally, 0.28% of all respondents in the network identify as non-binary, 0.08% identify as genderqueer, 0.06% identify as gender fluid, and 0.1% identify as another gender.
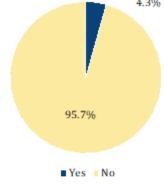
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[38] https://www.ncbi.nlm.nih.gov/books/NBK316205/
[39] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4437657/
[40] https://health.gov/healthypeople/objectives-and-data/browse-objectives/older-adults

Figure 11 summarizes the key health outcomes and social determinants of health of Pennsylvania LGBT Health Needs Assessment respondents in Northampton county. 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 St. Luke's respondents, 9.7% and 1.6%, respectively (Figure 13).
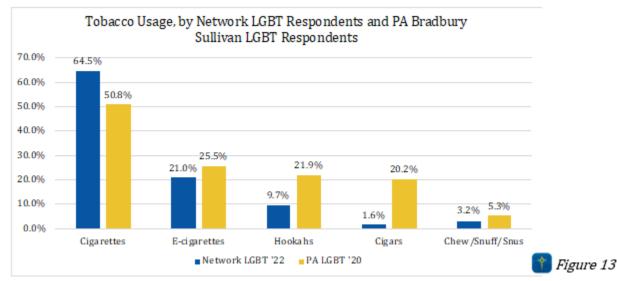

Figure 12

Category	Outcome Measures	Northampton County PA LGBT Respondents
Mental Health	Ever Considered Suicide	57.3%
	Dissatisfied with Life	27.6%
Mental Health Access	Had a Mental Health Challenge in the last 12 months	73.0%
	Seen by a Mental Health Provider in the las 12 months	51.9%
Healthcare Barriers	Uninsured	6.9%
	no Primary Care Provider	16.3%
Discrimination and Violence	Experienced Discrimination	54.9%
	Experienced Violence	27.6%
Financial, Food and Housing Insecurity	Financially Insecure	44.6%
	Food Insecure	28.5%
	Ever Homeless	29.2%
Chronic Disease	Diabetes Diagnosis	7.6%
	Pre-Diabetes Diagnosis	10.3%
	HIV Diagnosis	4.4%
Tobacco and Drug Use	Current Cigarette Smoker (18+ years)	14.9%
	Curren E-Cigarette Smokers (all ages)	11.8%
	Ever Engaged in Chemsex	29.4%

Figure 11

Figure 13

Disabled Population

In the Anderson, Easton, and Star Community Health service area, 13% of people have a disability.[41] The six disability types considered in this category are hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty (e.g., serious difficulty walking or climbing stairs), self-care difficulty, and independent living difficulty.[42] In the Anderson, Easton, and Star Community Health service area, 8% of those who have a disability are under 18 years old, 50% are between 18 and 64 years, and 42% are 65 years and older.

Veteran Population

Of the Anderson and Easton population 18 years and older, 7.3% are veterans. 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."[43] Of the 7.3% of veterans in this service area 92.5% are male and 7.5% are female.[44]

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[41] data.census.gov/ Table (S1810)
[42] https://www.census.gov/topics/health/disability/guidance/data-collection-acs.html
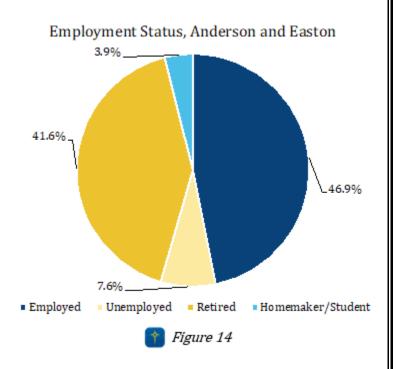[43] https://www.census.gov/content/dam/Census/topics/population/veterans/guidance/acs-topic-information-veterans.pdf
[44] Data.census.gov/ Table (S2101)

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. The unemployment rate is 4.4% in Pennsylvania according to the Robert Wood Johnson Foundation 2021 data.[45] However, unemployment rates varied widely within the year due to the COVID-19 pandemic. In January of 2020, Pennsylvania started off the year with an unemployment rate of 4.7%, but that rate sky-rocketed to 16.1% by April of 2020—the highest observed since the U.S. Great Depression. Pennsylvania reached unemployment rates below 10% by September of 2020 and 4.5% of residents of Northampton county experience unemployment. In recent years, Northampton county follows very closely the unemployment trends of both Pennsylvania state and the United States.[46]

The majority of respondents from the Anderson, Easton, and Star Community Health service area are employed (47.0%) or retired (41.6%), and less than 4.0% were homemakers or students. A total of 8% of respondents are unemployed, which includes both individuals who are out of work and those that are unable to work.
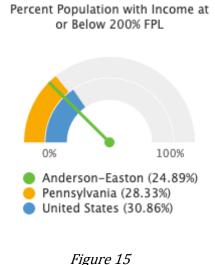

Employment Status, Anderson and Easton

3.9%
41.6%
46.9%
7.6%

■ Employed   Unemployed   ■ Retired   ■ Homemaker/Student

✝ Figure 14

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[45] https://www.countyhealthrankings.org/
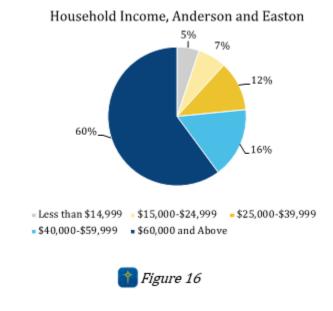[46] https://www.countyhealthrankings.org

Household Income and Poverty

The 2021 Federal Poverty Level (FPL) poverty guideline is measured at $12,880 a year for one person and $26,500 for a family of four.[47] If one person is 200% of the FPL, the make $25,760; if a family of four is 200% of the FPL, they make $53,000. ACS data (2019) reports that 24.9% of the Anderson, Easton, and Star Community Health service area live 200% below the federal poverty level. This is lower than both Pennsylvania, 28.3%, and the United States, 30.9%. Parts of 18015, 18042 and 18301 are most affected by poverty. The ACS also reports that the median household income in in Northampton county is $70,470, which is higher than the median household income in Pennsylvania ($61,744) and the United States ($62,843).[48]

The majority of respondents surveyed in the Anderson, Easton, and Star Community Health service area have a household income of $60,000 and above (60%), 12% have a household income of $24,999 and below, and 28% have a household income between $25,000 and $59,999. While we cannot determine how many people live below the FPL based on household size, these survey results do reveal that there are many people who could use support from food pantries, Federally Qualified Health Centers, government assistance, and rent assistance, to supplement their income.
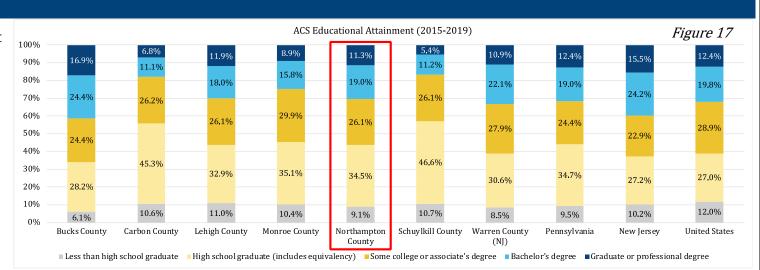

Figure 15

Figure 16

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[47] https://aspe.hhs.gov/2021-poverty-guidelines
[48] Data.census.gov/

Education

While income and employment are linked to health status, educational attainment is linked to income and employment. These lay the building blocks for the next generation to have improved socioeconomic status and correlated positive health outcomes. The Healthy People 2030 high school target graduation rate is 90.7%.

Figure 17

ACS Educational Attainment (2015-2019)

Legend: Less than high school graduate | High school graduate (includes equivalency) | Some college or associate's degree | Bachelor's degree | Graduate or professional degree

In Pennsylvania, 91% of people have a high school diploma or equivalent. Northampton county is on par with Pennsylvania having 91% of people with a high school diploma or equivalent. The county underperforms by 3 percentage points when compared to U.S. top performers.[49]

In the Anderson, Easton, and Star Community Health service area, 97.8% of survey respondents have a high school degree or higher, 0.6% have less than a high school education, and 1.6% have some high school education. Broken down further, 19.8% of respondents have only a high school degree, 30.6% have some college or an associate's degree (18.3% have some college and 12.3% have an associate's), 22.6% have a bachelor's degree, and 24.8% have a graduate degree. CHNA survey results show that respondents have much higher rates of higher education than the general public (Figure 17). Additionally, our survey data has lower percentages of respondents with less than a high school diploma compared to ACS findings. 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.[50] Healthy People 2030 states that children with less access to quality education are less likely to get safe, high-paying jobs and will be more likely to have 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 in order to aid in healthy lifestyles and well-being.

[49] https://www.countyhealthrankings.org
[50] 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."[51] Speaking and understanding English is important in this service area because most health services are provided in English. Language can also be a large barrier to educational attainment, higher income, employment, accessing healthcare and thus good health outcomes. In the Anderson, Easton, and Star Community Health service area, 5.4% of the population are considered to have limited English proficiency, compared to 4.3% in Pennsylvania and 8.4% in the United States (Figure 19).
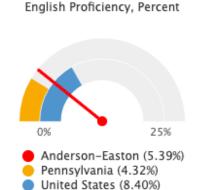

Figure 19

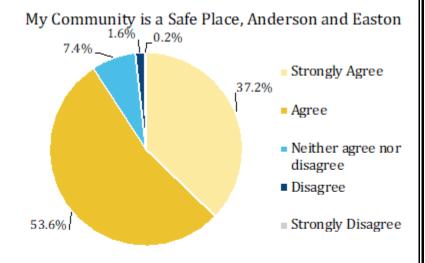| Anderson and Easton Service Area Languages			
Top Zip Codes	Percentage and Number of Spanish Speakers in Zip Code	Percentage and Number of Spanish Speakers in Zip Code Who Speak English Less than "Very Well"	Next Frequent Language
18042	12.8% (5,141 people)	42.6% (2,188 people)	Other Indo-European languages (1.5%- 591 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)
18020	4.8% (934 people)	29.0% (271 people)	Other Indo-European languages (3.3%- 651 people)
18013	2.6% (443 people)	37.2% (165 people)	Russian, Polish, or other Slavic languages (1.1%- 194 people)
18017	11.8% (4,399 people)	35.6% (1,564 people)	Other Indo-European languages (2.9%- 1,078 people)
18091	2.0% (104 people)	50.0% (52 people)	Russian, Polish, or other Slavic languages (3.5%- 180 people)
18040	3.5% (546 people)	18.9% (103 people)	Other Indo-European languages (1.4%- 227 people)
18301	10.4% (2,942 people)	22.8% (672 people)	Russian, Polish, or other Slavic languages (2.3%- 653 people)
18360	6.0% (1,564 people)	16.8% (262 people)	Other Indo-European languages (3.1%- 815 people)
18072	2.5% (154 people)	0.0% (0 people)	Other Asian and Pacific Island languages (2.1%- 132 people)
18353	3.3% (404 people)	0.0% (0 people)	Russian, Polish, or other Slavic languages (1.9%- 236 people)
18014	1.9% (215 people)	78.1% (168 people)	German or other West Germanic languages (1.0%- 115 people)
18302	10.1% (1,729 people)	21.9% (379 people)	Russian, Polish, or other Slavic languages (2.8%- 484 people)
18018	15.2% (4,519 people)	39.3% (1,775 people)	Other Indo-European languages (2.0%- 585 people)
18015	21.7% (6,857 people)	48.5% (3,329 people)	Chinese (incl. Mandarin, Cantonese) (1.9%- 609 people)

Figure 18

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[51] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf

Translators and interpreters are required in locations where either 5% of the community speaks a different language or over 1,000 members speak a different language.[52] A translator typically only translates the written word while interpreters translate orally. Figure 18 shows the Anderson, Easton, and Star Community Health service area zip codes. Columns shown in red text indicate areas that require translator or interpreter services. In total, 8 zip codes require services for Spanish speakers and on zip codes requires services for other Indo-European speakers (not including West Germanic and Slavic languages). Since Indo-European makes up more than one language, more than one interpreter or translator would be needed.

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"[53], is one measure of community safety. According to Robert Wood Johnson 2021, Pennsylvania has a rate of 315 violent crime offenses per 100,000 population and the U.S. top performer rate at 63 per 100,000. Northampton county has a violent crime rate of 212 per 100,000 people and has declined since 2016.[54]

When asked to rate the degree to which they agree that their community is a safe place to live, the majority of CHNA survey respondents in the Anderson, Easton, and Star Community Health service area agreed (53.6%), 37.2% of respondents strongly agreed and 7.4% neither agreed nor disagreed. Additionally, 1.6% of respondents disagreed that their community is a safe place and 0.2% strongly disagreed.

Figure 20

[52] https://www.hud.gov/program_offices/fair_housing_equal_opp/
[53] https://www.countyhealthrankings.org/app/new-jersey/2021/measure/factors/43/data
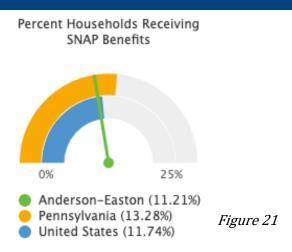[54] https://www.countyhealthrankings.org

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. The social association indicator in Northampton county (10.6), which falls below Pennsylvania (12.2), and U.S. top performers (18.2).[55]

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.[56] A quality diet is one with access to a variety of 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.[57] 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.[58] In 2019, Pennsylvania had a food insecurity rate of 10.2% and VLFS rate of 4.1%.

Percent Households Receiving SNAP Benefits

0%   25%

- Anderson–Easton (11.21%)
- Pennsylvania (13.28%)
- United States (11.74%)

Figure 21

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,
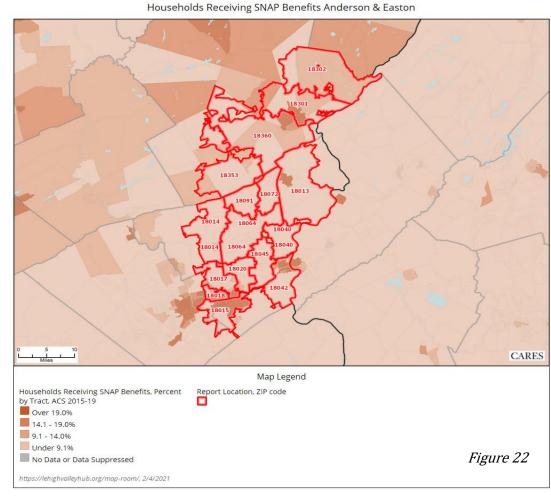
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[55] https://www.countyhealthrankings.org
[56] https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx
[57] https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4
[58] https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4

and 34.1% of households receiving WIC were food insecure.[59] Additionally, 57.7% of households classified as VLFS reported participating in one of these three federal assistance programs, with SNAP having the largest number of participants (47.8%). According to the ACS (2015-2019), 11.2% of the Anderson, Easton, and Star Community Health service area received SNAP benefits.[60] Figure 21 depicts Anderson and Easton compared to Pennsylvania and the United States and Figure 22 below depicts households receiving SNAP benefits by Census tract.

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) projected the potential rates of food insecurity because of COVID-19, estimating more than 50 million people experiencing food insecurity because of the pandemic.[61] 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 around 6.7% and the annual poverty rate to be 12% in 2021, which is a 0.9% increase from 2020.[62] Food insecurity in Northampton county was 11.8% in 2020, an increase of 37% from 2019. The projected food insecurity rate in Northampton county for 2021 is 9.8% and 12% in Pennsylvania. Additionally, 13.9% of children in Northampton county in 2021 are projected to be food insecure. Northampton county ranked 62 out of the 67 counties in Pennsylvania for food insecurity, with 1 ranked as the highest food insecurity rate.

Figure 22

[59] https://www.ers.usda.gov/webdocs/publications/99282/err-275.pdf?v=4396.4
[60] data.census.gov/
[61] https://www.feedingamerica.org/research/coronavirus-hunger-research
[62] https://www.feedingamerica.org/research/coronavirus-hunger-research

Northampton County Feeding America COVID-19 Food Insecurity Projections					
Rank 2021	2021	2020	2019	Change 2019-2020	2021 Child
62/67	9.8%	11.8%	8.6%	37.0%	13.9%

Figure 23

Additionally, availability of food can be a concern for children. PAYS asked students if they have been worried about running out of food one or more times in the past year, and 11.7% of students across Pennsylvania and 14.8% of students in Northampton county agreed with this statement.[63]

It is also important to note that the pandemic affected people of color (BIPOC) communities hardest in terms of unemployment and food insecurity. The Latinx 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 more likely to live in food insecure households than White individuals prior to the pandemic, and now 18 of the 25 counties across the country projected to have the highest food insecurity rates in 2020 are predominantly Black.[64]

Research studies have found that stress from inconsistent access to food can play an active role in fat accumulation and chronic disease.[65] In non-senior adults, food insecurity is associated with decreased nutrient intakes, increased rates of mental health problems, hypertension, and poor sleep outcomes.[66] 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.[67] Food deserts also play a role in food insecurity and chronic disease. A food desert is an area that has limited or nonexistent access to affordable and healthy grocery stores.[68] Living in a food desert has been linked to a poor diet and a greater risk for obesity, while people who live near a grocery store are more likely to consume fruits and vegetables and less likely to be obese.[69]

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[63] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx
[64] https://www.feedingamerica.org/research/coronavirus-hunger-research
[65] https://doi.org/10.3945/an.112.002543
[66] https://www.healthaffairs.org/doi/10.1377/hlthaff.2015.0645
[67] https://www.healthaffairs.org/doi/10.1377/hlthaff.2015.0645
[68] https://foodispower.org/access-health/food-deserts/
[69] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5708005/

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.[70]

The Robert Wood Johnson Foundation ranks counties based on their food environment index; the food environment index is measured by the "percentage of the population that is low income and does not live close to a grocery store."[71] Northampton county scored 8.7 out of 10, with 10 as the best.[72]

In 2015, Buy Fresh Buy Local, a Greater Lehigh Valley organization with aims to increase food access and consumption of locally grown food, released a report on the status of the Lehigh Valley's local food economy. In this report, Buy Fresh Buy Local 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.[73] Instead, the organization suggests families purchase locally grown, healthy foods that will promote a healthy lifestyle. The report noted that locally grown food creates about $17 million of economic activity in the Lehigh Valley each year and for every dollar received by food related farms in Lehigh and Northampton counties, an average of 45 cents of economic activity is added to the Lehigh Valley.[74] 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. Shopping locally for fresh fruits and vegetables not only helps the economy in the Lehigh Valley, but also helps reduce the risk of chronic disease.

A community forum attendee mentioned that "demand for food remains very high at the food banks, and food insecurity is a major community health problem."

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, which are "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."[75] Housing affects other sectors including education, health, racial equity, economic stability, homelessness,

[70] https://foodispower.org/access-health/food-deserts/
[71] https://www.countyhealthrankings.org/app/pennsylvania/2020/measure/factors/133/description
[72] https://www.countyhealthrankings.org/app/pennsylvania/2021/rankings/northampton/county/outcomes/overall/snapshot
[73] http://www.buylocalglv.org/wp-content/uploads/2016/01/Assessment-Report-LV-Food-Economy-FINAL-1.pdf
[74] http://www.buylocalglv.org/wp-content/uploads/2016/01/Assessment-Report-LV-Food-Economy-FINAL-1.pdf
[75] https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health

hunger, crime, the environment, and disability rights.[76] Over time, homeownership can help build wealth and savings, which are important in relation to health; but not everyone has equal opportunity to homeownership. Decades of discriminatory practices and inability to benefit from homeownership programs has led to a disproportionate homeownership rate between races.[77] 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.[78]

> *"The housing costs right now are pushing people into horrible choices. The pandemic has moved us even more into the housing haves and have not groups."*

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.[79] Refer to Figure 25 for more information on cost-burdened households. 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.[80] 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.[81]
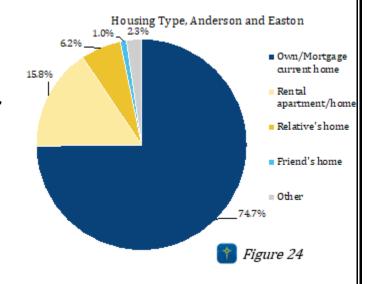
> *"The rental market and affordable housing conditions are as bad as I have ever seen them. The pressure and demand for assistance is crazy high. We are extremely concerned with the period after the moratorium on eviction ends."*

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,

Figure 24

Housing Type, Anderson and Easton
- Own/Mortgage current home: 74.7%
- Rental apartment/home: 15.8%
- Relative's home: 6.2%
- Friend's home: 1.0%
- Other: 2.3%

[76] https://www.opportunityhome.org/related-sectors/
[77] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report
[78] https://health.gov/healthypeople/objectives-and-data/browse-objectives/housing-and-homes
[79] https://lvpc.org/data-lv-housing.html
[80] https://lvpc.org/data-lv-housing.html
[81] https://lvpc.org/data-lv-housing.html
[82] https://www.cdc.gov/coronavirus/2019-ncov/more/pdf/CDC-Eviction-Moratorium-01292021.pdf

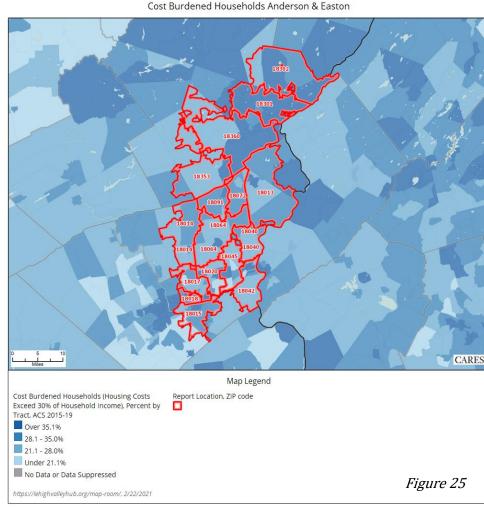The moratorium was meant to keep people in their current housing situations regardless of ability to pay rent, however it did not exclude tenants from paying rent. While this was a temporary solution, people facing eviction are likely to experience high rates of depression, anxiety and psychological distress.[83]

To get an understanding of how the Anderson, Easton, and Star Community Health service area population lives, we asked CHNA survey respondents to indicate their housing type. Due to small sample size, "Other" consists of individuals living in a shelter (.06%), group home (0.25%), senior living (1.02%), homeless (0.12%), or Other (0.93%). The largest percentage of respondents own or have a mortgage on their home (74.7%), followed by renting their home (15.8%), living at a relative's home (6.2%), Other (2.3%), and living at a friend's home (1%).

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.[84] A household is considered to be severely cost-burdened if 50% or more of their income goes toward paying mortgage or rent. These 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.

Cost Burdened Households Anderson & Easton

Map Legend

Cost Burdened Households (Housing Costs Exceed 30% of Household Income), Percent by Tract, ACS 2015-19

Report Location, ZIP code

- Over 35.1%
- 28.1 - 35.0%
- 21.1 - 28.0%
- Under 21.1%
- No Data or Data Suppressed

https://lehighvalleyhub.org/map-room/, 2/22/2021

Figure 25

A 2019 report by the County Health Rankings and Robert Wood Johnson (RWJ) Foundation found that 1 in 10 households across the United States spend more than half of their income on housing costs (severe cost-burdened).[85] 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.[86] Additionally, segregated counties across

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[83] https://doi.org/10.1016/j.socscimed.2017.01.010
[84] https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_092214.html
[85] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report
[86] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report

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.[87] Cost-burdened housing is a significant problem in the St. Luke's service area as wages and housing costs are not always aligned.

Further assessing 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, and Pennsylvania ranks 26 highest in housing costs.[88] 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.[89] 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.

Anderson and Easton (Northampton)		
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 111, Northampton County, PA (18015)	$ 28,056	40.0%
Census Tract 108, Northampton County, PA (18018)	$ 33,714	35.0%
Census Tract 112, Northampton County, PA (18015)	$ 33,903	50.5%
Census Tract 144, Northampton County, PA (18042, 18044, & 18045)	$ 35,000	40.9%
Census Tract 110, Northampton County, PA (18015)	$ 35,223	43.4%
Census Tract 109, Northampton County, PA (18015)	$ 37,917	47.2%
Census Tract 143, Northampton County, PA (18042 & 18045)	$ 41,913	44.3%
Census Tract 152.01, Northampton County, PA (18013 & 18072)	$ 43,455	40.9%
Census Tract 142, Northampton County, PA (18042)	$ 45,625	49.4%
Average 10 Census Tracts	$ 35,981	43.6%
Pennsylvania	$ 61,744	28.9%
National	$ 62,843	31.8%

Figure 26: Data is reported from the 5-year ACS (2015-2019) estimates by the U.S. Census Bureau

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. In Northampton county, the fair market rent for a two-bedroom apartment is $1,026, requiring $19.73 an hour or $41,040 annually to afford an apartment and not be cost-burdened. Based on the 2020 estimated hourly mean wage for renters in Northampton county, $13.51 an hour, an individual would need to work 1.5 full time jobs to afford an apartment.[90] The average cost-burdened percent in the lowest income census tracts from Northampton county is 43.6% (Figure 26). This is much higher than the Pennsylvania and National averages, 28.9% and 31.8%, respectively. Even more significant, half of the residents in census tract 112 are considered cost-burdened.

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[87] https://www.countyhealthrankings.org/reports/2019-county-health-rankings-key-findings-report
[88] https://reports.nlihc.org/oor
[89] https://reports.nlihc.org/sites/default/files/oor/files/reports/state/PA-2020-OOR.pdf
[90] https://reports.nlihc.org/sites/default/files/oor/files/reports/state/PA-2020-OOR.pdf

Figure 26 depicts the cost burdened households in the Anderson, Easton, and Star Community Health service area. 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 of houses because they give an indication of living standards and assess the quality of household facilities. According to the 2019 ACS subject definitions guide, a complete kitchen must include a sink with a faucet, a stove or range, and a refrigerator.[91] If a household lacks any one or more of these facilities, the household is considered to lack a complete kitchen. A complete plumbing facility must include hot and cold running water, and a bathtub or shower.[92]

Anderson and Easton (Northampton)		
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 111, Northampton County, PA (18015)	$ 28,056	0.0%
Census Tract 108, Northampton County, PA (18018)	$ 33,714	5.8%
Census Tract 112, Northampton County, PA (18015)	$ 33,903	7.0%
Census Tract 144, Northampton County, PA (18042, 18044, & 18045)	$ 35,000	9.7%
Census Tract 110, Northampton County, PA (18015)	$ 35,223	8.5%
Census Tract 109, Northampton County, PA (18015)	$ 37,917	5.9%
Census Tract 143, Northampton County, PA (18042 & 18045)	$ 41,913	9.5%
Census Tract 152.01, Northampton County, PA (18013 & 18072)	$ 43,455	3.7%
Census Tract 142, Northampton County, PA (18042)	$ 45,625	13.1%
Average 10 Census Tracts	$ 35,981	6.6%
Pennsylvania	$ 61,744	3.4%
National	$ 62,843	2.8%

Figure 27: Data is reported from the 5-year ACS (2015-2019) estimates by the U.S. Census Bureau

If a household lacks one or both facilities, the house is considered to lack complete plumbing. Without a complete kitchen, families are unable to cook nutritious meals and may rely more heavily on fast food or other ready-made food. For households lacking complete plumbing facilities, families may not be able to bathe regularly leading to worsened hygiene.

The average percent of the 10 lowest income households in Northampton county lacking a complete kitchen is 6.6%, over double the national average and well above the Pennsylvania state average. 8 out of these 10 census tracts have 5% or more households that lack a complete kitchen, with census tract 142 reporting 13.1% of its households lacking a complete kitchen. Census tract 142 is an example of an area that should be heavily focused on regarding safe housing and nutrition.

The average percent of the 10 lowest income households in Northampton county lacking complete plumbing is 3.3%, slightly above both the Pennsylvania and national percentages. While some of the census tracts have a low percent of households lacking complete plumbing, tracts 144 (7.6%), 143 (9.5%), and 142 (7.9%) all have significantly higher amounts of households lacking complete plumbing.

[91] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf
[92] https://www2.census.gov/programs-surveys/acs/tech_docs/subject_definitions/2019_ACSSubjectDefinitions.pdf

Anderson and Easton (Northampton)		
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 111, Northampton County, PA (18015)	$ 28,056	0.0%
Census Tract 108, Northampton County, PA (18018)	$ 33,714	1.3%
Census Tract 112, Northampton County, PA (18015)	$ 33,903	1.0%
Census Tract 144, Northampton County, PA (18042, 18044, & 18045)	$ 35,000	7.6%
Census Tract 110, Northampton County, PA (18015)	$ 35,223	2.9%
Census Tract 109, Northampton County, PA (18015)	$ 37,917	2.9%
Census Tract 143, Northampton County, PA (18042 & 18045)	$ 41,913	9.5%
Census Tract 152.01, Northampton County, PA (18013 & 18072)	$ 43,455	0.0%
Census Tract 142, Northampton County, PA (18042)	$ 45,625	7.9%
Average 10 Census Tracts	$ 35,981	3.3%
Pennsylvania	$ 61,744	2.6%
National	$ 62,843	2.1%

Figure 28: Data is reported from the 5-year ACS (2015-2019) estimates by the U.S. Census Bureau

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.[93] 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.[94]

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 12th grade.[95] The unique count is based on where the child was identified as homeless and attributed to the local education agency.[96] Of the eight counties that St. Luke's reaches 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). During the 2018-2019 school year, Northampton county reported 890 homeless students, slightly more than the previous school year (814 students).[97]

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[93] https://www.usich.gov/homelessness-statistics/pa/
[94] https://files.hudexchange.info/reports/published/
CoC_PopSub_State_PA_2019.pdf
[95] https://www.education.pa.gov/
[96] https://www.education.pa.gov/
[97] https://www.education.pa.gov/Documents/K-12/Homeless%20Education/Reports/2017-18%20Unique%20and%20Duplicate%20Counts%20by%20County.pdf

The Robert Wood Johnson Foundation produces County Health Rankings measuring many social determinants of health. One measure pertinent to housing is 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.[98] Northampton county ranks 54 out of 67 Pennsylvania counties for severe housing problems, with 1 ranked as having the least amount of problems. In Northampton county, 14% of residents have one or more of the housing problems listed above, compared to 15% of households in Pennsylvania.[99]

"Affordable housing which has all the ramifications of people not being able to get life-sustaining jobs or rent that is at market rate. This creates a homelessness problem, which is part of the mental health component challenge ,

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 also cause long term health effects.[100] Air quality is typically assessed by two components, ozone (O_3) 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, immediate breathing problems, long term exposure risks, and potential cardiovascular harm.[101] 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 would 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.[102] Objectives for environmental health determined by Healthy People 2030 are to increase the proportion of people with safe water to drink, reduce the amount of toxic pollutants in the environment, and to reduce the number of days people are exposed to unhealthy air.[103]

According to the American Lung Association, Northampton county earned an 'F' for high ozone days for 2016-2018. The weighted average of O_3 was 4.3 and the county had a total of 13 orange days. Orange days are characterized as unhealthy days for sensitive groups.

[98] https://www.countyhealthrankings.org/app/pennsylvania/2020/measure/factors/136/description
[99] https://www.countyhealthrankings.org/app/pennsylvania/2021/measure/factors/136/data?sort=sc-2
[100] https://www.spareheair.org/understanding-air-quality/air-pollutants-and-health-effects/whos-at-risk
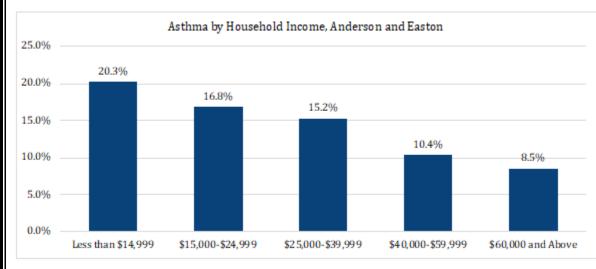[101] https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/ozone
[102] https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/particle-pollution
[103] https://health.gov/healthypeople/objectives-and-data/browse-objectives/environmental-health

Northampton county earned a 'B' for PM days, with 0.7 weight average and 2 unhealthy days for sensitive groups.

Anderson and Easton (Northampton)				
	Weight average	Orange days	Red days	Purple days
High Ozone	4.3	13	0	0
High PM	0.7	2	0	0

Figure 29: Orange-unhealthy for sensitive groups, Red-unhealthy, Purple-very unhealthy, DNC-Did Not Collect

Asthma by Household Income, Anderson and Easton

Additionally, the CHNA survey asks respondents to indicate if they have ever been diagnosed with asthma. When distributed by income, 20.3% of respondents in the Anderson, Easton, and Star Community Health service area who make less than $14,999 have asthma. For those who make $100,000 and above, only 7.9% have asthma. Respondents with lower incomes may have higher asthma rates due to location of housing, quality of air in their neighborhood, and lack of access to air purifiers.

Figure 30

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 by the state. From Pennsylvania's Department of Environmental Protection (DEP) water report in 2019, 11% of Pennsylvania households use well water and 89% of households use community water systems.[104] 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 in them if 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 safe. The water report also tracks the Maximum Residual Disinfectant Level (MRDL) which limits the amount of disinfectants allowed in safe drinking water.[105] Some of the typical contaminants tested are chlorine, fluoride, radium, turbidity, organic carbon, lead, and copper.[106] Water contaminants can result in a variety of negative health impacts, like gastrointestinal illness, worsened

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[104] http://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/PublicDrinkingWater/PA_DEP_2019_Annual_Compliance_Report.pdf
[105] https://www.state.nj.us/dep/watersupply/pdf/violations2019.pdf
[106] http://files.dep.state.pa.us/Water/BSDW/DrinkingWaterManagement/PublicDrinkingWater/PA_DEP_2019_Annual_Compliance_Report.pdf

nervous or reproductive system, and a variety of diseases (e.g., cancer).[107] The effects can also be short term or long term, while also going unseen, potentially worsening the effects over time.

Northampton county reports their water quality report through the Northampton Borough Municipal Authority (NBMA) and the Easton Suburban Water Authority. The water source for the Easton Suburban Water Authority is the Delaware River and the NBMA's source is Lehigh River and the Spring Mill Dam.[108] Neither of the reports recorded any violations in the 2019 water quality report. The NBMA also tested for other contaminants not on the EPA's list which include twenty-one volatile organic contaminants; fifteen synthetic organic contaminants; nine inorganic contaminants; and three microbiological contaminants.[109] None of these contaminants were detected in the Northampton water. The Easton Suburban Water Authority also tested for other contaminants such as aluminum, foaming agents (MBAS), sulfate and zinc; all were within the recommended range. 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 that may exist in homes. Higher prevalence for lead poisoning is found in low income homes.[110]

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.[111] A goal of Healthy People 2030 is to increase the amount of people using public transportation to get to work.[112] People who drive to work are less likely to reach the recommended physical activity goal for the day. Driving to work can also have a significant effect on obesity, diabetes, and heart disease.[108] 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 31 depicts the modes of transportation used to get to work by people in Northampton county, Pennsylvania, and the United States. For all three geographies, the most people drive alone to work. Northampton county reported 82.8% of commuters drive alone to work, which is slightly higher than Pennsylvania (75.9%), and the United States (76.3%). However, only small portions of people commute to work via public transportation or walking. Compared to Pennsylvania and the United States, significantly less Northampton county commuters use public transportation.

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[107] https://www.epa.gov/report-environment/drinking-water
[108] https://www.eswater.net/info/report-2019.pdf
[109] https://www.nbma.org/water-quality-report
[110] https://www.cdc.gov/nceh/lead/prevention/populations.htm?CDC_AA_refVal=https%3A%2F%2F
[111] https://ephtracking.cdc.gov/showCommunityDesignAddLinkTypesOfTransportationToWork
[112] https://health.gov/healthypeople/objectives-and-data/browse-objectives/transportation

Though a large portion of the Northampton county population commutes to work by car, 6.9% of people do not have access to a car. This is much lower than the United States percentage (8.6%) and Pennsylvania (10.9%).[113] People who do not have access to a car must then rely on public transportation, walking, or other modes of transportation. This can be an issue because poor public transportation and lack of walkability in some parts of the county may lead to individuals missing health appointments or screenings, which are crucial to healthy living.

Residents of Northampton county do have some access to public transportation, specifically Lehigh and Northampton Transportation Authority (LANTA). LANTA offers 35 different buses that travel on routes throughout the county and Lehigh county. LANTA also offers the LANTA Van service for individuals who are disabled, needing medical assistance, and 65 years or older.[114] In addition to LANTA, Northampton county residents have access to the Greyhound buses that travel to major cities in the area, along with Silverline EXPRESS, which provides transportation services throughout the Lehigh Valley.[115]

Figure 31

Anderson and Easton (Northampton)			
Mode of Transportation to Work	Northampton %	PA %	US %
Drive Alone (Car, Truck or Van)	82.8%	75.9%	76.3%
Carpool	6.9%	8.5%	9.0%
Use Public Transportation	1.6%	5.6%	5.0%
Taxi	0.0%	0.1%	0.2%
Motorcycle	0.1%	0.1%	0.2%
Bike	0.1%	0.5%	0.5%
Walk	2.5%	3.6%	2.7%
Other	1.4%	0.8%	0.9%
Work From Home	4.5%	4.9%	5.2%

Clinical Care

Access to Care

"There is a tremendous amount of backed up health needs in the region. People put off chronic disease issues and the leading health indicators are worsening are."

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[113] Data.census.gov (Table B25044)
[114] https://www.lantabus.com/lantavan/
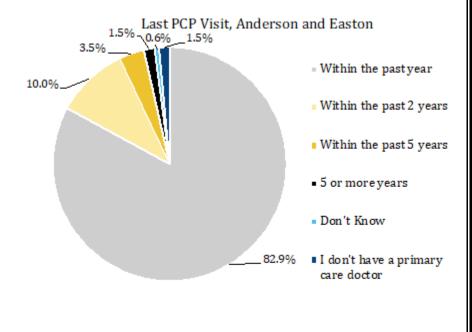[115] https://www.northamptoncounty.org/CTYGUIDE/Pages/Transportation.aspx

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. County Health Rankings reports a ratio of the number of individuals in a population served by one physician in the county. The smaller the ratio, the more physicians there are in the area in relation to population size. Northampton county has a ratio of 1,210:1, which is better than Pennsylvania's overall ratio at 1,230:1, but worse than U.S. top performers (1,030:1).[116]

To assess the frequency of visits, the CHNA survey asked how long it has been since the respondent last visited their PCP. The majority of respondents from the Anderson, Easton, and Star Community Health service area have seen a PCP within the last year (82.9%), followed by within the past 2 years (10%), within the past 5 years (3.5%), and 5 or more years (1.5%). Additionally, 2.1% of respondents do not know the last time they saw a PCP or do not have one.

It is also important to look at an individual's last visit to a PCP and 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 33), lack of insurance does hinder the frequency of doctor's visits. For respondents who do not have insurance coverage and pay cash, only 45% have seen a PCP within the past year, which is far lower than those with Medicare (92%), Medicaid (87%), and Veteran's Administration (79%). Additionally, respondents who do not have insurance coverage and respondents who do not know their insurance type have the highest rates of lacking a PCP, 11% and 6%, respectively. These findings reinforce the need for Federally Qualified Health Centers and doctors who offer services on a sliding pay scale so all patients can afford healthcare.
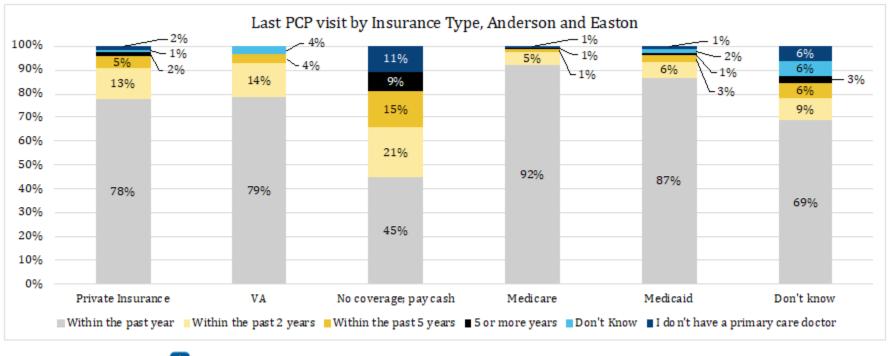

Figure 32

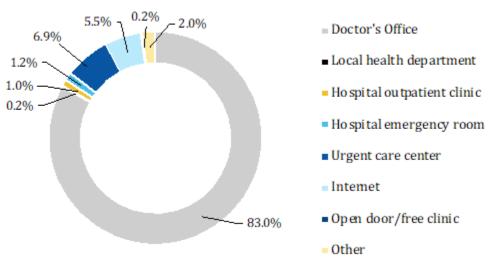[116] https://www.countyhealthrankings.org/

Last PCP visit by Insurance Type, Anderson and Easton

Legend: Within the past year, Within the past 2 years, Within the past 5 years, 5 or more years, Don't Know, I don't have a primary care doctor

Figure 33

Finally, the CHNA survey asked 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 (83%), followed by an urgent care center (6.9%), using the Internet (5.5%), and emergency room visit (1.2%). While a majority of respondents use a doctor's office, bringing in more PCPs who have 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 in an emergency room.

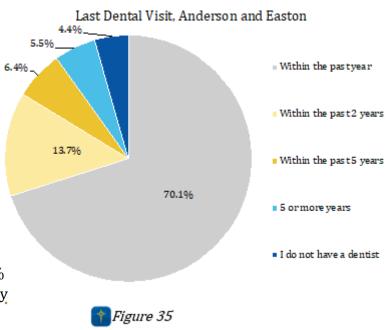## Last Location of Medical Advice or Care, Anderson and Easton

Legend: Doctor's Office, Local health department, Hospital outpatient clinic, Hospital emergency room, Urgent care center, Internet, Open door/free clinic, Other

Figure 34

Dentists

The Mayo Clinic refers to dental health as "a window to your overall health."[117] Oral pain can be debilitating in some circumstances and affect one's overall daily life, impacting their ability to go to work or school. Poor oral health can lead to a host of other issues in the body. A buildup of bad bacteria in your mouth due to poor oral hygiene can cause respiratory, digestive, and cardiovascular diseases.

Northampton county has a ratio of population to dentists of 1,700:1, which scores significantly worse than Pennsylvania overall with 1,410:1. The ratio, however, has been decreasing in Northampton county in recent years, illustrating a trend of an increasing number of dentists in the county per population.[118]

Within the past year, 70.1% of CHNA survey respondents from the Anderson, Easton, and Star Community Health service area have seen a dentist. Additionally, 13.7% have seen a dentist with the past 2 years, 6.4% within the past 5 years, 5.5% have seen a dentist 5 or more years ago, and 4.4% do not have dentist. The majority of respondents use private insurance for dental coverage (62.8%), followed by no insurance (30.8%), Medicaid (6.1%), and Veteran's Administration (0.3%).

Last Dental Visit, Anderson and Easton

- Within the past year
- Within the past 2 years
- Within the past 5 years
- 5 or more years
- I do not have a dentist

4.4%
5.5%
6.4%
13.7%
70.1%

Figure 35

Mental Health Providers

Mental health has also been identified as a large challenge facing the communities in all our counties. The COVID-19 pandemic has greatly impacted access to mental healthcare. As an indicator of mental healthcare providers and access in the county, Northampton has an overall ratio of population to mental healthcare providers of 420:1 which is slightly better than Pennsylvania overall at 450:1, but far below U.S. top performers at 270:1.[119]

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[117] https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/dental/art-20047475
[118] https://www.countyhealthrankings.org/
[119] https://www.countyhealthrankings.org/

Health Insurance

Uninsured rates represent a major barrier to 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 with 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.[120] 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 and awareness 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 and/or has an unusually close understanding of the community served."[121] The CHW is the liaison between health and social services and the community. They serve an important role in improving quality of services with cultural competency, increasing health knowledge in the community, and providing advocacy. CHWs help inform those of services available, regardless of insurance type or being uninsured, helping to increase access.
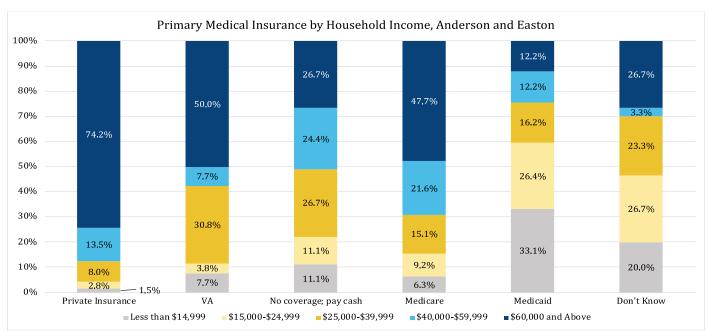
Uninsured rates in Northampton county stand at 4.6% overall while the Anderson, Easton, and Star Community Health service area has 5.2% of people uninsured. When broken down by age in the Anderson, Easton, and Star Community Health service area, 3% of those uninsured are under 18 years old, 7.3% are between 18-64 years old, and 0.3% are 65 and older.[122] These rates compare to Pennsylvania overall at 5.7% and the U.S. at 8.8%. When surveying the Anderson, Easton, and Star Community Health service area, a clear theme emerges; individuals who make less than $14,999 a year primarily use Medicaid (33.1%), do not know their primary insurance (20%), or have no coverage and pay cash (11.1%).

Conversely, those whose household income is $100,000 or more primarily have private insurance (42.2%), Medicare (18.8%), or use Veteran's Administration (15.4%). These findings reinforce the need for FQHCs in St. Luke's service areas, like Star Community Health (FQHC look-alike) along with doctors who accept Medicaid and uninsured patients. In addition, to assess the relationship between income and insurance, it is also important to look at ethnicity and insurance. Of respondents in the Anderson, Easton, and Star Community Health service area with private insurance, 12.3% are Hispanic; Veteran's Administration, 28.6%; no coverage, 22.9%; Medicare, 6.4%; Medicaid, 32.9%; and 25% of those who do not know.
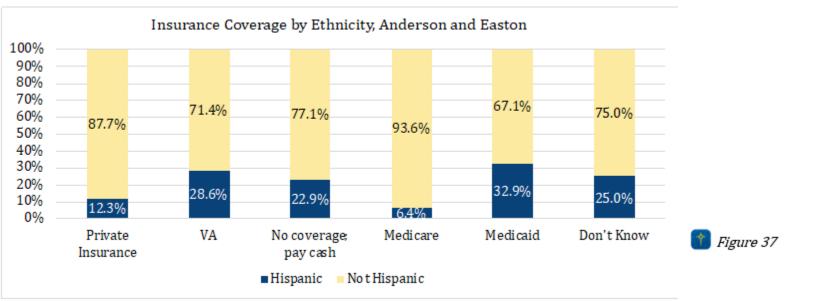
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[120] https://www.hrsa.gov/opa/eligibility-and-registration/health-centers/fqhc/index.html
[121] https://www.apha.org/apha-communities/member-sections/community-health-workers
[122] https://data.census.gov/cedsci/

Figure 36

Figure 37

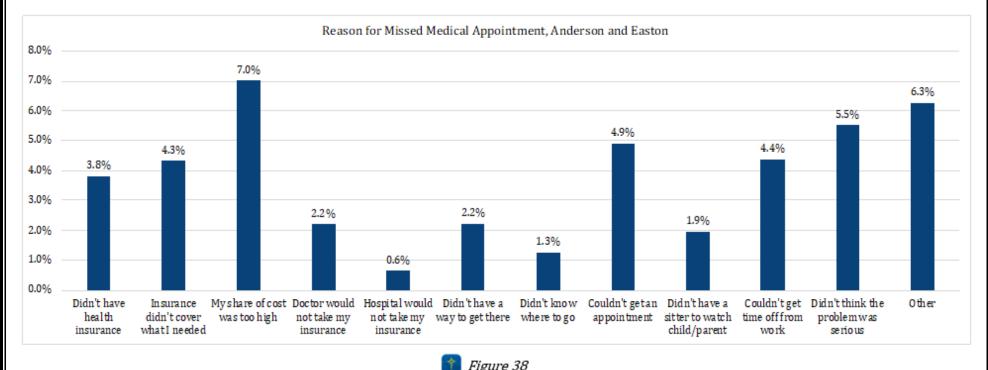# Hospital Data

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 through partnerships in the communities 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 Anderson, Easton, and Star Community Health service area were: the share of cost was too high (7%), Other (6.3%), and didn't think the problem was serious enough (5.5%). 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 adequate health insurance and facilities that provide assistance or sliding scales to lessen the financial burden of healthcare. 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.

Figure 38

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 perspective, to focus efforts on priority areas most affecting the health of our patient population. The top 10 reasons for hospitalization at St. Luke's Anderson and Easton campuses are listed in the table below. Sepsis is the most common diagnosis during an inpatient encounter; accounting for 4.7% of Anderson and Easton Campuses total inpatient encounters.

Principal Diagnosis	Ranking
Sepsis, unspecified organism	1
Single live born infant, delivered vaginally	2
Acute kidney failure, unspecified	3
Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	4
Single live born infant, delivered by cesarean	5
Other specified sepsis	6
Hypertensive heart disease with heart failure	7
Sepsis due to Escherichia coli [E. coli]	8
COVID-19	9
Non-ST elevation (NSTEMI) myocardial infarction	10

Figure 39

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 the most of any income bracket, with 31% of respondents who indicated visiting an ED 5 or more times in the past year make less than $14,999. Additionally, those who make $60,000 and above frequent the ED the lowest of any income bracket; 63.2% of respondents who have not visited an ED in the past year make $60,000 and above. These findings suggest that there needs to be more affordable PCP access for lower income patients.

In fiscal year 2020, the average number of emergency department encounters per ED patient seen at St. Luke's Anderson and Easton campuses was 1.49, which is below the network average of 1.75 (Figure 41). Note that multiple service areas contain multiple hospitals and therefore multiple EDs. The ED encounters are an average of the encounters at those hospitals.
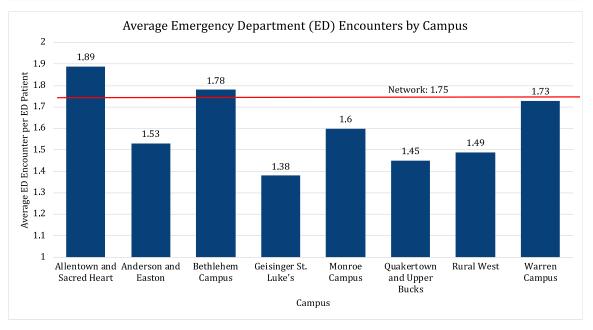

Figure 40

Figure 41

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.[123] For each obese individual, their medical costs are estimated to be $1,429 higher 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 the last few decades including: a lack of vegetable consumption, a lack of physical activity, poor portion control, and poor access to outdoor recreational activities and healthy foods.

In 2018, 42.4% of U.S. adults were obese—an almost 12% increase in obesity rates since 2000.[124] The 2020 report by Trust for America's Health (TFAH) using 2019 data reports that "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%."[125] 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 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.[126]

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.[127] Additionally, 41.5% of Black adults, 30.9% of Latinx adults and 31.3% of White adults in Pennsylvania are obese. The age bracket with the most number of adults with obesity in Pennsylvania is 45-64 years old, accounting for 38.2% of adults with obesity. When assessing childhood obesity, the most recent report found that 12.8% of children ages 2-4 and 17.4% of children ages 10-17 in Pennsylvania 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/m². According to the CDC, "Body Mass Index (BMI) is a person's weight 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

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[123] https://www.cdc.gov/obesity/adult/causes.html
[124] https://www.cdc.gov/obesity/data/adult.html
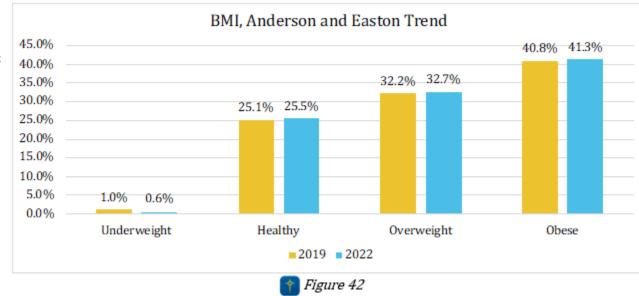[125] https://www.tfah.org/report-details/state-of-obesity-2020/
[126] https://www.tfah.org/report-details/state-of-obesity-2020/
[127] https://www.tfah.org/wp-content/uploads/2020/09/TFAHObesityReport_20.pdf

weight categories that may lead to health problems, but it is not diagnostic of the body fat or health of an individual."[128] 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 31% of adults in Pennsylvania are obese. Northampton county also reports that 31% of adults in the county are obese.

In the Anderson, Easton, and Star Community Health service area CHNA survey respondents had a small percentage underweight (0.6%), 25.5% healthy weight, 32.7% overweight, and 41.3% obese. While slightly higher than the national obesity average, the majority of respondents at unhealthy weights indicate a need for a stronger emphasis on healthy diet, education, access to fruits and vegetables, and other healthy food options.

Figure 42

Since 2019, BMI has stayed about the same in the Anderson, Easton, and Star Community Health service area; 0.6% of CHNA survey respondents are underweight, 25.5% are healthy, 32.7% are overweight, and 41.3% are obese, according to BMI. When speaking about chronic disease and obesity, two community forum members added in their observations:

"Obesity has been a major issue for our district and I'm certain that during the pandemic the problem has worsened. Lots of kids were not getting physical activity near the level they need to."

"We struggle with obesity in the Easton area and the situation is most likely worsening. The combination of inactivity and unhealthy diets, particularly in lower socio-economic neighborhoods, has led to troubling health outcomes."

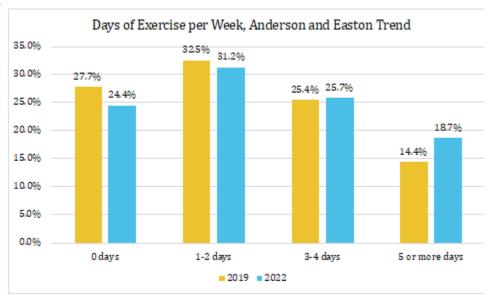
[128] https://www.cdc.gov/healthyweight/assessing/bmi/index.html

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.[129] Healthy People 2030 aim 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 30 minutes of exercise a day 5 days a week.[130]

County Health Rankings measure physical inactivity as the percentage of adults aged 20 and over reporting no leisure-time physical activity. Robert Wood Johnson reports that "physical activity improves sleep, cognitive ability, bone and musculoskeletal health, as well as reduces risks of dementia. Physical inactivity is not only associated with individual behavior but also community conditions such as expenditures on recreational activities, access to infrastructure, and poverty."[131] In Pennsylvania, 22% of adults have no leisure-time physical activity along with 27% of adults in Northampton county, which is the highest of all Pennsylvania service area counties. Additionally, the Rankings measure access to exercise opportunities, which "measures the percentage of individuals in a county who live reasonably close to a location for physical activity. Locations for physical activity are defined as parks or recreational facilities. Individuals are considered to have access to exercise opportunities if they: reside in a census block that is within a half mile of a park; or reside in an urban census block that is within one mile of a recreational facility; or reside in a rural census block that is within three miles of a recreational facility."[132] 84% of individuals in Pennsylvania have access to exercise opportunities along with 87% of individuals in Northampton county.

When asked how many days a CHNA survey respondent exercises 30 minutes, 24.4% of respondents from the Anderson, Easton, and Star Community Health service area indicated 0 days. However, 31.2% of respondents indicated exercising 1-2 days a week, 25.7% exercising 3-4 days a week, and 18.7% exercising 5 or more days a week- the Healthy People 2030 recommendation. The number of respondents who exercise 5 or more days a week increased 4 percentage points since 2019.

Figure 43

[129] https://www.cdc.gov/physicalactivity/data/index.html
[130] https://health.gov/healthypeople/objectives-and-data/browse-objectives/physical-activity/
[131] https://www.countyhealthrankings.org/
[132] https://www.countyhealthrankings.org/

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,[133] all 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. [134] Compared to our survey results, 93.3% of network survey respondents and 94% of Anderson, Easton, and Star Community Health service area respondents report eating at least one serving or 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).[135] In Pennsylvania, 7% of adults consume two or more servings of fruit and three or more servings of vegetables daily along with 8% of adults in the United States.

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.[136] 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.[137] Sweet food consumption was also highest among the middle- and highest-income groups compared to the lowest income group.
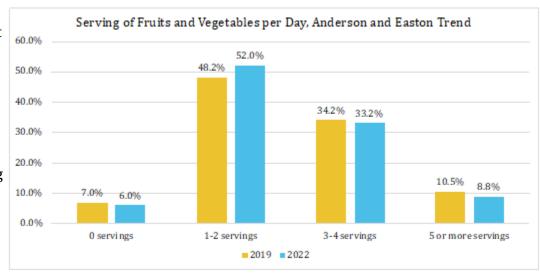

Figure 44

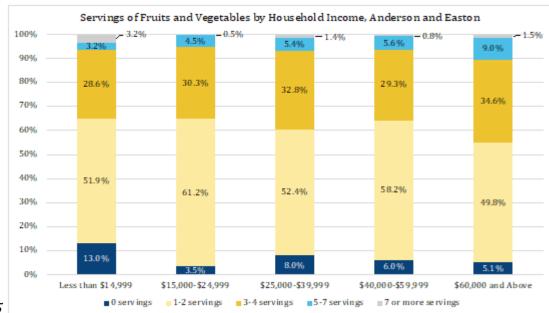[133] https://www.cdc.gov/nccdphp/dnpao/division-information/media-tools/adults-fruits-vegetables.html
[134] https://www.cdc.gov/nchs/data/databriefs/db397-H.pdf
[135] https://www.americashealthrankings.org/explore/annual/measure/fvcombo/state/U.S.
[136] https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/34_Sweet_foods_children_1518.pdf
[137] https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/DBrief/33_Sweet_foods_adults_1518.pdf

In the 2022 CHNA survey, we found that only 8.8% of respondents from the Anderson, Easton, and Star Community Health service area eat 5 or more servings of fruits and vegetables per day. The majority of respondents (52%) eat 1-2 servings per day and 6% do not eat any servings. From 2019, the number of respondents who eat 1-2 servings increase by almost 4 percentage points. Furthermore, looking at fruit and vegetable consumption by income shows that serving size increases with income. Of respondents who make less than $14,999, 13% do not consume any fruits and vegetables. Most respondents in each income bracket consume 1-2 servings of fruits and vegetables a day, followed by 3-4 servings per day. Respondents who make $60,000 and above have the highest percentage of respondents who eat 5 or more servings a day (10.5%).

Figure 45

Free or Reduced Lunch

During the 2018-2019 school year, 53.3% of students in Pennsylvania were eligible for free or reduced lunch.[138] Free or reduced lunch is a part of the National School Lunch Program (NSLP), a federally assisted meal program providing nutritionally balanced, low cost or free school lunches each day in public, private, and residential child care institutions.[139] To qualify for the NSLP, families must have an income at or below 130% of the poverty level. In 2016, the NSLP reached 30.4 million children nationwide.

Figure 46

[138] https://datacenter.kidscount.org/data/tables/2720
[139] https://www.fns.usda.gov/nslp

55

Percent of Children During 2018-2019 School Year with Free or Reduced Lunch Eligibility	
Northampton--Nazareth Area (Suburban)	22.5%
Northampton--Saucon Valley (Suburban)	25.9%
Northampton--Northampton Area (Suburban)	33.7%
Northampton--Pen Argyl Area (Rural)	35.8%
Northampton--Bangor Area (Rural)	43.9%
Northampton--Lehigh Valley Academy Regional CS (N/A)	45.4%
Northampton--Wilson Area (Suburban)	46.0%
Northampton--Bethlehem AVTS	50.3%
Northampton--Career Institute of Technology	51.1%
Northampton--Bethlehem Area (Urban)	56.1%
Northampton--Easton Area (Suburban)	61.1%
Northampton--Easton Arts Academy Elem CS (N/A)	63.0%
Northampton--Lehigh Valley Dual Language CS	100.0%
Average	48.8%

In Northampton county, an average of 48.8% of all students qualify for free or reduced lunch. Lehigh Valley Dual Language report 100% of their students as eligible for free or reduced lunches and Nazareth Area reports the least number of children eligible (22.5%).[140]

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.[141] 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 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 number of adolescents who receive formal sexual education before age 18.[142]

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; a 21% increase in both chlamydia and gonorrhea. Chlamydia is important to assess because it 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."[143] Chlamydia also disproportionately impacts adolescent women with 1 in 20 sexually active women ages 14-24 diagnosed with chlamydia.[144] In Pennsylvania, the rate is 463.4 per 100,000 population. In Northampton county, the rate is 411.0 per 100,000.

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.[145] The measure is represented by the number of births per 1,000 female population ages 15-19 years. In Pennsylvania, the rate is 17. In Northampton county, the rate is 12. 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

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[140] https://datacenter.kidscount.org/data/tables/2720
[141] https://health.gov/healthypeople/objectives-and-data/browse-objectives/sexually-transmitted-infections
[142] https://health.gov/healthypeople/objectives-and-data/browse-objectives/adolescents
[143] https://www.countyhealthrankings.org/
[144] https://www.cdc.gov/std/chlamydia/stdfact-chlamydia-detailed.htm
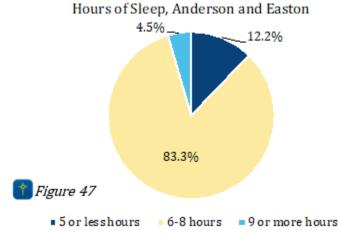[145] https://www.countyhealthrankings.org/

trouble gaining weight.[146] Teen mothers (and mothers over 40) are highly likely to have a low birthweight child. Between 2015-2019, 8.2% of births in Northampton County were considered low birthweight.[147]

Sleep

The Robert Wood Johnson Foundation indicates that sleep is an important part of a healthy lifestyle and a lack of sleep can have serious and negative health effects.[148] Healthy People 2030 also reports that approximately 1 in 3 adults do not get enough sleep.[149] Ongoing sleep deficiency has been linked to a number of health conditions such as heart disease, stroke, depression, and anxiety. Objectives for Healthy People 2030 include the reduction of motor vehicle crashes due to exhaustion and to increase the number of children and adults who get enough sleep. The 2021 Robert Wood Johnson County Health Rankings assessed the percent of adults who report less than 7 hours of sleep on average. In Pennsylvania, 39% of adults report less than 7 hours of sleep. Northampton county has 41% of adults, the highest among all service area counties.

The 2019 PAYS survey asked students to indicate if on average, they get less than 7 hours of sleep a night.[150] In Pennsylvania, 37.9% of students reported averaging less than 7 hours of sleep a night and 41.1% of students in Northampton county get less than 7 hours of sleep a night. 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 and 65.4% of students in Northampton county agreed with the statement.

To get an understanding of how many hours of sleep CHAN survey respondents get, we asked respondents to indicate, on average, the number of hours they sleep in a 24-hour period. The majority of respondents (83.3%) get 6-8 hours of sleep per night, 4.5% of respondents get more than 8 hours per night (recommended), and 12.2% get 5 hours or less per night.

Figure 47

Hours of Sleep, Anderson and Easton

- 5 or less hours
- 6-8 hours
- 9 or more hours

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[146] https://www.marchofdimes.org/complications/low-birthweight.aspx#
[147] https://www.health.pa.gov/topics/HealthStatistics/VitalStatistics/CountyHealthProfiles/Documents/current/maps-births.aspx#low-birth-weight
[148] https://www.countyhealthrankings.org/
[149] https://health.gov/healthypeople/objectives-and-data/browse-objectives/sleep
[150] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS)-2019.aspx

Mental Health

Mental health has been an increasing issue during the last 10 years, even prior to COVID-19. Mental health disorders can affect people of all age and racial groups, but some populations have disproportionately higher rate of diagnosis.[151] Mental health disorders like anxiety and 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. Goals related to mental health for Healthy People 2030 are to increase the proportion of people who get treatment for substance use and mental health disorders, 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 service area. In Lehigh and Northampton county, there is the Lehigh Valley NAMI.[152]

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.[153] The report ranks states on their prevalence rates and access to care for adults and youth. States (including the District of Columbia) ranked 1-13 have lower prevalence and higher access to care, while 40-51 have higher prevalence rates and lower access to care. For overall rankings, Pennsylvania ranks 5 for adults and 2 for youth, indicating a lower prevalence rate and higher access to care.[154] 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. Pennsylvania ranks 11 with a 18.2% prevalence rate. Additionally, 4.6% of adults experience a severe mental illness. See

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

Figure 48

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[151] https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders
[152] https://www.nami-lv.org/
[153] https://www.mhanational.org/issues/state-mental-health-america
[154] https://mhanational.org/issues/2021/ranking-states

Figure 49

Figure 48 for more information on questions covered in the report.

The 2021 Report also ranked states by youth measures. 13.8% of youth ages 12-17 report suffering 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."[155] Additionally, 9.7% of youth cope with severe major depression.

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

During the COVID-19 pandemic, the National Center for Health Statistics (NCHS) partners with the U.S. Census Bureau to ask people about the frequency of anxiety and depression symptoms they have experienced in the Household Pulse Survey.[156] 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 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. During this time in Pennsylvania, 24% of people report experiencing a depressive disorder in the past 7 days, ranks 13 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.

Starting in Phase 2, the Pulse survey began asking about mental healthcare. 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; 11% of people in Pennsylvania report needing counseling and not receiving

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[155] https://www.bridgestorecovery.com/major-depression/what-is-a-major-depressive-episode/
[156] https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm

care, ranking 25 out of 51. 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. 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 has consistently been between 10 and 14% since Phase 1. During this time in Pennsylvania, 8% of people were uninsured at the time of the interview, ranking 22 out of 51.

Prior to COVID-19, depression was still an issue facing the U.S. and the residents of our service area. The National Institute of Mental Health (NIMH) defines 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."[157] Some signs of depression are, but not limited to: persistent, sad, anxious, or "empty" mood; feelings of hopelessness or pessimism; decreased energy or fatigue; difficulty concentrating, remembering or making decisions; and
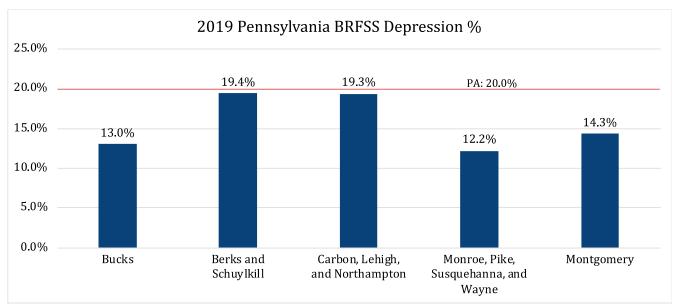

Figure 50

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.[158] 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 (e.g., counseling), or a combination of both.

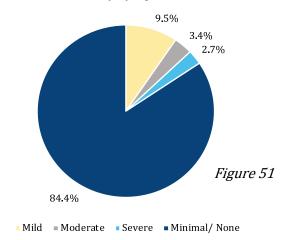[157] https://www.nimh.nih.gov/health/topics/depression/index.shtml
[158] https://www.nimh.nih.gov/health/topics/depression/index.shtml

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 (i.e., dysthymia). The survey found that 20% of people in Pennsylvania were depressed. The survey broke the counties into clusters, finding that 19.4% of Carbon, Lehigh, and Northampton report a depression diagnosis.[159]

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."[160] 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.[161] Anxiety disorders can be treated with psychotherapy, medication, or a combination. In 2020, the CDC released a report of symptoms of Generalized Anxiety Disorder (GAD) among adults in the United States. GAD displays excessive anxiety or worry, most days for at least 6 months, about numerous things, causing significant problems in areas of life like social interactions, school, and work.[162] The CDC survey found that 9.5% of adults experienced mild symptoms of anxiety, 3.4% experienced moderate symptoms of anxiety, and 2.7% experienced severe symptoms of anxiety in the past 2 weeks, while 84.4% of people reported no or minimal symptoms.[163] The percentage of adults who experienced all types of symptoms was highest among those 18-29 years 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.

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 United States had a substance use disorder.[164] 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, to go to school, and to have good relationships with family and friends.[165]

2019 CDC Percent of Adults in US Experiencing Anxiety Symptoms

9.5%
3.4%
2.7%
84.4%

Figure 51

Mild   Moderate   Severe   Minimal/ None

[159]https://www.health.pa.gov/topics/HealthStatistics/BehavioralStatistics/BehavioralRiskPAAdults/Pages/BehavioralRisksPAAdults.aspx
[160] https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml
[161] https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml
[162] https://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml
[163] https://www.cdc.gov/nchs/products/databriefs/db378.htm
[164] https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4935.pdf
[165] https://www.nimh.nih.gov/health/topics/substance-use-and-mental-health/index.shtml

Substance use disorders also co-occur at high prevalence rates with anxiety disorders, depression disorders, bipolar disorders, and attention-deficit disorder (ADHD).[166] Additionally, people with schizophrenia have higher rates of alcohol, tobacco, and drug use disorders than the general population. Around 1 in 4 individuals with a serious mental illness (i.e., diagnosable mental, behavioral, or emotional disorders that cause serious functional impairment interfering with one or more major life activities) also have a substance use disorder.[167] Substance use disorder vulnerability can largely be attributed with genetics, but physical and emotional trauma also puts people at a higher risk. The 2021 State of America report previously found that 7.7% of adults in America reported having a substance use disorder in the past year.[168] Additionally, 2.9% of adults reported having an illicit drug use disorder in the past year and 5.7% of adults reported having an alcohol use disorder in the past year. In Pennsylvania, 7.3% of adults have a substance use disorder, which ranks 15 out of 51.

"Lack of jobs and education leads to an 'avalanche effect' of worse mental and behavioral health"

In 2016, the SAMHSA study found that opiates, including heroin and prescription pain killers, were present in 20% of suicide deaths in the U.S. Additionally, 22% of all suicide deaths in 2016 involved alcohol intoxication. Alcohol is a commonly used substance, but its ability to increase aggressiveness and constrict cognition, which impairs coping strategies and may increase risk of suicidal behaviors.[169]

Suicide involves dynamic interactions between national issues, community issues, families and relationships, and individual health and or well-being.[170] It has become a growing concern as it is now the 10th 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.[171] Suicide is likely to remain a significant issue during, and well beyond, the pandemic. The long-term effects 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.[172] Therefore, responses to suicide should target the whole population, focusing on particular risk factors like financial stressors, alcohol consumption, isolation, and access to care.[173]

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[166] https://www.drugabuse.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-1-connection-between-substance-use-disorders-mental-illness
[167] https://www.drugabuse.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-1-connection-between-substance-use-disorders-mental-illness
[168] https://mhanational.org/issues/2021/ranking-states
[169] https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4935.pdf
[170] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf
[171] https://www.cdc.gov/nchs/products/databriefs/db398.htm
[172] https://doi.org/10.1016/S2215-0366(20)30171-1
[173] https://doi.org/10.1016/S2215-0366(20)30171-1

A CDC Suicide Mortality report in the United States from 1999-2019 was released February 2021, outlining the suicide rate over 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).[174] The 2019 crude rate is 24.5 per 100,000 people.[175] In 2018, the National Hospital Ambulatory Medical Care Survey (NHAMCS) reported 312,000 emergency visits for self-injury.[176] CDC WONDER data shows the 2019 crude rate of suicide by intentional self-harm from 1999-2019.[177] In 2019, 11.9 per 100,000 deaths were death by intentional self-harm.

Released in September 2020, the National Vital Statistics Report and CDC published a report on 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% nationally and 53.6% in Pennsylvania.[178] After a period of stability from 2000-2007, the suicide rate among youth and adolescents increased 57.4%, which went 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. Pennsylvania's suicide rate in 2016-2018 was 10.6 per 100,000 deaths.[179]

In response to growing suicide rates, in September 2020 Pennsylvania created a suicide prevention plan, outlining 8 specific prevention goals including 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.[180]

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.[181] 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 outreach and services to encourage care-seeking behaviors.

Another population particularly vulnerable to suicide are 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.[182] 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

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[174] https://www.cdc.gov/nchs/products/databriefs/db398.htm
[175] https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=BF94A69A2EA7B26A79CC60EBC4B1
[176] https://www.cdc.gov/nchs/fastats/suicide.htm
[177] https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=808281E7650E525FCF44896FE0B4
[178] https://www.cdc.gov/nchs/data/nvsr/nvsr69/nvsr-69-11-508.pdf
[179] https://www.cdc.gov/nchs/data/nvsr/nvsr69/nvsr-69-11-508.pdf
[180] https://www.dhs.pa.gov/Services/Mental-Health-In-PA/Documents/PA%20Statewide%20Suicide%20Prevention%20Plan.pdf
[181] https://mhttcnetwork.org/sites/default/files/2020-06/Mh_Disparities_Booklet.pdf
[182] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf

by suicide are more likely to have sleep disorders, traumatic brain injuries, or a mental disorder diagnosis.[183] These suicide rates tend to be higher of 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.[184] Veterans are a group that require specialized services and care that addresses the needs of the population.

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.[185] An illicit drug is one that is highly addictive and forbidden by law. Some of these include marijuana, opioids like fentanyl and heroin, and stimulants like cocaine and 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."[186] 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 number of adults who used drugs in the past month, increase the rate of people with a substance use disorder who got treatment in the past year, increase the proportion of adolescents who think substance abuse is risky, and to reduce the rate of opioid related emergency department visits.[187]

When speaking about substance use, a community forum member mentioned the pandemic's impact. However, another forum member added that the collaboration between organizations to address substance use has been an asset to the community.

"The combination of substance abuse and behavioral and mental health cases is large, and I think we have not scratched the surface of the pandemic's impact on these problems."

"In the area of substance abuse, collaboration between nonprofits and local governments is strong in the Valley. Recovery centers also work well together."

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[183] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf
[184] https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf
[185] https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf
[186] https://www.samhsa.gov/find-help/disorders
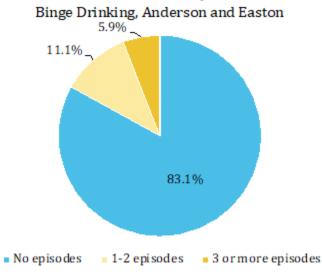[187] https://health.gov/healthypeople/objectives-and-data/browse-objectives/drug-and-alcohol-use

Alcohol

A 2019 CDC alcohol use report found that 25.1% of adults 18 and older have had at least one heavy drinking day (five or more drinks for men and four or more drinks for women) in the past year.[188] The percentage for binge drinking in women is 19.8% and for men, 30.9%.[189] 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. In Northampton county there were 10.2 alcohol-induced deaths per 100,000 population.[190]

Pennsylvania's Behavioral Risk Factor Surveillance System (BRFSS) surveyed 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."[191] The CDC reports that binge drinking is the most common, costly, and deadly pattern of excessive alcohol use in the United States.[192] 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.[193] 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. The Carbon, Lehigh and Northampton cluster was reported to have 7% of people at risk for a drinking problem.[194] Anderson, Easton, and Star Community Health CHNA survey respondents indicated low episodes of binge drinking, with no episodes representing the majority (83.1%), 1-2 episodes (11.1%) and 3 or more (5.9%).

Binge Drinking, Anderson and Easton

Figure 52

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[188] https://www.cdc.gov/nchs/fastats/alcohol.htm
[189] https://public.tableau.com/profile/tina.norris#!/vizhome/FIGURE9_1/Dashboard9_1
[190] https://wonder.cdc.gov/controller/saved/D76/D99F021
[191] https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm
[192] https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm
[193] https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking
[194] https://www.health.pa.gov/topics/HealthStatistics/BehavioralStatistics/BehavioralRiskPAAdults/Pages/BehavioralRisksPAAdults.aspx

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, like beer and 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.[195] This is an issue because increased access to liquor stores poses a higher risk of developing alcohol use and/or a substance use disorder. The number of liquor stores is reported per 10,000 population. The Anderson, Easton, and Star Community Health service area has 1.31 liquor stores per 10,000 population, while Northampton county has 1.34 per 10,000 population.[196]

Vehicle Deaths with Alcohol Impairment

- Northampton County (28%)
- US (11%)
- Pennsylvania (26%)

Figure 53

RWJ also measures excessive drinking and alcohol impaired driving deaths. Excessive drinking measures the percentage of the county's adult population that reports binge or heavy drinking in the past 30 days. Pennsylvania reported 20% and Northampton county reported 22%. The alcohol impaired driving measures the percentage of motor vehicle deaths with alcohol impairment. Alcohol reduces brain function and impairs thinking, which can hinder driving. Drivers 21-24 years old caused 27% of all alcohol impaired deaths in 2015-2019.[197] Pennsylvania reported 26% of all vehicle deaths with alcohol impairment and Northampton county reported 28%.

Stimulants

The drug overdose report for 1999-2019 by the CDC 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.[198] It is also reported that the age-adjusted rate of drug overdose deaths involving psychostimulants, which include drugs such as methamphetamine and 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 including rapid breathing, aggression, hallucinations, overactive reflexes, and more.[199] The 2019 Annual Surveillance Report of Drug-Related Risks and Outcomes from the CDC,[200] 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 people 26–29 years (6.0%) and people 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

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[195] DOI: 10.1016/s0277-9536(00)00004-6

[196] https://www.census.gov/programs-surveys/cbp.html

[197] https://www.countyhealthrankings.org/explore-health-rankings/measures-data-sources/county-health-rankings-model/health-factors/health-behaviors/alcohol-drug-use/alcohol-impaired-driving-deaths

[198] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf

[199] https://www.drugabuse.gov/publications/drugfacts/prescription-stimulants

[200] https://www.cdc.gov/drugoverdose/pubs/related-publications.html

is highest among people 30–34 years (1.6%), and 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.[201]

There are an average about 510 new methamphetamine users a 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. Using data from 2018 and 2019, SAMHSA reports that 75,000 people 18 years and older in Pennsylvania used methamphetamines in the past year.[202]

Figure 54

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.[203] The CDC and National Health Interview Survey of 2019 reported that 14.2% of adults 18 years and older currently smoke cigarettes[204] and 8.1% of adolescents grades 9-12 smoked cigarettes in the past 30 days.[205] The Robert Wood Johnson 2021 County Health Rankings report on adult

[201] https://emergency.cdc.gov/han/2020/han00438.asp
[202] https://www.samhsa.gov/data/sites/default/files/reports/rpt32879/NSDUHsaeTotal2019/2019NSDUHsaeTotal.pdf
[203] https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf
[204] https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf
[205] https://www.cdc.gov/nchs/data/hus/hus19-508.pdf#fig09

smoking using data from 2018. Cigarette smoking is an important data point to capture because it has been an identified cause of various cancers, cardiovascular disease and other adverse health outcomes.[206] Measuring tobacco use can help St. Luke's and other health networks to 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.

In Pennsylvania, 18% of adults smoke every day or have smoked at least 100 cigarettes in their lifetime. In Northampton county, it is 19% of adults. Additionally, the CDC National Center for Health Statistics (NCHS) released a secondhand smoke exposure report among nonsmoking adults in February 2021. Using data from 2015-2018, the report indicated that 20.8% of nonsmoking U.S. adults 18 and over were exposed to secondhand smoke, which was measured by cotinine in their blood.[207] Cotinine is a metabolite of nicotine. 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%) than 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 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 CHNA survey respondents smoke, 11.9% of respondents from the Anderson, Easton, and Star Community Health service area responded yes. Of those who do smoke, cigarettes are the most common form of tobacco (7.3%), followed by cigars (2.1%), e-cigarettes (1.5%), 0.6% of respondents use chew, 0.3% use snuff, 0.3% use hookahs, 0.2% use pipe, and 0% use snus.
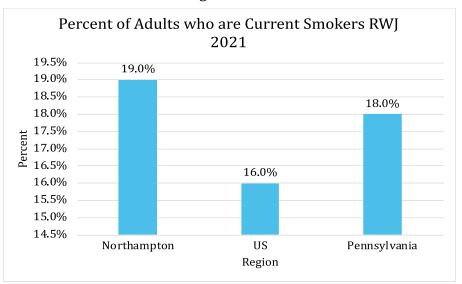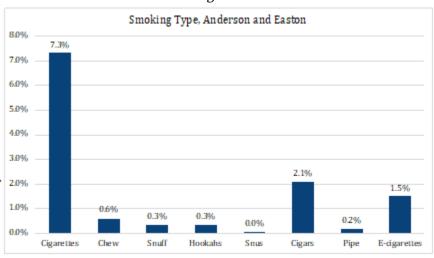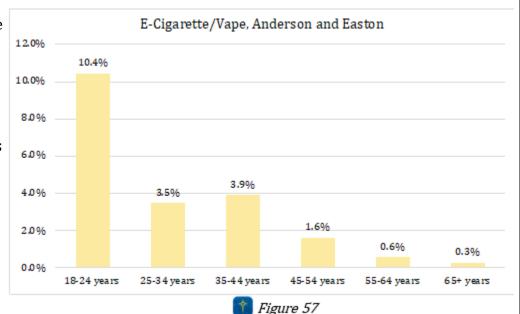

Figure 55

Figure 56

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[206] https://www.countyhealthrankings.org/
[207] https://www.cdc.gov/nchs/data/databriefs/db396-H.pdf

···························· 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."[208] The CDC and National Health Interview Survey in 2019 found that 4.4% of adults 18 years and older use e-cigarettes[209] and 20.8% of adolescents grades 9-12 have used e-cigarettes in the past 30 days.[210] Electronic cigarettes were introduced in the United States around 2007 and the highest percentage of use is seen in adolescents.[211] Nicotine is most harmful for children and adolescents because the substance hinders brain development, which occurs until around age 25. Particularly, nicotine impacts attention, learning, mood, and impulse control, all of which are built and refined through childhood.[212]

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.[213] 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.[214] 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.[215] According to PAYS data, 19% of students in Pennsylvania used an e-cigarette of vape within the last 30 days.[216] Similar to other findings, the CHNA survey age group that

Figure 57

[208] https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html
[209] https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf
[210] https://www.cdc.gov/nchs/data/hus/hus19-508.pdf#fig09
[211] https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf
[212] https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html
[213] https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e1.htm?s_cid=mm6937e1_w%20
[214] https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a1.htm
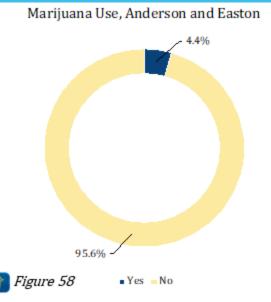[215] https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a1.htm
[216] https://www.pccd.pa.gov/Juvenile-Justice/Pages/Pennsylvania-Youth-Survey-(PAYS).aspx

uses e-cigarettes/vape most frequently are 18-24 year old (10.4%), 3.5% of respondents 25-34 years old use vapes, followed by 3.9% 35-44 years old, 1.6% 45-54 years old, 0.6% 55-64 years old, and 0.3% 65 years and older. The decrease in use by age is consistent with national and state trends.

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 to brain development.[217] 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.[218]

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.[219] This usage was highest among people 18-25 (34.8%) and people 26-34 (29.6%). Marijuana use was reported low, 4.4% by CHNA survey respondents in the Anderson, Easton, and Star Community Health service area.

Marijuana Use, Anderson and Easton

4.4%

95.6%

Figure 58   ▪ Yes ▪ No

Opioids

The CDC reports that the opioid epidemic has occurred in three phases.[220] 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 alternative to prescription opioids due to its similar effect on the body. The third phase began in 2013 with the introduction of synthetic opioids, like illicitly manufactured fentanyl. The CDC provides descriptions on the most commonly used opioids: prescription opioids,

[217] https://www.drugabuse.gov/publications/drugfacts/marijuana
[218] https://www.cdc.gov/nchs/data/hus/2019/020-508.pdf
[219] https://www.cdc.gov/drugoverdose/pubs/related-publications.html
[220] https://www.cdc.gov/drugoverdose/epidemic/index.html

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."[221] Prescription opioids are highly addictive, and once addicted it is 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.[222] 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.[223] The CDC reports that rates of overdose deaths involving synthetic opioids other than methadone, which includes fentanyl and fentanyl analogs, increased over 16% from 2018 to 2019. Overdose deaths involving synthetic opioids were nearly 12 times higher in 2019 than in 2013."[224] Heroin is an illegal and highly addictive drug that is typically injected, and heroin use 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.[225] 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.[226] 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% per year) than 2013-2017 (75% per year). 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 increasing again to 4.4 in 2016 and 2017. The rates in 2018 (3.8) and 2019 (3.6) were lower than 2017.[227]

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 100,000 people and 293.2 hospital admissions with opioid use disorder per 100,000 people in Pennsylvania.[228] In Northampton county, there was a rate of 24.2 opioid overdose hospital admissions per 100,000 people and a rate of 380.8 hospital admissions with OUD per 100,000 people.

[221] https://www.cdc.gov/drugoverdose/opioids/prescribed.html
[222] https://www.cdc.gov/drugoverdose/opioids/prescribed.html
[223] https://www.cdc.gov/drugoverdose/opioids/fentanyl.html
[224] https://www.cdc.gov/drugoverdose/opioids/fentanyl.html
[225] https://www.cdc.gov/drugoverdose/opioids/heroin.html
[226] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[227] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[228] Phc4.org/m/Opioids/

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."[229] The effects of NAS usually occur within 48-72 hours of birth, suffering from withdrawal, low birth weight, tremors, vomiting, fever and more. In Pennsylvania, there have been 5,596 NAS births from January 1, 2018 to March 6, 2021.[230] In 2018, Northampton county had 11.9 NAS births per 1,000 births, 36 NAS births in total.[231]

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 purpose of the report was to alert public health departments, healthcare professionals, medical examiners, and coroners of substance use increase and drug overdoses across the U.S. with "a concerning acceleration of the increase in drug overdose deaths, with the largest increase recorded from March 2020 to May 2020, coinciding with the implementation of widespread mitigation measures for the COVID-19 pandemic."[232] The alert indicated that overdose deaths increased 18.2% from the 12-month period between June 30, 2019 and May 31, 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 January 2015 when monthly provisional estimates began.[233] The report also claims that synthetic opioids are the primary driver of the increases in overdose deaths; "the 12-month count of synthetic opioid deaths increased 38.4% from the 12-months ending in June 2019 compared with the 12-months ending in May 2020."[234] Of the 38 jurisdictions in the U.S. with available synthetic opioid data, 37 jurisdictions reported increases in synthetic opioid overdose deaths, and 18 of the jurisdictions reported increases greater than 50%. 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 Pennsylvania is 5,008.[235] These numbers are underreported due to incomplete data and should not be assumed to be final. To prevent against the increase in overdose deaths, the CDC recommends states expand the use of naloxone with overdose prevention education; expand access to treatment for substance use disorders; intervene early with individuals at high risk for overdose; improve detection of overdose outbreaks.

[229] https://nj.gov/health/populationhealth/opioid/opioid_nas.shtml
[230] https://data.pa.gov/stories/s/9q45-nckt/
[231] https://data.pa.gov/Opioid-Related/Annual-Rate-of-Neonatal-Hospital-Stays-with-Withdr/drhe-nauc
[232] https://emergency.cdc.gov/han/2020/han00438.asp
[233] https://emergency.cdc.gov/han/2020/han00438.asp
[234] https://emergency.cdc.gov/han/2020/han00438.asp
[235] https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm

Overdose

Overdose has been discussed previously, as it is a growing concern with prevalence rates increasing, especially during the pandemic.[236] Drug overdose deaths are the leading contributor to premature death and are largely preventable.[237] 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.[238] 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.[239]

In Pennsylvania, the rate is 53.3 per 100,000 population. In Northampton county, the rate is 47.6 overdose deaths per 100,000 people. 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).[240] Adults 35-44 had the highest rate of drug overdose deaths of any age group in 2019, (40.5 per 100,000 population). Increasing from 2012, drug overdose deaths involving cocaine increased from 1.4 to 4.9 per 100,000 population in 2019 and those deaths involving psychostimulants with abuse potential, such as methamphetamine and amphetamine, increased from 0.8 to 5.0 per 100,000 population, more than 6-fold.[241] As of 2018, Pennsylvania ranks 4 overall for age-adjusted drug overdose deaths in the United States.[242] During this time, Pennsylvania had 4,415 drug overdose deaths. Of the total drug overdose deaths in Pennsylvania, 65% involved opioids, a total of 2,866 deaths.[243]
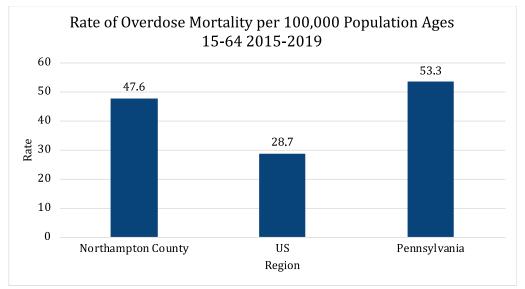
Rate of Overdose Mortality per 100,000 Population Ages 15-64 2015-2019

Region	Rate
Northampton County	47.6
US	28.7
Pennsylvania	53.3

Figure 59

[236] https://emergency.cdc.gov/han/2020/han00438.asp
[237] https://www.countyhealthrankings.org/
[238] https://www.countyhealthrankings.org/
[239] https://opioidmisusetool.norc.org/
[240] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[241] https://www.cdc.gov/nchs/data/databriefs/db394-H.pdf
[242] https://www.cdc.gov/drugoverdose/data/statedeaths/drug-overdose-death-2018.html
[243] https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state

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."[244] Stigma may be a barrier to seeking help for someone suffering from substance use due to fear of disapproval toward the substance use from family or friends. St. Luke's has worked with our own staff and other community organizations to inform people 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 the campuses whose employees are directly related to substance use disorders (SUD) as part of the Opioid Stewardship Program. 2,898 of 4,500 inpatient and outpatient network providers, nurses, and support staff received and completed the confidential stigma survey and education. 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. With the presentations, we have been able to reach 299 people as of December 2021. The stigma education included partners such as 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 defines 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 as a result of overdosing with heroin or prescription opioid pain medications."[245] Naloxone is safe and can be administered in three ways: injected, auto injected, or as a nasal spray. It is important for a variety of people 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.

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[244] https://dictionary.cambridge.org/us/dictionary/english/stigma
[245] https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-reversal-naloxone-narcan-evzio

Warm Hand Off

A warm hand off is a process that has been implemented in St. Luke's 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."[246] Screening, Brief Intervention, and Referral to Treatment (SBIRT) is another approach adopted in St. Luke's 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.[247] During CY 2021, a total of 2,637 patients have received full SBIRT at 10 St. Luke's campuses. Of those SBIRT patients, 56% have been referred with warm hand off and 32% have entered substance use treatment.

Opioid Encounters

While opioid use and overdoses have been increasing, especially in relation to the COVID-19 pandemic, St. Luke's has been rising to meet the needs of the community with support services including: 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 Opioid Use Disorder (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.

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[246] https://www.ahrq.gov/patient-safety/reports/engage/interventions/warmhandoff.html
[247] https://www.samhsa.gov/sbirt

Health Outcomes

In the 2021 Robert Wood Johns County Health Rankings, Northampton county ranks 11 overall in Pennsylvania for health outcomes. It is ranked among the healthiest counties in Pennsylvania in the 75-100th percentile. America's Health Ranking ranks Pennsylvania 34 out of 50 for health outcomes. For both organizations, a ranking closest to 1 indicates healthier outcomes.

Morbidity, Mortality, and Life Expectancy

Morbidity, mortality, and life expectancy are key health outcomes that help us to determine the overall health of the populations we serve. 2021 Robert Wood Johnson Foundation County Health Rankings data 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 Northampton county is 6,000 deaths per 100,000 which is better than Pennsylvania (7,500) but worse than U.S. top performers (5,400), indicating there is room for improvement in mortality outcomes among residents surrounding St. Luke's Anderson and Easton campuses and Star Community Health. Since 1998, there has been no significant trend in premature deaths within the county.[248]

According to the CDC, the average life expectancy from birth in the U.S. is 78.8 years.[249] The Robert Wood Johnson County Healthy Rankings measures life expectancy as an age-adjusted, average number of years a person can expect to live.[250] In Pennsylvania, the life expectancy is 78.4 and the range of life expectancy in the counties of Pennsylvania is 74.9-83. Life expectancy in Northampton county is 80.1.

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 growth problems, cardiovascular disease, respiratory conditions, and visual, auditory, and intellectual impairments.[251] The overall low birthweight percentage is 8% in Pennsylvania and 6% for U.S. top performers. The low birthweight percentage is 8.2% in Northampton county.

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%.[252] In Pennsylvania, there were 2,147,482 cases reported (16,774.6 per 100,000), 37,111 deaths, and a

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[248] https://www.countyhealthrankings.org/
[249] https://www.cdc.gov/nchs/fastats/life-expectancy.htm
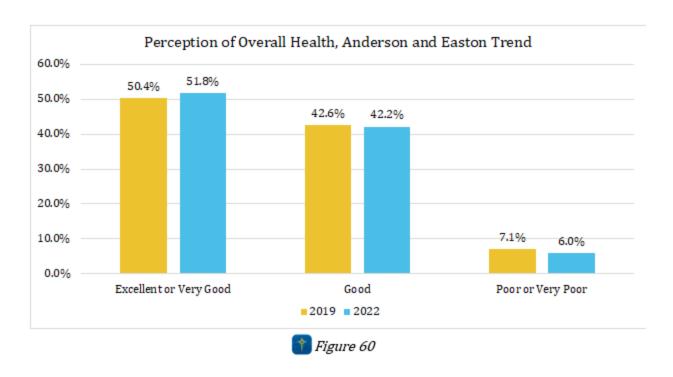[250] https://www.countyhealthrankings.org/
[251] https://www.countyhealthrankings.org/
[252] https://coronavirus.jhu.edu/map.html

mortality rate of 1.7%.[253] In Northampton county, there were 62,242 cases reported (20,420.1 per 100,000), 890 deaths, and a mortality rate or 1.4%.
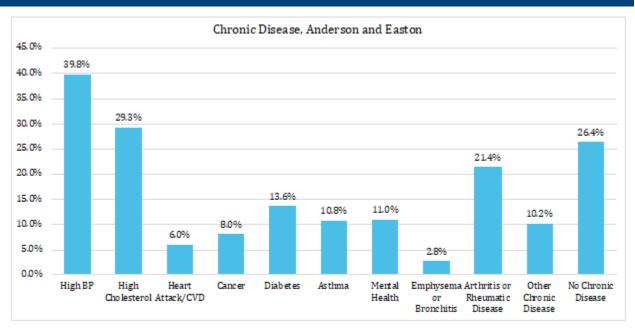
Perceptions of Health

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 benefit the community. According to 2022 CHNA survey, most individuals in the service area reported excellent or very good health (51.8%), followed by good (42.2%), and poor or very poor (6%).

Figure 60

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[253] https://www.health.pa.gov/topics/disease/coronavirus/Pages/Cases.aspx

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.[254] 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 cost to the healthcare system. Our 2022 CHNA survey results conveyed that the highest percentage of Anderson, Easton, and Star Community Health service area respondents have high blood pressure (39.8%), followed by high cholesterol (29.3%), and arthritis or a rheumatic disease (21.4%). Only 21% of respondents 45 years and older reported not having a chronic illness of any kind.

Figure 61

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; 90 to 95% of all diabetes is type 2. Additionally, 21.4% of adults with diabetes were not aware they had diabetes and thus it went undiagnosed. According to the 2017 Behavioral Risk Factor Surveillance System (BRFSS), a national, health related survey, 10.9% of adults in Northampton county aged 18 years and older have been diagnosed with diabetes.[255]

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[254] https://www.cdc.gov/pcd/issues/2020/20_0130.htm
[255] https://chronicdata.cdc.gov/500-Cities-Places/PLACES-Local-Data-for-Better-Health-County-Data-20/swc5-untb/data
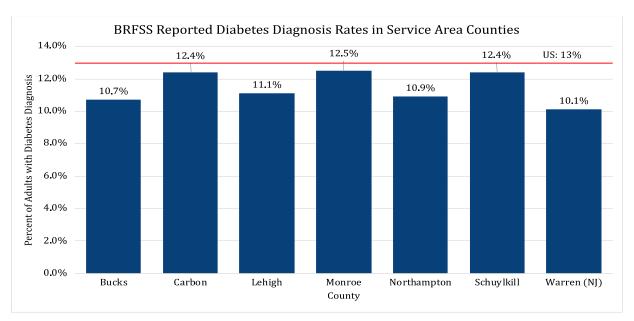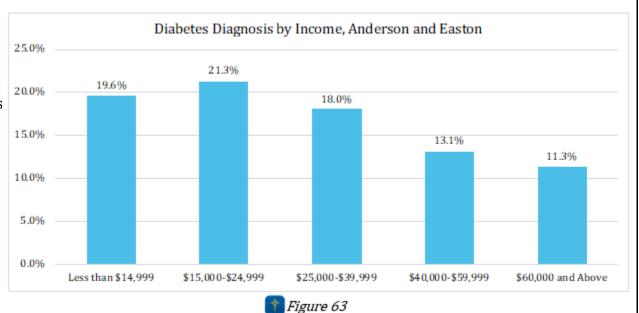
Figure 62

Of all CHNA survey respondents from the Anderson, Easton, and Star Community Health service area, 13.6% have diabetes. When broken down by income, respondents whose household income is $15,000-$24,999 have the highest rates of diabetes (21.3%) and respondents whose household income is $60,000 and above have the lowest rates (11.3%). Respondents who make less than $40,000 have the highest rates of diabetes.

Figure 63

79

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,[256] 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 report, the crude prevalence of hypertension in U.S. adults aged 20 and over is 49.6%. According to the 2017 Behavioral Risk Factor Surveillance System (BRFSS), a national, health related survey, 33.2% of adults in Northampton county aged 18 years and older have been diagnosed with high blood pressure.[257] See Figure 64, which compares Northampton county hypertension diagnosis rates to other service area counties and the U.S. overall.
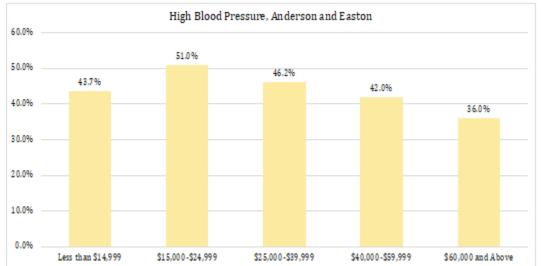

Figure 64

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[256] https://www.cdc.gov/bloodpressure/about.htm
[257] https://chronicdata.cdc.gov/500-Cities-Places/PLACES-Local-Data-for-Better-Health-County-Data-20/swc5-untb/data

Of all Anderson, Easton, and Star Community Health service area CHNA survey respondents, 39.8% have high blood pressure. When broken down by income, respondents whose household income is $15,000-$24,999 have the highest rates of high blood pressure (51%) while respondents whose household income is $60,000 and above have the lowest rates (36%). It is important to note that all of these rates are relatively high, regardless of income.

Figure 65

High Blood Pressure, Anderson and Easton

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; that is more than 1 in 4 U.S. adults. According to the 2017 BRFSS, 33.3% of adults in Northampton county aged 18 years and older, who have been screened in the past 5 years have been diagnosed with high cholesterol.[258] See Figure 66, which compares Northampton county hyperlipidemia diagnosis rates to other service area counties and the U.S. overall.
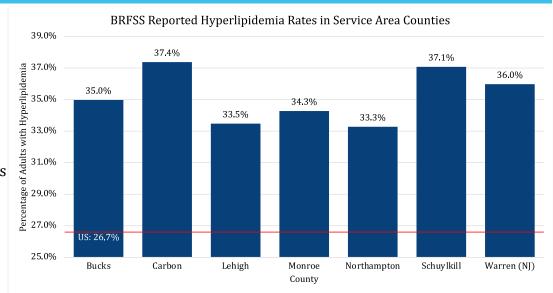

BRFSS Reported Hyperlipidemia Rates in Service Area Counties

Figure 66

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[258] https://chronicdata.cdc.gov/500-Cities-Places/PLACES-Local-Data-for-Better-Health-County-Data-20/swc5-untb/data

Of all CHNA survey respondents from the Anderson, Easton, and Star Community Health service area, 29.3% have high cholesterol. When broken down by income, respondents whose household income is $15,000-$24,999 have the highest rates of high cholesterol (35.6%) and respondents whose household income is less than $14,999 have the lowest rates (27.8%).
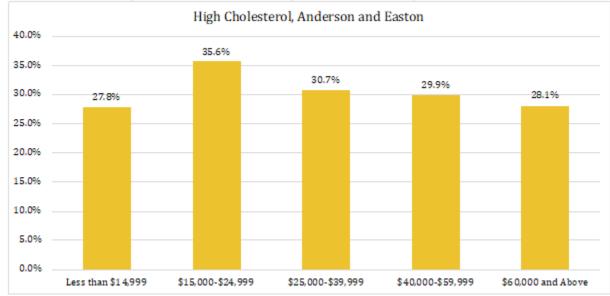
✦ *Figure 67*

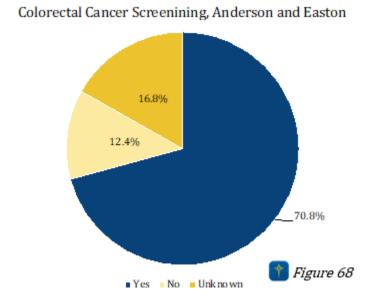**High Cholesterol, Anderson and Easton**

Less than $14,999	$15,000-$24,999	$25,000-$39,999	$40,000-$59,999	$60,000 and Above
27.8%	35.6%	30.7%	29.9%	28.1%

Cancer

In the U.S., 1.7 million people are diagnosed with cancer each year and comes with an estimated healthcare cost of $174 billion.[259] Cancer is the 2nd leading cause of death nationally with over half a million deaths each year.[260] According to the National Cancer Institute, cancer incidence in the U.S. is 448.7 per 100,000.[261] Pennsylvania has a cancer incidence of 484.6 per 100,000 which falls higher than the U.S. overall. Northampton county has a cancer incidence of 523.0 per 100,000 which is significantly higher than Pennsylvania's cancer incidence and has the highest cancer incidence rate out of all our service area counties. There are certain risk factors that increase one's chance of getting cancer. Among them, include being overweight or obese, smoking and 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 related 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.

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[259] https://www.cdc.gov/chronicdisease/about/costs/index.htm
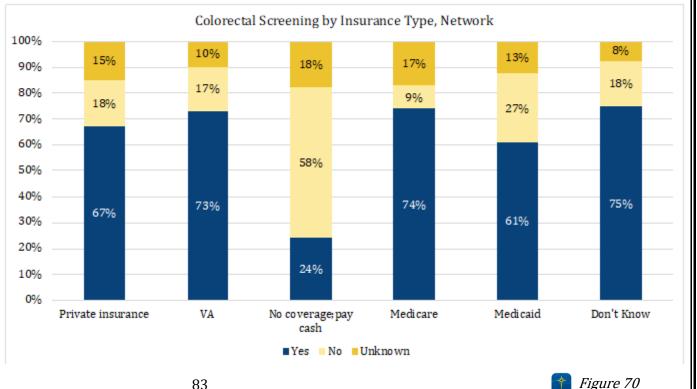[260] https://www.cdc.gov/chronicdisease/resources/publications/factsheets/cancer.htm
[261] National Cancer Institute's State Cancer Profiles, 2013-2017

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 (Figure 69). If a respondent was missing an answer to one of the questions, their screening status was marked "Unknown." The CHNA survey asked respondents ages 50-74 to indicate their most recent colon cancer screening. Of all Anderson, Easton, and Star Community Health service area respondents, 70.8% have been screened,12.4% have never been screened, and 16.8% are unknown. The 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. Network data is used due to small sample size by campus.
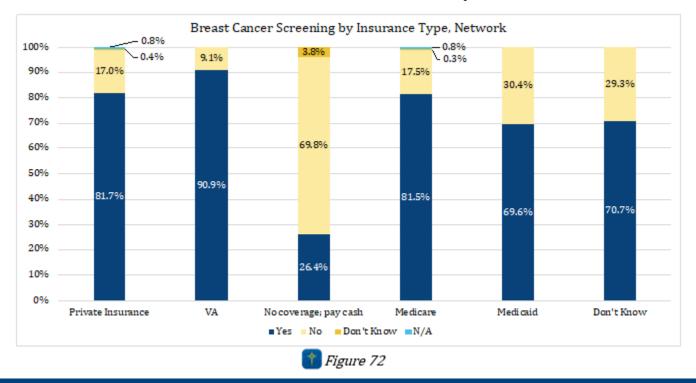

Colorectal Cancer Screenining, Anderson and Easton

Figure 68

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 69

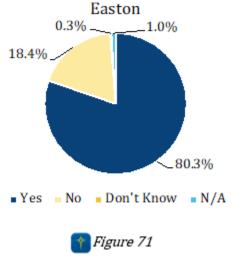Colorectal Screening by Insurance Type, Network

Figure 70

CHNA survey respondents were also asked about breast cancer screening and we compared breast cancer screening rates to insurance. Of all Anderson and Easton respondents ages 40-74 years old, 80.3% had a mammogram, 18.4% have not, 0.3% do not know, and 1% 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. The network data is used for insurance due to small sample size.

Figure 71

Figure 72

Days of Poor Physical Health

According to Healthy People 2030, daily physical activity can prevent disease, disability, injury, and premature death.[262] Robert Wood Johnson County Health Rankings assesses the number of poor physical health days people have because it can be a predictor for negative

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[262] https://health.gov/healthypeople/objectives-and-data/browse-objectives/physical-activity

outcomes associated with health like unemployment, poverty, and mortality. The poor physical health days question is measured by the average number of physically unhealthy days in the past 30 days. In Pennsylvania, the average is 4.0 unhealthy days, with Northampton county at 4.0 unhealthy days. The majority of CHNA survey respondents indicated no physically unhealthy days in the past 30 days (58.4%), 23.9% of respondents indicated 1-2 sick days, 9.2% indicated 3-7 sick days, and 8.5% indicated 8 or more sick days in the past 30 days.
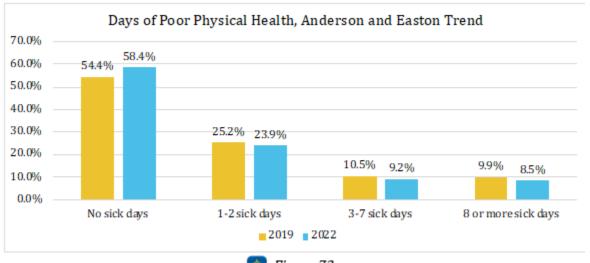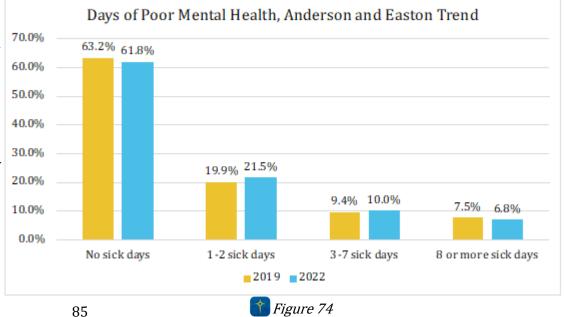

Figure 73

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.[263] The poor mental health days question is measured by the average number of mentally unhealthy days in the past 30 days. In Pennsylvania, the overall average is 4.7 unhealthy days, with Northampton county at 4.7 unhealthy days. The majority of CHNA survey respondents indicated no mentally unhealthy days in the past 30 days (61.8%), 21.5% indicated 1-2 sick days, 10% indicated 3-7 sick days, and 6.8% indicated 8 or more sick days in the past 30 days.

Figure 74

[263] https://www.countyhealthrankings.org/

85

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.[264] 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.[265] 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.[266] In Pennsylvania, the unintentional injury death rate was 67.1 and Northampton county was 56.0 per 100,000 population.[267] Healthy People 2030 has set objectives for injury deaths because unintentional injury deaths are so prominent. Some of which are to reduce unintentional injury deaths, reduce deaths involving opioids, and to reduce emergency department visits for nonfatal injuries and unintentional injuries.

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 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.[268] 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 other COVID-19 variants. In

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[264] Wonder.cdc.gov
[265] https://www.cdc.gov/nchs/fastats/accidental-injury.htm
[266] Wonder.cdc.gov
[267] wisqars.cdc.gov/
[268] https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html

late 2021, the Omicron variant emerged, proving to be more contagious than other COVID-19 variants, but not necessarily more deadly.[269] The most common symptoms of COVID-19 include fever or chills, cough, shortness of breath, headache, and new loss of taste or smell.

The 2020 COVID-19 pandemic has manifested unprecedented challenges in our community. Northampton county has experienced substantial community transmission of COVID-19 during both waves of the pandemic. The highest number of new cases recorded in one day was 142 new cases in November 2020. By the beginning of 2022, with the new Omicron variant and high levels of transmission, the highest number of new cases in one day was 1,001 in Northampton county.
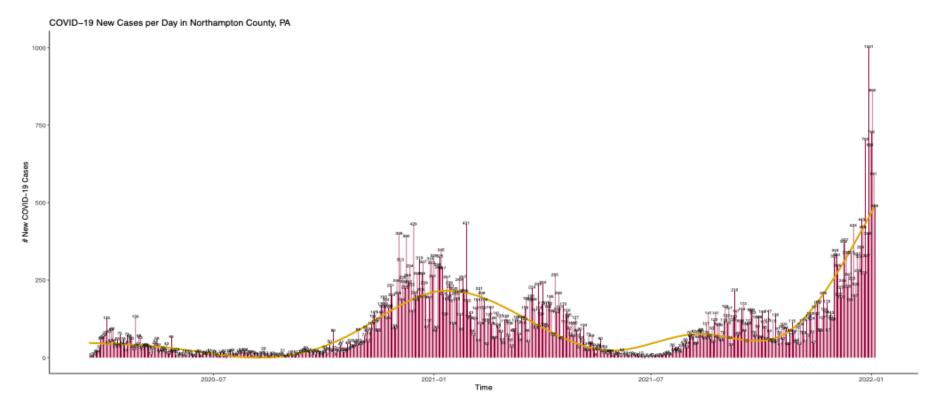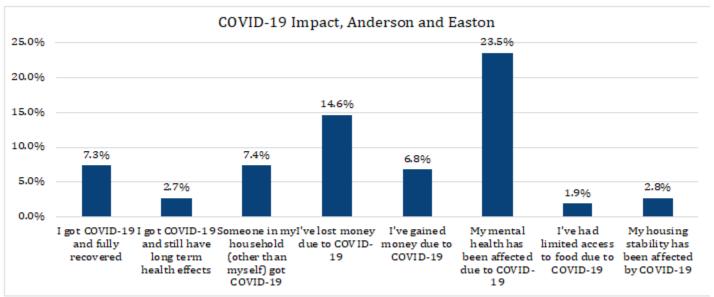

Figure 75

[269] https://www.cdc.gov/coronavirus/2019-ncov/variants/omicron-variant.html

To get an understanding as to how COVID-19 impacted the Anderson, Easton, and Star Community Health service area we asked CHNA survey respondents to indicate if any of the categories in Figure 76 applied to them. Of those who indicated they had been impacted by COVID-19, the greatest number of respondents say their mental health has been affected (23.5%), 14.6% of respondents said they lost money due COVID-19, 7.3% said they had COVID-19 and fully recovered while
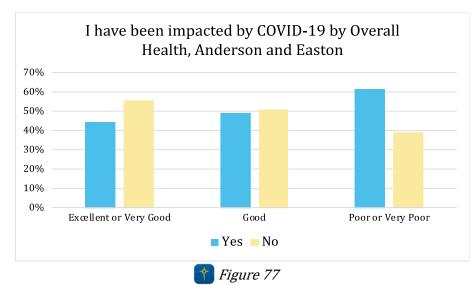

Figure 76

7.4% said someone else in their household had COVID-19. However, 2.7% said they had COVID-19 and are still having long term effects, 1.9% had limited food access, 2.8% had housing instability due to the pandemic, and 6.8% gained money due to the pandemic.

The COVID-19 pandemic is of universal concern and has far-reaching impacts in our communities. On the surface, it appears as though approximately half of the population (47.5%) in the Anderson, Easton, and Star Community Health service area has not been affected by the pandemic. Yet, when we examine these results further, we begin to understand that this is not the case for our vulnerable populations. Results from the community health survey in Anderson, Easton, and Star Community Health service area shed light on some key differences among populations and highlight the impact that COVID-19 has on at-risk populations.
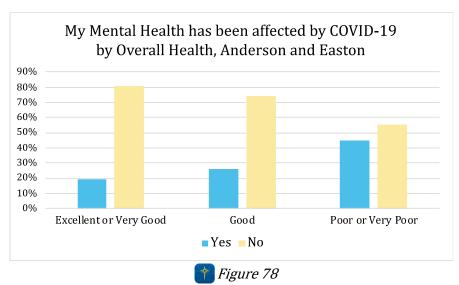
Overall Health and COVID-19

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.[270] CHNA survey respondents in the Anderson, Easton, and Star Community Health service area that reported excellent/very good health were less likely (45%) to report being impacted by COVID-19 compared to respondents reporting good health (49%) or poor/very poor health (61%). This is also the case when reporting the impacts of COVID-19 on mental health, with 19% of respondents in

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[270] https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html

excellent/very good health, 26% in good health, and 45% 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.
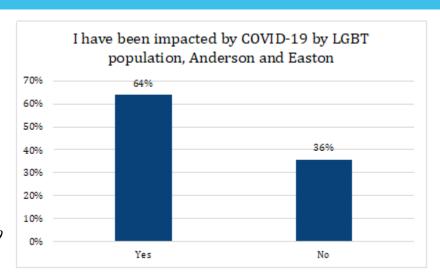
I have been impacted by COVID-19 by Overall Health, Anderson and Easton

Figure 77

My Mental Health has been affected by COVID-19 by Overall Health, Anderson and Easton

Figure 78

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.[271] Findings from the CHNA survey in the Anderson, Easton, and Star Community Health service area showed similar discrepancies between gender, with female respondents more likely to be impacted by COVID-19 (51%) 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 (28%) than males (17%).

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[271] https://www.kff.org/coronavirus-covid-19/issue-brief/coronavirus-a-look-at-gender-differences-in-awareness-and-actions
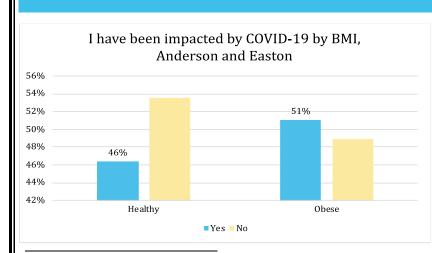
·········· LGBT and COVID-19 ··········

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.[272] CHNA survey results from the Anderson and Easton campuses also reflect these differences, with more than 64% responding that they had been impacted by the pandemic, compared to 52.5% of non-LGBT respondents in the Anderson, Easton, and Star Community Health service area. In addition, 43% of the LGBT respondents said their mental health had been affected by the COVID-19 pandemic, compared to 23.5% of total respondents in the service area.

Figure 79

I have been impacted by COVID-19 by LGBT population, Anderson and Easton
- Yes: 64%
- No: 36%

·········· Obesity and COVID-19 ··········

I have been impacted by COVID-19 by BMI, Anderson and Easton
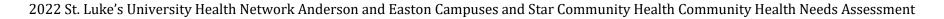- Healthy: Yes 46%, No 53.5%
- Obese: Yes 51%, No 48.8%

Obesity puts people at risk for having serious complications and illness from COVID-19 and triples the risk of hospitalization when infected.[273] Obesity is shown to have negative impacts on COVID-19 recovery and outcomes. With a large population of the Anderson, Easton, and Star Community Health service area struggling with obesity (41.3%), the CHNA survey results reflect the relationship between obesity and COVID-19, with only 46% of respondents with a healthy weight being impacted, compare to 51% of people living with obesity.

Figure 80

[272] https://www.kff.org/coronavirus-covid-19/poll-finding/the-impact-of-the-covid-19-pandemic-on-lgbt-people/
[273] 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.[274] When asked if the COVID-19 pandemic had impacted their lives, 54% of Hispanic respondents in the Anderson, Easton, and Star Community Health service area said yes, compared to 47% of non-Hispanic respondents.

Income and COVID-19

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.[275] These findings were also seen in our community health survey in the Anderson, Easton, and Star Community Health service area, with 58% of respondents earning $14,999 or less responding that they were impacted by COVID-19, compared to 47% of respondents making $60,000 and above.

Social Vulnerability

Figure 81 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."[276]
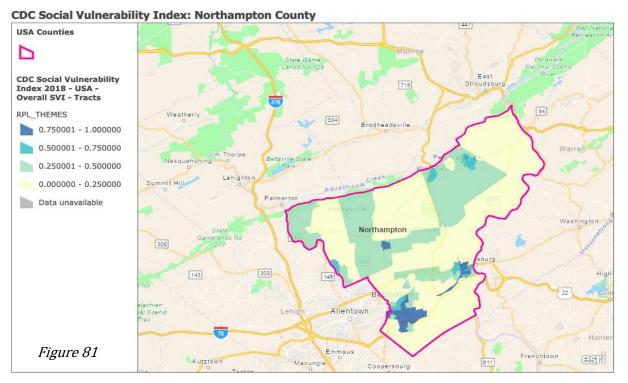
Reducing social vulnerability can minimize the impacts of stressors and or disasters, decreasing human suffering and economic loss. The index is scored from 0 (lowest vulnerability) to 1 (highest vulnerability). Zip codes 18105, 18107 and 18108 were among the highest impacted during the pandemic. Social vulnerability by census tract in Northampton county demonstrates underserved areas with high

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[274] https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html
[275] https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2779417
[276] https://www.atsdr.cdc.gov/placeandhealth/svi/at-a-glance_svi.html

minority populations and lower socioeconomic status. In South terrace, those areas of high vulnerability exclude the Lehigh University, however, the larger minority community surrounding the Lehigh University campus does experience more social vulnerability and was also more greatly impacted by COVID-19.

Figure 81

data.pa.gov, New Jersey Office of GIS, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, EPA, NPS

Overall for Northampton county, social vulnerability is at .29, which is low to moderate vulnerability. In all other categories, vulnerability is low to moderate, with the exception of minority status and language, which has high vulnerability at .73.

Several of these factors are associated with higher rates of COVID-19 infection.[277] 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; 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 amount of resources available to deal with them.

Northampton Social Vulnerability	
Overall	0.29
Socioeconomic	0.21
Household Composition and Disability	0.13
Minority Status and Language	0.73
Housing Type and Transportation	0.45

Figure 82

[277] https://www.sciencedirect.com/science/article/pii/S0749379720302592

Through key informant interviews, we learned that many pre-COVID-19 problems, especially regarding economic inequities and psychological health have been exacerbated. One Anderson key informant spoke of the impact of the COVID-19 pandemic and virtual learning on students:

> *"With COVID, and having a third of our population on a virtual learning platform and two-thirds in person but with masks and not being able to hear and see as they did before, our results are down. We are not at that 90% level [of proficient literacy rates] which is new territory for us. We worked hard to get that 90%. We sustained that for three years and this is the first year that it is dipping."*

COVID-19 was described as being the "last nail in the coffin" for businesses that struggling before the pandemic. And social isolation greatly impacted the mental health of the community. COVID-19 has also worn parents thin with online learning, according to a forum member.

> *"There is exhaustion among many parents as they have tried to keep things together during the pandemic. The situations with remote learning and closed childcare centers have left so many scrambling for options. They are wearing out."*

But where there is despair and darkness, there is also a glimmer of hope and light. The COVID-19 pandemic tested people's limits and endurance, but the community is extremely resilient:
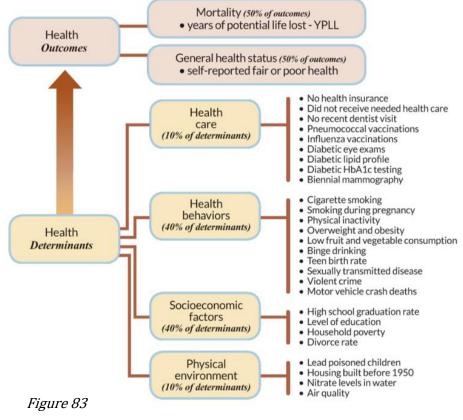
> *"People up here are very resilient. If there is a will, there's a way. They're going to make it work one way or the other."*
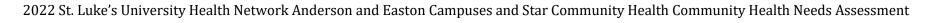
Conclusion

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 (2022-2025) 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 83). The social determinants of health shape the status of a person's health and provide guidance for community health priorities. 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 use.

Figure 83

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 Opioids and other Substance Use
o Mental Health
o Housing
o Transportation

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 Anderson, Easton, and Star Community Health service area using the three pillars of: Wellness and Prevention; Care Transformation; and 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.

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- Anderson and Easton Campuses

- Bangor Area School District (BASD)
- Buy Fresh Buy Local
- Cheston Elementary
- City of Easton
- Community Action Committee of the Lehigh Valley
- Easton Area Community Center
- Easton Area Neighborhood Center
- Easton Area School District (EASD)
- 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
- Family Promise Center
- Great Easton Development Project
- Kellyn Foundation

- Lafayette College
- Lehigh Valley Food Council
- Lehigh Valley Intake
- MARS Treatment Center
- Nature Nurture Center
- Northampton County Drug & Alcohol
- Northampton County Mental Health
- Northampton CouConclusionn's Association
- PA State Constable
- Project Easton
- Recovery Revolution
- Retreat Premiere Treatment Centers
- Shanti Project
- Slater Family Network
- Third Street Alliance
- Two Rivers Health & Wellness Foundation
- United Way
- Wilson Borough