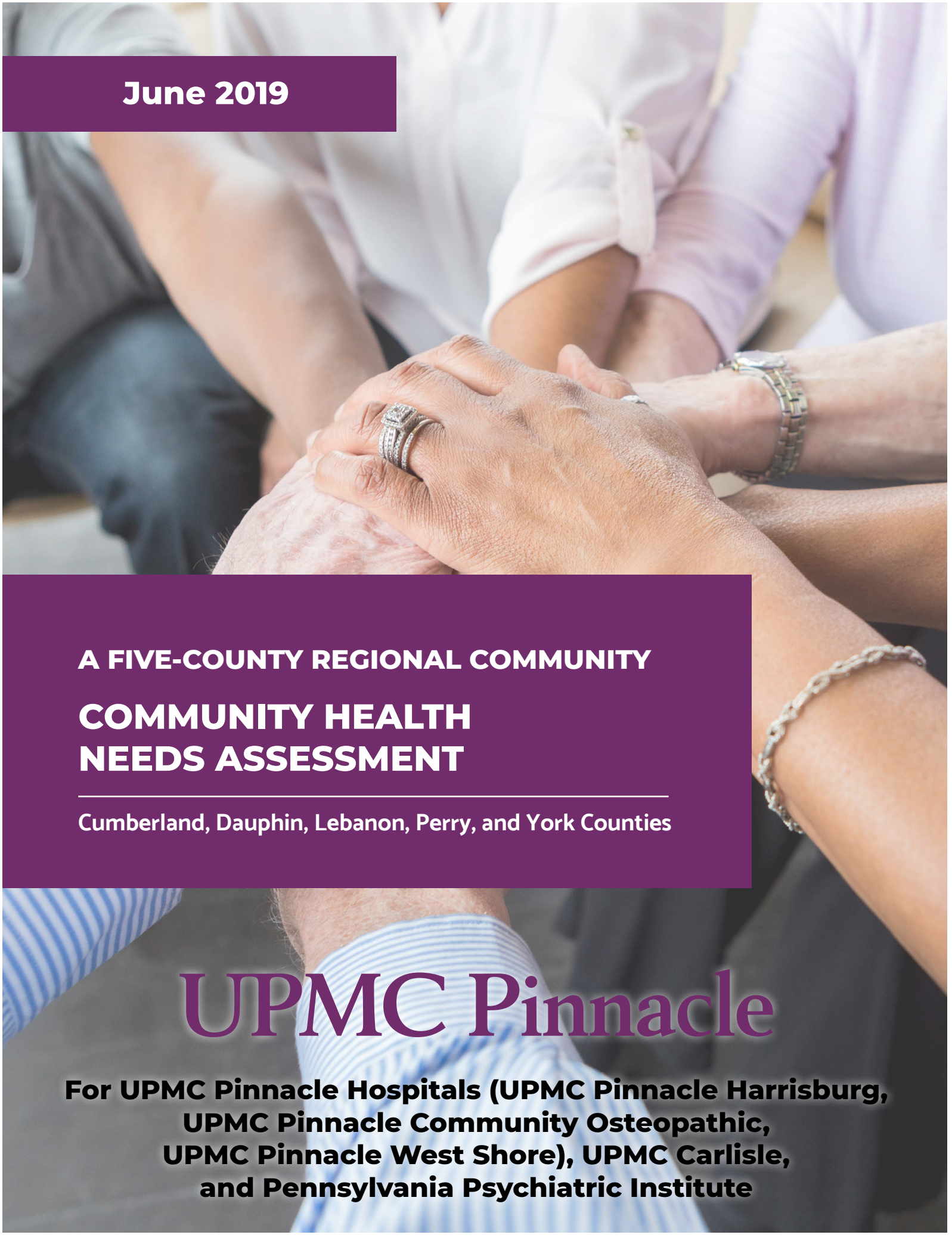

June 2019

A FIVE-COUNTY REGIONAL COMMUNITY

COMMUNITY HEALTH NEEDS ASSESSMENT

Cumberland, Dauphin, Lebanon, Perry, and York Counties

UPMC Pinnacle

For UPMC Pinnacle Hospitals (UPMC Pinnacle Harrisburg, UPMC Pinnacle Community Osteopathic, UPMC Pinnacle West Shore), UPMC Carlisle, and Pennsylvania Psychiatric Institute

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Introduction

The Patient Protection and Affordable Care Act (PPACA), which went into effect on March 23, 2010, requires tax-exempt hospitals to conduct community health needs assessments (CHNA) and implementation strategies in order to improve the health and well-being being of residents within the communities served by the Hospitals.

These strategies created by hospitals and institutions consist of programs, activities, and plans that are specifically targeted towards populations within the community. The execution of the implementation strategy plan is designed to increase and track the impact of each hospitals' efforts.

Tripp Umbach was contracted by UPMC Pinnacle Hospitals to officially conduct a CHNA for UPMC Pinnacle Hospitals (Community Osteopathic, Harrisburg and West Shore[1]), UPMC Carlisle and the Pennsylvania Psychiatric Institute (PPI). The overall CHNA involved multiple steps that are depicted in Chart 1. Additional information regarding each component of the project, and the results, can be found in the Appendices section of this report.

The CHNA process undertaken by UPMC Pinnacle Hospitals, UPMC Carlisle and PPI, with project management and consultation by Tripp Umbach, included input from representatives who represent the broad interests of the community served by the hospital facilities, including those with special knowledge of public health issues, data related to underserved, hard-to-reach, vulnerable populations, and representatives of vulnerable populations served by each hospital. Tripp Umbach worked closely with members of UPMC Pinnacle Hospitals to oversee and accomplish the assessment and its goals. This report fulfills the requirements of the Internal Revenue Code 501(r)(3), established within the Patient Protection and Affordable Care Act (PPACA) requiring that nonprofit hospitals conduct CHNAs every three years.

Data from government and social agencies provides a strong framework and a comprehensive piece to the overall CHNA. The information collected is a snapshot of the health of residents in central Pennsylvania, which encompassed socioeconomic information, health statistics, demographics, children's health, and mental health issues, etc. The CHNA report is a summary of primary and secondary data collected for UPMC Pinnacle Hospitals.

The requirements imposed by the IRS for tax-exempt hospitals and health systems must include the following:

- Conduct a CHNA every three years.
- Adopt an implementation strategy to meet the community health needs identified through the assessment.
- Report how it is addressing the needs identified in the CHNA and a description of needs that are not being addressed, with the reasons why.

[1] Tripp Umbach worked closely with Working Group members composed of hospital administrative leaders, as well as leaders from regional organizations. A complete Working Group member listing can be found in Appendix F.

The Department of the Treasury and the IRS require a CHNA to include:

1. A description of the community served by the hospital facilities and how the description was determined.
2. A description of the process and methods used to conduct the assessment.
    - A description of the sources and dates of the data and other information used in the assessment and the analytical methods applied to identify community health needs.
    - A description of information gaps that impact the hospital organization's ability to assess the health needs of the community served by the hospital facility.
    - Identification of organizations that collaborated with the hospital and an explanation of their qualifications.
3. A description of how the hospital organizations took into account input from persons who represent the broad interests of the community served by the hospitals. In addition, the report must identify any individual providing input that has special knowledge of or expertise in public health. The report must also identify any individual providing input who is a "leader" or "representative" of populations.
4. A prioritized description of all of the community health needs identified through the CHNA, as well as a description of the process and criteria used in prioritizing such health needs.
5. A description of the existing health care facilities and other resources within the community available to meet the community health needs identified through the CHNA.
6. A description of the needs identified that the hospital intends to address, the reasons those needs were selected, and the means by which the hospital will undertake to address the selected needs.[2]

Methodology

UPMC Pinnacle Hospitals, UPMC Carlisle, and PPI executed a CHNA process that included the collection of primary and secondary data. Organizations and community leaders within the five-county region were engaged to identify the needs of the community. Faith-based organizations, community organizations, government agencies, educational systems, and health and human services entities were engaged throughout the CHNA. The comprehensive primary data collection phase resulted in the contribution of over 900 community stakeholders/leaders, organizations, and community groups.

The primary data collection consisted of several project component pieces. Twenty-seven community stakeholder interviews were conducted with individuals who represented a) broad interests of the community, b) populations of need or c) persons with specialized knowledge in public health. Overall, 831 paper hand-surveys were collected from community residents. Tripp Umbach worked closely with 47 community organizations to distribute and gather the hand-survey from community residents. Forty-

[2] The outcomes from the CHNA will be addressed through an implementation planning phase.

two community leaders and representatives attended a community forum facilitated by Tripp Umbach to prioritize health needs, which will assist in the implementation and planning phase. A resource inventory was generated to highlight available programs and services within the five-county service area. The resource inventory identifies available organizations and agencies that serve the region within each of the priority needs.

A significant project component piece of the CHNA was the compilation of a regional profile (secondary data analysis). The regional profile was composed utilizing local, state, and federal figures providing valuable information on a wide-array of health and social issues. Tripp Umbach, along with the Working Group, allowed the members to examine and discuss different socioeconomic aspects, health outcomes, and health factors that affect residents' behaviors; specifically, the influential factors that impact the health of residents.

Tripp Umbach examined data from Truven Health Analytics[3] to gain a deeper understanding of community health care needs. The Community Needs Index (CNI), jointly developed by Dignity Health and Truven Health, assists in the process of gathering vital socioeconomic factors in the community. The tool is a strong indicator of a community's demand for various health care services.

Truven Health Analytics uses a wide-array of demographic and economic statistics. The CNI provides a score for every populated ZIP code in the United States on a scale of 1.0 to 5.0. A score of 1.0 indicates a ZIP code with the least need, while a score of 5.0 represents a ZIP code with the most need. The CNI should be used as a part of the larger community health needs assessment to assist in pinpointing specific areas that have greater needs compared to others. The CNI data will be used, in tandem, to quantify the implementation strategy efforts and plan for UPMC Pinnacle Hospitals.

Tripp Umbach was contracted by UPMC Pinnacle Hospitals to officially conduct a CHNA for UPMC Pinnacle Hospitals, UPMC Carlisle and PPI. Tripp Umbach worked closely with Working Group members composed of hospital administrative leaders, as well as leaders from regional organizations. The overall CHNA involved multiple steps that are depicted in the flow chart on the following page. Additional information regarding each component of the project, and the results, can be located in the Appendices section of this report.

Data from government and social agencies provides a strong framework and a comprehensive piece to the overall CHNA. The information collected is a snapshot of the health of residents in central Pennsylvania, which encompassed socioeconomic information, health statistics, demographics, children's health, and mental health issues, etc. The CHNA report is a summary of primary and secondary data collected for UPMC Pinnacle.

[3] Truven Health Analytics, formerly known as Thomson Reuters, is a multinational health care company that delivers information, analytic tools, benchmarks, research and services to a variety of organizations and companies. Truven Health Analytics uses: Demographic data, poverty data (from The Nielsen Company) and insurance coverage estimates (from Truven Health Analytics) to provide Community Needs Index (CNI) scores at the ZIP code level. Additional information on Truven Health Analytics can be found in the Appendices.

Chart 1: CHNA Process Chart

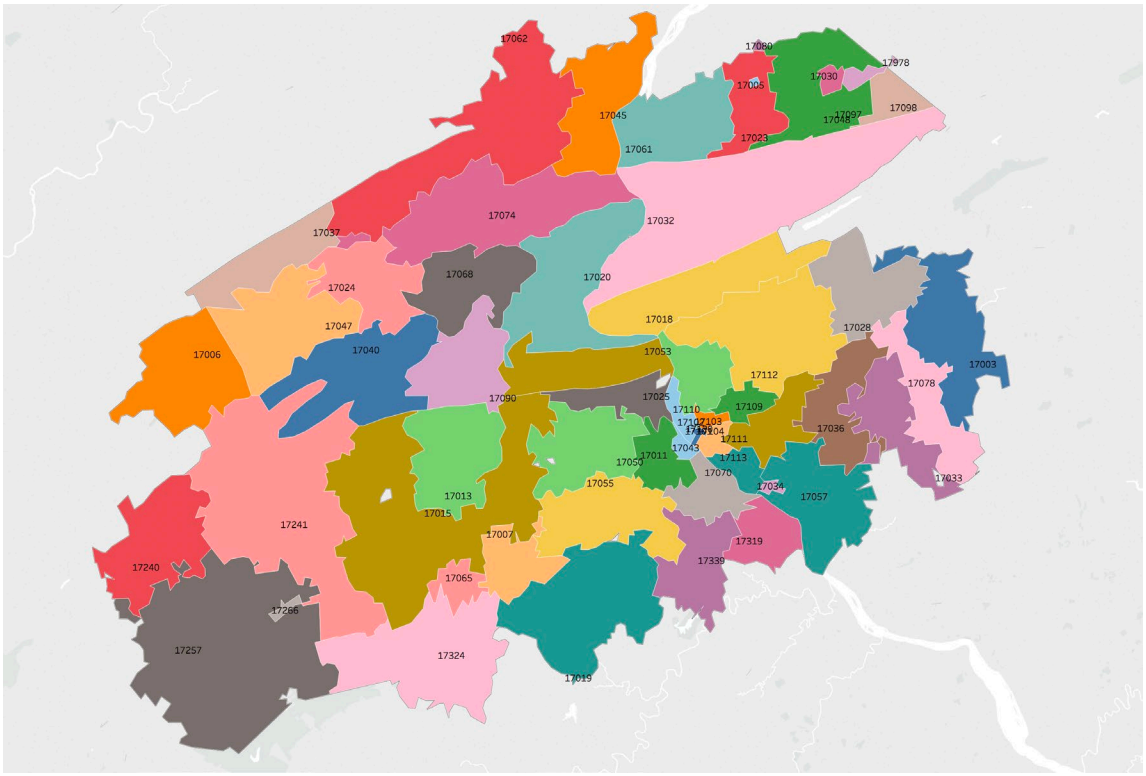
Primary Service Area

In 2012 and 2015, UPMC Pinnacle Hospitals (formerly known as PinnacleHealth System) completed a comprehensive CHNA focusing on a five-county region which included Cumberland, Dauphin, Lebanon, Perry, and York counties. The 2018 assessment also focused on the same counties as they still fall under the service areas for UPMC Pinnacle. Tripp Umbach has completed three CHNA cycles for the health system, benchmarking or trending data was provided to track and observe positive or negative movements in the primary and secondary data (where applicable).

In 2018, a total of 57 ZIP codes were analyzed, compared to 42 in 2015, and 31 in 2012 for UPMC Pinnacle. UPMC Pinnacle, and in particular UPMC Pinnacle Hospitals provides services to residents in Pennsylvania, the nation, and internationally. The 2018 CHNA focused on 57 ZIP codes, reflecting the populations with the largest number of residents who utilize health care services from UPMC Pinnacle. These ZIP codes also reflect 80 percent of inpatient discharges. The information collected from these specific ZIP codes will assist in future health care planning services, community benefit contributions, and programming efforts.

The below map represents the geographic region as the primary service area of UPMC Pinnacle. The primary service area encompasses 57 ZIP codes within South Central Pennsylvania. (See Map 1).

Map 1: Overall Service Area of UPMC Pinnacle Hospitals – 2018 Study Area Map



Source: Truven Health Analytics 2017

The study area for UPMC Pinnacle Hospitals shows that the five counties are projected to have a population growth from 2017-2022. Cumberland County is expected to have the largest population growth with 3.5 percent compared to Perry County, which is expected to have the lowest at 0.3 percent. Overall, the UPMC Pinnacle Hospitals study area is expected to have a 2.4 percent population growth with roughly 15,000 new residents added to the overall five-county region.

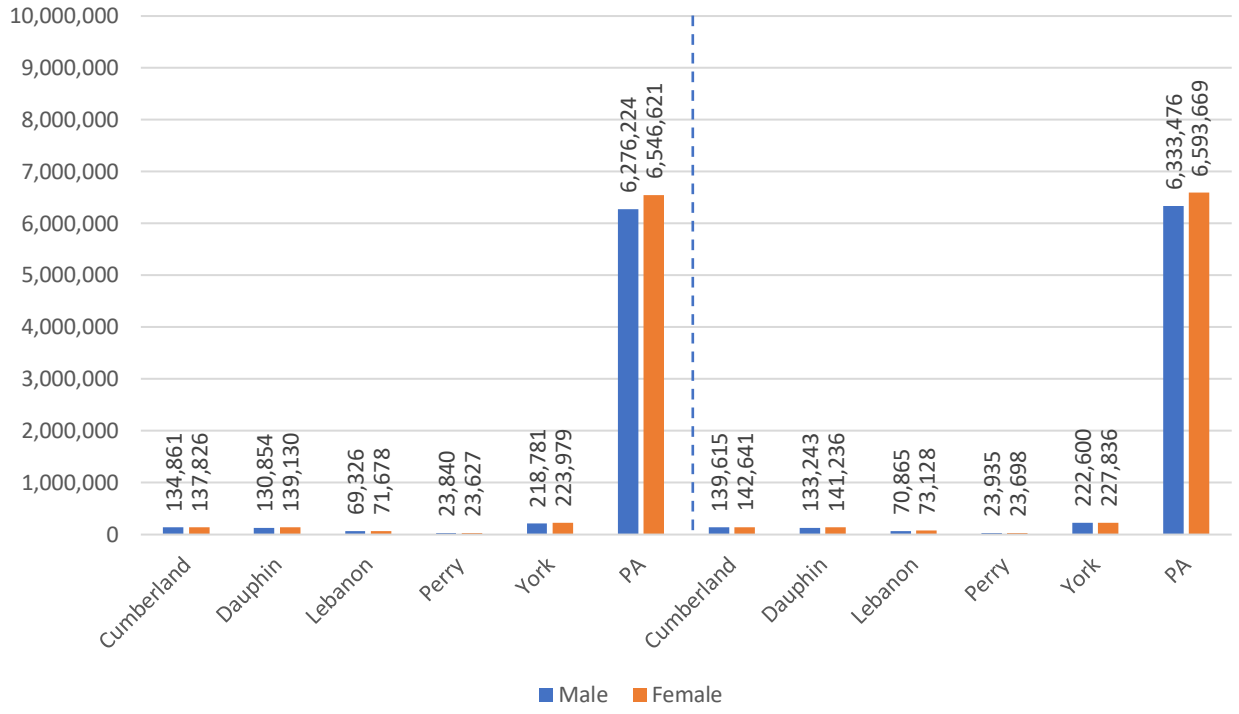
Table 1: Area Population Snapshot

	Cumberland County	Dauphin County	Lebanon County	Perry County	York County	UPMC Pinnacle Hospitals Study Area	PA	USA
2017 Total Population	272,687	269,984	141,004	47,467	442,760	659,885	12,822,845	325,139,271
2022 Projected Population	282,256	274,479	143,993	47,633	450,436	675,669	12,927,145	337,393,057
# Change	+9,569	+4,495	+2,989	+166	+7,676	+15,784	+104,300	+12,253,786
% Change	3.5%	1.7%	2.1%	0.3%	1.7%	2.4%	0.8%	3.8%

Source: Truven Health Analytics 2017

The representation of males and females in the overall study area and the state are relatively close. This is a trend that is expected to continue into 2022 (See Chart 2).

Chart 2: Gender Snapshot



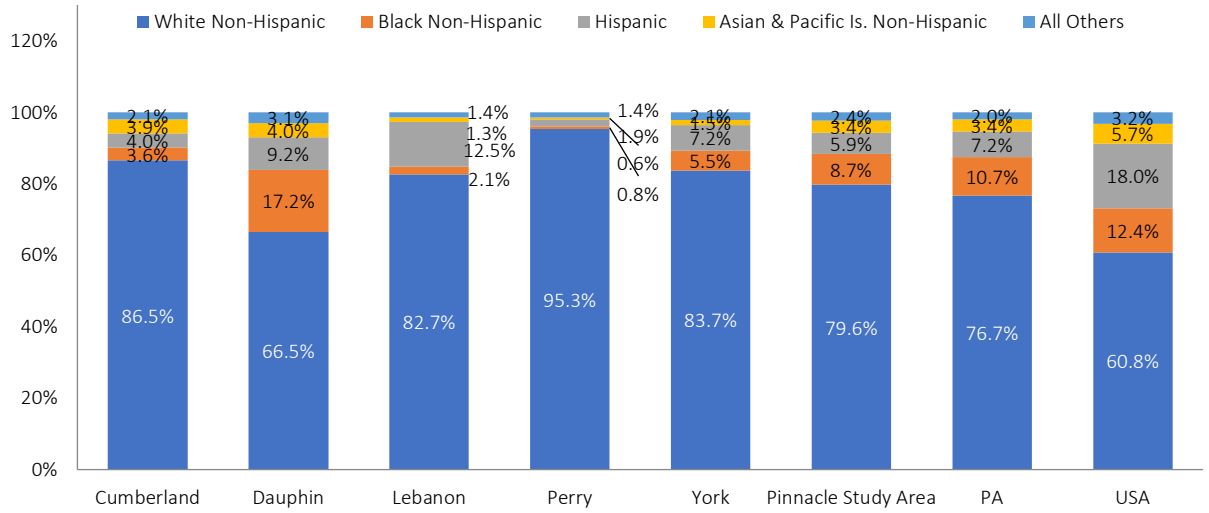
Source: Truven Health Analytics 2017

The data reveals a higher representation in Dauphin County of Black, Non-Hispanic (17.2 percent) when compared to the state and the nation. Overall, Dauphin County is the most diverse when compared to the other counties in the study area.

Perry County yields a high representation of White, Non-Hispanic residents (93.5 percent). (See Chart 3).

- Lebanon County has the highest rate of Hispanic (12.5 percent) population.
- Dauphin County has the highest rate of Asian/Pacific Islander, Non-Hispanic (4.0 percent percent) population.

Chart 3: Race/Ethnicity



Source: Truven Health Analytics 2017

A CNI score of 1.0 indicates a ZIP code with the least need, while a score of 5.0 represents a ZIP code with significant need. It is important to note that ZIP codes with a low score (e.g., 1.0) do not imply that no attention should be given to that neighborhood; rather, hospital leadership should decipher what specifically is strategically working well to ensure a low neighborhood score.

Reviewing the CNI scores obtained by Truven Health Analytics is an important part of the study. The CNI ZIP code summary provides valuable background information to begin addressing and planning for the community's current and future needs. The CNI provides greater ability to diagnose community needs as it explores ZIP code areas with significant barriers to health care access.

Examining the CNI scores of each individual county, in 2017 Dauphin County reports a score of 2.9 (a county that faces significant barriers to care); while on the polar end, Perry County reports a lower score of 2.1 indicating fewer barriers to care for residents. York County when compared to the remaining counties in the study area reports the largest gain between 2017 and 2014 CNI with a -0.3 movement.

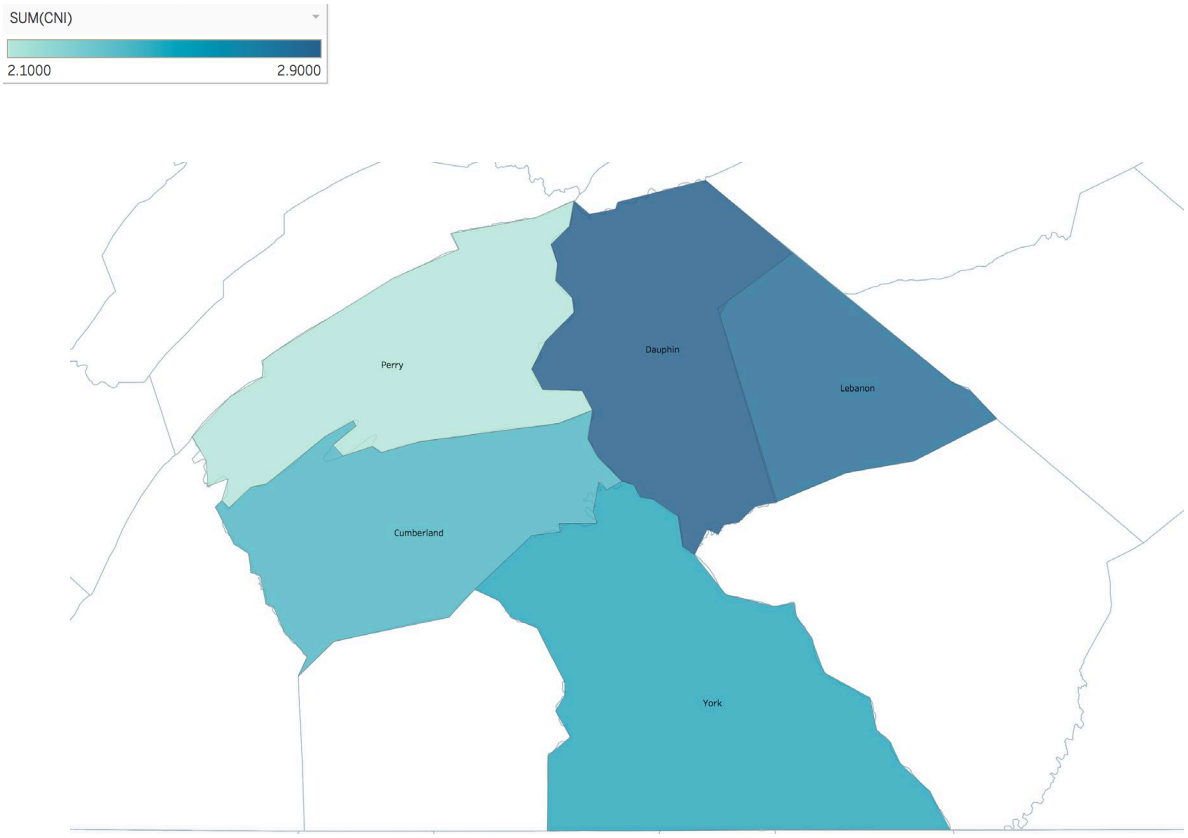
Table 2: Overall Study Area Summary

	2017 Total Pop.	Poverty 65+	Married w/ Children Pov.	Sin. w/ Children Pov.	Limited Eng.	Minor %	No HS Diploma	Unemp %	Uninsu %	Rental %	Insurance Rank	Culture Rank	Education Rank	Insurance Rank	House Rank	2017 CNI Score	2014 CNI Score	2010 CNI Score
Cumberland	18,179	5.2%	12.1%	29.7%	0.9%	13.5%	8.9%	5.3%	2.3%	27.1%	2	3	2	1	3	2.4	2.2	2.2
Dauphin	10,799	8.6%	15.5%	31.4%	2.4%	33.4%	11.4%	7.1%	3.3%	34.9%	2	4	3	2	4	2.9	3.0	2.9
Lebanon	14,100	7.2%	13.2%	29.1%	2.2%	17.3%	14.1%	7.5%	2.5%	27.5%	2	3	4	1	4	2.8	3.0	2.6
Perry	3,651	7.5%	11.9%	31.3%	0.3%	4.7%	12.4%	7.6%	2.1%	20.5%	2	1	3	1	2	2.1	2.3	2.1
York	13,022	7.7%	12.9%	33.3%	1.1%	16.3%	11.7%	7.4%	2.5%	24.4%	2	3	3	1	3	2.5	2.8	2.4
All Counties	8,589	10.1%	16.0%	35.2%	1.9%	23.3%	11.0%	8.1%	3.3%	30.2%	3	3	3	2	4	2.7	2.8	2.4

Source: Truven Health Analytics 2017

The map below provides a geographic a representation of the CNI scores depicted from Table 2. ZIP codes that have higher socioeconomic barriers (5.0) are represented in dark blue/teal. As the socioeconomic scores decrease, the coding color lightens. Dauphin County shows high socioeconomic barriers to care while Perry County shows fewer barriers to care (See Map 2).

Map 2: County CNI Scores



Source: Truven Health Analytics 2017

2017 CNI Score

5.00 to 4.00 (High socioeconomic barriers)

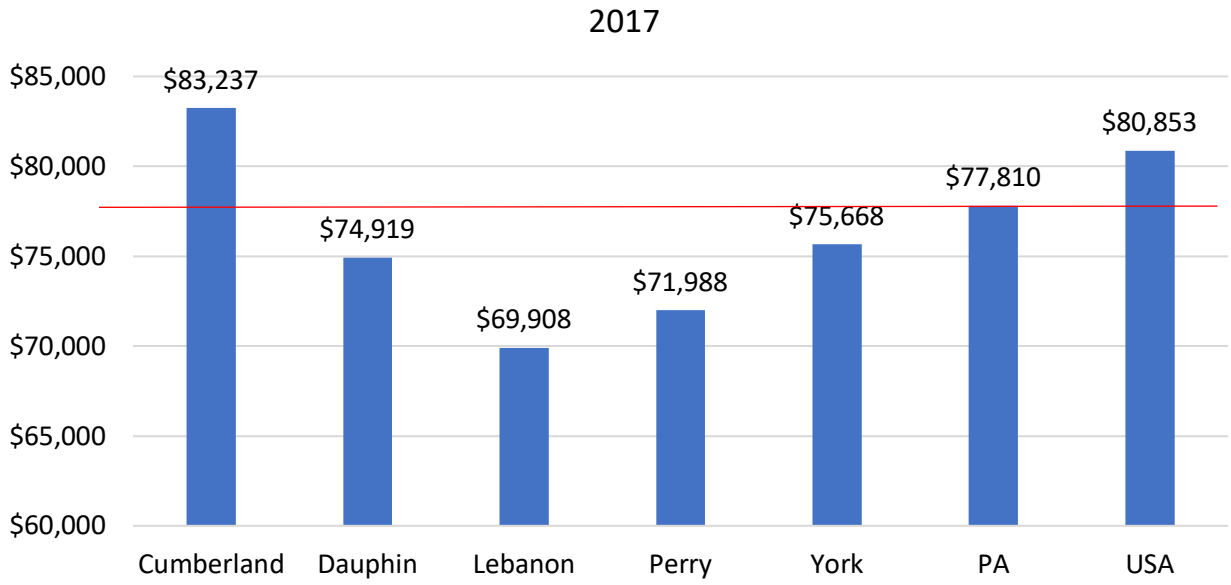
3.99 to 3.00

1.99 to 1.00 (Low socioeconomic barriers)

The breakdown of household income by counties shows Cumberland County reports the highest average household income at $83,237. Lebanon, at $69,908, reports the lowest when compared to the remaining counties.

Dauphin, Lebanon, Perry, and York counties have an average household income lower than the state ($77,810) and the nation ($80,853).

Chart 4: Average Household Income



Source: Truven Health Analytics 2017

Key Community Needs

A healthy community provides access to health services, a safe and wholesome physical environment, available and affordable housing, available transportation, quality education, healthy foods, and employment opportunities. At the other end of the spectrum, unhealthy environments have pathways to poor health outcomes and poor health behaviors. Encouragement and involvement from community groups along with health care institutions and government organizations can help improve the health of a community. Organizations can take action, promote, and combat the overall poor infrastructure of a community in order to develop healthy options and prevent disease in the region.

The reduction of health care costs and improving and synchronizing health services are two key elements in the execution of the PPACA. It is imperative for health care institutions and systems to provide better care coordination and greater accessibility to health services. UPMC Pinnacle Hospitals is working in collaboration and partnership with regional agencies and organizations, both public and private, using existing means to capitalize on community resources. As portions of residents in Southern Central Pennsylvania were uninsured, the pathway to affordable health insurance coverage is available for many due to the ACA.

As a large economic driver in South Central Pennsylvania, UPMC Pinnacle Hospitals has implemented meaningful strategies that are geared towards the overall needs of the region. Pinnacle Health Foundation has contributed towards community initiatives, patient care, regional programs, and educational efforts to ensure and encourage the continued health and security of its community.

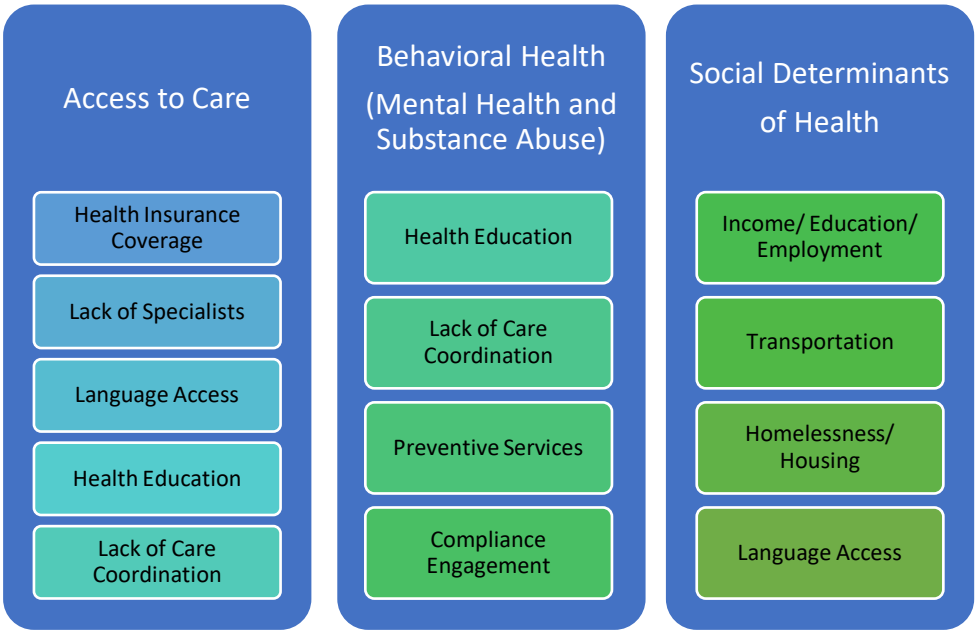
UPMC Pinnacle Hospitals will continue their commitment and dedication to their community with the implementation of a comprehensive CHNA process engaging multiple community organizations.

In the spring of 2018, key need areas were identified during the CHNA process through the gathering of primary and secondary data, community stakeholder interviews, hand-distributed surveys, a community forum, and a health provider inventory, which highlighted organizations and agencies that serve the community. The three identified needs were:

1. Access to Care,
2. Behavioral Health, and
3. Social Determinants of Health.

The identified community needs are depicted in order of priority in the chart below (See Chart 5).

Chart 5: Regional Community Health Needs 2018



Priority 1: Access to Care

The ease in which a population accesses health care has a direct correlation to the health of the overall community. A population with adequate access to quality health care services that are both readily available and culturally competent is more likely to experience better health outcomes when presented with sickness and disease.

Access to health care is a culmination of many factors including, geographic, economic, cultural, and social.[4] Economic, cultural, and social factors can reduce and, in some cases, eliminate access to needed medical services, despite an existing adequate ratio of providers and transportation to those providers.

Economic factors such as income level and employment opportunities within the community impact the affordability of health insurance and thereby limit the ability to obtain care.[5] Individuals with lower socioeconomic status are more likely to approach their health reactively by addressing preventable health crises in the emergency department verses proactively by keeping preventive care appointments and developing a relationship with a primary care provider. A healthy population contributes to the overall economic success of a community by ensuring a healthy workforce is available when corporations are scouting locations for new facilities.

Education also plays a role in an individual's ability to make informed health decisions and effectively navigate today's complex health care delivery system. Understanding health issues and successfully implementing treatment plans is essential to managing chronic conditions and preventing complications and/or hospitalizations. Patients with language barriers, limited English speaking skills, and low levels of educational attainment are especially vulnerable to poor health outcomes.

Culturally competent care takes into consideration the social context in which a person lives and is an integral part of effectively delivering quality health care.[6] Cultural attitudes such as a systemic distrust in the medical community and following treatment plans not prescribed and monitored by a health care professional often lead to poor health outcomes for otherwise easily managed or entirely preventable health conditions. Some African American communities are less likely to adhere to prescribed medication regimens due to their inherent distrust of the medical community, stemming from a long history of medical mistreatment. A study concluded that, for this reason, there is a health disparity around complications with hypertension between African Americans and their Caucasian counterparts.[7]

It is essential that health care organizations, community-based organizations, and civic authorities monitor all of these factors to ensure community members have access to and take advantage of quality medical services to the highest degree possible.

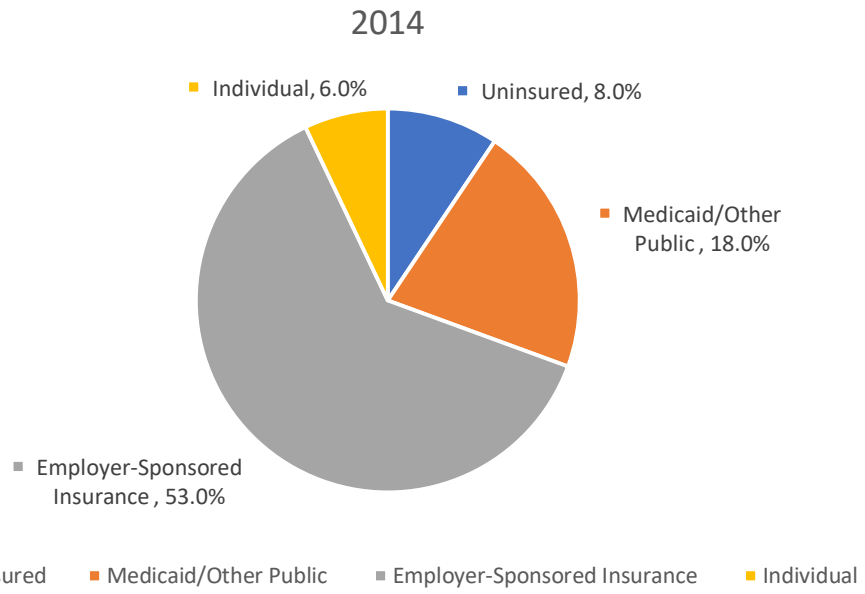
[4] Rand Corporation: www.rand.org/topics/health-care-access.html
[5] Healthy People 2020: www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services
[6] US National Library of Medicine National Institutes of Health: www.ncbi.nlm.nih.gov/pmc/articles/PMC4121958/
[7] US National Library of Medicine National Institutes of Health: www.ncbi.nlm.nih.gov/pmc/articles/PMC3860006/

Health Insurance Coverage

Being insured opens the door to receiving health services, an improved quality of life, and decreased poor health outcomes. The enactment of the Affordable Care Act (ACA) has paved the way for many uninsured, low-income American families to obtain health coverage. Residents who do not have insurance are typically impoverished, low-income, and are economically disadvantaged. Under ACA, the number of uninsured non-elderly Americans decreased from 44 million in 2013 (the year before the major coverage provisions went into effect) to less than 28 million as of the end of 2016.[8] States that expanded Medicaid had large gains of insured populations among low-income people; however, 27.6 million in 2016 still remain uninsured.[9]

Prior to the implementation of the ACA, 1.2 million Pennsylvanians were uninsured.[10] By 2014, 92.0 percent of all Pennsylvanians had health insurance.[11] The breakout of the type of insurance shows that almost 59 percent were covered under private health insurance, with 53 percent were covered by employer sponsored insurance, and the remaining six percent covered by individual coverage. Eighteen percent (18.0) were covered by Medicaid or other public coverage, and less than one in ten (eight percent) of all Pennsylvanians were left uninsured.[12]

Chart 6: Health Insurance Coverage of the Total Population in Pennsylvania, 2014



Source: Kaiser Family Foundation 2014

[8] Kaiser Family Foundation: www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/
[9] Ibid.
[10] Kaiser Family Foundation: https://www.kff.org/health-reform/fact-sheet/the-pennsylvania-health-care-landscape/
[11] Ibid.
[12] Kaiser Family Foundation: www.kff.org/health-reform/fact-sheet/the-pennsylvania-health-care-landscape/

Information from County Health Rankings provide a glimpse on how on how each county within the U.S. ranks in comparison to one another on multiple measures. Pennsylvania has 67 counties; thus, each county is ranked one through 67. Obtaining a one or two ranking is considered to be the healthiest of all of the counties in Pennsylvania. County Health Rankings also provides information on previous years and benchmarking data. This information allows communities to see incremental improvements or declines within subsequent years.

Data from County Health Rankings shows a decrease in the number of Pennsylvanians who are uninsured from 2015 to 2018. The overall percentage reflects an average decrease of 4.6 percent between a three-year span within the five-county focus. Lebanon and Perry counties report higher percentages of uninsured residents when compared to the state, as Cumberland and York counties reporting the lowest percent of uninsured residents in Pennsylvania (See Table 3).

Table 3: Pennsylvania County Health Rankings Insurance Coverage, 2015 and 2018

Pennsylvania Counties	Percent Uninsured 2015	Percent Uninsured 2018
Cumberland	11.0	8.0
Dauphin	14.0	9.0
Lebanon	15.0	10.0
Perry	15.0	10.0
York	13.0	8.0
Pennsylvania	14.0	9.0

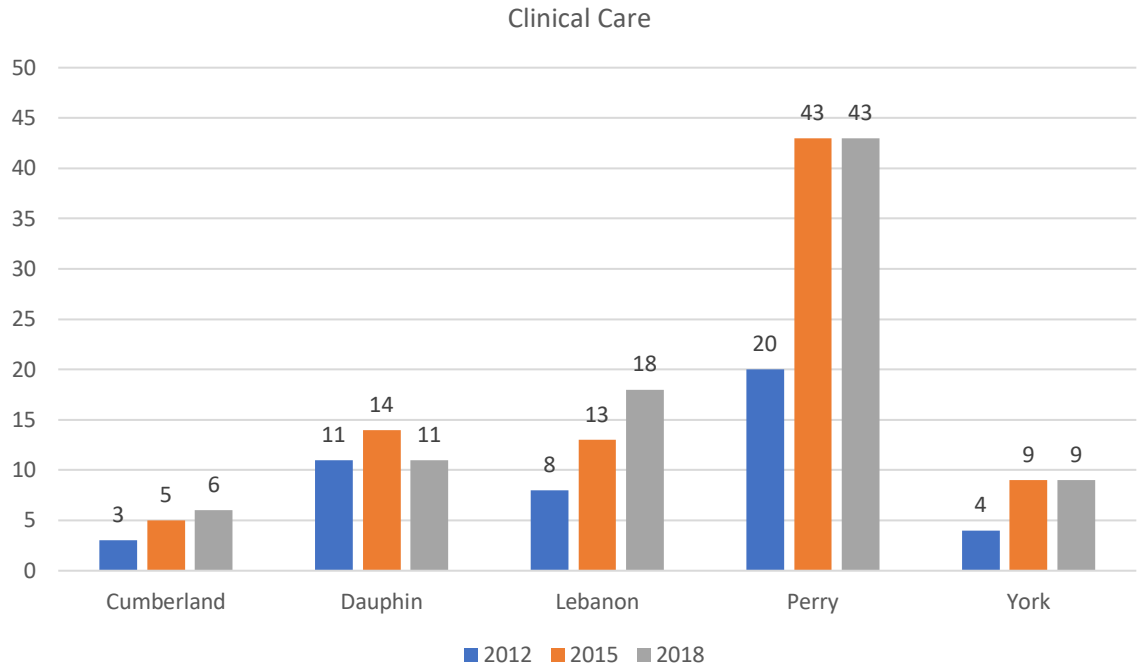
Source: County Health Rankings

As health insurance coverage continues to be an area of concern, data related to the clinical setting of the region plays an intricate role. County Health Rankings' clinical care information from 2012, 2015, and 2018 shows Perry County reporting rankings above median.

Cumberland County increased in their clinical care score starting in 2012 from a three, to a ranking of five in 2015, to a ranking of six in 2018.[13] Dauphin County improved their scores from 2015 to 2018; going from a 14 to an 11 ranking. The shift in scores indicates that a specific measure affected the rankings positively. Specific measures such as the uninsured, primary care physicians, dentists, mental health providers, preventable hospital stays, diabetic monitoring, and mammography screening rates have been impacted for scores to be affected; therefore, altering the overall ranking outcome. Overall, Cumberland, Dauphin, Lebanon, and York have ranking scores that are below the Pennsylvanian median (See Chart 7).

[13] County Health Rankings measures clinical care under Health Factors. Specific measures that are assessed under clinical care includes: the uninsured population (adults and children), primary care physicians, dentists, mental health providers, preventable hospital stays, diabetes monitoring, and mammography screenings. The healthiest county in the state is ranked #1. Additional information on measures from County Health Rankings can be found at www.countyhealthrankings.org.

Chart 7: County Health Rankings; Clinical Care



Source: County Health Rankings

Table 4: County CNI Scores

	Poverty 65+	M w/ Children Pov.	Sin. w/ Children Pov.	Lim Eng	Minor %	No HS Dip	Unemp %	Uninsu %	Rental %	Inc Rank	Cult Rank	Edu Rank	Ins Rank	House Rank	2010 CNI Score	2014 CNI Score	2017 CNI Score
Cumberland	5.2%	12.1%	29.7%	0.9%	13.5%	8.9%	5.3%	2.3%	27.1%	2	3	2	1	3	2.2	2.2	2.4
Dauphin	8.6%	15.5%	31.4%	2.4%	33.4%	11.4%	7.1%	3.3%	34.9%	2	4	3	2	4	2.9	3.0	2.9
Lebanon	7.2%	13.2%	29.1%	2.2%	17.3%	14.1%	7.5%	2.5%	27.5%	2	3	4	1	4	2.6	3.0	2.8
Perry	7.5%	11.9%	31.3%	0.3%	4.7%	12.4%	7.6%	2.1%	20.5%	2	1	3	1	2	2.1	2.3	2.1
York	7.7%	12.9%	33.3%	1.1%	16.3%	11.7%	7.4%	2.5%	24.4%	2	3	3	1	3	2.4	2.8	2.5
All Counties	10.1%	16.0%	35.2%	1.9%	23.3%	11.0%	8.1%	3.3%	30.2%	3	3	3	2	4	2.4	2.8	2.7

Source: Truven Health Analytics 2017

Tripp Umbach utilized a socioeconomic database from Truven Health Analytics, (CNI), to understand socioeconomic factors within specific neighborhoods and communities that have access issues and barriers to care. Based on a wide-array of demographic and economic statistics, CNI provides a score on

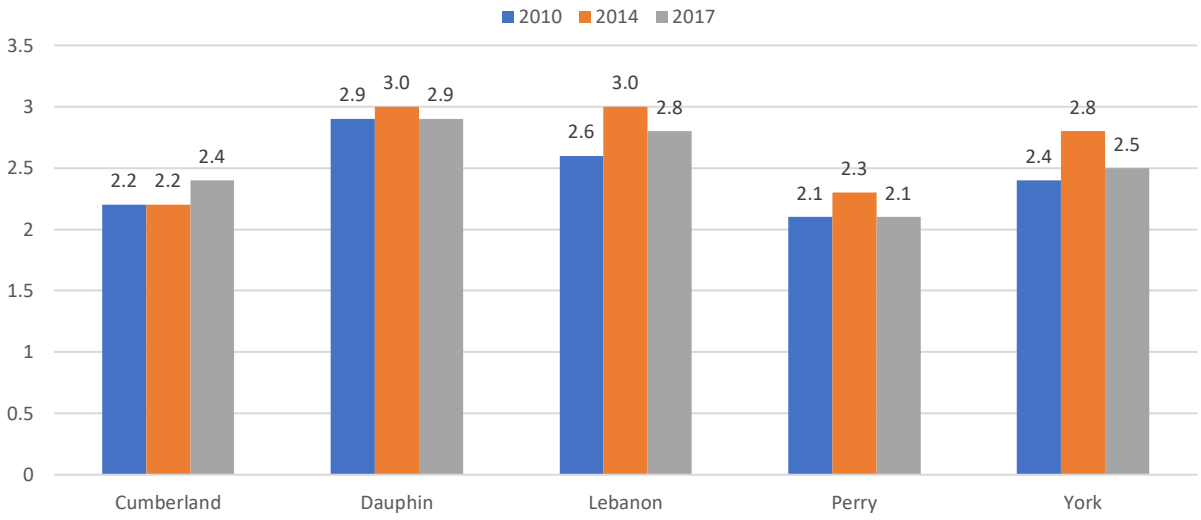
a scale of 1.0 to 5.0. A score of 1.0 indicates a score with the least need, while a score of 5.0 represents a score with the most need.[14]

The CNI insurance ranking for Dauphin County shows a score of 2, which indicates that Dauphin County community residents have more insurance access issues (i.e., more barriers) when compared to the remaining four counties. The remaining counties report a low insurance rank of 1 in Cumberland, Lebanon, Perry, and York counties indicating that these counties have less access issues and barriers related to health insurance (See Table 4).

The unemployment rate in Dauphin (7.1 percent), Lebanon (7.5 percent), Perry (7.6 percent), and York (7.4 percent) counties yield higher rates than Cumberland County. Employment rates correlate with accessibility issues resulting from health, social, environment, and daily living factors. The accumulation of economic and demographic data points produced an overall CNI of 2.9 in 2017 for Dauphin County (the highest CNI score in the five-county region) compared to 2.1 in Perry County in 2017.

CNI scores over the years show Cumberland County increasing between 2014 and 2017; as the remaining counties in the study area have a reduction in their CNI scores within the same years (See Chart 8).

Chart 8: County CNI Scores over the years



Source: County Health Rankings

[14] Truven Health Analytics, formally known as Thomson Reuters is a multinational health care company that delivers information, analytic tools, benchmarks, research, and services to a variety of organizations and companies. Truven Health Analytics uses: Demographic Data, poverty data (from The Nielsen Company), and insurance coverage estimates (from Truven Health Analytics) to provide Community Needs Index (CNI) scores at the ZIP code level. Additional information on Truven Health Analytics can be found in Appendix G.

Analyzing UPMC Pinnacle's service area by ZIP code, particularly the insurance ranking in Table 5 (examining only the Top 5 Zip Code Scores) ZIP codes 17101, 17104, 17103, 17034, and 17102, all in Dauphin County) have a rank score between 4 and mostly 5. The high scores of 4 and 5 indicate that these ZIP codes in UPMC Pinnacle's primary service area face significant barriers to accessing care based on their insurance needs.

Reviewing scores of the top five ZIP codes reveal that residents in these ZIP codes, which make up part of UPMC Pinnacle's primary service area, face significant barriers to accessing care (See Table 5).

Overall, UPMC Pinnacle's weighted average for the study area in 2017 was 2.5. In 2014, the weighted overall score was 2.5 and 2.4 in 2010. Throughout the years, the overall study area CNI scores were relatively stagnant. Tripp Umbach is careful to draw final conclusions as the primary service area for UPMC Pinnacle Hospitals has grown over the years; therefore, ZIP codes that were once identified and examined in the current study may not have been examined and included in the previous; thus, altering the scores.

(For a complete listing of UPMC Pinnacle's 2018 ZIP codes refer to Table 13)

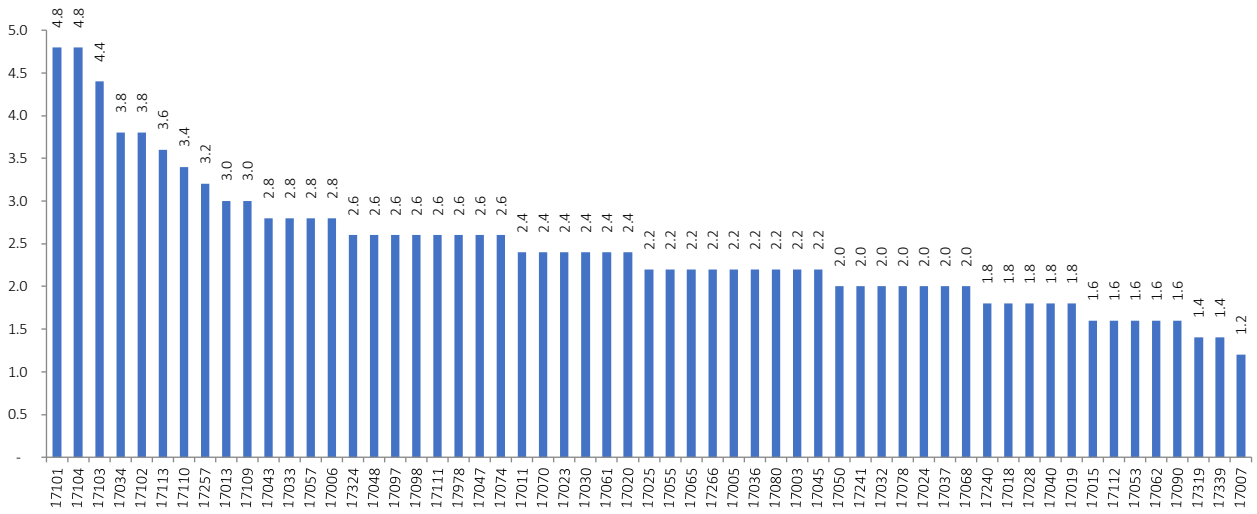
Table 5: UPMC Pinnacle Hospitals CNI ZIP Codes (Top 5 Zip Code Scores and Bottom 5 Zip Code Scores)

ZIP	City	County	Income Rank	Insurance Rank	Education Rank	Culture Rank	Housing Rank	2017 CNI Score
17101	Harrisburg	Dauphin	5	5	5	4	5	4.8
17104	Harrisburg	Dauphin	5	5	5	4	5	4.8
17103	Harrisburg	Dauphin	4	5	5	3	5	4.4
17034	Highspire	Dauphin	4	4	4	2	5	3.8
17102	Harrisburg	Dauphin	3	5	3	3	5	3.8
17062	Millerstown	Perry	2	1	3	1	1	1.6
17090	Shermans Dale	Perry	1	1	3	2	1	1.6
17319	Etters	York	2	2	1	1	1	1.4
17339	Lewisberry	York	1	2	2	1	1	1.4
17007	Boiling Springs	Cumberland	1	2	1	1	1	1.2
UPMC Pinnacle Hospitals Study Area			1	2	1	1	1	2.5*

Source: Truven Health Analytics 2017

Chart 9 provides a quick snapshot of where each ZIP code in the primary service area lies in terms of CNI score. The range of CNI scores vary from 4.8 (high socioeconomic barriers to care) to 1.2 in ZIP code 17007 indicating residents within that neighborhood face low barriers to care.

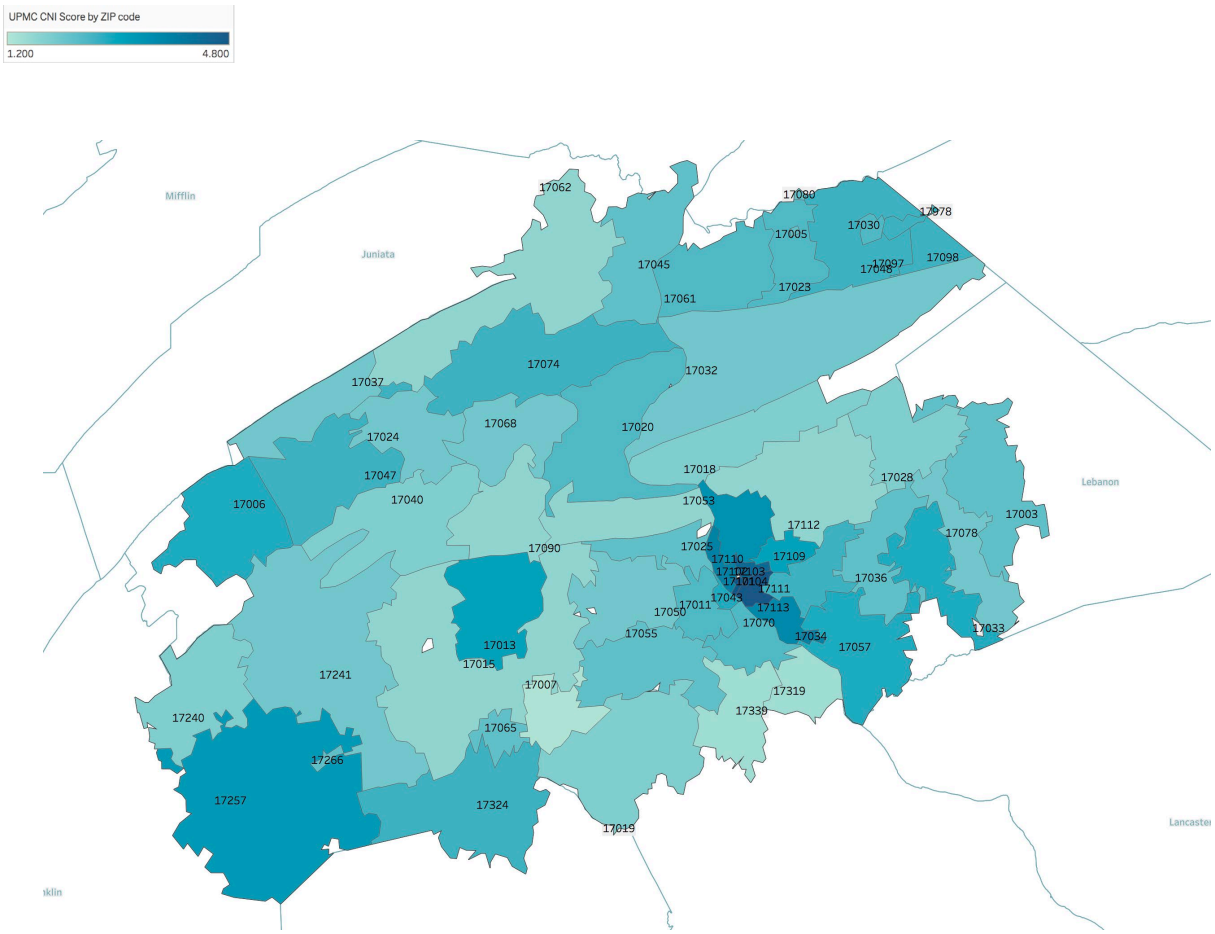
Chart 9: UPMC Pinnacle Hospitals Primary Service Area ZIP Code CNI Scores



Source: Truven Health Analytics 2017

Map 3 shows the geographic representation of UPMC Pinnacle's CNI score within the primary service area. The scores range on the low end from 1.2 to 4.8 on the high end. The darker concentrated colors indicate the regions where residents face high barriers to care. Understanding and being aware of the factors that prohibit residents from receiving care geographically will enable UPMC Pinnacle Hospitals and their community partners to address and tackle specific issues related to the underserved and disenfranchised. Specific programs and services can be applied regionally once the identification of key prohibiting factors is identified. The geographic ZIP code blueprint can provide future strategic plans for programming efforts within the region.

Map 3: UPMC Pinnacle Hospitals CNI ZIP Code Score



Source: Truven Health Analytics 2017

Access to care was designated in the primary data collection phase of the CHNA as a health priority. The hand-distributed survey findings from the study area reported that overall 14.5 percent of survey respondents do not have health insurance compared to 20 percent in 2015.

Of those who do not have health insurance, the top reasons why residents did not have insurance included: I can't afford it (40 percent), I don't qualify (26.9 percent), I had insurance but I lost it (13.8 percent), I have not applied (11.5 percent), I do not need it (4.6 percent), and I do not want it (3.1 percent); compared to the top reason why in 2015, which was 70.3 percent of respondents stated that they do not qualify or cannot afford health care coverage.

These findings solidify statements made by community stakeholders. Health care coverage for residents in the region has slightly improved for some, although many still cannot afford insurance through the ACA, cannot afford private pay insurance or the cost of uninsured health services. This includes residents who are considered the working poor.

Additional data Tripp Umbach examined were score changes in UPMC Pinnacle's CNI scores from 2014 and 2017 data. Of the information from the 57 ZIP codes in the UPMC Pinnacle Hospitals study area, 16 saw declines in CNI score (going to fewer barriers to health care; positive movement), 13 ZIP codes maintained the same CNI score, and 13 experienced rises in CNI score (now having more barriers to health care; negative movement). Fifteen ZIP codes were new to the primary service area.

ZIP code 17070 – New Cumberland in Cumberland County had the largest CNI score change going from a 1.8 in 2014 to a 2.4 in 2017; which indicates that residents in this ZIP code face more barriers to health care. On the opposite end, ZIP codes 17113 (Harrisburg), 17098 (Williamstown), and 17074 (Newport) in Dauphin and Perry counties had the largest positive CNI score change with a 0.6 difference. This indicates that residents in these ZIP codes face fewer barriers to health care. These are promising changes as they signal changes that are positively impacting residents and their daily lives. Based upon the improved score changes, residents in those communities have fewer barriers to obtaining care in their area (See Table 6).

Table 6: UPMC Pinnacle Hospitals CNI Trends from 2014 - 2017

ZIP	City	County	2017 Population	2017 CNI Score	2014 CNI Score	CNI Score Change
17070	New Cumberland	Cumberland	16,593	2.4	1.8	**+0.6**
17043	Lemoyne	Cumberland	6,569	2.8	2.4	**+0.4**
17033	Hershey	Dauphin	17,060	2.8	2.4	**+0.4**
17018	Dauphin	Dauphin	4,333	1.8	1.4	**+0.4**
17019	Dillsburg	York	18,430	1.8	1.4	**+0.4**
17013	Carlisle	Cumberland	35,556	3.0	2.8	**+0.2**
17011	Camp Hill	Cumberland	35,531	2.4	2.2	**+0.2**
17061	Millersburg	Dauphin	6,889	2.4	2.2	**+0.2**
17025	Enola	Cumberland	18,941	2.2	2.0	**+0.2**
17045	Liverpool	Perry	3,478	2.2	2.0	**+0.2**
17050	Mechanicsburg	Cumberland	36,987	2.0	1.8	**+0.2**
17090	Shermans Dale	Perry	5,247	1.6	1.4	**+0.2**
17339	Lewisberry	York	6,880	1.4	1.2	**+0.2**

(continue to next page)

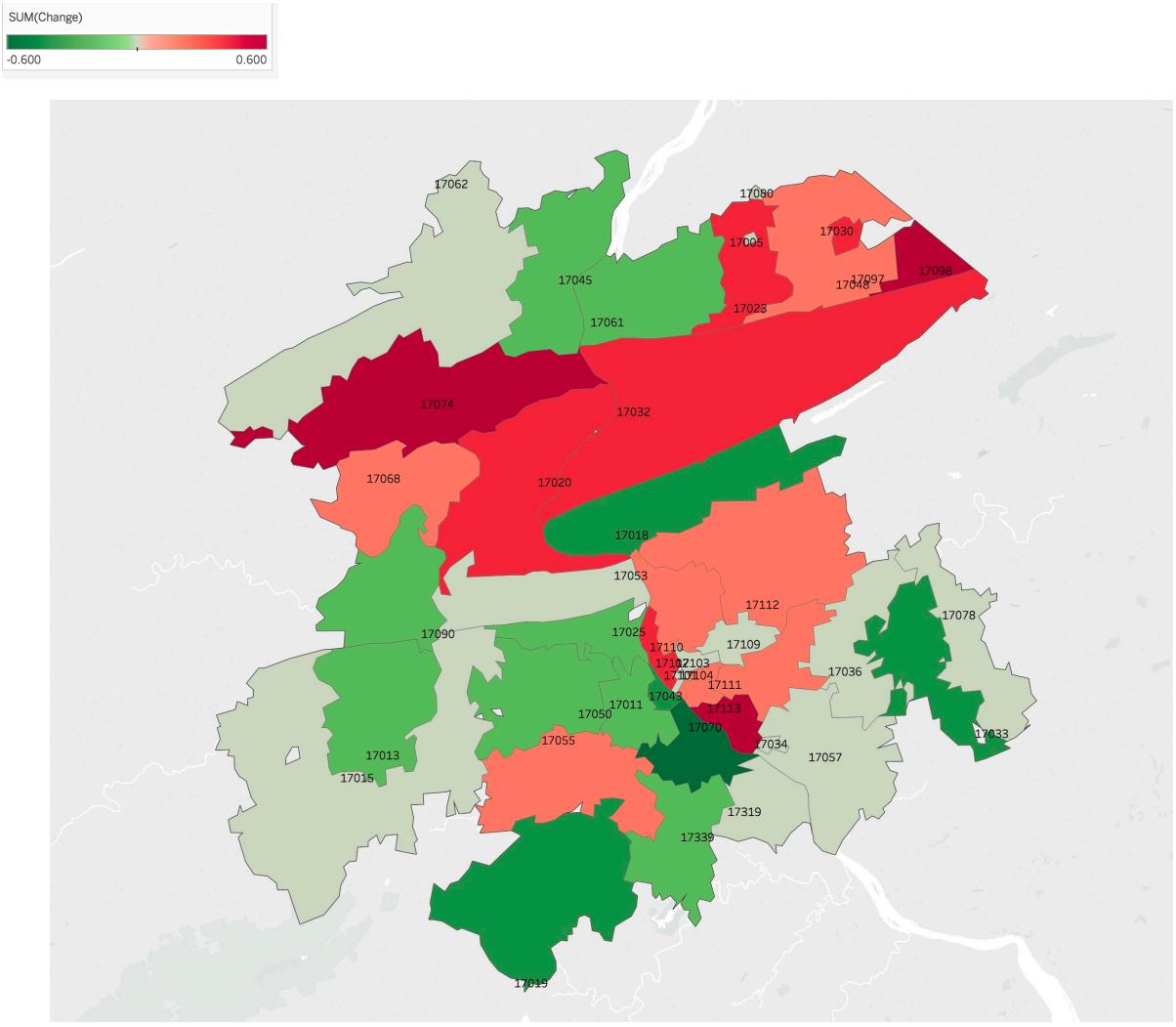
ZIP	City	County	2017 Population	2017 CNI Score	2014 CNI Score	CNI Score Change
17113	Harrisburg	Dauphin	11,402	3.6	4.2	**-0.6**
17098	Williamstown	Dauphin	2,463	2.6	3.2	**-0.6**
17074	Newport	Perry	7,284	2.6	3.2	**-0.6**
17102	Harrisburg	Dauphin	7,939	3.8	4.2	**-0.4**
17097	Wiconisco	Dauphin	107	2.6	3.0	**-0.4**
17023	Elizabethville	Dauphin	3,672	2.4	2.8	**-0.4**
17030	Gratz	Dauphin	1,071	2.4	2.8	**-0.4**
17020	Duncannon	Perry	9,054	2.4	2.8	**-0.4**
17032	Halifax	Dauphin	8,078	2.0	2.4	**-0.4**
17112	Harrisburg	Dauphin	34,796	1.6	1.8	**-0.2**
17104	Harrisburg	Dauphin	21,696	4.8	5.0	**-0.2**
17110	Harrisburg	Dauphin	25,902	3.4	3.6	**-0.2**
17048	Lykens	Dauphin	4,667	2.6	2.8	**-0.2**
17111	Harrisburg	Dauphin	31,602	2.6	2.8	**-0.2**
17055	Mechanicsburg	Cumberland	39,131	2.2	2.4	**-0.2**
17068	New Bloomfield	Perry	4,326	2.0	2.2	**-0.2**

Source: Truven Health Analytics 2017

(CNI score in green indicates a move in a positive direction; while a CNI score in red indicates a move in a negative direction.)

The below trending map provides a clear visual of the changes in CNI scores from 2014 to 2017. The trending map provides movement in the shifts of residents' behavior within the primary service area based on residents' income, education, culture, insurance, and housing. Exploring issues, pinpointing key external factors, and tracking CNI shifts can allow for better programming and future strategic services especially as it relates to accessibility (See Map 4).

Map 4: UPMC Pinnacle Hospitals CNI Trends from 2014 – 2017, Trend Map



Source: Truven Health Analytics 2017

South Central Pennsylvania has many challenges; although not much different from many communities throughout the U.S. Common challenges include the identification, action, and implementation needed to close the gaps on health disparities in the region. The collection of primary data from community leaders, hand-surveys, secondary data analysis at the ZIP code, state, and national level have provided

UPMC Pinnacle Hospitals with a plethora of information to help address and tackle areas of concern in the community.

Improving access to care allows for comprehensive high-quality health services to residents. Access to care also improves a person's health status and health outcomes. It also reduces premature and preventable deaths. Additional areas of concern revealed in the CHNA process within access to care include: lack of specialists, language access, health education, and lack of care coordination.

Lack of Physician Specialists

There is a health profession shortage across the country particularly for physicians and it is causing major concerns for residents throughout the nation. It is critical for states to produce and retain physicians to improve patient accessibility to health care services. The physician shortage has been looming for many years and it is expected to grow exponentially by 2030, severely limiting patient care access.[15]

The physician crisis is growing in part to the onset of physicians nearing the retirement age compounded by a growing and aging population. The shortage is calculated to be between 40,800 and 104,900 physicians by 2030, according to a new study commissioned by the Association of American Medical Colleges (AAMC). The study found that the numbers of new primary care physicians and other medical specialists are not keeping pace with the demands of a growing and aging population.[16] The AAMC predicts that there will be a shortage in non-primary care specialties of between 33,800 and 72,700 physicians. These findings are consistent with previous reports and persist despite modeling that take into account the use of other health professions and changes in care delivery.[17]

If states do not address and implement measures to tackle the growing shortages patient care will be dramatically affected. Quality of care will be greatly impacted as physicians will be physically taxed in order to treat a high patient volume, patients will face longer waiting periods for appointments, patient accessibility to care will be problematic, experiencing less time with providers, and additional frustrations with increased shortages.

South Central Pennsylvania is experiencing a physician shortage, and the health care needs of its citizens will continue to grow due to this deficit. The need for more physicians, both primary care and specialty care, will be exceptionally large. Overall, a physician shortage poses health risks to the overall population, as these shortages must be addressed in order to provide access to health care services.

In 2016, according to the Association of American Medical Colleges (AAMC), Pennsylvania had 12,744 practicing primary care physicians (PCPs) and ranked 15 out of 50 states in active PCPs per 100,000

[15] Association of American Medical Colleges (AAMC): https://news.aamc.org/medical-education/article/new-aamc-research-reaffirms-looming-physician-shor/
[16] Association of American Medical Colleges (AAMC): https://news.aamc.org/medical-education/article/new-aamc-research-reaffirms-looming-physician-shor/
[17] Association of American Medical Colleges: https://aamc-black.global.ssl.fastly.net/production/media/filer_public/b2/09/b2096c37-00aa-43e0-bfac-63cf532a7997/aamc-physician-supply-demand-key-findings-2018.pdf

populations (See Table 7). The percentage of active physicians who are aged 60 years and older in Pennsylvania is 32.2 percent, slightly higher than the state median of 30.3 percent. In 2016, there were 99.7 active primary care physicians per 100,000 population compared to the state median of 90.8 per 100,000 populations (See Table 8). The demand for health care services will increase as many factors will affect the physician shortages.[18]

Table 7: Pennsylvania Physician Workforce Snapshot 2016

	2016
Population	12,784,227
Population ≤ age 21	3,361,415
Total Active Physicians	39,863
Primary Care Physicians	12,744
Total Medical or Osteopathic Students	8,206
Total Residents	8,139

Source: The Association of American Medical Colleges (AAMC)

Table 8: Physician Supply

2016	PA	PA Rank	State Median
Active Physicians per 100,000 Population	311.8	8	257.6
Total Active Patient Care Physicians per 100,000 Population	266.2	9	227.2
Active Primary Care Physicians per 100,000 Population	99.7	15	90.8
Active Patient Care Primary Care Physicians per 100,000 Population	87.6	17	82.5
Active General Surgeons per 100,000 Population	8.9	15	7.7
Active Patient Care General Surgeons per 100,000 Population	7.5	19	6.9
Percentage of Active Physicians Who Are Female	34.1%	21	33.8%
Percentage of Active Physicians Who Are International Medical Graduates (IMGs)	23.4%	17	19.1%
Percentage of Active Physicians Who Are Age 60 or Older	32.2%	17	30.3%

Source: The Association of American Medical Colleges (AAMC)

The demand for specialists has not dwindled from previous years. The AAMC study shows that the numbers of new primary care physicians (PCP) and other medical specialists are not keeping pace with the health care demands of a growing and aging population.

The overall demand for physicians in medical specialties is increasing, but many physicians are choosing internal medicine subspecialties and pediatric subspecialties as physician supply is also expanding in

[18] Association of American Medical Colleges: www.aamc.org/download/484584/data/pennsylvaniaprofile.pdf

these medical specialties. This update projects a range from a surplus of about 700 full-time-equivalents (FTEs) to a shortfall of about 9,600 FTEs by 2030. The overall projections for the medical specialties group differ and projections vary significantly by individual subspecialty.[19]

While a provider health survey was not conducted in 2018, findings from the health provider survey data in 2015 reported that health providers would like to see timely access to specialty care (11.3 percent) and primary care (9.7 percent) as areas of improvement needed in the health care system.

Results from the hand-survey provide a view through the eyes of the community residents. Feedback obtained directly from community residents provides a baseline of past and future behaviors that are essential to future planning efforts. In 2018, the hand-surveys revealed that 20.6 percent of respondents do not have a primary care physician (PCP) compared to 23.2 percent in 2016. Of those who do not have a PCP, 31.5 percent cannot afford one and 13.3 percent cannot find one. Close to half of respondents, 49.2 percent, receive care from a physician; while 19.5 percent receive care in the emergency department, 18.7 percent at a clinic, and 17 percent receive care at an urgent care and/or pharmacy. The results from the 2018 hand-survey show improved statistics in community residents having primary care physicians. Cost and affordability remain the top reasons why survey respondents did not have a primary care physician in both 2018 and 2015.

In 2015, of those who did not have a PCP, 75.5 percent indicated that they cannot afford one, cannot find a primary care physician, and cannot find a physician who accepts their insurance (percentages were combined in 2015). Over one-third of respondents receive their primary care services from a clinic, urgent care, or emergency room. More than three-fourths of survey respondents (81.2 percent) reported going to a doctor or primary care physician within the past year.

Additional primary data collected revealed that community stakeholders reported that health services are oftentimes hard to access due to location, available appointment times, and affordability. Specialty care shortages have placed pressure on residents to travel, as the number of specialists has dwindled.

Language Access

Individuals experiencing language barriers are at a significant disadvantage when accessing health care, especially through providers without the ability to translate. Research demonstrates that the use of unqualified individuals for translation results in increased medical errors, less effective patient-clinical provider communication, and poor follow-up and adherence to clinical instructions, as well as possible conflicts with patient privacy rights.[20] Individuals with language barriers, if they seek medical services at all, typically have poorer health outcomes than the English-speaking population. Language barriers influence the most fundamental aspects of accessing health care including, obtaining health insurance, making an appointment, conveying health issues and concerns to a provider, comprehending diagnosed

[19] Association of American Medical Colleges: https://aamc-black.global.ssl.fastly.net/production/media/filer_public/85/d7/85d7b689-f417-4ef0-97fb-ecc129836829/aamc_2018_workforce_projections_update_april_11_2018.pdf

[20] Robert Wood Johnson Foundation: www.rwjf.org/en/library/research/2008/09/language-barriers-in-health-care.html

health conditions, and implementing treatment plans; all of which will have a detrimental effect on overall health outcomes.

According to most recent CNI data, Dauphin County reports the highest percentages of residents with limited English proficiency within the UPMC Pinnacle Hospitals study area. 14.7 percent of respondents to the hand-survey identified as being of Hispanic/Latino/Spanish origin. More than half of those respondents (8.1 percent) completed the hand-survey in Spanish. Responses collected during community stakeholder interviews supported the need for more bilingual services due to a growing immigrant population in the UPMC Pinnacle Hospitals study area. Additionally, the 2018 hand-survey was made available in Nepalese to encourage the respondent pool to reflect the diverse population of the study area.

Overcoming language barriers is essential to ensuring all residents can take equal advantage of the quality health care resources available in the UPMC Pinnacle Hospitals service area and eliminating health disparities faced by a population with limited English proficiency.

Health Education

According to the World Health Organization, health education is any combination of learning experiences designed to help individuals and communities improve their health by increasing their knowledge or influencing their attitudes.[21] Health care professionals, schools, and community-based organizations work hard to disseminate health information to residents in the UPMC Pinnacle Hospitals service area. However, low educational attainment levels can limit an individual's ability to interpret health information and apply this knowledge in a way that improves their health status.

Recent CNI statistics show education levels are low across the UPMC Pinnacle Hospitals service area. More than half (59.6 percent) of the ZIP codes represented in the UPMC Pinnacle Hospitals study area reported percentages above the nation (10.8 percent) of adult residents without a high school diploma; ranging from the highest in 17030 – Harrisburg at 29.6 percent, to the lowest in 17110 – Harrisburg and 17074 – Newport (10.9 percent). This corresponds with data collected from the 2017 hand-survey where 29.8 percent of the survey population reported having less than a high school diploma or GED.

Key stakeholders commented that lack of health education is influencing the rates of chronic health issues among community residents, specifically around obesity. The 2017 County Health Ranking Data supports stakeholders by showing all five counties in the UPMC Pinnacle Hospitals study area reporting 28.0 percent or higher of residents that are obese. Obesity has far reaching effects on overall health; increasing the likelihood of being afflicted with chronic diseases, as well as making management of chronic diseases more difficult. Successful weight management depends, largely, on practicing healthy behaviors, such as the ability to make healthy food choices and engage in physical activity on a regular basis. Education level and health literacy are major factors affecting health behaviors. Three of the five counties in the UPMC Pinnacle Hospitals study area (Dauphin, Perry, and York) ranked 30 or above (out of 67 Pennsylvania counties) in health behaviors.

[21] World Health Organization: www.who.int/topics/health_education/en/

Health education provides many positive benefits to individuals and the community at large, such as improved health status, enhanced quality of life, and reduced costs associated with health care.[22] Increasing health education (that is easily understood) will provide residents of the UPMC Pinnacle Hospitals service area with the tools they need to make informed decisions regarding their health and take an active role in managing their health care needs.

Lack of Care Coordination

Care coordination ensures patients can effectively navigate today's complex health care delivery system. Many residents have difficulty connecting with needed medical services, especially when those services are beyond the scope of their primary care physician. Residents with unmet health needs are likely to experience poor health outcomes when dealing with chronic conditions and health issues requiring specialty care.

In the UPMC Pinnacle Hospitals study area, community leaders noted a lack of specialty care available, making it difficult for residents to manage specialty health care needs. According to the 2017 hand-survey, 13.3 percent of participants responded they do not have a doctor because they could not find one, and 14.2 percent of participants that needed mental health services did not obtain them because they were overwhelmed or confused by the system.

Collaboration among hospitals, health insurers, and individual health care providers will increase access to available health care resources and improve health outcomes for residents of the UPMC Pinnacle Hospitals service area.

Priority 2: Behavioral Health (Mental Health and Substance Abuse)

Behavioral health is an important aspect of an individual's overall well-being. Individuals with behavioral health issues often have one or more underlying mental disorders. According to the National Survey of Substance Abuse Treatment Services (N-SSATS), almost half of Americans seeking substance use disorder treatment are diagnosed as having a co-occurring mental and substance use disorder.[23]

Untreated behavioral health issues increase the risk of unhealthy and/or violent, self-destructive behaviors, including suicide, the second leading cause of death among people age 25 to 34. These individuals are also more likely to have poorer health outcomes when diagnosed with chronic conditions such as diabetes, hypertension, and heart disease.[24]

Many behavioral and mental disorders can be effectively treated or managed with proper intervention. An integrated approach with health professionals collaborating across disciplines to treat the whole

[22] Coalition of National Health Education Organizations http://www.cnheo.org/files/health_ed.pdf
[23] The Substance Abuse and Mental Health Services Administration: www.samhsa.gov/treatment
[24] Healthy People 2020: www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Mental-Health

individual often produces the best outcomes when treating individuals with multiple health care needs.[25]

Mental Health

Mental health is an important part of overall health and well-being. Mental health includes our emotional, psychological, and social welfare. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make healthy choices. Mental health is important at every stage of life, from childhood and adolescence through adulthood.[26]

Mental health conditions are very common in the United States. The Centers for Disease Control and Prevention estimates that 50.0 percent of all Americans are diagnosed with a mental illness or disorder at some point in their lifetime. Mental illnesses, such as depression, are the third most common cause of hospitalization in the United States for those aged 18-44 years old; and adults living with serious mental illness die, on average, 25 years earlier than others.[27]

The prevalence of mental illness in American households is staggering. According to the National Alliance on Mental Health, one in 25 adults—9.8 million, or 4.0 percent—experiences a serious mental illness in a given year that substantially interferes with or limits one or more major life activities and, one in five youth aged 13–18 (21.4 percent) experiences a severe mental disorder at some point during this period. For children aged 8–15, the estimate is 13 percent.[28]

It is important to monitor mental illness as it is associated with increased occurrence of chronic diseases such as cardiovascular disease, diabetes, obesity, asthma, epilepsy, and cancer. Mental illness is also associated with lower use of medical care, reduced adherence to treatment therapies for chronic diseases, and higher risks of adverse health outcomes.

Residents who have a mental illness are also more likely to use tobacco products and abuse alcohol. Rates for both intentional (e.g., homicide, suicide) and unintentional (e.g., motor vehicle) injuries are two to six times higher among people with a mental illness than in the population overall.[29]

Americans often go without treatment for their behavioral health condition; however, with recent changes and the implementation of the ACA, residents have accessibility options to obtain and seek treatment for their behavioral health condition. The ACA has provided health plans which cover basic mental health and substance abuse services.

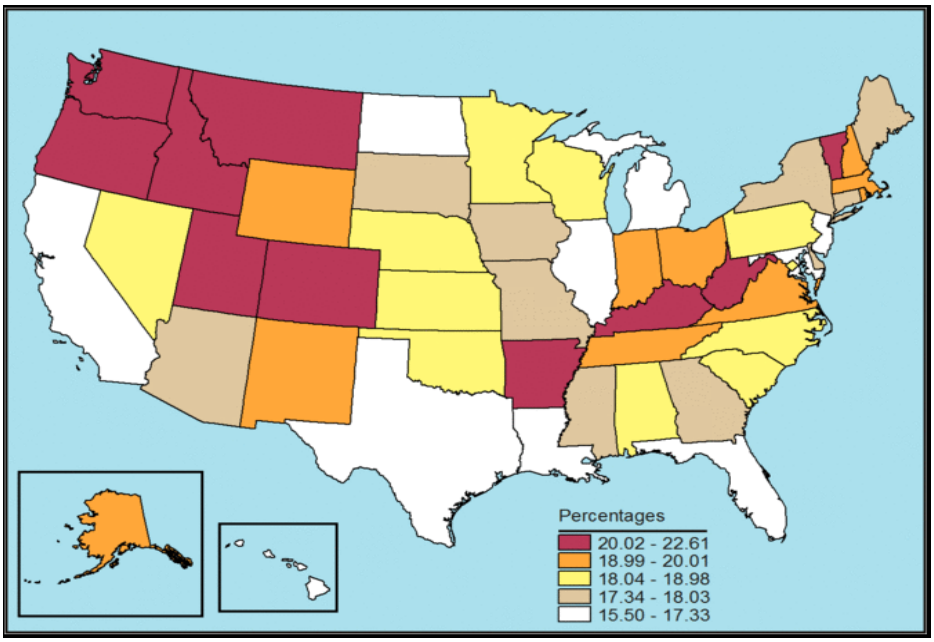
The Substance Abuse and Mental Health Services Administration (SAMHSA) reports that individual and group counseling, medication, and supportive services are evidence-based treatments that can be offered to assist those in need. An individual's path to recovery varies as treatment and services for

[25] The Substance Abuse and Mental Health Services Administration: www.integration.samhsa.gov/about-us/what-is-integrated-care
[26] Centers for Disease Control and Prevention: www.cdc.gov/mentalhealth/index.htm
[27] Centers for Disease Control and Prevention: www.cdc.gov/mentalhealth/data_publications/index.htm
[28] National Alliance on Mental Health: www.nami.org/Learn-More/Mental-Health-By-the-Numbers
[29] Centers for Diseases and Prevention: U.S. Adult Mental Illness Surveillance Report, www.cdc.gov/Features/MentalHealthSurveillance

mental and substance abuse should be tailored and customized to yield the most effective results. Typically, the most effective approaches often involve counseling in addition to medication. A critical component to recovery for patients is the availability of supportive services such as case management. South Central Pennsylvania like many communities offers support services; however, with the upswing and surge of behavioral health care needs, the region is faced with programming shortages and funding to address the region's growing need and demand for behavioral health care services.

The below map (Map 5) geographically depicts individuals 18 and older who had any type of mental illnesses according to SAMHSA. Pennsylvania reports a range between 18.0 percent – 18.9 percent of residents who reported any type of mental illnesses in years 2015-2016.[30]

Map 5: Any Mental Illness (AMI) in the Past Year among Persons Aged 18 or Older, by State: Percentages, Annual Averages Based on 2015 and 2016 NSDUHs



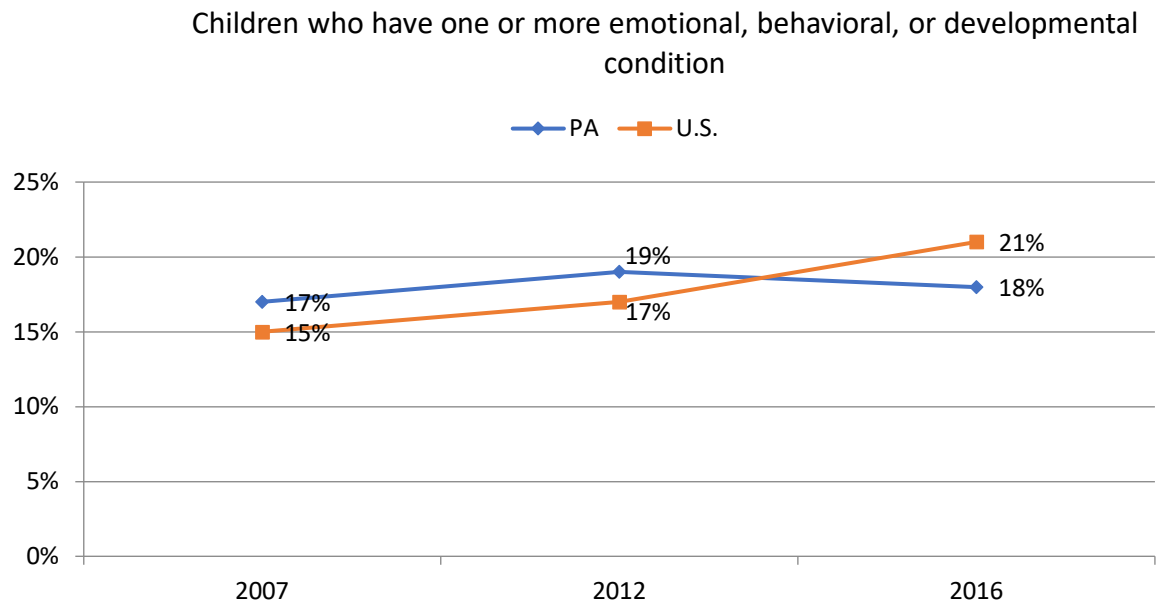
Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2015 and 2016.

Data related to Pennsylvania in Chart 10 reveals a slight decrease in the number of children who have one or more emotional, behavioral, or developmental condition. From 2007 to 2012, rates of emotional, behavioral, or developmental conditions in children in the U.S. and Pennsylvania both rose, with the Pennsylvania rate being slightly higher. In most recent years, U.S. saw a notable increase in the rate of

[30] Any mental illness (AMI) is defined as having a diagnosable mental, behavioral, or emotional disorder, other than a developmental or substance use disorder, that met the criteria found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

children with emotional, behavioral, or developmental conditions while the rate in Pennsylvania declined; a positive sign (19.0 percent to 18.0 percent respectively).

Chart 10: Mental Health Statistics - Children's Mental Health

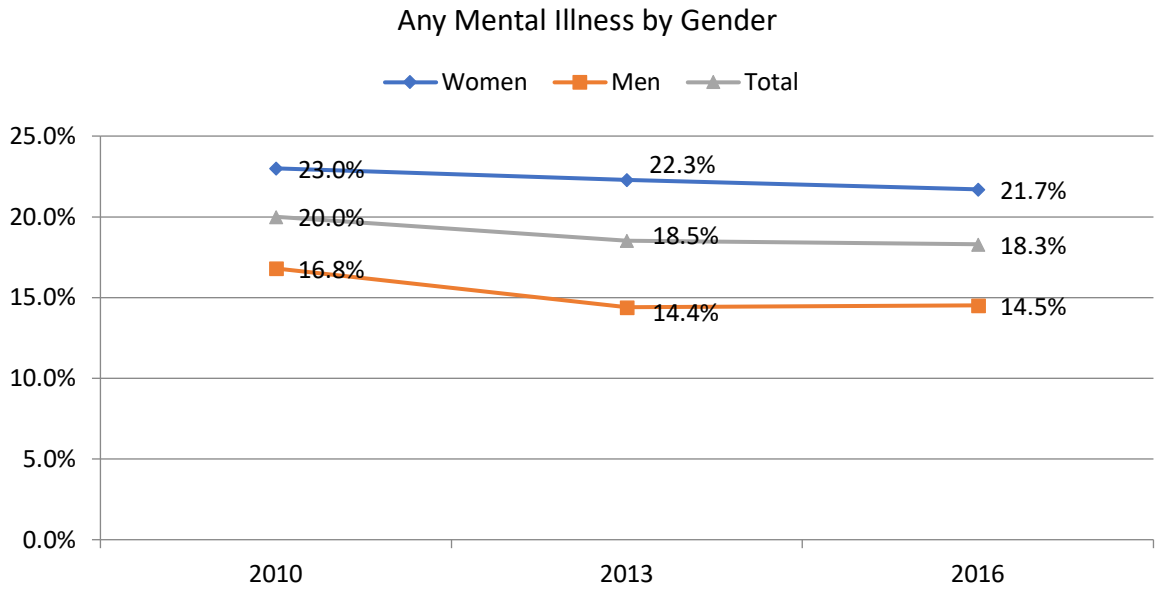


Source: National Kids Count

Information broken further down, Chart 11 reports mental illness broken out by year 2010, 2013, and 2016 by gender. Women show higher rates of having any mental illness than men. However, it is important to remember that women tend to report more mental illness and seek mental health services more often than men. This is important to note, due to the fact that mental health services must focus efforts for men and women differently.[31]

[31] Results from the 2010, 2013 and 2016 National Survey on Drug Use and Health: Mental Health Detailed Tables

Chart 11: Any Mental Illness by Sex



Source: 2016 National Survey on Drug Use and Health: Mental Health Detailed Tables

The shortage of mental health providers is a growing problem. The need for treatment is expected to rise as the number of mental health providers falls. In 2025, demand may outpace supply by 6,090 to 15,600 psychiatrists, according to a 2017 National Council for Behavioral Health report that explores the shortage's causes.[32]

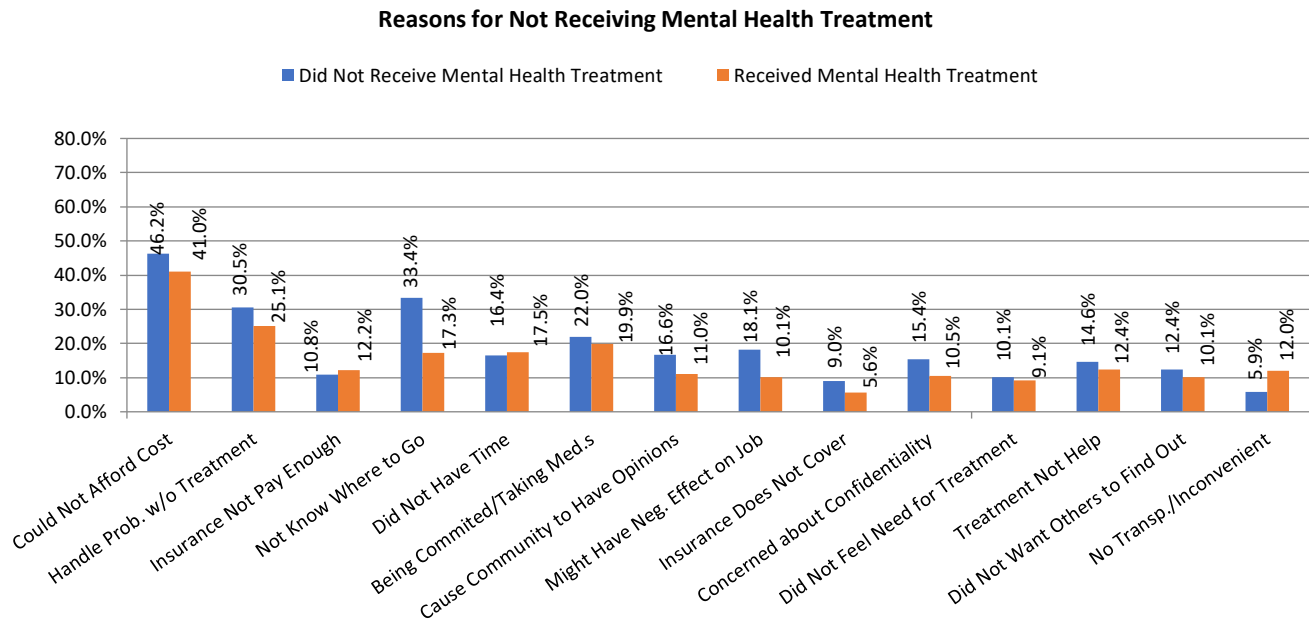
SAMHSA's 2016 National Survey on Drug Use and Health (Chart 12) revealed that those who did not receive mental health treatment reported their main reason for not receiving care they needed was due to cost (46.2 percent), followed by not knowing where to go for treatment (33.4 percent), then, believing they could handle their issue without treatment (30.5 percent).

Those who were eventually able to receive treatment reported that the cost of insurance (41.0 percent), handling problem without treatment (25.1 percent), and concerned about being committed (19.9 percent) were their top choices as to why they did not receive treatment for their mental illness.

Many of the responses from the 2016 national survey were aligned with the primary data collected for the CHNA from the UPMC Pinnacle Hospitals five-county focus area. Overall, cost, accessibility, and stigma were resonated throughout the assessment as these factors are echoed at the national level and regional level.

[32] Association of American Medical Colleges: https://news.aamc.org/patient-care/article/addressing-escalating-psychiatrist-shortage/

Chart 12: Mental Health Demographics in the U.S., population 18+



Source: 2016 National Survey on Drug Use and Health: Mental Health Detailed Tables

At the state level, Table 9 depicts the ratio of available mental health providers to one resident within the area. Perry County reports an extreme deficit of mental health providers with 3,830:1; while on the polar end, Dauphin County reports a 500:1 ratio of metal health providers in the area. The U.S. top performers fall in the 90th percentile range of 330:1. The shortage of mental health providers in the five-county UPMC Pinnacle Hospitals study area highlights what residents already face and will continue to face without direct action. The ability to secure treatment and services is greatly impacted by the shortfall of regional mental health providers.

Table 9: Mental Health Providers at County Level[33]

County	Ratio of Mental Health Providers 2017
Cumberland	570:1
Dauphin	500:1
Lebanon	440:1
Perry	3,820:1
York	970:1
Pennsylvania	560:1

Source: County Health Rankings

[33] County Health Rankings: www.countyhealthrankings.org/app/pennsylvania/2018/measure/factors/62/data

Information collected from the 2018 hand-survey reported that more than one-third of survey participants (39.3 percent) stated that they have been told that they have a mental health concern. Over the past 12 months (within the timeframe of when the hand-survey was distributed and collected), 31.6 percent received services for their mental health issue. Mental health counselors and the county mental health system were the top two places where services were obtained (30.1 percent and 22.0 percent respectively). Unfortunately, a quarter of survey respondents (25.0 percent) reported that their mental health issue has affected their physical health; specifically, chronic pain (25.3 percent) or high blood pressure (20.1 percent) were ways their mental health issues affected them physically.

Community stakeholders reported that mental health can affect all age groups and encompasses individuals of all demographics. It has a wide-reaching effect on physical health, education, employment, and overall daily life. Mental health intervention and service are available to a degree for individuals who seek care. Unfortunately, the need for such services continues to grow. Traumatic life events, especially those experienced at a young age, have negatively impacted the physical and emotional well-being of community residents. Accessibility accounts for one of the main reasons why residents face challenges in receiving care; this issue coupled with difficulties in securing timely appointments leads to residents resorting to using the emergency department or opting not to obtain any care at all.

It was reported that there is not an adequate amount of services or providers to deal with the increasing mental health problems. A shortage of psychiatrists, counselors, and facilities to treat patients, particularly long term, are factors that contribute to residents obtaining mental health services in the community. Mental health is a large community issue, one that community stakeholders believe cannot be resolved without substantial funding and efforts made by all in the region.

Community leaders see mental health as a major issue and expressed that while mental health has received more publicity, as well as exposure in the media, there has not been enough focus on treatment of the disease. Residents dealing with mental health issues need assistance in accessing programs and resources for treatment and care. It is essential that organizations identify ways to provide assistance for these community residents. Recommendations from community stakeholders also included providing resources for those struggling with mental health and substance abuse issues as well as addressing ways for residents to discuss the trauma they face. These are problems that currently plague the community; therefore, it is crucial for organizations to identify ways to assist community residents in order to stretch what the community currently has to offer.

The National Council for Behavioral Health's report suggests the following:[34]

- Improving access to, and the quality of, evidence-based psychiatric services;
- Fostering better patient outcomes;
- Putting behavioral health provider organizations in a stronger position for the delivery of integrated care;

[34] Association of American Medical Colleges: https://news.aamc.org/patient-care/article/addressing-escalating-psychiatrist-shortage/

- Managing total health care costs through better integration;
- Reducing stigma towards individuals seeking treatment for mental health; and
- Increasing recognition of the importance of treating co-morbid medical and psychiatric disorders for better patient outcomes and reducing the overall cost of care.

Efforts to address mental health at the community level or grass roots level need to be actively employed in order to achieve the end goal. Pressure placed on our policymakers and government leaders can yield positive changes and achieve the aforementioned solutions.

Substance Abuse

Individuals with a mental health condition are more likely to have an alcohol or substance use disorder. Mental health and substance abuse disorders are co-occurring issues; as both of these problems affect people from various age groups, gender, and socioeconomic backgrounds. Recognizing common signs associated with both diseases can help people obtain the assistance they need as co-occurring disorders are often difficult to diagnosis. SAMHSA's 2014 National Survey on Drug Use and Health (NSDUH) reported that in 2014, 20.2 million adults (8.4percent) had a substance use disorder. Of these, 7.9 million people had both a mental disorder and substance use disorder.[35]

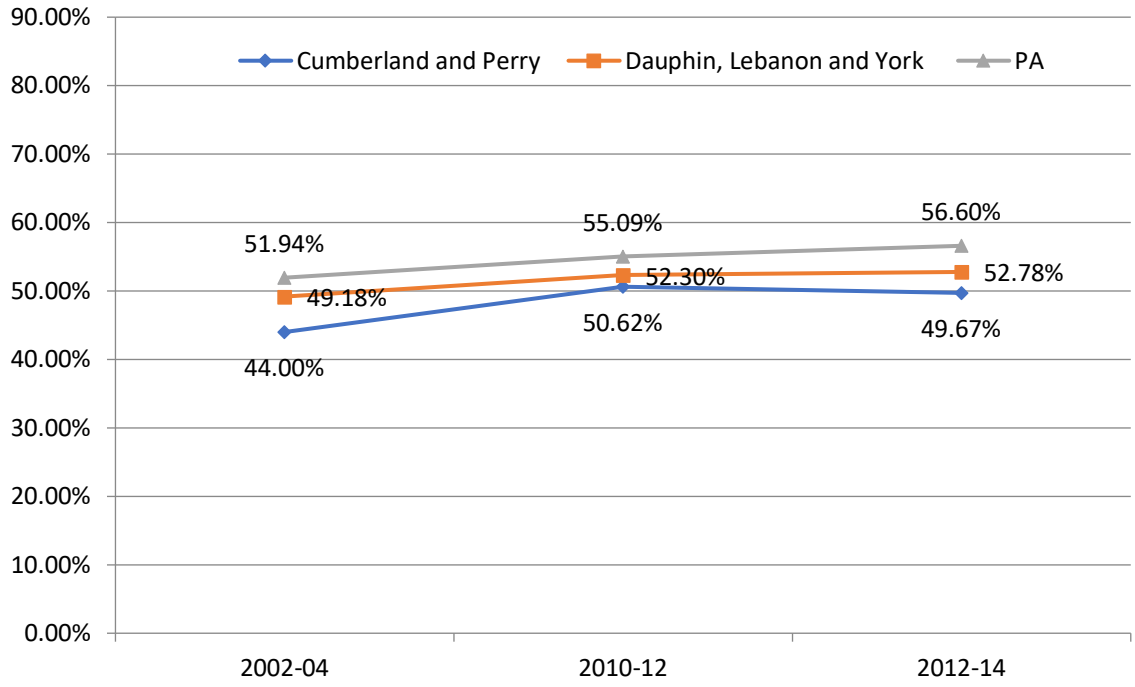
The reoccurring use of alcohol and/or drugs physically impairs and damages the overall health and well-being of an individual. Long-term effects can harm the users' social life, work environment, and can significantly affect educational obtainment. In 2014, about 21.5 million Americans aged 12 and older (8.1 percent) were classified with a substance use disorder in the past year. Of those, 2.6 million had problems with both alcohol and drugs, 4.5 million had problems with drugs but not alcohol, and 14.4 million had problems with alcohol only. The consequences of undiagnosed, untreated, or undertreated co-occurring disorders can lead to a higher likelihood of experiencing homelessness, incarceration, medical illness, suicide, or even early death.[36]

Residents who have co-occurring problems tend to seek primary care services as they oftentimes have multiple health problems. These residents often seek primary care services before they seek mental health assistance. A practitioner's interaction with a resident who has a co-occurring problem has a unique opportunity to screen, recognize, and address their conditions from the onset. It is essential to provide open access to residents for primary care services as this opens pathways to be diagnosed, seek, and obtain treatment.

Regional data from years 2002-2004, 2010-2012, 2012-2014, shows that all of the counties within the five-county study area have lower rates of alcohol use and binge alcohol use compared to the state. Dauphin, Lebanon, and York counties in 2012-2014 have the highest rates of alcohol use (52.7 percent) compared to Cumberland and Perry counties (See Chart 13).

[35] The Substance Abuse and Mental Health Services Administration: www.samhsa.gov/disorders
[36] The Substance Abuse and Mental Health Services Administration: www.samhsa.gov/disorders/co-occurring

Chart 13: Alcohol Use in the Past Month (Aged 12 +)



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2014.

Hand-survey results show that more than one-third of survey respondents (35.8 percent) drink alcohol and 10.1 percent reported using recreational drugs. In the 2015 health provider survey, health providers listed alcohol abuse (11.4 percent) and substance abuse (11.2 percent) as two of the most pressing risky behaviors in the region.

Primary data collected from community stakeholders reported that substance abuse effects everyone surrounding the individual. Substance abuse affects and alters the way individuals of all demographics behave, altering their mood, lowering inhibitions, and negatively influencing relationships. Substance abuse has become a national problem and has infiltrated South Central Pennsylvania. It is a growing problem, as community leaders believe opioid usage has affected the community considerably. Substance abuse does not target any one specific group or age demographic; it is all encompassing.

Stakeholders also reported that substance abuse and mental health issues dovetail one another. Stakeholders reported that individuals who have a mental health problem are more likely to have a co-occurring substance abuse issue. Resources that address these issues simultaneously would greatly improve outcomes for residents with co-occurring substance abuse and mental health issues.

Unfortunately, community leaders do not believe there are enough services or providers available to deal with these issues, leading residents to travel outside of their local community to obtain care and treatment. Oftentimes, patients are referred to facilities out-of-state as the need for such services outpaces local providers. Community leaders were also quick to note that individuals dealing with

substance abuse are deterred from seeking help due to negative social stigmas that continue to surround this disease.

Health Education

Health education related to understanding poor behaviors is necessary to instill in children at an early age. Teaching children the dangers of substance abuse and recognizing early signs related to mental health provides a pathway to learn about important health risks and conditions. Children readily grasp habits at an early age. Reinforcement along with healthy actions can change and reduce the likelihood of future poor behaviors. Health education aims to build on a framework of existing knowledge and attitudes. It sets out to reduce diseases and risky behaviors. Health education can help patients understand their own diagnosis and recovery stages as it provides an outline and furthers goals and objectives. Development of skills at an early age, understanding conditions, and aliments throughout life will create a better future for the individual.

Health education should include physical, mental, social, and emotional health. Residents throughout the U.S. suffer from anxiety, depression, eating disorders, etc. and many do not understand what may be occurring physically. Having accessible facts and knowledge, along with a strong fostering environment, will help the individual and those around them.

Lack of Care Coordination

Care coordination was discussed as a need which impacts individuals with a mental health and/or substance abuse disorder. Care coordination involves two or more individuals who provide appropriate health care services to patients. Care coordination helps to assist the patient and reduce cost of care overall.

Care coordination is essential to the success of a patient's well-being. Poor care coordination can be unsafe and result in fatal consequences. The risk and outcomes of a patient's health stems from poor communication between the patient, caregiver, primary care physician, physician specialists, counselor, and pharmacist if communication is not relayed properly.

According the American College of Physicians, uncoordinated care is costly for patients and the health care system, as it increases the possibility of duplicate services, risk of preventable hospital admissions and readmissions, and contributes to overuse of procedures that are more intensive. Patients who receive uncoordinated care are estimated to pay 75.0 percent more for their health care services than patients matched with coordinated care. It was suggested that enhanced care coordination could reduce 35 percent of costs. Because of the recognized impact of care coordination, the PPACA invokes care coordination throughout its provisions to improve the quality of care and control costs to transform the health-care-delivery system.[37]

[37] Managed Healthcare Connect: www.managedhealthcareconnect.com/article/care-coordination-today-what-why-who-where-and-how

Care coordination dovetailed with appropriate programs and services can successfully benefit the patient and improve quality of life. A successful integrated model with appropriate staff, medical practitioners, support systems, etc. must be part of the delivery of care model for successful coordination intervention.

Preventive Services

Preventive health services help hinder disease and help improve an individual's health status and over all well-being. Prevention plays a critical role in behavioral health. Patients who have co-occurring conditions and have success in one area will tend to have success in the other area. Applying an effective intervention that improves mental health may also reduce substance use and, vice versa reducing substance use may improve a person's mental health.[38] It is important to help patients achieve good mental health as it also correlates with good physical health.

Social and environmental factors along with genetic components can greatly influence a person to use drugs and/or develop a mental health condition. According to SAMHSA, effective prevention focuses on reducing those risk factors, and strengthening protective factors, that are most closely related to the problem being addressed. Applying the Strategic Prevention Framework (SPF) helps prevention professionals identify factors having the greatest impact on their target population.[39]

An important prevention measure of behavioral health is the continuum of care according to SAMHSA. The continuum of care (promotion, prevention, treatment, and recovery) presents opportunities for addressing behavioral health problems and for collaborating across sectors. In the prevention component of the continuum, practitioners assess relevant risk factors and protective factors prior to implementing their prevention efforts.[40]

Disease prevention and detecting diseases early is an important part of healthy living. Detection and prevention will lower health care costs and prolong and improve an individuals' health status. Having a long-term, trusting relationship with one's primary care physician, counselor, and/or specialist is vital to overall prevention.

Compliance Engagement

Residents who are non-compliant describes the level to which a patient incorrectly follows medical advice. Typically, it refers to medication and drug compliance; however, it can also pertain to self-care or therapy sessions. Patients diagnosed with a mental health condition and/or a substance abuse disorder will most likely at some point stop taking their medication or suspend their treatment plan. The simplicity of taking medication and following a physician's order is an unassuming charge; however, non-compliancy is very common. When patients stop taking medication meant to treat and resolve their

[38] Substance Abuse and Mental Health Services Administration: www.samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health
[39] Substance Abuse and Mental Health Services Administration: www.samhsa.gov/capt/programs-campaigns/center-application-prevention-technologies/practicing-effective-prevention-2
[40] Ibid.

current health ailments, many are unaware of the long-term and serious ramifications they will face when they stop taking their medication and/or following their physicians' orders. Reasons that medication non-compliancy is typically reported are: forgetfulness, perception of the medication's effectiveness, fear of side effects, difficulty taking the medication (especially with injections or inhalers), and prescription costs. According to the American Heart Association, poor medication adherence takes the lives of 125,000 Americans annually, and costs the health care system nearly $300 billion a year in additional doctor visits, emergency department visits, and hospitalizations.[41]

Being diagnosed with a mental health condition carries a significant negative stigma. Reducing the stigma can help patients come to terms with their conditions and could potentially reinforce the need to be compliant with their medication.

Reasons why patients are non-compliant frustrates family members, practitioners, and the support system around the patient. Understanding and sympathizing with the patient's rationale, one that is already plagued with a mental health disorder, can help encourage and place patients back on track. A strong, open relationship with a mental health provider is vital to a patient being compliant.

Priority 3: Social Determinants of Health

According to Healthy People 2020, social determinates of health are conditions in the environments in which people are born, live, learn, work, and play. Social determinates of health have a significant impact on health outcomes. Some examples of social determinates of health include: access to safe and affordable housing, quality education and employment opportunities, public safety, and healthy foods. All of which enhance quality of life and play a strong role in ensuring a healthy population.[42]

Lacking any one of these resources makes it difficult for individuals and families to cope with everyday life and can be disastrous when presented with sickness or disease. ALICE is a United Way acronym that stands for "Asset Limited Income Constrained Employed". This population is employed and earns above the federal poverty level but is still unable to afford things like housing, child care, and health care. Individuals who are low-income with limited education are plagued with multiple environmental challenges such as clean affordable housing, a community afflicted with high crime rates, and poor food options. These residents will continue to face challenges unless their income structure changes.

A strong, collaborative network across all sectors (e.g., health care systems, state and local government, community-based organizations, etc.) addressing the unique needs of each community is essential to providing support to individuals and families and improving the overall health of the community.[43]

The table below provides a snapshot from County Health Rankings and Roadmaps of where the five-counties rank from 2015 to 2018 for Social and Economic Factors. The ranking scale enables

[41] American Heart Association: www.heart.org/HEARTORG/Conditions/More/ConsumerHealthCare/Medication-Adherence---Taking-Your-Meds-as-Directed_UCM_453329_Article.jsp#.WzbZMy2ZNm8
[42] Healthy People 2020: www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
[43] Healthy People 2020: www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources

communities, organizations, and agencies to assess where their communities lie in comparison to the remaining 67 counties in Pennsylvania. Cumberland County ranks a three out of 56 on Socioeconomic Factors in year 2018; while Dauphin County ranks 22 in year in 2018 (See Table 10). Overall, Dauphin, Cumberland, Perry, and York counties improved on their rankings between 2015 and 2018.[44]

Factors that are used to derive the overall socioeconomic rankings are high school graduation, some college, unemployment, children in poverty, income inequality, children in single-parent households, social associations, violent crime, and injury deaths.

Table 10: County Health Rankings Social and Economic Factors

	2015	2018
Dauphin	29	22
Cumberland	5	3
Lebanon	10	11
Perry	14	10
York	20	12

Source: County Health Rankings

Education/Employment/Income

Obtaining a higher education enables individuals to be more aware of their environment and helps formulate opinions and viewpoints and can ultimately change social standing. Individuals who have an education, in particular, a higher education (a bachelor's degree or higher), tend to have strong employment security, earn a higher income, and hold an advantage for additional employment opportunities. Having an education also enables individuals to navigate the health care system for services, understand the importance of preventive care, make better health choices for themselves and their family, therefore, improving their own health and well-being.

According to the Virginia Commonwealth University Center on Society and Health in a study funded by the Robert Wood Johnson Foundation, some key findings related to education and income are complex; however, both factors are highly dependent on each other. The report stated that education creates opportunities for better health, poor health puts educational attainment at risk, and both affect health and education.[45] The connection between education, income, and employment are linked. The important role of education is globally known. The benefits of having an education are important in any society.

Obtaining an education creates a pathway to available employment opportunities. Employment provides a steady income, plays a vital role in providing benefits to obtain health services, and provides

[44] County Health Rankings: www.countyhealthrankings.org
[45] Robert Wood Johnson Foundation: www.rwjf.org/en/library/research/2014/04/why-education-matters-to-health.html

stability in the management of one's overall health. Employment provides access to food, quality housing, and additional environmental amenities which can improve an individual's' lifestyle.

Table 11 from County Health Rankings reveals the percentage of population aged 16 and older who are unemployed but seeking work. Residents in Dauphin County have the highest reported unemployment rate in the five-county study area; however, the rates are lower than Pennsylvania. The Top U.S. performers in the 10th percentile report a 3.2 percent score.

Table 11: 2018 County Health Rankings Percent Unemployment[46]

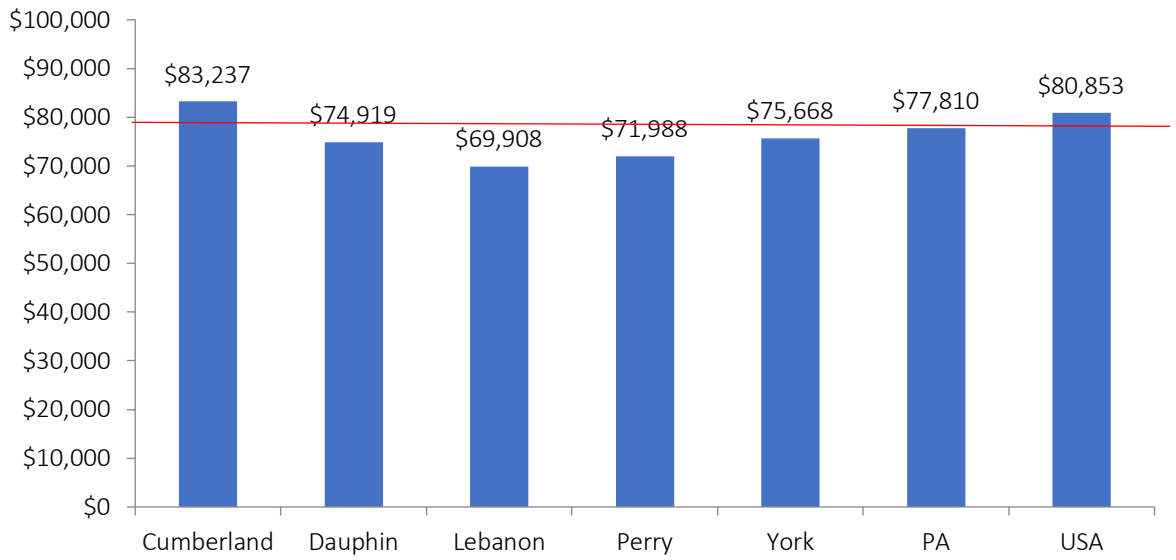
	2018 Unemployment (% unemployed)
Cumberland	4.1
Dauphin	4.8
Lebanon	4.5
Perry	4.7
York	4.7
Pennsylvania	5.4

Source: County Health Rankings

Within the five-county study area, Cumberland County has the highest average household income at $83,237. On the other hand, Lebanon County has the lowest average household income at $69,908. Cumberland County also reports ($83,237) a higher household income when compared to the state ($77,810) and nation ($80,853) (See Chart 14).

[46] County Health Rankings: www.countyhealthrankings.org

Chart 14: Five County Study Area Average Household Income

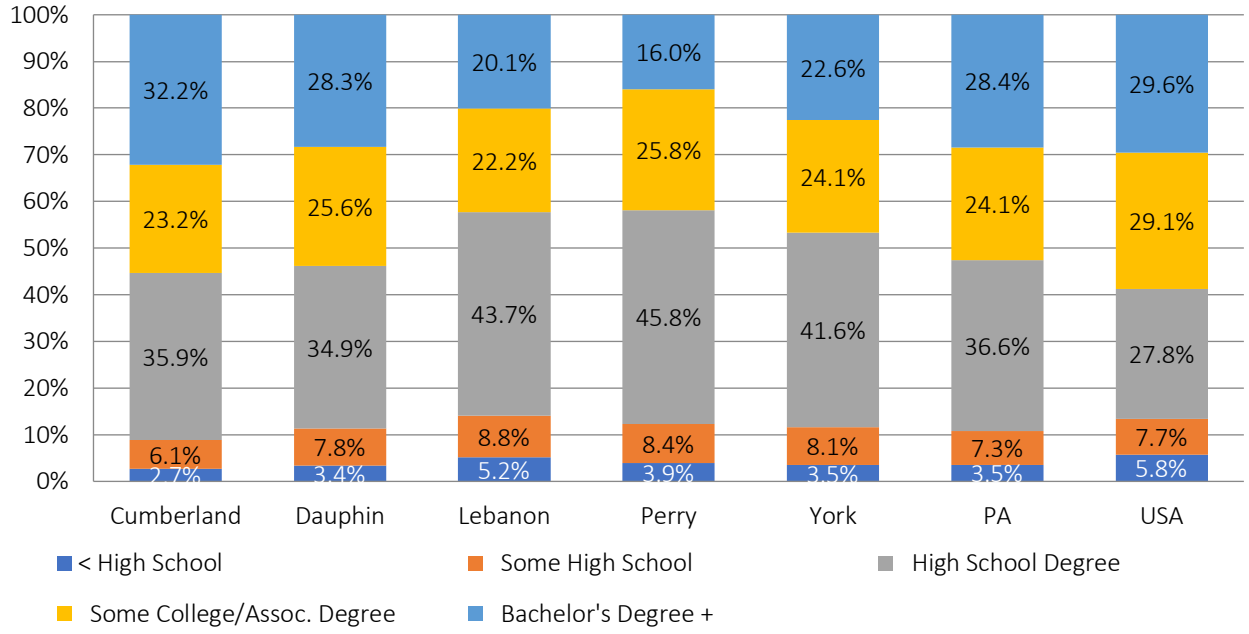


Source: Truven Health Analytics 2017

Further examination of Charts 14 and 15 reveals the correlation between income and education. It was reported that close to one-third of residents in Cumberland County (32.2 percent) have a bachelor's degree or higher compared to residents in Lebanon (20.1 percent) and Perry (16 percent) counties.

Lebanon and Perry counties report the largest number of residents who have less than a high school education, some high school, and a high school degree (respectively 57.7 percent and 58.2 percent) (See Chart 15). These percentages are reflective in the average household income as Lebanon and Perry counties also reports the lowest average household income in the five-county study area (See Chart 14).

Chart 15: Five County Study Area Education Level



Source: Truven Health Analytics 2017

Table 12 depicts the top five ZIP codes and the bottom five ZIP codes in the 2018 CNI data. The connection between education, income, and health care are plainly shown in the CNI rankings; specifically, ZIP codes 17101 (Harrisburg), 17104 (Harrisburg), 17103 (Harrisburg), 17034 (Highspire), and 17102 (Harrisburg); which are all located in Dauphin County. We can acknowledge that residents in those specific ZIP codes have high percentages of: residents who live in poverty, residents without a high school diploma, and residents who are uninsured and unemployed.

The results indicate that residents in the specific ZIP codes of Harrisburg and Highspire, with a CNI score of 5.8 – 3.8, face high socioeconomic barriers when seeking health care services. Residents in these ZIP codes face more socioeconomic challenges than residents on the polar end in Table 12.

Residents who reside in ZIP codes 17062 (Millerstown), 17090 (Shermans Dale), 17319 (Etters), 17339 (Lewisberry), and 17007 (Boiling Springs) are less likely to face barriers when seeking health care services, as their rankings and overall CNI score indicates decreased barriers to obtaining care. The CNI scores for these residents range from 1.6 – 1.2.

Table 12: Community Need Index (Top Five ZIP Codes and Bottom Five ZIP codes scores)[47]

ZIP	City	County	Income Rank	Insurance Rank	Education Rank	Culture Rank	Housing Rank	2017 CNI Score
17101	Harrisburg	Dauphin	5	5	5	4	5	4.8
17104	Harrisburg	Dauphin	5	5	5	4	5	4.8
17103	Harrisburg	Dauphin	4	5	5	3	5	4.4
17034	Highspire	Dauphin	4	4	4	2	5	3.8
17102	Harrisburg	Dauphin	3	5	3	3	5	3.8
17062	Millerstown	Perry	2	1	3	1	1	1.6
17090	Shermans Dale	Perry	1	1	3	2	1	1.6
17319	Etters	York	2	2	1	1	1	1.4
17339	Lewisberry	York	1	2	2	1	1	1.4
17007	Boiling Springs	Cumberland	1	2	1	1	1	1.2

Source: Truven Health Analytics 2017

Community stakeholders reported that education and prevention are key to combatting health and socioeconomic disparities. Education provides a pathway for residents to obtain health care and community outreach can implement strategies where residents live to reduce health and socioeconomic disparities. With increased education, community residents can understand their health needs, navigate the health care system, and have greater employment opportunities, thereby leading to greater financial gain and, ultimately, better health status and health outcomes.

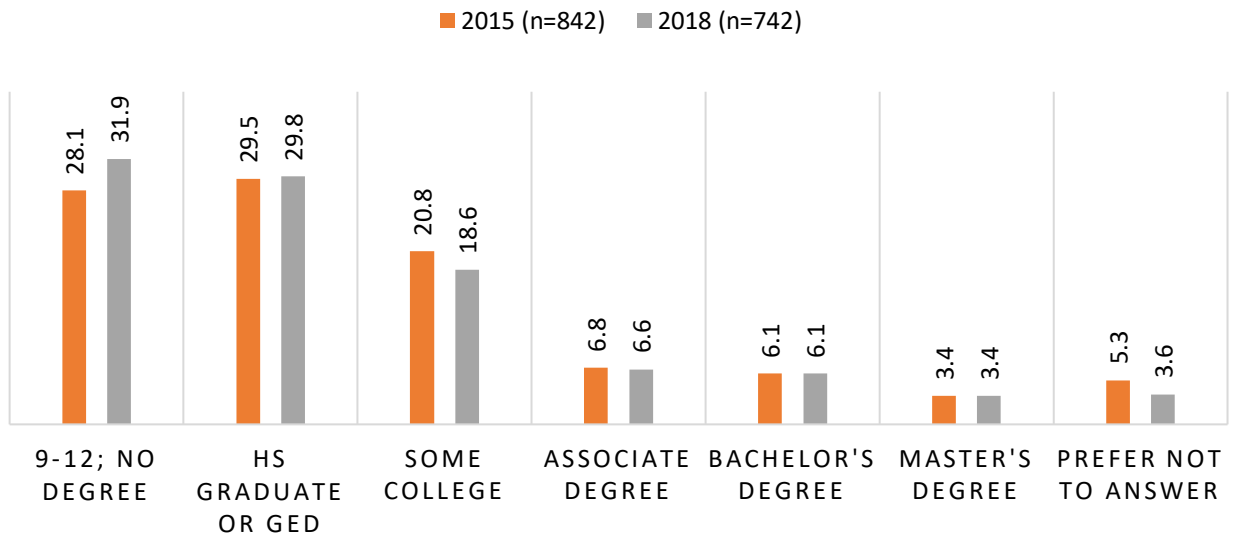
Primary data collected from stakeholders also indicated that the region needs to improve accessibility issues residents face through preventive education information, suggesting continuous repetition of health factors and information to be relayed. For residents who have a language barrier issue, working closely with community-based organizations in direct contact with this population to message culturally appropriate information will improve their health outcome.

In the 2018 hand-survey, three-fourths (80.3 percent) of survey respondents reported having either no degree, graduating high school (GED), or having less than some college exposure (see Chart 16). While the hand-survey data was collected from underserved and vulnerable populations, the information

[47] ZIP codes in grey are the top five ZIP codes out of the 58 ZIP codes in the primary service area (high socioeconomic barriers); while ZIP codes in blue are the lowest ZIP codes out of the primary service area (few socioeconomic barriers).

nonetheless reinforces the relationship between education and income. Socioeconomic factors and its influences will continue to shape and mold an individual's quality of life.

Chart 16: Hand-Survey Education Level



Transportation

Transportation is an integral aspect of a healthy community. A community without access to adequate transportation is unable to take advantage of health care services, employment opportunities, or assistance resources.

Community leaders interviewed as part of the CHNA process commented that many of the communities located in the UPMC Pinnacle Hospitals service area are rural and the resources residents need are not available locally. As such, lack of transportation in these communities is a significant barrier to receiving health and social services and hinders employment and social activities. Many organizations are working diligently to provide this service to their community; unfortunately, it remains a challenge on many fronts.

A reported 9.7 percent of residents said they do not have a doctor in the 2018 hand-survey and stated the reason was that they do not have transportation. Another 14.7 percent of respondents stated they have problems keeping child immunizations up to date because of no or limited transportation. Only half (51.1 percent) of surveyed residents reported their main form of transportation was their own car; this is slightly less than what was reported in 2015 which was 51.7 percent. Only 20.4 percent of residents without a car utilize public transportation.

Without transportation, residents in the UPMC Pinnacle Hospitals service area are unable to take advantage of the UPMC Pinnacle's rich health care resources; leaving many residents with unmet health needs. ZIP code 17045 – Liverpool located in Perry County is 21.6 miles away from the closest UPMC

Pinnacle Hospitals facility and 19.7 miles away from the closest Emergency or Walk-in Care facility.[48, 49] According to the Pennsylvania Department of Transportation (PennDOT), Perry County does not provide mass transit services for its residents; and is the only county in the UPMC Pinnacle Hospitals study area without any form of mass transit.

Homelessness/Housing

Individuals and families around the nation are impacted by their housing circumstances and homelessness. It is difficult to maintain a good health status when faced with unstable housing situations and homelessness; both issues contribute to poor health outcomes for these populations. Residents of the UPMC Pinnacle Hospitals service area, like the nation, experience these barriers to health care.

According to the 2017 CNI research, almost 35 percent of Dauphin County residents rent their homes. Seven of the eight ZIP codes scoring above the median (3.0) are located in Dauphin County, indicating increased barriers to health care.

In Pennsylvania, the homelessness rate is below the national rate at 12.01 per 10,000 people. However, this rate represents a 0.6 percent increase since last year, while the national number decreased. Cumberland County provides the most homelessness assistance at a rate of 24.5 clients per 1,000 residents among the counties in the UMPC Pinnacle study area.[50, 51]

County Health Rankings evaluates various measures to reveal a snapshot of how health is influenced by where we live, learn, work, and play. These rankings provide a starting point for change in communities.[52] According to County Health Rankings data, all of counties in the UPMC Pinnacle Hospitals study area have either improved in rank or stayed the same for Social and Economic Factors. Physical Environment rankings consider, among other measures, severe housing problems. Severe housing problems are defined as households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities.[53] Only Perry County improved in this category from a ranking of 61 (out of 67 counties) in 2014 to 51 in 2017. Cumberland County decreased the most in rank from 2014 to 2017; going from 11 in 2014 to 40 in 2017. Twelve percent of residents in Cumberland County are impacted by severe housing problems; Dauphin County has the highest percentage of residents experiencing severe housing problems at 14 percent.

Residents of the UPMC Pinnacle Hospitals service area will need the collaboration of hospitals, county government, and community-based organizations to develop programs and services that target this population in order to overcome these obstacles to health care and improve health outcomes.

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[48] UPMC Pinnacle: www.pinnaclehealth.org/locations/?locationType=1
[49] UPMC Pinnacle: https://www.pinnaclehealth.org/locations/?locationType=2
[50] National Alliance to End Homelessness, The State of Homelessness in America 2016, PIT survey 2016
[51] Pennsylvania Office of Rural Health, Capital Area Coalition on Homelessness – Ad hoc Committee on Overnight Shelter Final Report and Recommendations - May 2010; and Point in Time Survey 2014. Last Updated 2018
[52] County Health Rankings: www.countyhealthrankings.org/
[53] County health Rankings: www.countyhealthrankings.org/app/pennsylvania/2017/measure/factors/136/map

Language Access

Having language accessibility helps providers and organizations delivery of high-quality effective care to help meet the cultural needs of their patients. Health and social organizations can improve health outcome, health status, and reduce gaps in health disparities if an effective system is developed.

Language barriers and residents who have difficulties in understanding the English language are factors that contribute to poor health outcomes for many populations. Organizations must address their community's diversity by providing services in predominantly spoken languages and/or languages that have a strong representation in the region, employ staff who are culturally and linguistically reflective of the community, and provide information at low-reading levels. Being culturally aware of the many different ethnic and nationally diverse populations can change the health circumstances of a resident. The patient landscape is changing, and health systems and social organizations must adapt in order to reduce poor health outcomes associated with diverse, non-English speaking populations.

Conclusion

Improving the health of residents and closing gaps in health disparities is one of the main goals many communities strive to obtain. UPMC Pinnacle Hospitals completed their third CHNA cycle focusing on a five-county region. Goals and strategies related to the identified needs will be developed as the system continues to leverage their strengths and resources to those in need. The CHNA along with the implementation plan will build upon the original blueprint of community health improvement strategies and add additional approaches to enhance their community's infrastructure. Results from the CHNA will be made publicly available as the community and its organizations must work in tandem to reach the end goal: a healthier community.

Community organizations and local partners along with UPMC Pinnacle Hospitals will continue to work closely to address how the identified CHNA needs will be resolved. Community organizations and leaders will need to understand the overall health of their region to determine how to best serve their residents; thus, information and open communication is essential. With the completion of the 2018 assessment, the implementation phase will lay the foundation for the ongoing evaluation process.

Information collected from the underserved and hard-to-reach populations will assist UPMC Pinnacle Hospitals leadership and community leaders in reducing the challenges residents often face when seeking services. The health needs identified in 2018 by UPMC Pinnacle Hospitals include: Access to Care, Behavioral Health (Mental Health and Substance Abuse), and Social Determinants of Health.

The compilation and analysis of primary and secondary data provided the CHNA Working Group with an array of information enabling the group to identify key health services gaps. Local, regional, and statewide partners, along with UPMC Pinnacle Hospitals understand the CHNA is a critical component of the creation of future strategies that will improve the health and well-being of their region.

APPENDICES




UPMC Pinnacle

For UPMC Pinnacle Hospitals (UPMC Pinnacle Harrisburg, UPMC Pinnacle Community Osteopathic, UPMC Pinnacle West Shore), UPMC Carlisle, and Pennsylvania Psychiatric Institute

Appendix A: General Description of UPMC Pinnacle Hospitals

UPMC Pinnacle, in response to their community commitment, contracted with Tripp Umbach to facilitate a comprehensive Community Health Needs Assessment (CHNA). The CHNA was conducted fall 2017 through May 2018. As a partnering hospital of a regional collaborative effort to assess community health needs in the five-county region (Cumberland, Dauphin, Lebanon, Perry, and York), UPMC Pinnacle Hospitals (Community Osteopathic, Harrisburg, and West Shore Hospitals) and UPMC Carlisle, collaborated with Hamilton Health Center, and the Pennsylvania Psychiatric Institute.

The report fulfills the requirements of the Internal Revenue Code 501(r)(3), a statute established within the Patient Protection and Affordable Care Act (PPACA) requiring that non-profit hospitals conduct a CHNA every three years. The CHNA process undertaken by UPMC Pinnacle Hospitals with project management and consultation by Tripp Umbach included extensive input from persons who represented the broad interests of the community served by the hospital facility, including those with special knowledge of public health issues, data related to underserved, vulnerable populations, and representatives of vulnerable populations served by UPMC Pinnacle.

UPMC Pinnacle Hospitals is a nationally recognized leader in providing high-quality, patient-centered health care services in central Pennsylvania and surrounding communities. Its medical staff of more than 2,900 physicians and allied health professionals and approximately 11,000 employees serve a 10-county area at outpatient facilities and eight acute care hospitals with 1,360 licensed beds: Carlisle, Community Osteopathic, Hanover, Harrisburg, Lancaster, Lititz, Memorial and West Shore.

The not-for-profit system anticipates caring for more than 1.2 million area residents in FY2018. Through programs such as community health centers, senior living services, nutrition programs, nurse-family partnerships, and more, UPMC Pinnacle Hospitals provided more than $66 million in free and reduced care, in addition to $20 million in community benefit for health care services and health education in FY 2017.

For a complete list of services, visit www.UPMCPinnacle.com

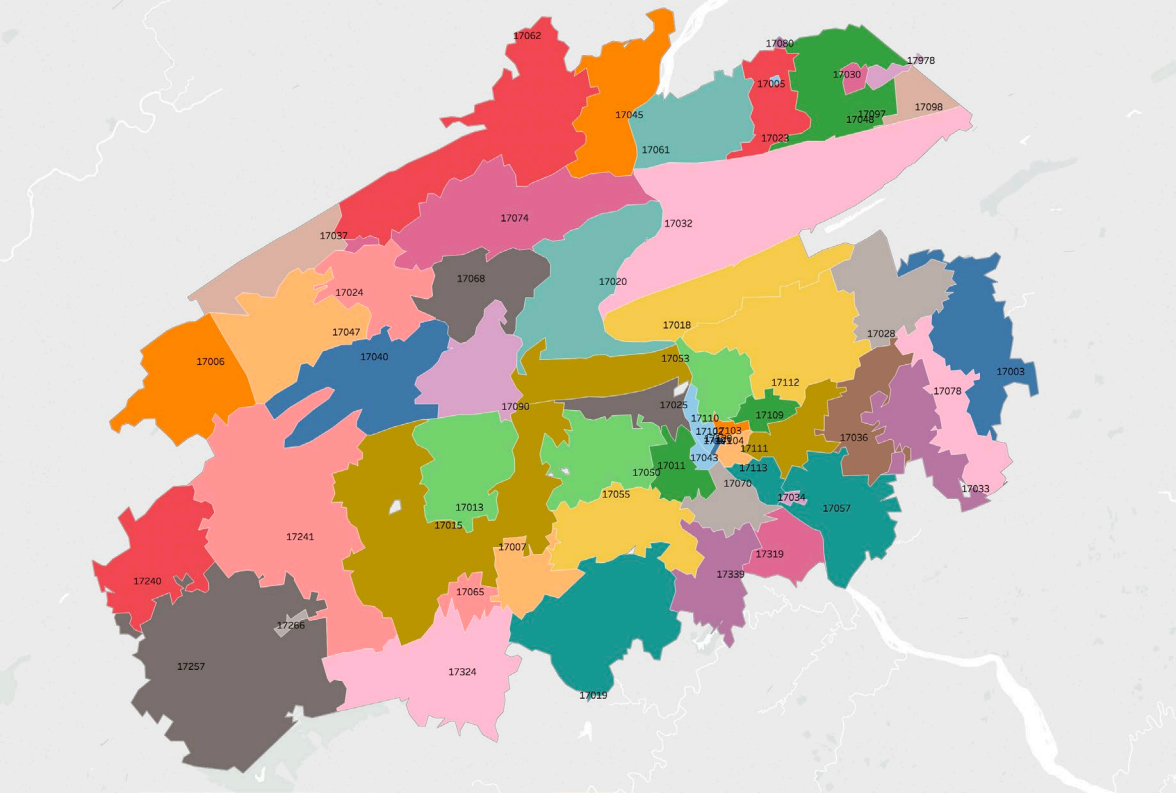
Appendix B: UPMC Pinnacle Hospitals Community Definition

A community can be defined in many different ways and in 2018, the community served by UPMC Pinnacle Hospitals grew to represent a total of 58 ZIP codes; which represents 80 percent of the inpatient discharges for the health system. The ZIP codes fall into five counties in South Central Pennsylvania: Cumberland, Dauphin, Lebanon, Perry, and York. ZIP code 17120 was reported as having a zero population; therefore, within the ZIP code analysis, 57 total ZIP codes were analyzed. The 57 ZIP codes represent the community served by UPMC Pinnacle Hospitals (See Table 13).

In 2015, the communities served by UPMC Pinnacle Hospitals encompassed 42 ZIP codes. In 2012, a total of 31 ZIP code were analyzed for UPMC Pinnacle, at the time representing 80 percent of inpatient discharges for the health system (See Map 6).

Map 6: UPMC Pinnacle Hospitals Study Area for 2018.[54]

2018 Study Area Map (58 ZIP Codes)

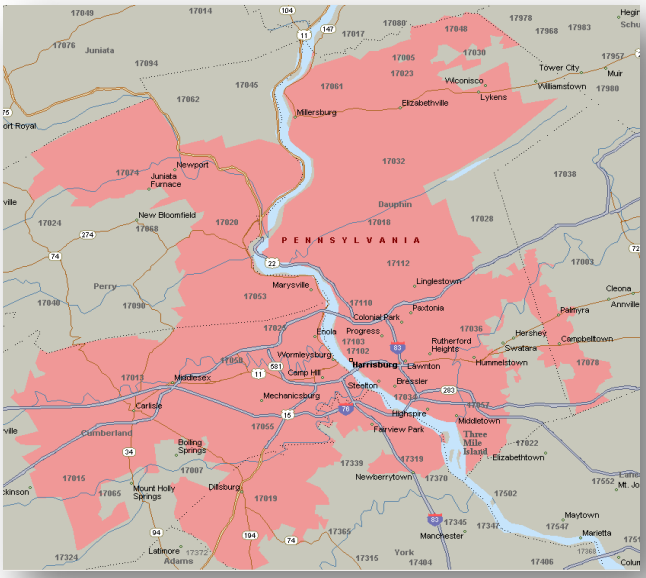


Source: Truven Health Analytics 2017

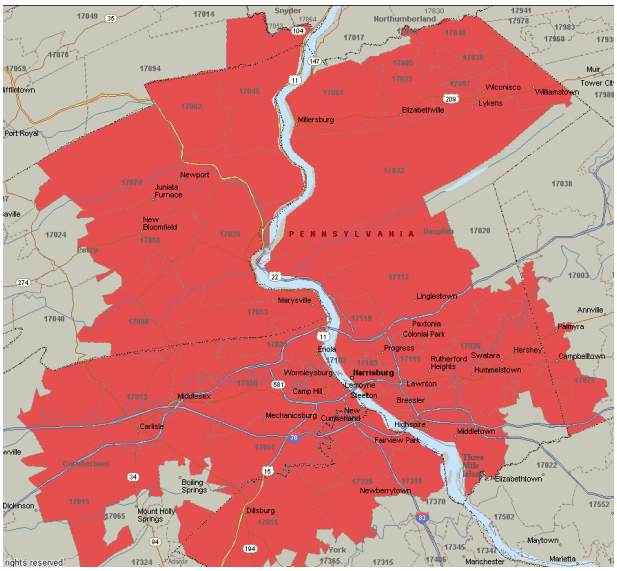
[54] For mapping purposes, while ZIP code 17120 did not have a population, the ZIP code was included in the map. The 2018 map image has changed due to software changes.

Map 7: UPMC Pinnacle Hospitals 2012 and 2015 ZIP codes

2012 Map (ZIP Codes 31)



2015 Map (ZIP Codes 42)



Source: Truven Health Analytics 2012 and 2015

UPMC Pinnacle Hospitals Population and Demographics Snapshot 2018

- The counties are expected to have a population growth from 0.3 percent – 3.5 percent from 2017-2022. The UPMC Pinnacle Hospitals study area is expected to have an overall growth of 2.4 percent between 2017-2011.
- The UPMC Pinnacle Hospitals study area will see more seniors aged 65+ by 2022 when compared to the nation (15.5 percent).
- Lebanon County is expected to have more seniors aged 65+ (21.2 percent) in 2022 when compared to the remaining counties; while Dauphin County (18.8 percent) is expected to have the fewest.
- Cumberland County has the highest average household income of all the counties in the study area at $83,237, also higher than the state and nation. On the other hand, Lebanon County has the lowest average household income at $69,908; while the national average is $80,853.
- Cumberland (27.6 percent) and York (24.4 percent) counties have more households earning over $100,000 a year when compared to the rest of the counties in the study area.
- Lebanon County has the highest percentage of individuals without a high school diploma (14 percent); this is also higher than the state (10.8 percent) and national rate (13.5 percent).

- Perry County (16 percent) reports having the lowest number of respondents who have a bachelor's degree or higher; while Cumberland County (32.2 percent) reports the most even when compared to the nation (29.6 percent)
- Dauphin County is the most racially diverse county of the study area, with 33.5 percent of its population identifying as a race other than White, Non-Hispanic.
- Perry County has the least diversity, with only 4.7 percent of the population identifying as a race other than White, Non-Hispanic.

Table 13: UPMC Pinnacle Hospitals Study Area Community ZIP Codes

	ZIP Code	City	County
1.	17007	Boiling Springs	Cumberland County
2.	17011	Camp Hill	Cumberland County
3.	17013	Carlisle	Cumberland County
4.	17015	Carlisle	Cumberland County
5.	17025	Enola	Cumberland County
6.	17043	Lemoyne	Cumberland County
7.	17050	Mechanicsburg	Cumberland County
8.	17055	Mechanicsburg	Cumberland County
9.	17065	Mount Holly Springs	Cumberland County
10.	17070	New Cumberland	Cumberland County
11.	17240	Newburg	Cumberland County
12.	17241	Newville	Cumberland County
13.	17257	Shippensburg	Cumberland County
14.	17266	Walnut Bottom	Cumberland County
15.	17324	Gardners	Cumberland County
16.	17005	Berrysburg	Dauphin County
17.	17018	Dauphin	Dauphin County
18.	17023	Elizabethville	Dauphin County
19.	17028	Grantville	Dauphin County
20.	17030	Gratz	Dauphin County
21.	17032	Halifax	Dauphin County
22.	17033	Hershey	Dauphin County
23.	17034	Highspire	Dauphin County
24.	17036	Hummelstown	Dauphin County
25.	17048	Lykens	Dauphin County
26.	17057	Middletown	Dauphin County
27.	17061	Millersburg	Dauphin County
28.	17080	Pillow	Dauphin County
29.	17097	Wiconisco	Dauphin County

30.	17098	Williamstown	Dauphin County
31.	17101	Harrisburg	Dauphin County
32.	17102	Harrisburg	Dauphin County
33.	17103	Harrisburg	Dauphin County
34.	17104	Harrisburg	Dauphin County
35.	17109	Harrisburg	Dauphin County
36.	17110	Harrisburg	Dauphin County
37.	17111	Harrisburg	Dauphin County
38.	17112	Harrisburg	Dauphin County
39.	17113	Harrisburg	Dauphin County
40.	17978	Spring Glen	Dauphin County
41.	17003	Annville	Lebanon County
42.	17078	Palmyra	Lebanon County
43.	17006	Blain	Perry County
44.	17020	Duncannon	Perry County
45.	17024	Elliottsburg	Perry County
46.	17037	Ickesburg	Perry County
47.	17040	Landisburg	Perry County
48.	17045	Liverpool	Perry County
49.	17047	Loysville	Perry County
50.	17053	Marysville	Perry County
51.	17062	Millerstown	Perry County
52.	17068	New Bloomfield	Perry County
53.	17074	Newport	Perry County
54.	17090	Shermans Dale	Perry County
55.	17019	Dillsburg	York County
56.	17319	Etters	York County
57.	17339	Lewisberry	York County

Appendix C: Primary and Secondary Data Overview

Primary Data and Secondary Data Collection

Process Overview

A comprehensive community-wide CHNA process was completed for UPMC Pinnacle Hospitals. Government officials, community-based organizations, faith-based organizations, and educational institutions participated in the assessment to assist UPMC Pinnacle Hospitals evaluate the needs of the community. The 2018 assessment included primary and secondary data collection that incorporated public comments, community stakeholder interviews, a hand-distributed survey, and a community forum.

Tripp Umbach collected primary and secondary data through the identification of key community health needs in the region. UPMC Pinnacle Hospitals will develop an Implementation Strategy Plan that will highlight and identify ways the health system will meet the needs of the communities they serve.

Tripp Umbach worked closely with UPMC Pinnacle Hospitals to collect, analyze, review, and discuss the results of the CHNA, culminating in the identification and prioritization of the community's needs at the local level.

The flow chart below outlines the process of each project component in the CHNA.

Flow Chart of CHNA Process

Public Commentary Collection

Tripp Umbach solicited comments related to the 2015 Community Health Needs Assessment (CHNA) and 2016 Implementation Strategy Plan (ISP) on behalf of UPMC Pinnacle Hospitals as part of the CHNA.

The solicitation of feedback was obtained from community stakeholders identified by the Working Group. Observations offered community representatives the opportunity to react to the methods, findings, and subsequent actions taken as a result of the previous CHNA and implementation planning process. The public comments below are a summary of stakeholder's feedback regarding the former CHNA and ISP.

The qualitative data was gathered by Tripp Umbach on behalf of UPMC Pinnacle. Community leaders and stakeholders were asked to review the 2015 CHNA report and the ISP adopted by UPMC Pinnacle Hospitals in 2016. Stakeholders were posed questions developed by Tripp Umbach and reviewed by the Steering Committee. Feedback was collected from 19 community stakeholders relating to the public commentary survey. The collection period for the survey began late December 2017 and continued through early February 2018. The information below represents the community stakeholder's feedback.

When asked if the assessment "included input from community members or organizations" all survey respondents reported that it did (100 percent).

More than half (52.6 percent) of survey respondents reported that the assessment reviewed did not exclude any community members or organizations that should have been involved in the assessment; three participants, or 15.8 percent, reported that a community member/organization was excluded; 31.6 percent were unsure.

In response to the question, "Are there needs in the community related to health (e.g., physical health, mental health, medical services, dental services, etc.) that were not represented in the CHNA", close to one-third of participants (31.6 percent) indicated that there were needs not represented in the 2015 CHNA. More than half (63.2 percent) reported that the assessment represented the needs of the community, and 5.3 percent were unsure.

Survey participants gave the following examples of community needs not represented in the 2015 CHNA: sexually transmitted diseases, pre and postnatal care, the opioid crisis, and services and support for individuals with autism and their families, as well as overall assistance and advocacy groups to help identify resources. Populations that experience these needs and barriers specifically include: middle school students, young adults, African American women, and children overall.

More than half of survey respondents (68.4 percent) indicated that the ISP was directly related to the needs identified in the CHNA; while 31.6 percent were unsure.

According to respondents, the CHNA and the ISP benefited them and their community in the following manner (in no specific order):

- The importance and the benefits of working in collaboration with one another and assessing ways to complement each organization are needed in the community.
- The findings aligned with the health issues and concerns in our schools.

- Provided a check and balance in the community.
- The results from the CHNA and ISP plan allowed us to be more aware of what we should be focusing on and recognize what is missing to bridge the gap for those in need.
- The overall health needs were identified and were trickled down and recognized collectively as a group – the process for this identification was important.
- Maintaining new and existing partnerships is important. Having a healthy relationship between organizations is vital, as we need to stay strong and work collectively as county agencies.
- Showed that organizations need to be better connected and promotional of all services and the network needs to stay strong for better advancement within the community.
- The inclusion of our organization in the process gave us a broad spectrum of the gaps and we value the course of actions taken to impact and address these barriers. The support of our local health initiative network includes many of our CHNA partners – this shows great unity. Together we are building relationships and need to continue the journey for a better network and healthier community.
- The data related to dental care provided more education for our population. We inform our population of what is available and access to information is essential for our residents.
- The overall CHNA and ISP plan were great approaches. Tactic and strategic on a scale and piloting some of these strategies would be utilized in other communities.
- The data provided us with a community health outlook perspective and with a large health system in the forefront, the outcome can be positive, but partnership must exist for a positive conclusion.
- Highlighting and keeping mental health in the spotlight will lessen the stigma of the disease. There are many in need due to this disease.
- The CHNA ensured that organizations worked in unison. The outcomes were positive and ensured that organizations do not have to work in silos.
- The findings highlighted the success of the impact of the ACA and how it is helping those who struggle with accessing health care.

Community Stakeholder Interviews

As part of the CHNA phase, telephone interviews were completed with community stakeholders in the service area to better understand the changing community health environment. Community stakeholder interviews were conducted during late December 2017 through early February 2018. Community stakeholders targeted for interviews encompassed a wide variety of professional backgrounds including: 1) public health expertise; 2) professionals with access to community health related data; 3) representatives of underserved populations; 4) government leaders; and 5) religious leaders. In total, 26 interviews were conducted with community leaders and stakeholders. The counties in which community

stakeholders served included: Adams, Cumberland, Dauphin, Juniata, Lebanon, Lancaster, Northumberland, Perry, Snyder, and York.

The interviews offered community stakeholders an opportunity to provide feedback on the needs of the community, secondary data resources, and other information relevant to the study.

The qualitative data collected from community stakeholders are the opinions, perceptions, and insights of those who were interviewed as part of the CHNA process. The information in this report is meant to provide insight and add greater depth to the qualitative data. This report represents one section of the overall CHNA project completed by Tripp Umbach.

The common themes from the stakeholder interviews were (in no particular order):

1. Obstacles to Health
2. Mental Health
3. Chronic Health Issues
4. Substance Abuse
5. Dental Care

Evaluation of Previous Planning Efforts

UPMC Pinnacle Hospitals submitted an evaluation matrix to highlight and measure specific strategies that were developed in 2016. The Implementation Strategy is a roadmap for how hospitals and communities are addressing the community health needs identified in the CHNA. (https://www.pinnaclehealth.org/assets/files/data-84501ef11996e88c742b29407fe0fdbc/file-3936.pdf).

The purpose of the implementation strategy evaluation is for hospitals and community leaders to review and assess progress on the strategies and goals identified in the 2016 Implementation Strategy Plan to address community health needs.

A. Access to Primary Care Health Services

Outcomes/Results:

- Increased enrollment of nearly 160 uninsured adults during FY 2016-2018.
- Enrollment and Financial Aid Counselors available in community settings 10 days per month.
- Optimized the patient centered medical home model and conducted 223 home visits.
- Reduced A1c levels by 2.5 percent.
- Improved care coordination and outreach to Hamilton Health and Kline Health Center through weekly site visits and $20,000 free care provided to clinic patients.

B. Access to Specialty Health Services

Outcomes/Results:

- Improved access to specialty care services and improved number of patients seeking emergent stroke care within a two-hour symptom onset by 2.5 percent.
- Conducted more than 10 education and outreach services across the five-county primary service area.
- Improved access to Dental Health Services with 120 referrals to Smiles program and Downey Clinic utilization of 31 percent among school students.

C. Improve Behavioral Health Services

Outcomes/Results:

- Implemented an integrated care model for behavioral health services and tracking of direct admissions to PPI and number of PHMG practices with integrated PPI services, in progress.
- Conducted three community-wide education sessions and provided resource supports to prevent adolescent and adult deaths caused by substance abuse within the five-county region.

D. Improve Healthy Lifestyles and Reduce Obesity among Children

Outcomes/Results

- Over 116 youth participated in Eat Smart Play Smart Programs with a 19.35 percent improvement of knowledge of health choices, a 2.7 percent decrease in weight, and 4.41 percent improvement in health behaviors.
- Distributed 15,645 weekend power packs to over 1,782 low income students and over 2,400 children attending UPMC Pinnacle Hospitals Children's Health Fair during 2016-2018.
- Conducted 7,163 medical screenings, 2,388 dental screenings, 5,887 vision screenings, and 2,812 hearing screenings to improve health and prevent chronic illness among school age children.

The evaluation of the previous Implementation Strategy plan is used to build the new Implementation strategy plan – combining and updating goals from the previous plan with new ideas and strategies**.**

Secondary Data Analysis

Tripp Umbach collected and analyzed secondary data from multiple sources, including Community Commons, County Health Rankings, Pennsylvania Department of Health Substance Abuse and Mental Health Services Administration, The Annie E. Casey Foundation, The Centers for Disease Prevention and Control (CDC), and Truven Health Analytics, etc.

The secondary data profile includes information from multiple health, social, and demographics sources. Tripp Umbach used secondary data sources to compile information related to disease prevalence, socioeconomic factors, and behavioral habits. Where applicable, data were benchmarked against state and national trends. ZIP code analysis was also completed to illustrate community health needs at the local level.

The information provided in the secondary data profile does not replace existing local, regional, and national sites but rather provides a comprehensive (but not all-inclusive) overview that complements and highlights existing and changing health and social behaviors of community residents for the health system, social, and community health organizations involved in the CHNA. A robust secondary data report was compiled for UPMC Pinnacle Hospitals Health; select information collected from the report has been presented throughout the CHNA. Data specifically related to the identified needs were used to support the key health needs.

Tripp Umbach obtained data through Truven Health Analytics (formerly known as Thomson Reuters) to quantify the severity of health disparities for ZIP codes in UPMC Pinnacle's service area. Truven Health Analytics provides data and analytics to hospitals, health systems, and health-supported agencies.

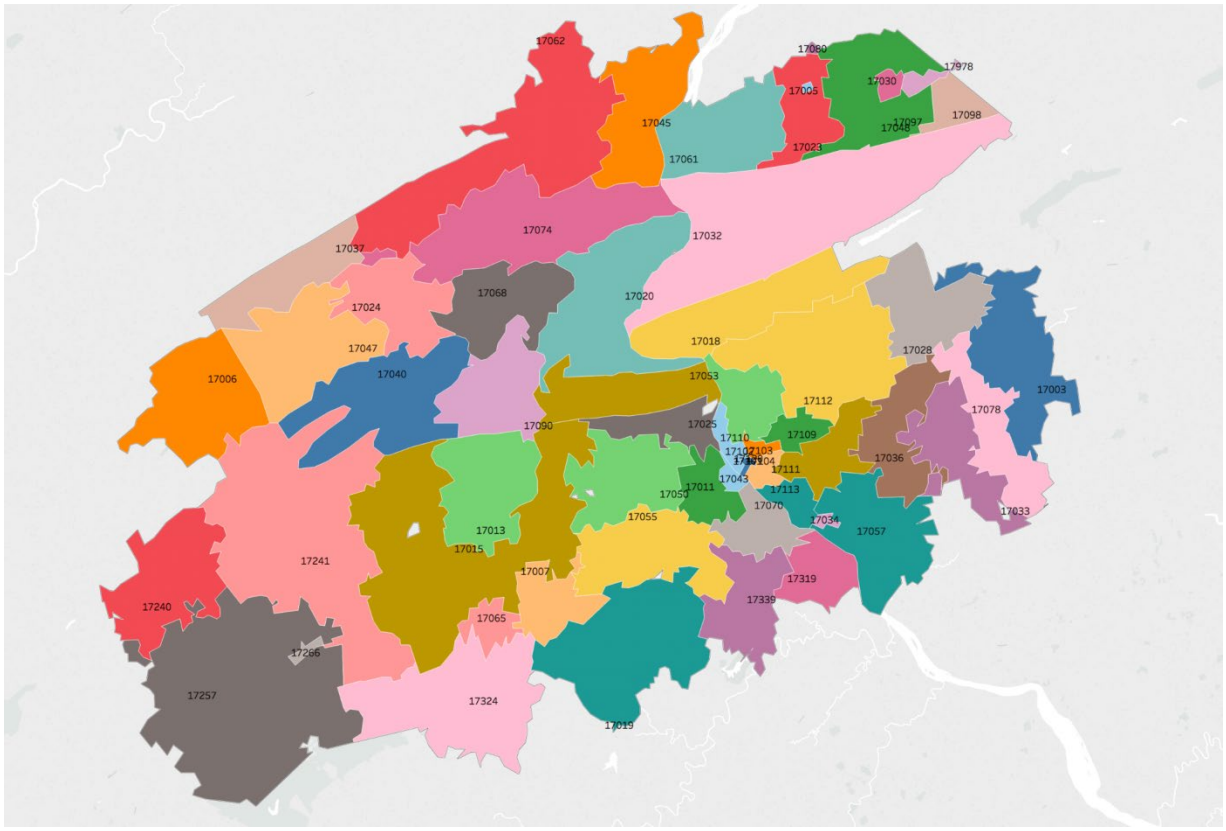
The Community Need Index (CNI) data source was also used in the health assessment. CNI considers multiple factors that are known to limit health care access; the tool is useful in identifying and addressing the disproportionate and unmet health-related needs of neighborhoods. The five prominent socioeconomic barriers to community health quantified in the CNI are Income Barriers, Cultural/Language Barriers, Educational Barriers, Insurance Barriers, and Housing Barriers. Additional information related to CNI can be found in Appendix B.

In 2018, a total of 58 ZIP codes were analyzed for UPMC Pinnacle. These ZIP codes represent the community served by UPMC Pinnacle Hospitals as portions of the health system's service areas. UPMC Pinnacle Hospitals provides services to communities throughout Pennsylvania and adjoining states. The community health assessment focused on 58 specific ZIP codes, which fell into five counties: Dauphin, Cumberland, Lebanon, Perry, and York.

The following map geographically depicts the service area by showing the communities that are shaded. The service area encompasses 58 ZIP codes in South Central Pennsylvania.

For 2018, UPMC Pinnacle's overall project study area was composed of 58 populated ZIP codes. ZIP code 17120 was reported as having a zero population; this ZIP code has been defined as a business ZIP code. The collection and analysis of secondary data began late February 2018 until April 2018. (See Map 8).

Map 8: UPMC Pinnacle Hospitals Service Area – 2018 Study Area Map



Source: Truven Health Analytics 2017

Table 14: CNI Overall County Study Area Summary

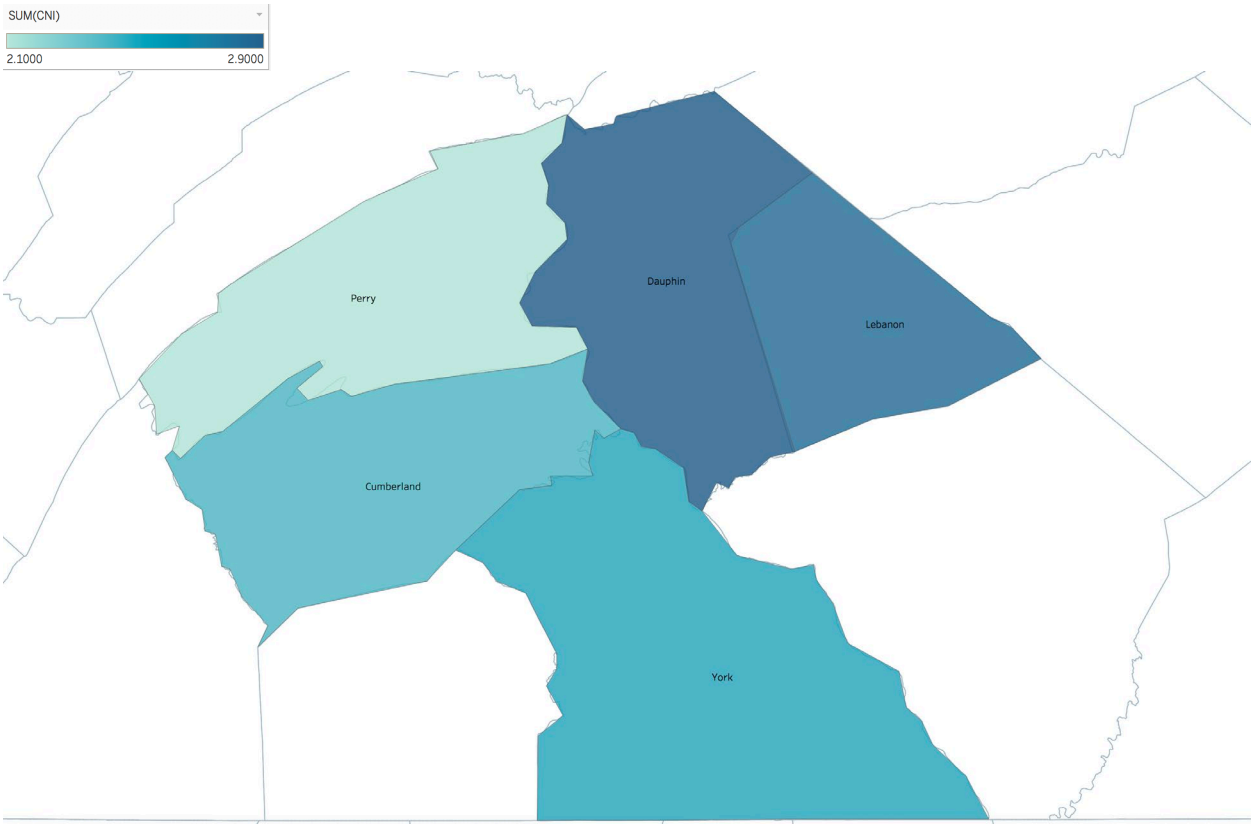
County	2017 Tot. Pop.	Poverty 65+	M w/ Children Pov.	Sin. w/ Children Pov.	Lim Eng	Minor %	No HS Dip	Unemp %	Uninsu %	Rental %	Inc Rank	Cult Rank	Edu Rank	Ins Rank	House Rank	2017 CNI Score	2014 CNI Score	2010 CNI Score
Cumberland	18,179	5.2%	12.1%	29.7%	0.9%	13.5%	8.9%	5.3%	2.3%	27.1%	2	3	2	1	3	2.4	2.2	2.2
Dauphin	10,799	8.6%	15.5%	31.4%	2.4%	33.4%	11.4%	7.1%	3.3%	34.9%	2	4	3	2	4	2.9	3.0	2.9
Lebanon	14,100	7.2%	13.2%	29.1%	2.2%	17.3%	14.1%	7.5%	2.5%	27.5%	2	3	4	1	4	2.8	3.0	2.6
Perry	3,651	7.5%	11.9%	31.3%	0.3%	4.7%	12.4%	7.6%	2.1%	20.5%	2	1	3	1	2	2.1	2.3	2.1
York	13,022	7.7%	12.9%	33.3%	1.1%	16.3%	11.7%	7.4%	2.5%	24.4%	2	3	3	1	3	2.5	2.8	2.4
All Counties	8,589	10.1%	16.0%	35.2%	1.9%	23.3%	11.0%	8.1%	3.3%	30.2%	3	3	3	2	4	2.7	2.8	2.4

Source: Truven Health Analytics 2017

- A score of 5.0 represents a ZIP code area with the most socioeconomic barriers (high need); while a score of 1.0 indicates a ZIP code area with the lowest socioeconomic barriers (low need).

- A low score is the ultimate goal, ZIP codes with a low score should not be overlooked; rather communities should identify what specific entities are succeeding which ensures a low score.

Map 9: County CNI Scores



Source: Truven Health Analytics 2017

2017 CNI Score

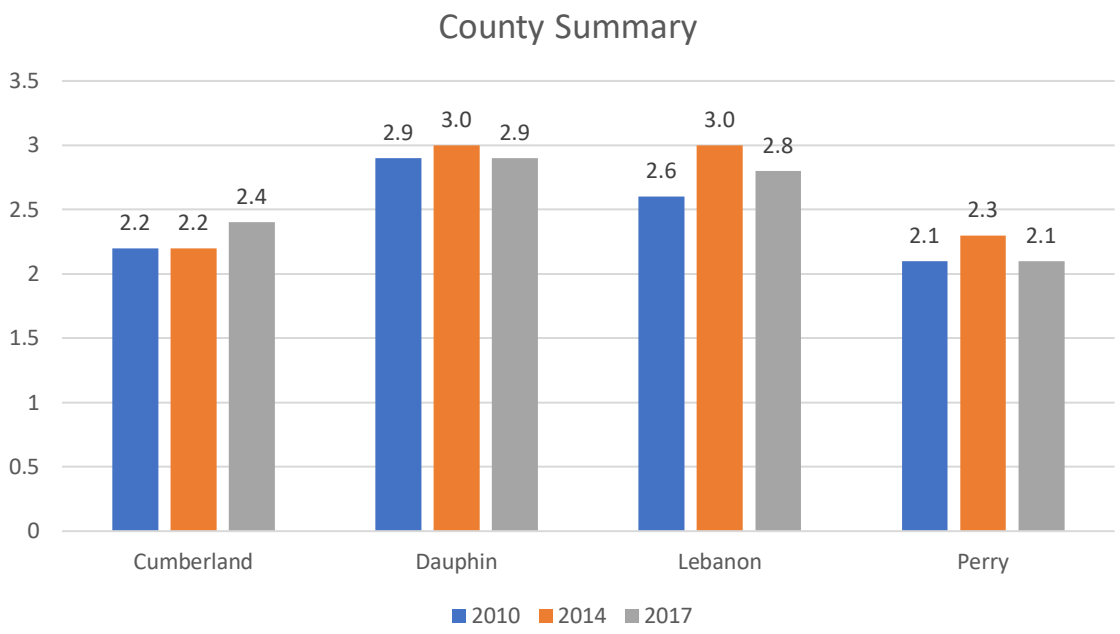
5.00 to 4.00 (High socioeconomic barriers)

3.99 to 3.00

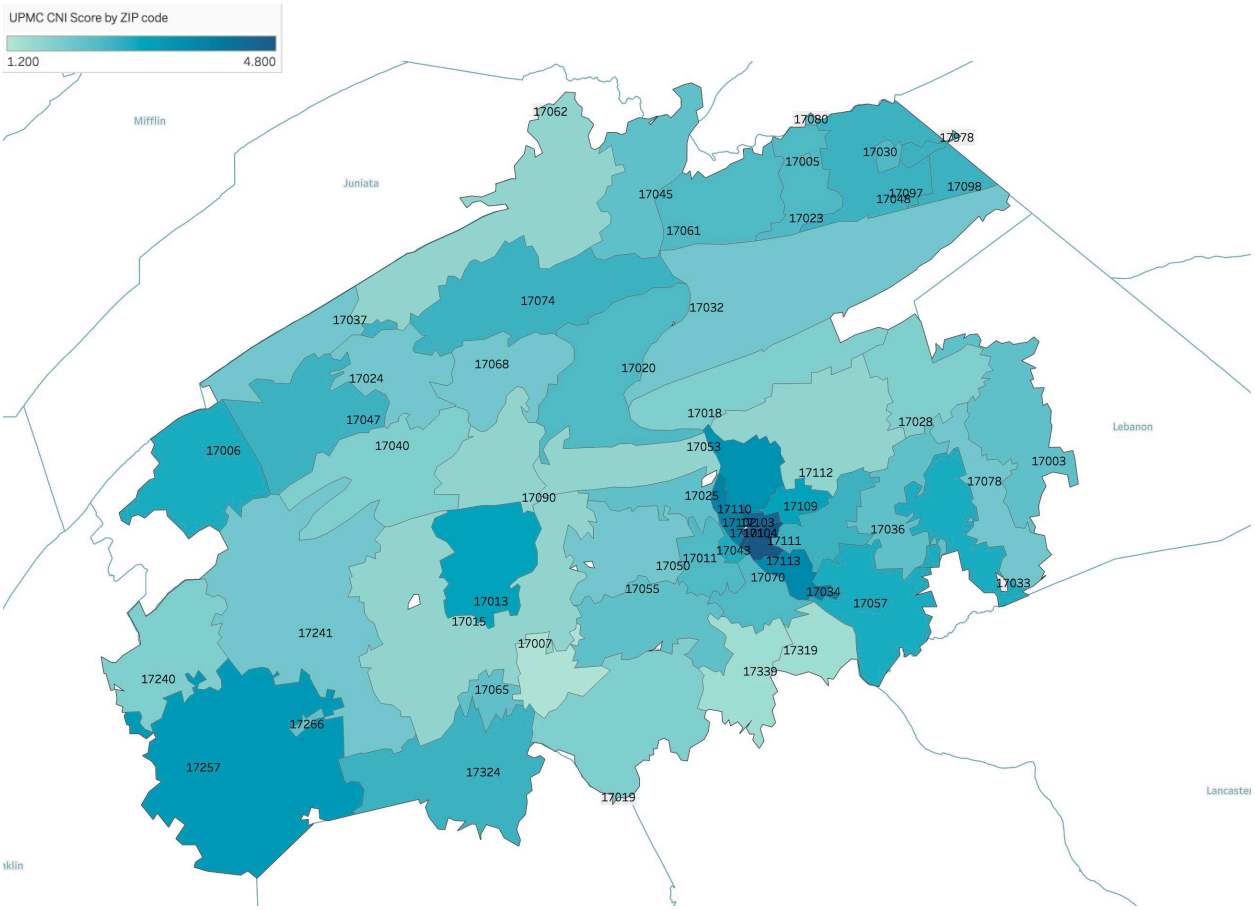
1.99 to 1.00 (Low socioeconomic barriers)

- In 2017, Dauphin County reported having the most barriers to health care in the overall study area (2.9) whereas in 2014, it was shared between Dauphin and Lebanon counties (3.0).
    - Cumberland County saw a rise in their CNI score between 2014 and 2017 (2.2 vs. 2.4 respectively).
    - Four of the five counties saw a decrease in their CNI score. They include Dauphin, Lebanon, Perry, and York.
    - York County experienced the largest decline in CNI scores from 2014 to 2017, showing a 0.3 score difference.
- Perry County now reports the fewest barriers to accessing care with a CNI score of 2.1 (the lowest across the counties in the study area).
- Previously, it was Cumberland County that reported the lowest county level CNI score in 2014 at 2.2
    - In 2017, Dauphin County reported a 2.9 CNI score; the highest score (more barriers) when compared to the remaining counties.
    - Perry County reported a CNI score of 2.1 in 2017 (fewer barriers); the lowest when compared to the remaining counties.

Chart 17: County CNI Scores over the Years (Summary)



Map 10: UPMC Pinnacle Hospitals Overall Study Area 2017 (58 ZIP Codes – CNI Map)



Source: Truven Health Analytics 2017

2017 CNI Score

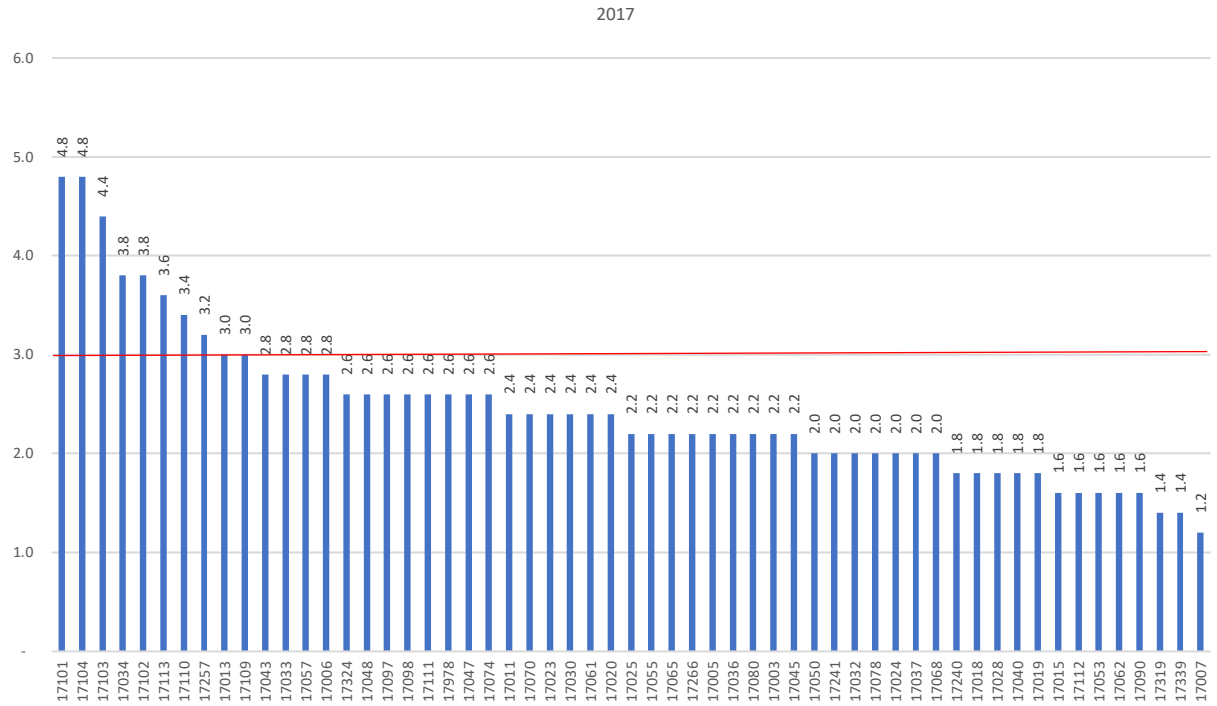
5.00 to 4.00 (High socioeconomic barriers)

3.99 to 3.00

1.99 to 1.00 (Low socioeconomic barriers)

(*The darker shading indicates greater barriers to health care access)

Chart 18: UPMC Pinnacle Hospitals CNI Study Area ZIP Codes



Source: Truven Health Analytics 2017

- ZIP codes 17101 and 17104 report a CNI score of 4.8 indicating that residents in these ZIP codes face high socioeconomic barriers to care.
- The most common CNI scores for the region are 2.6 and 2.2. The average score of the ZIP codes in 2017 is 2.5.
    - Eight ZIP codes fell above the median score of 3.0. The red line depicts the median score of the study area. All other ZIP codes for the study area fell at or below the median score of 3.0, indicating less barriers to health care.
- The average score for the overall UPMC Pinnacle Hospitals study area (all counties combined) in 2017 is 2.7.

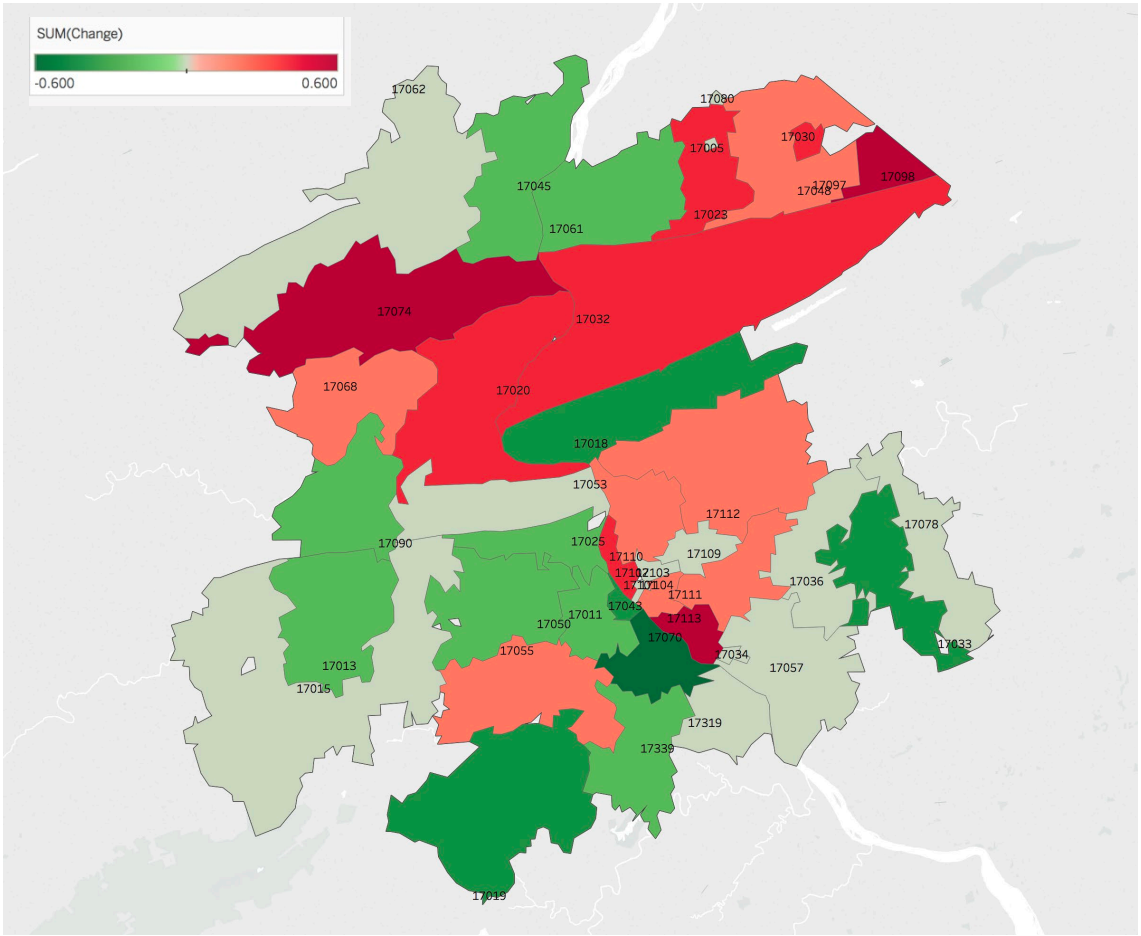
In reviewing scores from 2017 and 2014, the below map provides a geographic trending snapshot of the service area between the years. The dark green colors represent ZIP codes that have improved their overall CNI score. As the color changes to red, certain ZIP codes face higher socioeconomic barriers to health care are present (Map 10).

- Of the 57 ZIP codes analyzed in the UPMC Pinnacle Hospitals study area:
    - 16 saw declines in CNI score (going to fewer barriers to health care; positive movement)

- 13 ZIP codes maintained the same CNI score
- 13 experienced rises in CNI score (now having more barriers to health care; negative movement)
- 15 ZIP codes are new to the analysis

- ZIP codes 17113 (Harrisburg) and 17098 (Williamstown) saw the largest decline in CNI score; going from 4.2 to 3.6 (fewer barriers).
- ZIP code 17070 New Cumberland saw the largest increase in CNI score; going from 1.8 to 2.4 (more barriers).

Map 11: UPMC Pinnacle Hospitals CNI - Trend Map



Source: Truven Health Analytics 2017

0.60 (CNI Increased; More barriers; negative movement)

0

-0.60 (CNI Decreased; Less barriers (positive movement))

Hand-Survey Collection

Tripp Umbach employed a hand-distribution methodology to disseminate surveys to individuals within the region. A hand-survey was utilized to collect input, in particular, from underserved populations. The hand-survey, available in English, Spanish, and Nepalese was designed to capture and identify the health risk factors and health needs of those within the study area. The hand-survey collection process was implemented during February 2018 through March 2018.

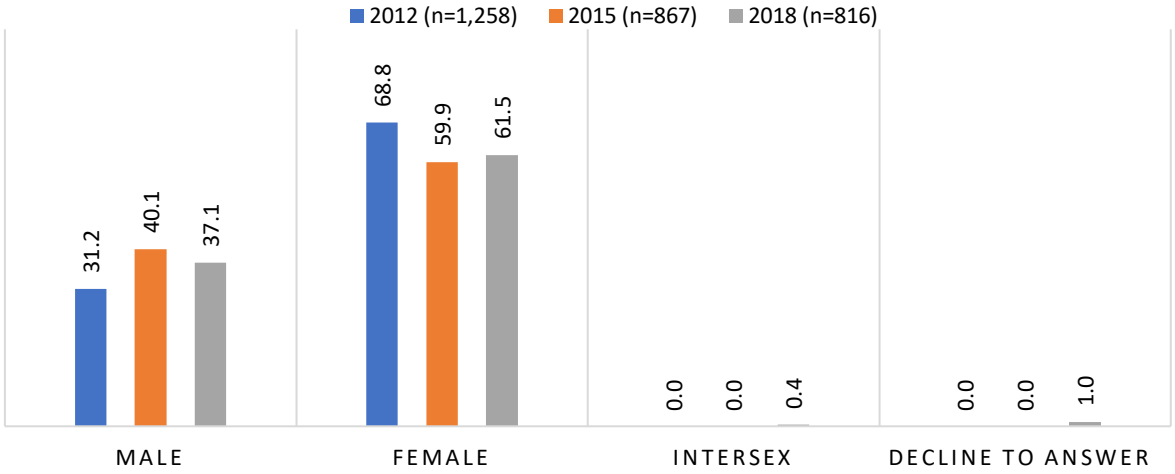
Tripp Umbach worked with community-based organizations to distribute and collect the surveys to/from end-users in the underserved populations. Tripp Umbach's engagement of local community organizations was vital to the survey distribution process.

In total, 831 were used for analysis; 826 surveys were collected in English, 67 surveys were collected in Spanish, and five were collected in Nepalese.

A total of 47 community organizations were involved in the dissemination and collection of the community hand-distributed survey in 2018 (See Table 16). Key survey findings collected from the hand-distributed survey are outlined in the following sections.

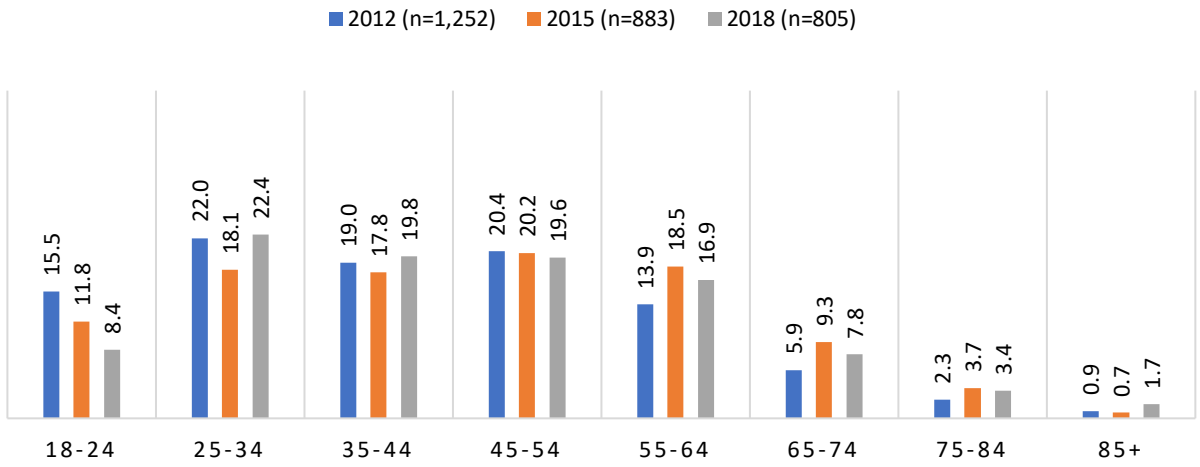
Gender:

- In 2018, the number of female respondents slightly rose.
- The gender break-down of survey respondents was closer to the area population for the 2015 survey than the 2012 survey.



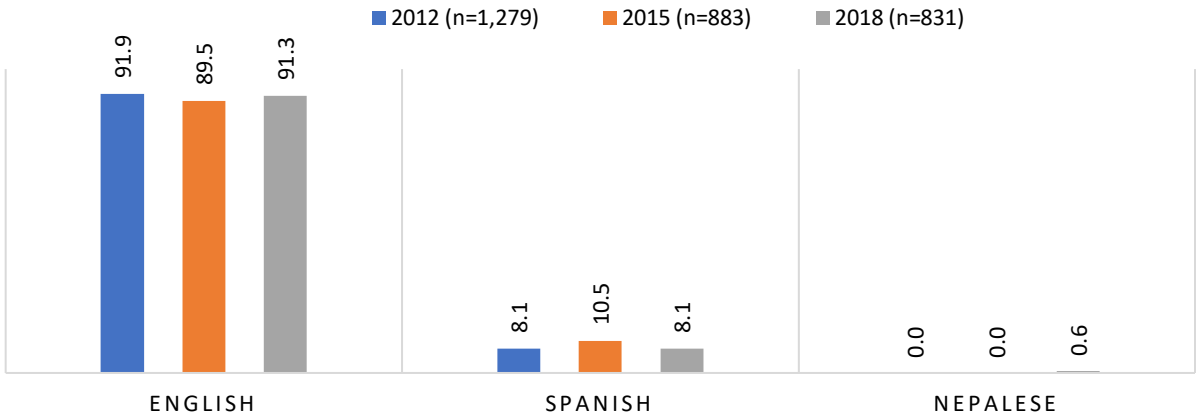
Age:

- The number of survey respondents from 2012 through 2018 in the age ranges of 18-24 continues to decline; as the number of respondents ages 25 – 34 rises.



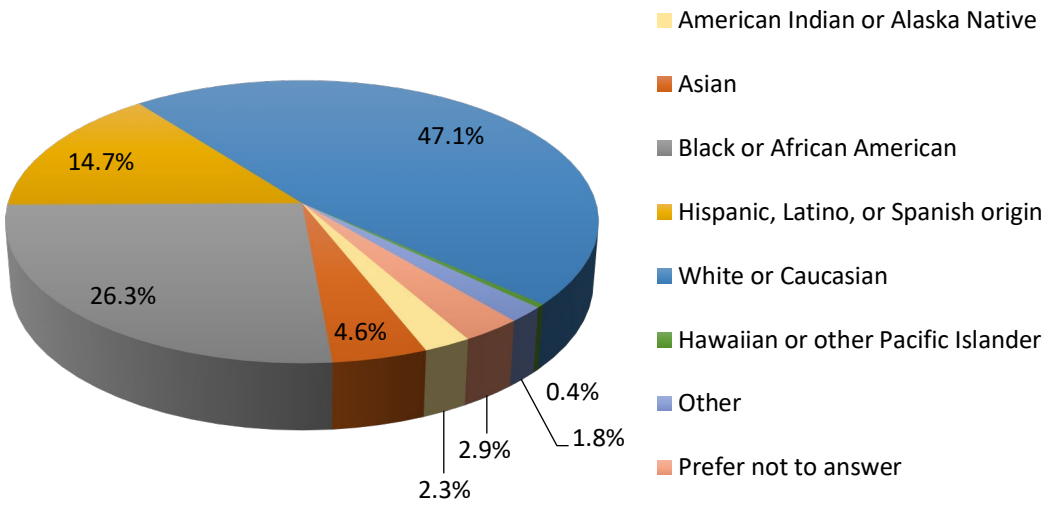
Survey Language:

- In 2018, Nepalese surveys were provided to community residents. They were not offered in previous years.
- The percentage of surveys completed in Spanish rose from 2012 (8.1 percent) to 2015 (10.5 percent).



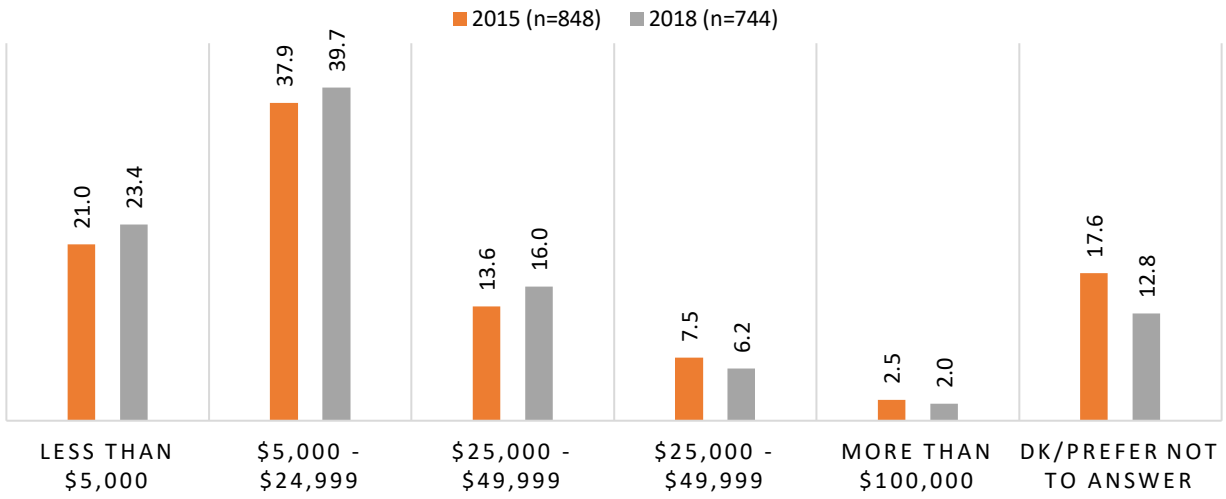
Race and Ethnicity:

- White/Caucasian was the majority race of survey respondents at 47.1 percent.
    - 26.3 percent were Black or African-American.
- 14.7 percent of the survey population was Hispanic/Latino/Spanish origin.



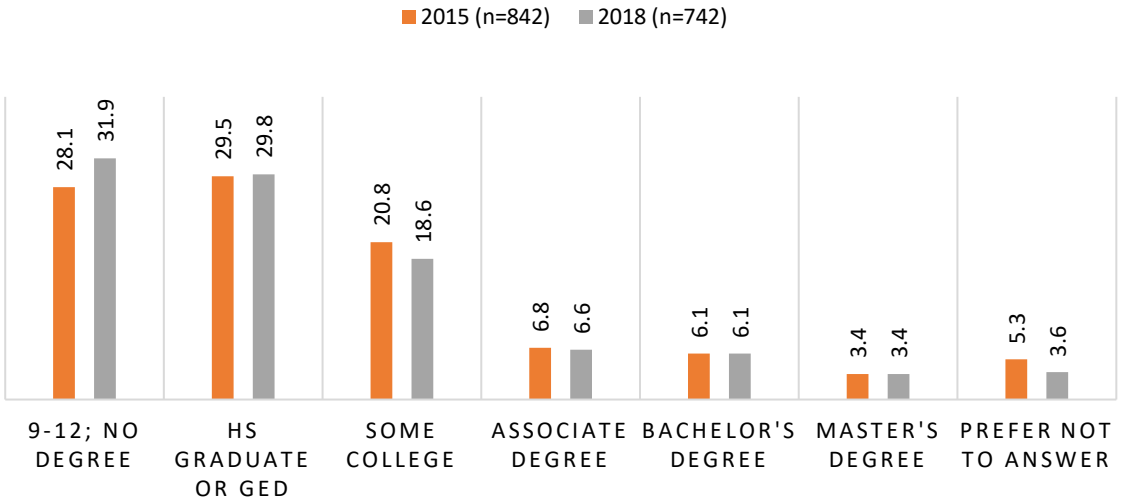
Income:

- In 2018, more than one-third of survey respondents (39.7 percent) are in the income bracket of $5,000 - $24,999.
- In 2015, survey respondents reported being in the $5,000 - $24,999 annual household income bracket at the highest rate (37.9 percent).



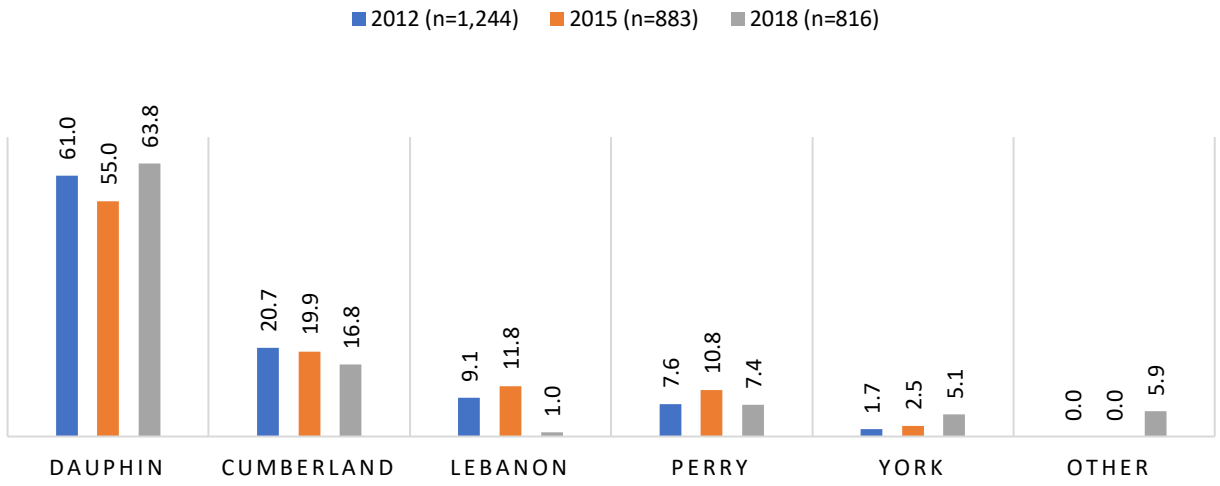
Education Level:

- 31.9 percent of survey respondents reported having a 9th-12th grade education/no degree.
- 29.8 percent of the survey population had a high school diploma or GED.
- 9.5 percent of the survey respondents have a bachelor's degree or higher.



County Breakout:

- The largest number of surveys were collected from Dauphin County followed by Cumberland and Perry counties.



Key Findings:

- In 2018, 79.4 percent of the survey respondents reported having a primary care provider.
- Similar to the past study, survey respondents seek care most often from the doctor's office (49.2 percent for 2018).
- 82.3 percent of the survey respondents reported having seen their primary care provider within the past year. Three percent of the survey respondents reported seeing their doctor five or more years ago.
- 85.5 percent of the survey respondents reported having health insurance.
- More than half of respondents in 2018 reported that not having insurance affected their ability to get services (70.8 percent).
- In 2018, there was a slight increase in the rate of those surveyed that responded they did not seek health care services because of lack of insurance.
- In 2018, there was an increase in residents seeking care at dental clinics (18.3 percent) compared to 12.7 percent in 2015.
- The majority of respondents reported receiving dental care within the past year (50.8 percent); consistent with the 2015 survey (50.6 percent).
- The majority of respondents reported paying for their dental services with dental insurance coverage (63.3 percent). An increase from the previous assessment (57.2 percent).

- In 2018, 11.3 percent reported they did not pay for their dental services, an increase since 2015 (9.7 percent).
- In 2018, 70.3 percent of the survey respondents reported doing regular activity to stay healthy; a drop from 2015 (75.2 percent).
- In 2018, 45 percent of the survey population reported they have been told by a health professional that they are overweight or obese.
- In 2015, 40 percent of respondents indicated that they have high blood pressure; in 2018, this rate rose to 45.4 percent.
- In 2018, 19.6 percent of the survey population reported having diabetes.
- Similar to high blood pressure, in 2015, the rate of respondents reporting heart problems was 18.9 percent; in 2018, it rose to 21.3 percent.
- The rate of respondents who currently smoke has decreased slightly from 2015 to 2018 (39.5 percent and 38.5 percent respectively).
- A majority of participants' drink alcohol (35.8 percent) compared to using recreational drugs (10.1 percent) and vaping (5.8 percent).
- Of the respondents who indicate limitations to their daily activities, the most common limitation is physical, followed by mental, emotional, and spiritual.
- More than half of respondents indicated that they received their immunization shots within the past year, 61.1 percent.
- No/Limited transportation and no insurance were the top two reasons for not receiving immunization shots (14.7 percent and 11.8 percent).
- In 2018, the most common method used by respondents to get information about their community is via television (18.7 percent). This was a decline from 2015 (21.4 percent).
- In 2018, the most common form of transportation for respondents was their car (51.1 percent). This reflected a slight decrease from 2015 when the rate was 51.7 percent.
- 74.3 percent of respondents indicated that they wear their seat belt every time that they ride in a car. This rate has remained steady since 2012.
- In 2018, more than one-third of respondents reported feeling "extremely safe" in their neighborhood/community. This was a slight increase from 33.1 percent in 2012 to 33.8 percent in 2015.
- The 2018 hand-survey indicated the top three reasons for participants not feeling safe were:
    - Crime/Gun violence (22 percent)
    - Drug Use/Sell (21.5 percent)
    - Unsafe neighborhood (15 percent)

    - All three categories reported a decrease in the rate from 2015.
- For services that people can use, respondents indicated the lowest usage rate of services for people with HIV/AIDS (5.5 percent).
- For 2018, Drug and Alcohol Use remained the most mentioned health concerns for the study area (12.7 percent and 8.3 percent respectively) by respondents.

Mental Health

- 39.3 percent of survey respondents indicated that they have been told they have a mental health concern, an increase since 2015 (35.9 percent).
- The most common reported mental health concerns were depression or bipolar disorders (42.6 percent reporting) and panic attacks, anxiety or PTSD disorders (37.8 percent).
- Close to one-third of respondents in 2018 (31.6 percent) reported that they received services for their mental health concern in the past year; 68.4 percent reported that they did not receive services for their mental health concern.
- In 2018, those with mental health concerns obtained services from a mental health counselor at the highest rate (30.1 percent), followed by the county mental health system (22 percent), and PCP/health care professional (21.7 percent).
- 25 percent of respondents with a mental health concern reported that their mental health concern has impacted their physical health. This reflects a significant decline from 2015.
- 54.6 percent of participants reported that their mental health did not affect their physical health, an increase from 2015 (35.4 percent).
- The most commonly reported physical concern as a result of mental health issues was chronic pain (20.1 percent) followed by high blood pressure (19.7 percent). These were also the top two concerns in 2015.
- 13.0 percent of respondents with a mental health concern reported that they have needed but did not receive mental health services in the past year. This represents a decline in the rate from 2015.
- The top reason why respondents who reported not getting the mental health services they needed was because they report feeling as though they want to “make it on their own” without treatment (16.2 percent). The next most common reason was that respondents felt overwhelmed or confused by the system (14.2 percent).

Community Forum

On May 1 2018, Tripp Umbach facilitated a public input session (community forum) with 42 community organization leaders, religious leaders, government stakeholders, and other key community leaders at Hamilton Health Center. The purpose of the community forum was to present the CHNA findings, which included existing data, in-depth community stakeholder interviews results, and hand-distributed survey findings, and to obtain input regarding the needs and concerns of the community overall. Community leaders discussed the data, shared their visions and plans for community health improvement in their communities, identified and prioritized the top community health needs in their region. With input received from forum participants, UPMC Pinnacle Hospitals prioritized and identified top priority areas. They included: access to care, behavioral health, and social determinants of health. Each of the prioritized areas has subcategories, which further illustrate the identified need.

A. Access to care
    - Insurance/Coverage
    - Lack of Specialists
    - Language Access
    - Health Education
    - Lack of Care Coordination

B. Behavioral Health (Mental Health and Substance Abuse)
    - Health Education
    - Lack of Care Coordination
    - Preventive Services
    - Compliance Engagement

C. Social Determinants of Health
    - Education/Employment/Income
    - Transportation
    - Homelessness/Housing
    - Language Access

Provider Resource Inventory

An inventory of programs and services specifically related to the key prioritized needs was cataloged by Tripp Umbach. The inventory highlights programs and services within the five-county focus area. The inventory identifies the range of organizations and agencies in the community that are serving the various target populations within each of the prioritized needs. It provides program descriptions, contact information, and the potential for coordinating community activities by creating linkages among agencies. The provider inventory was provided as a separate document due to its interactive nature, and is available on UPMC Pinnacle's website.

Final Report

A final report was developed that summarized key findings from the assessment process including the final prioritized community needs. Top community health needs were identified by analyzing secondary data, primary data collected from key stakeholder interviews, hand-distributed surveys, and the community forum. Tripp Umbach provided support to the prioritized needs with secondary data (where available), and consensus with community stakeholders results, and hand-distributed surveys.

Implementation Planning

With the completion of the community health needs assessment, an implementation phase will begin with the onset of work sessions facilitated by Tripp Umbach. The work sessions will maximize system cohesion and synergies, during which leaders from UPMC Pinnacle Hospitals will be guided through a series of identified processes. The planning process will ultimately result in the development of an implementation plan that will meet system and IRS standards.

Appendix D: Community Stakeholder Interviewees

Tripp Umbach completed 27 interviews with community stakeholders throughout the region to gain a deeper understanding of community health needs from organizations, agencies and government officials that have a deep understanding from their day-to-day interactions with populations in greatest needs.

Interviews provide information about the community's health status, risk factors, service utilizations, and community resource needs, as well as gaps and service suggestions.

Table 15: Community Stakeholders (Listed alphabetically by last name)

	Name	Organizations
1.	Fred Banyelos	Harrisburg Housing Authority
2.	Mike Beck	Dauphin County Case Management Unit
3.	Brenda Benner	Perry County Commissioner
4.	Crystal Brown	Brethren Housing Association
5.	Sybil Knight Burney, Ph.D.	Harrisburg School District
6.	Robert Burns	Dauphin County Area Agency on Aging
7.	Caren Butera	Harrisburg School District
8.	Kelley Gollick	Contact Helpline
9.	George Hartwick	Dauphin County Commissioner
10.	Jamien Harvey	Camp Curtin YMCA
11.	Linda Hengst	Community Check-Up Center
12.	Bonnie Kent	The Northern Dauphin Human Services Center
13.	Patty Kim	Pennsylvania State Representative
14.	Shannon Mason	UPMC Pinnacle Hospitals
15.	Gloria Vazquez-Merrick	Latino Hispanic American Community Center
16.	George Payne	Redevelopment Authority of Harrisburg
17.	Jo Pepper	Capital Area Head Start
18.	Craig Skurcenski, M.D.	UPMC Pinnacle Hospitals
19.	Drew Stockstill	Holy Spirit Medical Outreach
20.	Mark Totaro, M.B.A, Ph.D.	Catholic Charities
21.	Phong N. Trong	International Services Center
22.	Denise Welch	Carlisle County Crisis Intervention
23.	Jennifer Wintermyer	Tri-County Community Action
24.	Gail Witwer	Partnership for Better Health
25.	Tim Whelan	Cumberland County Housing and Redevelopment Authority
26.	Susan Wokulich	United Way of the Capital Region
27.	Randie Yeager	Dauphin County Human Services

Appendix E: Community Organizations and Partners

UPMC Pinnacle Hospitals (Community Osteopathic, Harrisburg, and West Shore), UPMC Carlisle, and Pennsylvania Psychiatric Institute came together to conduct a CHNA. As the leading health care providers, UPMC Pinnacle hospitals are dedicated to understanding community needs, offering, enhancing quality programs to address those needs, and promoting population wellness.

The primary data collected in the CHNA provided invaluable input and ongoing dedication to assisting UPMC Pinnacle Hospitals in identifying community health priorities and building a foundation upon which to develop strategies that will address the needs of residents in South Central Pennsylvania.

Below is a listing of community organizations that assisted UPMC Pinnacle Hospitals with the primary data collection. In particular, the organizations listed below assisted with the collection and distribution of hand-survey for the 2018 CHNA.

Table 16: Community Organizations and Partners

	Organizations
1.	Alder Health Services
2.	Aurora Social Rehabilitation Services
3.	Bethesda Mission
4.	Capital Area Head Start - Keystone Human Services
5.	Carlisle C.A.R.E.S.
6.	Catholic Charities of Harrisburg
7.	Central Pennsylvania Food Bank
8.	Christ Lutheran Church
9.	Community Health Navigation Network (CHNN)
10.	Cumberland and Perry Mental Health Intellectual & Developmental Disabilities (MH.IDD)
11.	Cumberland County Department of Aging and Community Services
12.	Cumberland County Drug & Alcohol
13.	Domestic Violence Services of Cumberland and Perry Counties
14.	Downtown Daily Bread
15.	Faith United Church of Christ
16.	Gaudenzia
17.	Grantville Food Pantry
18.	Hamilton Health Center Inc.
19.	Harrisburg Area Dental Society
20.	Help Ministries
21.	Holy Spirit Medical Outreach Service
22.	Hope Within Ministries
23.	International Service Center
24.	Join Hands Ministry

25.	Joshua Group
26.	UPMC Pinnacle Hospitals Kline Health Center
27.	Lebanon Rescue Mission
28.	Mazzitti & Sullivan Counseling
29.	MidPenn Legal
30.	New Hope Ministries
31.	New Visions Inc.: Shippensburg Empowerment Dock Drop in Center
32.	Northern Dauphin Human Services Center
33.	Pennsylvania Counseling Services Inc.
34.	Pennsylvania Psychiatric Institute (PPI)
35.	Perry County Food Bank
36.	Perry County Office for the Aging
37.	Perry Human Services
38.	UPMC Pinnacle Hospitals Children and Teen Center
39.	Pressley Ridge
40.	Salvation Army
41.	STAR (Stevens Center Steps Towards Advocacy and Recovery (S.T.A.R.) Program)
42.	Steelton Food Pantry
43.	T.W. Ponessa and Associates Counseling Services Inc.
44.	The Community Check-Up Center
45.	UPMC Pinnacle Hospitals Resource Education and Comprehensive Care for HIV (REACCH) Program
46.	Wesley Union Church
47.	YMCA

Appendix F: Working Group Members

The CHNA was overseen by a committee of representatives from the sponsoring organizations. Members of the Working Group and the organizations they represent are listed in alphabetical order by last name.

Table 17: Working Group Members (Listed aphabetically by last name)

Name	Organization
Adefoloseyi Aderotoye "Seyi" M.D.	UPMC Pinnacle
Reverend Brenda Alton	UPMC Pinnacle Hospitals
Janice Black	The Foundation for Enhancing Communities
Adrian Buckner	United Way of the Capital Region
Kendra Ferguson	UPMC Pinnacle
Anthony Guarracino, M.D.	UPMC Pinnacle
Stefani McAuliffe, M.P.A.	UPMC Pinnacle
Ruth Moore	Pennsylvania Psychiatric Institute
Tina L Nixon, M.H.A.	UPMC Pinnacle
Katie Shradley	UPMC Pinnacle
Gail Witwer	Partnership for Better Health
Jeannine Peterson, M.P.A	Hamilton Health Center
Buff Carlson, C.P.A, M.B.A.	UPMC Pinnacle
Becca Raley	Partnership for Better Health
Denise Garman	UPMC Carlisle
Terese M. DeLaPlaine, J.D.	Hamilton Health Center
Ha T. Pham	Tripp Umbach
Barbara Terry	Tripp Umbach

Appendix G: Truven Health Analytics

Community Needs Index (CNI) Overview

Not-for-profit and community-based health systems have long considered a community's needs to be a core component of their mission of service to local communities. While specific initiatives designed to address health disparities vary across local communities (outreach to migrant farm workers, asthma programs for inner city children, etc.), the need to prioritize and effectively distribute hospital resources is a common thread among all providers.

Given the increased transparency of hospital operations (quality report cards, financial disclosures, etc.), community benefit efforts need to become increasingly strategic and targeted in order to illustrate to a variety of audiences how specific programs have been designed and developed. While local community needs assessments will always play a central role in this process, they are often voluminous, difficult to communicate, and may lack necessary qualitative and statistical justification for choosing specific communities as having the "greatest need."

Because of such challenges, Dignity Health and Truven Health Analytics jointly developed a Community Need Index (CNI) in 2004 to assist in the process of gathering vital socioeconomic factors in the community. The CNI is strongly linked to variations in community health care needs and is a strong indicator of a community's demand for various health care services.

Based on a wide-array of demographic and economic statistics, the CNI provides a score for every populated ZIP code in the United States on a scale of 1.0 to 5.0. A score of 1.0 indicates a ZIP code with the least need, while a score of 5.0 represents a ZIP code with the most need. The CNI should be used as part of a larger community need assessment and can help pinpoint specific areas that have greater need than others. The CNI should be shared with community partners and used to justify grants or resource allocations for community initiatives.

Methodology

The CNI score is an average of five different barrier scores that measure various socioeconomic indicators of each community using the source data. The five barriers are listed below, along with the individual statistics that are analyzed for each barrier. The following barriers, and the statistics that comprise them, were carefully chosen and tested individually by both Dignity Health and Truven Health:

1. Income Barrier

- Percentage of households below poverty line, with head of household age 65 or older.
- Percentage of families, with children under age 18, below poverty line.
- Percentage of single female-headed families, with children under age 18, below poverty line.

2. Cultural Barrier

- Percentage of population that is a minority (including Hispanic ethnicity).
- Percentage of population, over age five, which speaks English poorly or not at all.

3. Education Barrier

- Percentage of population, over age 25, without a high school diploma.

4. Insurance Barrier

- Percentage of population in the labor force, age 16 or older, without employment.
- Percentage of population without health insurance.

5. Housing Barrier

- Percentage of households renting their home.

Every populated ZIP code in the United States is assigned a barrier score of 1,2,3,4, or 5 depending upon the ZIP national rank (quintile). A score of 1 represents the lowest rank nationally for the statistics listed, while a score of 5 indicates the highest rank nationally. For example, ZIP codes that score a 1 for the Education Barrier contain highly educated populations; ZIP codes with a score of 5 have a very small percentage of high school graduates.

For the two barriers with only one statistic each (education and housing), Truven Health used only the single statistic listed to calculate the barrier score. For the three barriers with more than one component statistic (income, cultural, and insurance), Truven Health analyzed the variation and contribution of each statistic for its barrier; Truven Health then weighted each component statistic appropriately when calculating the barrier score.

Once each ZIP code is assigned its barrier scores from 1 to 5, all five barrier scores for each ZIP code are averaged together to yield the CNI score. Each of the five barrier scores receives equal weight (20.0 percent each) in the CNI score. An overall score of 1.0 indicates a ZIP code with the least need, while a score of 5.0 represents a ZIP code with the most need.

Data Sources

- Demographic Data, The Nielsen Company
- Poverty Data, The Nielsen Company
- Insurance Coverage Estimates, Truven Health Analytics

Applications and Caveats

- CNI scores are not calculated for non-populated ZIP codes. These include such areas as national parks, public spaces, post office boxes, and large unoccupied buildings.
- CNI scores for ZIP codes with small populations (especially less than 100 people) may be less accurate. This is due to the fact that the sample of respondents to the 2010 census is too small to provide accurate statistics for such ZIP codes.

Appendix H: Tripp Umbach

Consultants

UPMC Pinnacle Hospitals contracted with Tripp Umbach, a private health care consulting firm with offices throughout the United States, to complete a community health needs assessment (CHNA). Tripp Umbach has worked with more than 300 communities in all 50 states. In fact, more than one in five Americans lives in a community where our firm has worked.

From community needs assessment protocols to fulfilling the new Patient Protection and Affordable Care Act (PPACA) IRS 990 requirements, Tripp Umbach has turned needs assessments into practical action plans with sound implementation strategies, evaluation processes, and funding recommendations for hundreds of communities. Tripp Umbach has conducted more than 400 community health needs assessments and has worked with over 800 hospitals.

Changes introduced as a result of the PPACA have placed an increased level of importance on population health and well-being and on collaborative efforts between providers, public health agencies, and community organizations to improve the overall health of communities.

Tripp
Umbach

June 2019

A FIVE-COUNTY REGIONAL COMMUNITY

HEALTH NEEDS ASSESSMENT IMPLEMENTATION STRATEGY

Cumberland, Dauphin, Lebanon, Perry, and York Counties

UPMC Pinnacle

For UPMC Pinnacle Hospitals (UPMC Pinnacle Harrisburg, UPMC Pinnacle Community Osteopathic, UPMC Pinnacle West Shore), UPMC Carlisle, and Pennsylvania Psychiatric Institute

TABLE OF CONTENTS

COMMUNITY HEALTH NEEDS ASSESSMENT (CHNA)

Introduction

The Patient Protection and Affordable Care Act (PPACA), which went into effect on March 23, 2010, requires tax-exempt hospitals to conduct community health needs assessments (CHNA) and implementation strategies in order to improve the health and well-being of residents within the communities served by the hospitals.

The CHNA process undertaken by UPMC Pinnacle, with project management and consultation by Tripp Umbach, included input from representatives who represent the broad interests of the community served by the hospital facilities, including those with special knowledge of public health issues, data related to underserved, hard-to-reach, vulnerable populations, and representatives of vulnerable populations served by each hospital. Tripp Umbach worked closely with members of UPMC Pinnacle to oversee and accomplish the assessment and its goals. This report fulfills the requirements of the Internal Revenue Code 501(r)(3), established within the Patient Protection and Affordable Care Act (PPACA) requiring that nonprofit hospitals conduct CHNAs every three years.

Data from government and social agencies provides a strong framework and a comprehensive piece to the overall CHNA. The information collected is a snapshot of the health of residents in central Pennsylvania, which encompassed socioeconomic information, health statistics, demographics, children's health, and mental health issues, etc. The CHNA report is a summary of primary and secondary data collected for UPMC Pinnacle hospitals.

Community Partnerships

UPMC Pinnacle Hospitals (UPMC Pinnacle Harrisburg, UPMC Pinnacle Community Osteopathic, and UPMC Pinnacle West Shore), UPMC Carlisle, and Pennsylvania Psychiatric Institute (PPI) worked closely to develop an implementation strategy plan to address the needs identified by the community in the CHNA in a sustainable and accessible manner in order to better serve the needs of the five-county region of Pennsylvania.

UPMC Pinnacle Hospitals, UPMC Carlisle, and PPI worked closely to identify gaps in services to address access to care, behavioral health, and social determinants of health. The working group worked to identify ways to expand the health care outreach to rural and homebound populations within the five-county geography. Functioning collectively as a team, the group also focused to improve behavioral health illnesses by providing access to quality mental health and substance use disorder programs and education to address the individual. It was also important to the working group to increase the knowledge and opportunities of residents to attain and improve lifestyle choices within the UPMC Pinnacle rural communities and underserved populations.

The Pennsylvania Psychiatric Institute (PPI)

PPI is committed to providing a wide range of high-quality behavioral health services. PPI is dedicated to providing clinical excellence, diverse education, research, and community collaboration in a manner that evolves to meet the changing behavioral health care needs of the region.

UPMC Pinnacle

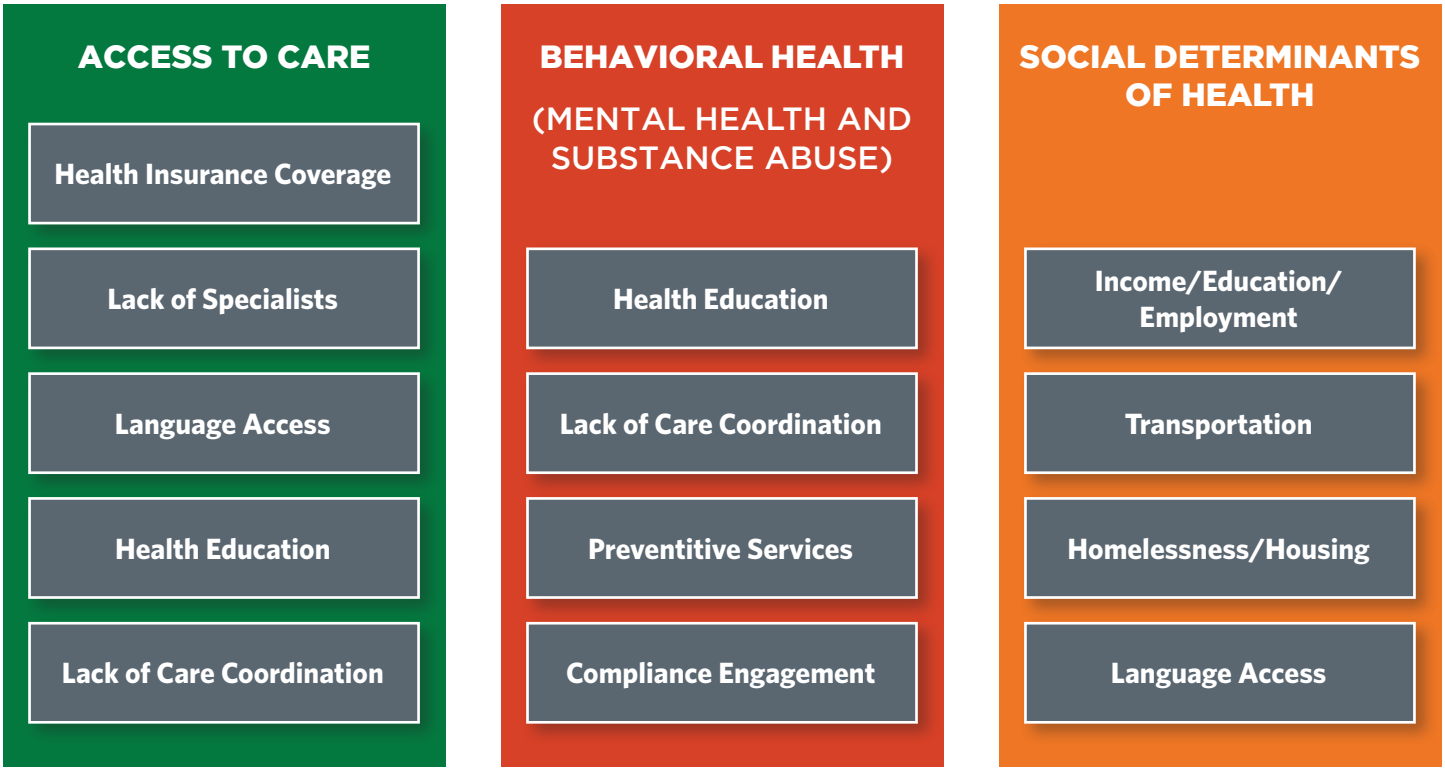
UPMC Pinnacle is a not-for-profit health care system dedicated to providing and improving the health and quality of life for the people of central Pennsylvania since 1873. A proven leader in medical innovation, UPMC Pinnacle offers a wide range of services from primary care to complex surgeries. The health care network includes seven campuses as well as medical services such as family practice, imaging, outpatient surgery, and oncology at multiple locations throughout the region.

UPMC Pinnacle is a nationally recognized leader in providing high-quality, patient-centered health care services in central Pennsylvania and surrounding rural communities. Its medical staff of more than 2,900 physicians and allied health professionals and approximately 11,000 employees serve a 10-county area at outpatient facilities and seven acute care hospitals with 1,161 licensed beds: Carlisle, Community Osteopathic, Hanover, Harrisburg, Lititz, Memorial, and West Shore. The not-for-profit system anticipates caring for more than 1.2 million area residents in CY 2019.

As a community hospital, UPMC Pinnacle maintains a focus on the needs of the local communities and strategies that address the unique health care needs of the diverse populations being served.

2019-2022
COMMUNITY HEALTH REGIONAL PRIORITIES

In the spring of 2018, key need areas were identified during the CHNA process through the gathering of primary and secondary data, community stakeholder interviews, hand-distributed surveys, a community forum, and a health provider inventory, which highlighted organizations and agencies that serve the community. The three identified needs were:



Cooperative structures and regional partnerships are essential in order to capitalize on the counties strengths, stretching resources when the region has been faced with financial limits and budget restrictions. UPMC Pinnacle, UPMC Carlisle, and PPI participate in coalitions such as the Hospital and Healthsystem Association of Pennsylvania (HAP), South Central Pennsylvania CHNA Collaborative, the Dauphin County Health Improvement Partnership (DCHIP), the Capital Area Coalition on Homelessness, The Pennsylvania Office of Rural Health, and The Pennsylvania Department of Health Office of Health Equity Advisory Committee. By crafting new partnerships and securing existing community-based relationships, the CHNA plan can accomplish more and produce more outcomes which positively affect residents. Closing the health disparities gaps and improving the quality of life for community residents are two of the goals that members of the working group and their organizations are accomplishing.

PRIORITY 1: ACCESS TO CARE

Health disparities regarding access to care continue to be a challenge for health systems across the nation despite the implementation of the Patient Protection and Affordable Care Act (PPACA) in 2010. Even with the availability of the government sponsored insurance plans and enrollment processes, the key reasons for access to care disparities continues to be affordability and the lack of health insurance coverage. 2018 CHNA findings note a slight increase with 85.5% of respondents reporting that they have insurance coverage as compared to 80.0% in 2015.

Health disparities, as it relates to quality health care, is directly connected to the lack of primary care physicians, specialty care, and dental care providers as noted by both the 2015 and the 2018 CHNAs. However, when asked "Do you have a primary care provider" a slight increase of primary care physicians is noted by respondents in the 2018 study (79.4%) as compared to 2015 (76.7%).

Language barriers negatively impact the patient's and family's ability to access appropriate services and use health services effectively.

GOAL: Expand the health care reach to rural and homebound populations.

ANTICIPATED IMPACT: Rural and homebound populations have increased access to health care services.

Strategy 1: Strengthen access to specialty provider-based services and supportive services, and increase utilization of health care services by community members. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Provide Insurance Enrollment Specialists and Financial Aid Counselors to enroll uninsured adults and children in appropriate insurance plans. Health insurance is a critical component in one's ability to access affordable health care services. Access to health care is the ability to obtain needed primary care services, health care specialists, and emergency treatment. Having health care coverage does not ensure accessibility to all health services. It is noted that some providers continue to refuse particular health insurance plans and deny vulnerable patients much needed health services. UPMC Pinnacle continues to provide trained insurance enrollment specialists and financial aid counselors who have established 10 monthly appointment days at community-based sites to enroll uninsured patients into MA and appropriate health plans.

Optimize the patient-centered medical home: UPMC Pinnacle created a partnership and network with local community health centers in 2009. Using technology for information exchange between UPMC Pinnacle and the community health centers and clinics, patients are tracked and connected to health care services. Health information sharing is critical to improve access to care and to optimize the delivery of quality patient care services. The benefits of appropriate sharing of health information among patients, physicians, payors, and others in the health care delivery system is well documented and necessary to reduce inappropriate emergency department visits, readmissions, and to ensure proper utilization of available health services.

Collaborate with community health center staff to review cases of high utilization and acuity. In collaboration with the community health centers and clinics, UPMC Pinnacle continues to provide diagnostic services to identified and eligible at-risk patients at no cost to the patients. The Community Health Team navigates care for at-risk populations and conducts monthly visits with community clinics and centers to provide safer, timelier, and more efficient patient-centered medical home care. UPMC Pinnacle will continue to provide home visits to high risk populations, providing free diagnostic services to clinic patients.

Continue partnership with community health centers and clinics to coordinate care to uninsured, underinsured, and diverse populations. Community health navigation staff will continue to conduct free clinics visits to identify social determinants of health and enroll the uninsured into appropriate health plans.

Improve adult diabetic care. The American Diabetes Association reports 30 million people have diabetes. That is one in 10 adults age 20 and older. For seniors (65 years and older), that figure rises to more than one in four. In Pennsylvania, 1,374,000 people, or 12% of the adult population, have diabetes. At a regional level, in the 2018 survey, nearly 20% of respondents reported having diabetes.

UPMC Pinnacle physicians and providers continue to provide services and education to enhance awareness, encourage patient and family involvement in their care, and to prevent the occurrence of diabetes.

Strategy 2: Strengthen access to dental provider-based services, supportive services, and utilization of dental services by community members. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Increase utilization of the SMILES program to minimize dental care as a barrier to overall health status improvement and coordinate care of urgent dental needs in the Emergency Department. The Dental SMILES Program was deployed in 2010 to address the dental needs of low-income families and those with limited dental coverage. For many underserved and under-insured populations within the community, dental insurance is typically not provided and/or obtainable. The SMILES Program is a collaboration with dental providers in the community who serve to bridge the gap for those seeking dental services as they provide free or low-cost dental care as well as preventive oral screenings.

The SMILES program serves over 120 underserved and uninsured patients annually who do not have the ability to pay for preventive health services and dental care emergencies.

Strategy 3: Strengthen access to provider-based services and supportive services by increasing number of patients with health insurance coverage. [UPMC Pinnacle Hospitals, UPMC Carlisle]

UPMC Carlisle is committed to making health care more accessible for the patients it serves by offering community resources to those who have barriers to health insurance coverage. Although Cumberland County's Community Needs Index (CNI) rating is 2.4, Carlisle, which is the county seat of Cumberland County, has a CNI rating of 3.0 (17013). Cumberland County is a large county with some rural populations and limited access to public transportation. The county assistance office is set outside the borough of Carlisle making it difficult for certain populations directly within the city to obtain access. UPMC Carlisle has not had enrollment specialists aiding in enrollments for community members since the hospital was purchased from Community Health System (CHS) in 2017. Healthcare Receivables Specialist Inc. (HRSI) is only contracted for the Emergency Department (ED) and Inpatient and does not have a representative onsite full-time. These FQHC locations are the only other site where individuals can go to connect with insurance and they only have limited availability for non-patients. There is a large population that routinely uses the Emergency Department in Carlisle as their PCP, so there is a great need to help individuals get insurance and establish a PCP.

Increase insurance access in the community and catchment area for Carlisle. Lack of health insurance serves as a barrier to accessing provider-based care and services in the Carlisle area. Many uninsured and underinsured residents cannot afford health insurance and may postpone or fail to seek medical care and treatment until necessary. This delay in care often results in unnecessary ED visits, as well as health complications and poor outcomes.

Develop work plan to expand coverage to Carlisle. There are significant financial implications of not having coverage, both to the health system and the patient. A work plan to address the need for expanded insurance coverage to the Carlisle area will examine the characteristics of the uninsured and underinsured populations and delineate actions for improving access to care.

Assess needs and improve access to specialty providers in Carlisle: Efforts to improve access to specialty providers is necessary to meet the complex needs of patient and families across the region. A lack of specialty providers in the Carlisle areas are noted:

- Nephology
- Endocrinology
- Dermatology
- Oral Health
- Ophthalmology

Explore telehealth to improve access to specialty care. Telehealth is the delivery of health-related services and information via telecommunications technologies. Telehealth services have proven to be effective in improving access to specialty care for patients and families residing in rural and underserved areas. Telehealth is demonstrated as two health professionals view and discuss care over the telephone and/or remote cameras existing between the patient, facilities, and different sites.

Strategy 4: Provide patient access to health care resources in their language. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Expand interpretation services to patients. Limited and non-English-speaking populations are more likely to face barriers to accessing care resulting in higher rates of certain health conditions as compared to English-speaking populations. It has been widely documented that patients better understand their care when language does not serve as a barrier. When patients who speak little or no English have someone at their provider's office or the inpatient and/or outpatient settings who speaks their preferred language, barriers to accessing care are minimized.

Each year, UPMC Pinnacle provides services to more than a half million patients of diverse nationalities, ethnic backgrounds, and cultures. In addition, the employees of the organization reflect the multiracial, cultural, and ethnic communities we serve. Continued efforts to improve access to care through language and translation services is paramount. Implementation actions include the following:

- Finalize approved policy
- Develop a language service line to arrange 24-hour coverage
- Market language services to the entire system
- Expand the interpreter pool (78 currently)
- Add interpretation on 24-hour nurse line

Expand translation of medical documents to patients. To meet the cultural and linguistic needs of patients, expanded translation activities will include the discharge summary and Cyracom translation from Epic, UPMC Pinnacle's electronic health record.

Strategy 5: Increase access to evidence-based smoking cessation and prevention programs. [UPMC Pinnacle Hospitals]

Continue tobacco cessation and smoking prevention programs. According to the American Cancer Society, each year more than 480,000 people in the United States, or one in five, die from illnesses related to tobacco use.

Tobacco usage is linked to several chronic illnesses including cancer, heart disease, chronic lung illnesses, and skin conditions. In Pennsylvania, over 18% of the population reports that they smoke. Tobacco usage along with lower rates of perception of risks of smoking seems to be more prevalent in the Cumberland (23%) and Perry (30%) areas of the region. A very slight decrease of 1% was noted in the 2018 study (38.5%) as compared to the 2015 study (39.5%). Continuing smoking prevention and cessation programs is a key action for improving the health of the community.

Strategy 6: Increase number of patients receiving care coordination services. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Explore payor options for payment programs. UPMC Pinnacle care navigators connect patients and families to needed health services, programs, and community resources and in partnership with personal care facilities, senior living communities, faith-based communities, community clinics, and the correctional system. Care navigators provide individuals and groups with access to UPMC Pinnacle's resources, expertise, and create links between community partners, the health care system, and other community resources to promote health and healing.

Care navigators tap into community assets and resources to assist with chronic disease management, empower individuals to take charge of their health, and help community members access and navigate the health system. Payor involvement is essential to explore payment programs and to assist the education of staff and providers in meeting payor and Medicare criteria.

Explore chronic care management billing. This action includes efforts to educate staff and PCPs on Medicare criteria, working with PCPs to develop patient care goals and care plans and to ensure annual wellness visits for Medicare patients.

PRIORITY 2: BEHAVIORAL HEALTH
(MENTAL HEALTH AND SUBSTANCE ABUSE)

Since January 2016, the Department of Drug & Alcohol Programs (DDAP) has worked with stakeholders to ensure a seamless transition for opioid overdose survivors from emergency medical care to specialty substance use disorder (SUD) treatment, thus improving the prospect of recovery. This concept is referred to as warm hand-off. DDAP incorporated contractual changes with the Single County Authorities (SCAs) in its 2015-2020 grant agreement that establishes the overdose survivor as a priority population and requires each SCA to create a warm hand-off policy. Perry and Dauphin counties have the highest rate (86.3%) of residents seeking drug and alcohol treatment.

According to data related to child and adolescent services reported in a 2012-2013, York County has the highest rate of children and teens with ADHD (9.25%). This rate is higher than the statewide average (5.23%). The percentage of individuals with any mental illness or a serious mental illness has increased in the state of Pennsylvania.

GOAL: Improve Behavioral Health illnesses by providing access to quality mental health and substance use programs and education that address the whole person.

ANTICIPATED IMPACT: Prevention, Education, and Treatment.

The community need to implement measures to prevent suicide is evident as the 2018 CHNA Report documented that, excluding Cumberland, all counties (Dauphin, Perry, Lebanon, and York) (2012-2016) saw an increase in the numbers of deaths attributed to suicide, with York County having the largest increase at 73 deaths. Most suicides are attributed to mental health disorders such as depression, schizophrenia, personality conditions, and bipolar illnesses. Other causes and risk factors include substance abuse, alcoholism, and drug usage.

Strategy 1: Conduct mental health screening to reduce occurrence of suicide.

PPI and UPMC Pinnacle will partner with local organizations to provide mental health screenings for youth in schools and other high-need community areas. Suicide is often linked with socio-economic factors, including financial difficulties, poor relationships, job loss, and other life challenges. Among adolescents, bullying has been identified as a possible risk factor for suicide. The implementation of effective suicide prevention efforts among adults and youth such as mental health screenings is critical to this five-county region.

Hamilton Health will screen (using Patient Health Questionnaire 9- PHQ9) all patients age 12 and older during every primary care visit. Hamilton Health will provide essential screening of adolescents and adults. Information sharing among partnering community organizations is essential in meeting the behavioral health needs of patients and families across the service areas.

Strategy 2: Provide mental health training to law enforcement off cers. [PPI]

Give police officers access to mental health education to do their job safely and effectively. Law enforcement officers are often called upon and play a key role in addressing the needs of individuals and families during a mental health crisis. Without sufficient training in mental health crisis intervention, law enforcement is not adequately prepared to determine and differentiate when a person's behavior is related to a mental health disability or a physical condition. Law enforcement officers need appropriate training to employ effective crisis intervention and de-escalation techniques during a mental health crisis.

A lack of training increases the likelihood of injury to both officers and individuals with mental health illness. In collaboration, PPI, and the Pennsylvania State Police Academy will provide mental health crisis intervention training to 300 officers over the next three years.

Strategy 3: Implement an integrated care model for behavioral health. [UPMC Pinnacle Hospitals]

Pinnacle Health Psychological Association (PHPA) has implemented counseling services with Medical Group (PHMG) practices. Primary care settings have become a gateway for many individuals with behavioral health and primary care needs. To address these dual needs, many primary care providers are integrating behavioral health care services into their clinical settings and training medical professionals.

Integrated Care Models have emerged to include the use of care managers, behavioral health consultants, behavioralists, and others working together to plan and provide comprehensive behavioral health care. The Center for Integrated Health Solutions (CIHS) monitors activities and models around the country in order to share best practices with the primary and behavioral health care professionals.

Engage patients on-site through mental health professionals to enhance continuity in services and integration of mental and physical health. The UPMC Pinnacle/PHMG Integrated Behavioral Health-collaborative care is a model of integrated behavioral health care and incorporates caseload focused psychiatric consultation support by a behavioral health care manager. This Integrated Care approach will be integrated into Kline Health Center and the UPMC Pinnacle Medical Group.

Expand patient health care team to include the behavioral health care manager (BHCM) and psychiatric consultant (PC). The behavioral health care manager (BHCM) performs the following key roles:

- BHCM supports patient's engagement, self-management, assessment, and relapse prevention
- BHCM provides warm handoffs, close follow-up, and validates measures and treatment planning.

Strategy 4: Provide early engagement and support for psychosis. [PPI]

Provide comprehensive treatment and support for young adults ages 16-30 experiencing early psychosis in the area. Half of mental health conditions begin by age 14, and 75% of mental health conditions develop by age 24. The normal personality and behavior changes of adolescence may mimic or mask symptoms of a mental health condition. Early engagement and support are crucial to improving outcomes and increasing the promise of recovery . An increase from 35.9% (2015) to 39.3% (2018) of survey respondents reported having been told by a medical professional that they have a mental health concern.

Increase access to comprehensive treatment and support to young adults. Efforts to strengthen access to comprehensive mental health treatment and community-based supportive services promote early engagement and intervention, and prevent mental health complications among young adults.

Offer diversionary pipelines from community in various settings for non-suicidal presentations of psychosis. Awareness and education of available behavioral health services and alternative community settings can be offered as options to non-suicidal patients.

Strategy 5: Implement Trauma Informed Care (TIC) to meet needs of the whole person. [UPMC Pinnacle Hospitals, PPI]

Recruit and retain Trauma Informed Care (TIC) staff who can support long-term TIC clinical programing. Trauma Informed Care means treating a whole person and taking into account past trauma and the resulting coping mechanisms when attempting to understand behaviors and treat the patient. Education, prevention, early identification and intervention, and effective trauma treatment are all necessary to break the cycle of violence.

Increase clinical quality through development of evidence-based treatment modalities for individuals impacted by trauma. To ensure quality of care, patient safety and treatment of trauma impacted patients, it is vitally important to research best practices, applicable knowledge, and evidence-based treatment modalities that have proven to be specifically effective in caring for trauma impacted patients. Evidence-based treatment modalities are based on a conscientious knowledge of mental health practices and incorporates the best evidence from well-designed studies, patient outcomes, values, and preferences. Mental health clinicians and counselors provide expertise in making appropriate decisions relative to trauma informed care.

Develop Steering Committee. The Trauma Informed Care (TIC) Steering Committee was created to support the translation of TIC theory gained through the Substance Abuse and Mental Health Services Administration (SAMHSA) technical assistance grant and to put those theories into practice. The Steering Committee met to set the following priorities: Select a TIC Chair from a pool of PPI's talented master clinicians. The TIC Chair will oversee three TIC Subcommittees: 1) TIC Education Subcommittee; 2) the TIC Mentor Subcommittee that provide experiential supervision to the units and sites; and 3) the TIC Subcommittee of Debriefers for both patients and staff. The Debriefers work with trauma patients after significant events to prevent re-traumatization from occurring and complex trauma from developing.

Strategy 6: Improve access to health care through a medical home. [UPMC Pinnacle Hospitals, PPI]

Deploy Community Health Workers (CHWs) to help consumers navigate their way to services. A medical home is a team-based health care delivery model led by a health care provider to provide comprehensive and continuous medical care to patients. Improving access to a medical home helps the patient achieve optimal health outcomes. The medical home approach has been deployed in many communities to provide comprehensive primary care for children, youth, and adults.

The Contact to Care Program is an initiative that is helping to improve access to health care in Harrisburg. United Way of the Capital Region (UWCR) worked together with a group of community health care experts to look at ways to impact health for the Capital Region. The Contact to Care Program is based on research showing that having a primary medical home for care improves health outcomes overall. Community Health Workers are trained community residents who serve their community and assist them in accessing the following health services:

- Behavioral Health
- Dental Care
- Health Care
- Vision Care
- Transportation

Strategy 7: Provide direct access for those experiencing a mental health crisis. [PPI]

Use assessment, screenings, and placement methods to determine and refer to level of care required for emergent care needs in outpatient facilities and schools. A direct admission program provides individuals experiencing a mental health crisis in a physician office, therapy office, or outpatient facility direct access to a psychiatric facility and increased access to inpatient, partial hospitalization, and outpatient services. Once assessed and screened, an appropriate level of care and disposition can be provided.

Strategy 8: Improve access to mental health care through telepsychiatry. [UPMC Pinnacle Hospitals, PPI]

PPI will perform evaluations via telepsychiatry at the Penn State Health Emergency Department. Psychiatric patients seeking emergency mental health evaluations are on the increase more than any other patient group. However, services to meet these urgent needs may not be accessible and available. In the absence of a readily available psychiatrist, telepsychiatry can be an effective tool for patient evaluation and facilitating access to care in an emergency setting. The use of telepsychiatry as a strategy to evaluate patients with behavioral health illnesses in an emergency room could potentially expedite patient care and dispositions when an on-site psychiatrist is not available.

Strategy 9: Improve behavioral health of children and adolescents. [PPI]

Develop an Intensive Outpatient Program as next component of continuum of service line. According to the 2012-2013 report, York County has the highest rate of children and teens with ADHD (9.25%). This rate is higher than the statewide average (5.23%).

Create specialized group programs to address specific needs of adolescents. For a diversity of children and adolescents, specialized programs are necessary to meet their behavioral health, cultural, social, and emotional needs. These programs include: Social Skills: "building strong relationships through effective communication," Crisis Management: "Keeping your cool," Problem Solving: "The facts of life," emotional regulation, LGBTQ, parenting processing group, and others.

Strategy 10: Improve access to Medicated Assisted Treatment (MAT). [UPMC Pinnacle Hospitals, PPI]

Medicated Assisted Treatment (MAT) is the use of medications in conjunction with counseling to provide a patient-centered approach to the treatment of substance use disorders. In MAT, approved medications, in combination with counseling and behavioral therapies are provided with a "whole-patient" approach to the treatment of substance use disorders. For opiate dependence, approved medications
include Methadone, Buprenorphine (with and without naloxone), and Naltrexone.

Hamilton Health will conduct (annual and PRN) screenings for substance use ages 10 and older. Our community partner Hamilton Health has the tools to provide annual and as needed substance use disorder screenings to youth and adults as they present to the center for care.

Develop a medical legal partnership with Dickinson Law school to provide free legal services. Underserved, low-income patients and families may experience the need to access legal services and advice. Through a medical-legal partnership, these services can be offered at no cost to the eligible patient.

New mobile unit for the Center for Addiction Recovery to service the rural areas in our footprint. The Center for Addiction Recovery applies a proven, multifaceted treatment approach that helps individuals and families climb out of addiction into long-term recovery. The center provides intensive and customized outpatient treatment to meet the individual's need, facilitates interventions in a supportive environment, and provides prevention education for families, employers, and schools. A new mobile unit for the Center for Addiction Recovery will be procured to improve access to critical behavioral health services and programs and to provide much needed outreach to rural and underserved populations. The mobile unit will be equipped with program materials and special supplies to meet the needs of underserved behavioral health communities.

Strategy 11: Provide Steps to Recovery for pregnant women facing addiction. [UPMC Pinnacle Hospitals]

Provide assessment and plan for Medication Assisted Therapy during pregnancy. As identified and assessed, pregnant women with addiction issues will receive Medicated Assisted Treatment (MAT) through the use of approved medications in conjunction with counseling services to provide a patient-centered approach to the treatment of substance use disorders.

Support prenatal care and education using the Centering Pregnancy model. Centering group prenatal care follows the recommended schedule of 10 prenatal visits, but each visit is 90 minutes to two hours long, resulting in more time with their prenatal provider. Moms engage in their care by taking their own weight and blood pressure and recording their own health data with private time with their provider for belly checks. Particularly important for women with addiction issues, centering materials help moms and providers ensure that everything from nutrition, common discomforts, stress management, labor and delivery, breastfeeding, and infant care are covered addressed.

Transition women to the center for addiction recovery after birth of the baby, if continuing with medication assisted therapy. This action is critical to ensure the health, safety, and recovery of both the mom and the baby.

Provide care coordination with hospital and community resources for mom and baby. Centering groups are comprised of women of different ages, races, and socio-economic backgrounds as they share the common experience of pregnancy, birth, and family care. Continuity and coordination of care is provided through a family-centered approach throughout the first two years of parenting.

Strategy 12: Partner with Center for Addiction Recovery Actions. [UPMC Pinnacle Hospitals, PPI]

Provide warm handoff process in EDs. Since January 2016, the Department of Drug & Alcohol Programs (DDAP) has worked with stakeholders to ensure a seamless transition for opioid overdose survivors from emergency medical care to specialty substance use disorder (SUD) treatment, thus improving the prospect of recovery. This concept is referred to as warm hand-off. DDAP incorporated contractual changes with the Single County Authorities (SCAs) in its 2015-2020 grant agreement that establishes the overdose survivor as a priority population and requires each SCA to create a warm hand-off policy.

Provide X Waiver training sessions. Based on the Drug Addiction Treatment Act of 2000, this expands the clinical context of medication-assisted opioid dependency treatment. Qualified physicians are permitted to dispense or prescribe specifically approved Schedule III, IV, and V narcotic medications (medications that have a lower risk for abuse, such as buprenorphine) in settings other than an opioid treatment program (OTP).

PRIORITY 3: SOCIAL DETERMINANTS OF HEALTH

As defined by the World Health Organization (WHO), social determinants of health (SDOH) are the economic and social conditions that influence individual and group differences in health status. The economic and social conditions under which people and groups live are often called "societal risk conditions," rather than individual risk factors that either increase or decrease the risk for a health condition or disease.

Portions of the Healthy People 2020 Social Determinants Overview states "Health starts in our homes, schools, workplaces, neighborhoods, and communities. Our health is also determined in part by access to social and economic opportunities; the resources and supports available in our homes, neighborhoods, and communities; the quality of our schooling; the safety of our workplaces; the cleanliness of our water, food, and air; and the nature of our social interactions and relationships. The conditions in which we live explain in part why some Americans are healthier than others and why Americans more generally are not as healthy as they could be."

Healthy People 2020 delineates five key social determinants of health that affect our quality of life and well-being:

- Economic Stability
- Education
- Social and Community Context
- Health and Health Care
- Neighborhood and Built Environment

GOAL: Increase knowledge of access and opportunity to UPMC Pinnacle resources in rural communities and underserved populations.

ANTICIPATED IMPACT: Five identified community organizations develop a relationship with UPMC Pinnacle within 12 months.

UPMC Pinnacle has made great strides in in adopting culturally and linguistically appropriate health care practices throughout the system and continually enhancing sensitivity and responsiveness to the clinical and cultural interests, needs and expectations of patients, families, and the workforce. In 2016-2017, the health system provided diversity and inclusion education to the senior leadership, faculty, medical staff, students, and community members. Social determinants of health (SDOH) was categorized as a new finding in the 2018 Community Health Needs Assessment (CHNA) report. It was noted that those findings were embedded in the narrative within the 2016 goals. Economic factors such as household income and employment opportunities within the community impact the affordability of health insurance, thereby, limiting access to health services.

Strategy 1: Address income, education, and employment determinants of health that negatively impact a healthy and diverse workforce and preventive care. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Collaborate with community businesses and higher education institutions to improve knowledge about available resources through UPMC Pinnacle. Education plays a vital role in helping individuals make informed health decisions and to effectively navigate today's complex health care delivery system. Addressing social determinants of health through community education and awareness of available resources at community-based diversity events and outreach are planned to affect the health status of individuals, families, and disparate communities.

Collaborate with area school districts to provide job opportunities through established career fairs. Career fairs are designed to improve access to job opportunities and job training. In partnership with area school districts, career development efforts expose our youth to various health care and other professions and help them explore future job aspirations.

Establish a Workforce Development pilot program that connects to community partners to improve employment opportunities for the unemployed and career-track seekers. The Workforce Development pilot program will be designed to improve the economic well-being of the populations and region served by UPMC Pinnacle. It has been well documented that economic status has direct relationship to health status and quality of life. This initiative is supported through the following actions:

- Support School District career development programs by collaborating with UPMC Pinnacle HR recruitment staff.
- Connect with partner Human Resources (HR) departments regarding their efforts around recruitment with higher education.
- Establish "senior mentors" to support students exploring career tracks.

Investigate possible domains in Epic (electronic health record) to capture data regarding diversity (race, religion, socioeconomic status, etc.). UPMC Pinnacle has made cultural competence a strategic priority and the uniqueness of all races, ethnicities, colors, religions, beliefs, abilities, appearances, genders, and sexual orientation are understood, respected, and welcomed. To ensure the delivery of culturally competent and individualized patient care, it is essential to capture critical data and patient demographics.

Strategy 2: Address transportation barriers to reduce missed appointments due to unreliable or no transportation, which negatively impacts preventive care and increased ED visits. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Provide transportation to patients who have difficulty with private transportation by connecting them to programs and services available in the five-county region. Many low-income and vulnerable people, especially in the Carlisle and rural areas, face challenges in regard to the lack of transportation or unreliable transportation. Inappropriate usage of the ED often results. Other effects of missed doctor and other appointments are poor health management, lack of preventive care, and poor health outcomes. To address the lack of transportation or unreliable transportation, the following actions will be taken:

- Establish partnership with Capital Area Transit (CAT) to provide transportation to health care
- Engage and roll-out Uber Health pilot program
- Partner with established clinics for outreach to the demographics of highly missed appointments

Strategy 3: Assist homeless recipients within the UPMC Pinnacle "footprint" from the streets and into structured, long-term care through collaboration with community partners. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Track admission and discharge patients through the HMIS System. Homelessness continues to be a community health issue across the region. Tracking efforts to connect them to health care services and to assist their living conditions toward appropriate long-term housing are on-going and in partnerships with a plethora of community and housing organizations.

- Extract participants of UPMC Pinnacle from HMIS System to obtain participants with a homeless or temporary living status

Structure data and information used to track progress, collaborate with local shelters, hospitals, and Pennsylvania Psychiatric Institute to improve prevention efforts. A review of best practices and programs assist efforts to improve the quality of life for homeless residents across the UPMC Pinnacle footprint:

- Review benchmark data and experience from Cleveland Health with Uber Health
- Review the Santa Rosa Cancer Center project
- Review the Single Point of Entry Project (Cumberland County)

Develop a mechanism with community partners to share information, as appropriate. The sharing of information among community partners regarding programs and services to assist the homeless informs and effects change. Information sharing is key to facilitating the implementation of strategies to improve the health and well-being of the homeless.

- Introduce the Homeless Assistance Program to the community for them to initiate the project (Pay for Success)
- Schedule a meeting with community partners to discover their tracking
- Review common metrics of Eastern Continuum of Care
- Obtain benchmark data from Blueprint to End Homelessness - Capital Area Coalition on Homelessness (CACH)

Reach those living in unstable housing situations through the Central PA Partnership Investment Opportunities (Pay for Success) - Win future RFPs. Environmental conditions and quality of housing are key social determinants of health. "It takes a community" to meet the needs of the homeless and the sharing of information enables community partners to work towards a common goal to effectively address the quality of life and living conditions of the homeless.

- Review and research real estate market with the Pennsylvania Housing Finance Agency (PHFA)

Strategy 4: Improve language access given through the development and promotion of culturally and linguistically appropriate services. [UPMC Pinnacle Hospitals, UPMC Carlisle]

Provide effective communication and language assistance services to culturally and linguistically diverse individuals receiving care and services. Continuing to provide effective communication and language assistance to linguistically diverse individuals, UPMC Pinnacle will take the following steps:

- Poll hospitals and agencies regarding the tools and practices used to meet cultural and linguistic needs
- Implement SDOH Epic Build and collect data
- Complete UPMC Pinnacle service line for Language Access
- Assess language access among community partners

Evaluate and assess the language services workforce for language access barriers. Similar to our patients and the community, the workforce represents a diversity of cultures and languages and may experience language barriers as well. An evaluation of those needs served as the foundation to address the cultural and linguistic needs of the workforce.

Develop a process to assess bilingual providers to discover gaps of language access. UPMC Pinnacle continues to expand diversity and inclusion education and promotes efforts to explore the language needs of bilingual providers. A better understanding of the needs, barriers, and/or gaps that bilingual providers experience leads to action and initiatives to improve language access.

Implementation of UPMC Pinnacle Cultural Health Care Program: UPMC Pinnacle continues to provide Bridging the Gap Medical Interpreter Training sessions and the promotion of the utilization of Cyracom (phone, video, and My Accessible Real-Time Translation Interpreter - (MARTTI)) to enhance, expand and improve language access across the organization and the community.

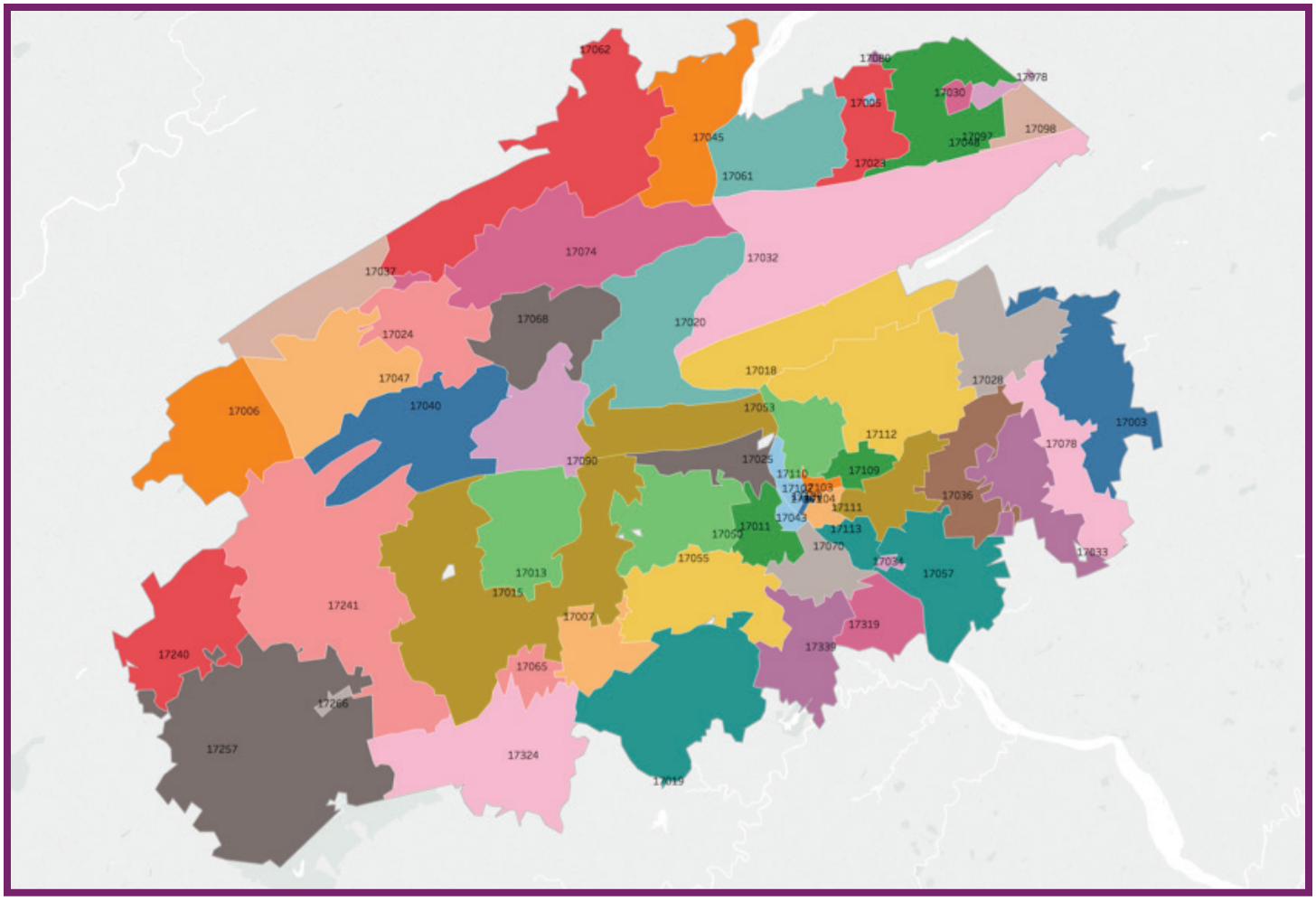
Explore Telemedical Support Services for culturally and linguistically diverse populations. Telemedicine has great application for eliminating language barriers as it improves access to culturally competent health care. In settings such as critical care and the ED, telemedicine technology can assist to provide life-saving information for linguistically diverse patients and families.

APPENDIX A: STUDY AREA

ZIP CODE	CITY	COUNTY
17007	Boiling Springs	Cumberland
17011	Camp Hill	Cumberland
17013	Carlisle	Cumberland
17015	Carlisle	Cumberland
17025	Enola	Cumberland
17043	Lemoyne	Cumberland
17050	Mechanicsburg	Cumberland
17055	Mechanicsburg	Cumberland
17065	Mount Holly Springs	Cumberland
17070	New Cumberland	Cumberland
17240	Newburg	Cumberland
17241	Newville	Cumberland
17257	Shippensburg	Cumberland
17266	Walnut Bottom	Cumberland
17324	Gardners	Cumberland
17005	Berrysburg	Dauphin
17018	Dauphin	Dauphin
17023	Elizabethville	Dauphin
17028	Grantville	Dauphin
17030	Gratz	Dauphin
17032	Halifax	Dauphin
17033	Hershey	Dauphin
17034	Highspire	Dauphin
17036	Hummelstown	Dauphin
17048	Lykens	Dauphin
17057	Middletown	Dauphin
17061	Millersburg	Dauphin
17080	Pillow	Dauphin
17097	Wiconisco	Dauphin

ZIP CODE	CITY	COUNTY
17098	Williamstown	Dauphin
17101	Harrisburg	Dauphin
17102	Harrisburg	Dauphin
17103	Harrisburg	Dauphin
17104	Harrisburg	Dauphin
17109	Harrisburg	Dauphin
17110	Harrisburg	Dauphin
17111	Harrisburg	Dauphin
17112	Harrisburg	Dauphin
17113	Harrisburg	Dauphin
17978	Spring Glen	Dauphin
17003	Annville	Lebanon
17078	Palmyra	Lebanon
17006	Blain	Perry
17020	Duncannon	Perry
17024	Elliottsburg	Perry
17037	Ickesburg	Perry
17040	Landisburg	Perry
17045	Liverpool	Perry
17047	Loysville	Perry
17053	Marysville	Perry
17062	Millerstown	Perry
17068	New Bloomfield	Perry
17074	Newport	Perry
17090	Shermans Dale	Perry
17019	Dillsburg	York
17319	Etters	York
17339	Lewisberry	York

APPENDIX B: MAP OF STUDY AREA



APPENDIX C: PINNACLEHEALTH PSYCHOLOGICAL ASSOCIATES, UPMC PINNACLE

PinnacleHealth Psychological Associates (PHPA) is a service of UPMC Pinnacle and is supported by UPMC Pinnacle's many resources. PHPA offers caring, qualified professionals using the latest therapies and treatment methods to help community residents. Patients will receive comprehensive psychological care at PHPA through range of programs and specialties.

PHPA staff consists of licensed: psychiatrists, psychologists, professional counselors, and clinical social workers. PHPA offers individual cognitive-behavioral psychotherapy, supportive psychotherapy, and psychiatric services that include consultation, evaluation and medication management.

PHPA's goal is to assist residents in finding positive, productive solutions to patients' concerns. Therapist will assess patients with a tailored, comprehensive treatment plan ultimately helping patients reach their goals. Listed below are PHPA's strategic goals and initiatives for the next coming years.

Existing Services

- **Outpatient Services – PHPA - HH Brady Hall 5th Floor and West Shore Bent Creek Locations**
  - Outpatient Psychotherapy - individual, family, couples, and group.
  - Employee Counseling Service (ECS)
  - Critical Incident Stress Management (CISM)
  - Family Information and Support Center (FISC) – support for Mass Casualty Incidents
  - 24/7 on-call clinician for mental health emergencies of any type
  - Medical Group/Hospital Floor Support – assist with assessment and disposition of patient behavioral health concerns
  - Education (Resident education, Lunch & Learn on request for any entity, Wellness Presentations, Training on all behavioral health topics)
- **Consult Liaison**
  - Locations: PHPA - Harrisburg Hospital, West Shore Hospital, and Community Osteopathic
  - Emergency Department and Medical/Surgical Floors
  - Telepsych Consult Liaison at Hanover; Specialists-On-Call (SOC)
  - Active Development
- **Outpatient Services**
  - UPMC/PHPA Community Behavioral Health Services for Harrisburg
  - Purchasing practice in York, Psychological Associates of Pennsylvania
- **Consult Liaison**
  - Specialists-On-Call (SOC) for Carlisle Hospital, Lititz Hospital, and Memorial Hospital
  - Emergency Department and Medical/Surgical Floors
  - Projected Development
- **Outpatient Services**
  - PHPA Model - Psychotherapy, Psychiatry, and Behavioral services in all UPMC Pinnacle communities
  - UPMC/PHPA Community Behavioral Health Service for York
  - UPMC/PHPA Community Behavioral Health Service for Lancaster
  - UPMC/PHPA Community Behavioral Health Service for Carlisle
- **Telepsych Consult Liaison as needed for all UPMC/UPMC Pinnacle Hospitals**
- **PHPA Outpatient and Inpatient Consult Liaisons (Psychiatrist and PCRNP) to cover all 7 hospitals**
- **Collaborative Care/Integrated Care Model across all hospital communities**

APPENDIX D: REGIONAL STAKEHOLDERS

- Alder Health Services
- Aurora Social Rehabilitation Services
- Bethesda Mission
- Brethren Housing Association
- Camp Curtin YMCA
- Capital Area Head Start
- Capital Area Head Start - Keystone Human Services
- Carlisle C.A.R.E.S.
- Carlisle County Crisis Intervention
- Catholic Charities
- Catholic Charities of Harrisburg
- Central Pennsylvania Food Bank
- Christ Lutheran Church
- Community Check-Up Center
- Community Health Navigation Network (CHNN)
- Contact Helpline
- Cumberland and Perry Mental Health Intellectual & Developmental Disabilities (MH.IDD)
- Cumberland County Department of Aging and Community Services
- Cumberland County Drug & Alcohol
- Cumberland County Housing and Redevelopment Authority
- Dauphin County Area Agency on Aging
- Dauphin County Case Management Unit
- Dauphin County Commissioner
- Dauphin County Human Services
- Domestic Violence Services of Cumberland and Perry Counties
- Downtown Daily Bread
- Faith United Church of Christ
- Gaudenzia
- Grantville Food Pantry
- Hamilton Health Center Inc.
- Harrisburg Area Dental Society
- Harrisburg Housing Authority
- Harrisburg School District
- Help Ministries
- Holy Spirit Medical Outreach
- Holy Spirit Medical Outreach Service
- Hope Within Ministries
- International Service Center
- Join Hands Ministry
- Joshua Group
- Latino Hispanic American Community Center
- Lebanon Rescue Mission
- Mazzitti & Sullivan Counseling
- MidPenn Legal
- New Hope Ministries
- New Visions Inc.: Shippensburg Empowerment Dock Drop in Center
- Northern Dauphin Human Services Center
- Partnership for Better Health
- Pennsylvania Counseling Services Inc.
- Pennsylvania Psychiatric Institute (PPI)
- Pennsylvania State Representative
- Perry County Commissioner
- Perry County Food Bank
- Perry County Office for the Aging
- Perry Human Services
- Pressley Ridge
- Redevelopment Authority of Harrisburg
- Salvation Army
- STAR (Stevens Center Steps Towards Advocacy and Recovery (S.T.A.R.) Program)
- Steelton Food Pantry
- T.W. Ponessa and Associates Counseling Services Inc.
- The Community Check-Up Center
- The Northern Dauphin Human Services Center
- Tri-County Community Action
- United Way of the Capital Region
- UPMC Pinnacle
- UPMC Pinnacle Children and Teen Center
- UPMC Pinnacle Kline Health Center
- UPMC Pinnacle Resource Education and Comprehensive Care for HIV (REACCH) Program
- Wesley Union Church
- YMCA