

A FIVE-COUNTY REGIONAL COMMUNITY HEALTH NEEDS ASSESSMENT SOUTH CENTRAL PENNSYLVANIA

Carlisle Regional Medical Center • Hamilton Health Center
Holy Spirit—A Geisinger Affiliate • Penn State Milton S. Hershey Medical Center
Pennsylvania Psychiatric Institute • PinnacleHealth System
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Introduction

To better serve the needs of community residents in South Central Pennsylvania, PinnacleHealth System partnered with Carlisle Regional Medical Center, Hamilton Health Center, Holy Spirit–A Geisinger Affiliate, Penn State Milton S. Hershey Medical Center, and the Pennsylvania Psychiatric Institute to form a community group, collectively known as The Collaborative. PinnacleHealth System, as a member of this Collaborative, completed a comprehensive community health needs assessment (CHNA) to fulfill its mission and goals.

The Patient Protection and Affordable Care Act (PPACA) has changed how individuals are obtaining care and has modified how healthcare is delivered. Reducing healthcare costs, greater care coordination, and better care/services are some goals of the PPACA. Healthcare organizations and systems are striving to improve the health of the community they serve. Collaborating with local, state and national partners, and government officials can provide opportunities for continued high-quality programs and services in the region.

In 2012, PinnacleHealth System completed a CHNA on Cumberland, Dauphin, Lebanon, Perry, and York counties, (particularly, Northern York).¹ These counties were specifically identified as regions that fell under PinnacleHealth System's service area.² The 2015 assessment focused on the same counties. In addition, the same project component pieces were completed with the exception of a new federal requirement to collect public feedback on the 2012 CHNA and implementation plan (this project piece was known as public commentary). With the completion of two CHNA cycles, Tripp Umbach provided trending data (when applicable) to view movements and changes in community respondents' behaviors.

The comprehensive CHNA identified and prioritized community health needs. The project component pieces involved to reach the regional community health needs included the collection of secondary data from local, state, and national resources, community stakeholder interviews, hand-distributed surveys, health provider surveys, and community forums. A provider resource inventory was also part of the CHNA. The resource 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 priority needs. It provides program descriptions, contact information, and the potential for coordinating community activities by creating linkages among agencies.

¹ The Collaborative identified Northern York County as their area of focus within York County. The Community Needs Index (CNI) provided zip code level data which were representative of the northern tier of York County. Additional data obtained for York County typically encompassed the whole county overall, unless otherwise noted.

² The overall study area encompassed five counties: Cumberland, Dauphin, Lebanon, Perry and York. PinnacleHealth's service area within the report denotes the counties and zip codes which were identified as PinnacleHealth's service region. The counties that fall under PinnacleHealth's service area include: Cumberland, Dauphin, Lebanon, Perry, and York counties. The 30 zip codes that fall under PinnacleHealth's service area can be found in Appendix D.

(Information regarding the CHNA process and each of the individual project pieces can be found in Appendix B.)



Tripp Umbach facilitated two public input and feedback events involving community organization leaders, government stakeholders, religious leaders, and members of the sponsoring health institutions. The events identified top areas of need, based upon the data collected and presented. Subsequently, a prioritization meeting was held with members of The Collaborative to pinpoint, isolate, and further refine the top three priority areas the health organizations and institutions will tackle. The identified community needs are listed in priority, based on qualitative and quantitative data collected. An implementation phase will be employed by PinnacleHealth System to explore and strategize ways to meet the needs of the community. The regional community health needs based upon results of the 2015 CHNA are illustrated in Figure 1 on the following page.

Figure 1: Regional Community Health Needs

Priority #1 Access to Health Services	Priority #2 Behavioral Health Services	Priority #3 Healthy Lifestyles
<ul style="list-style-type: none">• Primary care• Specialty care• Dental care	<ul style="list-style-type: none">• Mental health• Substance abuse	<ul style="list-style-type: none">• Lack of physical activity• Inadequate nutrition & obesity• Smoking Cessation & Prevention

In reviewing the demographic profile for PinnacleHealth System's service area, the region is expected to have a 1.8 percent increase in population from 2014 through 2019; these findings are consistent with the 2012 study. Cumberland County has the highest rate of individuals earning a bachelor's degree or greater. On the other hand, Perry County has the highest percentage of individuals without a high school diploma. The PinnacleHealth System study area has 15.7 percent of households earning less than \$15,000 in 2014. This is significantly lower than the rate in Pennsylvania (24.0 percent) and the nation (24.5 percent).^{3,4} Education is an important investment that can reduce a life of poverty and inequality, and provide a gateway to additional social and environment stabilities.

Community stakeholders reported that education is essential. Individuals who are educated tend to lead healthier lifestyles, understand preventive health measures, and have few barriers to access. While health education materials and information are available, the materials presented to community residents must be clear and conveyed at a reading comprehension level easily understood by all residents.

In reviewing the population of the overall study area, all of the counties are expected to have population growth from 2014 to 2019, with the exception of Perry County. Perry County is expected to have a decrease in population of -0.8 percent (See Table 1).

³ Truven Health Analytics

⁴ The population, household income, and education level demographics data are consistent with the 2012 CHNA study.

Table 1: Overall Study-Area Population

	Cumberland County	Dauphin County	Lebanon County	Perry County	York County	Overall Study Area	Pennsylvania
2014 Total Population	263,257	265,985	139,474	47,018	436,434	1,051,206	12,791,290
2019 Projected Population	269,715	268,856	142,540	46,662	441,367	1,067,668	12,899,019
# Change	+ 6,458	+ 2,871	+ 3,066	- 356	+ 4,933	+ 16,462	+ 107,729
% Change	+ 2.5%	+ 1.1%	+ 2.2%	- 0.8%	+ 1.1%	+ 1.6%	+ 0.8%

The overall study area for the 2015 CHNA showed Dauphin County has the highest percentage of individuals earning less than \$15,000 in 2014 (10.4 percent) and also showed Dauphin County as being the most racially diverse of the study-area counties, with 17.1 percent of the population identified as Black, Non-Hispanic and 8.1 percent identified as Hispanic.⁵ The demand for care will increase as PinnacleHealth System's population grows and the Baby Boomer generation retires and requires additional health services.

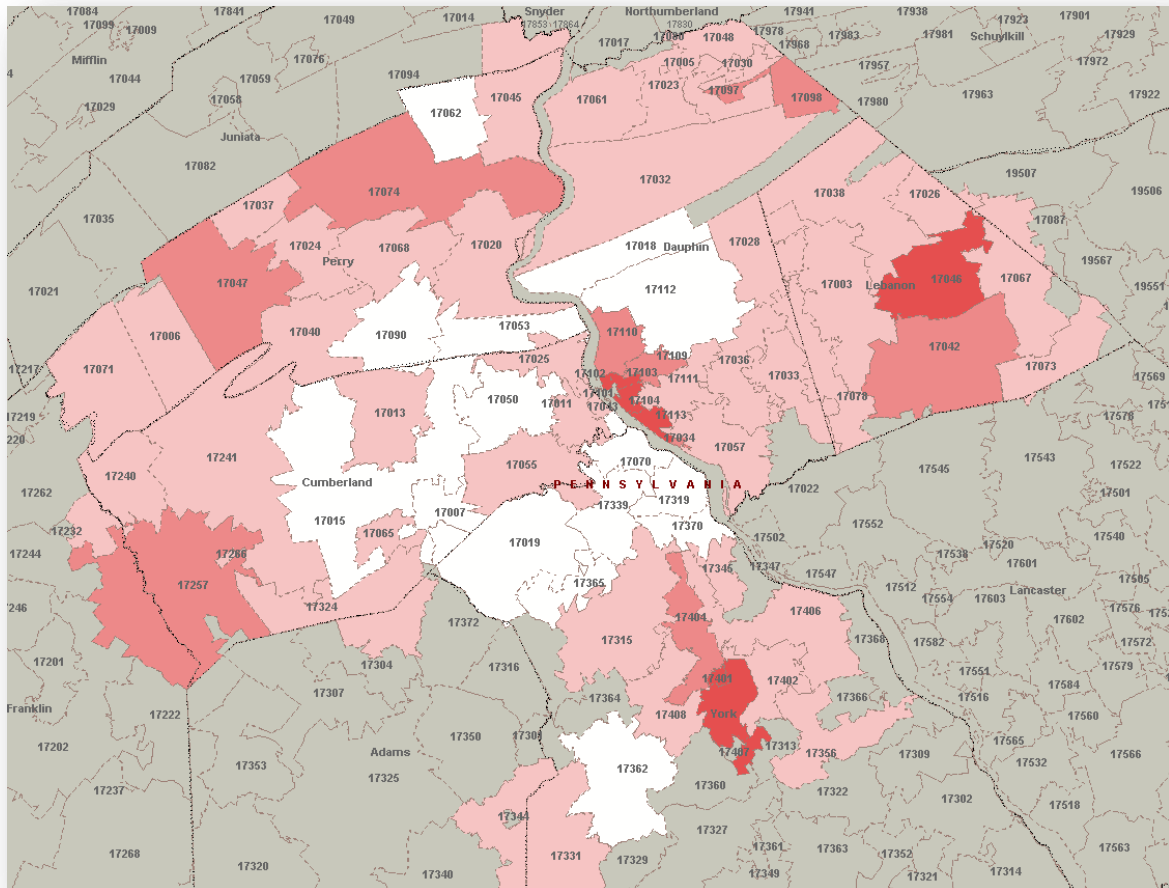
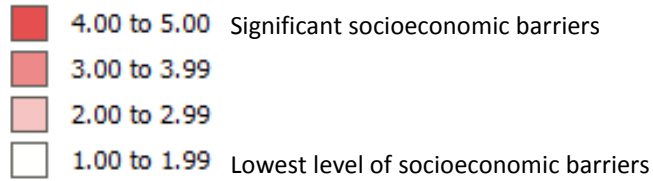
It is important to review the Community Needs Index (CNI) scores obtained by Truven Health Analytics.⁶ The CNI zip code summary provides valuable background information to begin addressing and planning for the community's current and future needs. The CNI provides greater ability to diagnose community needs as it explores zip code areas with significant barriers to healthcare access.

In reviewing the CNI scores for the overall study area, the top five zip codes that face barriers to healthcare are: 17104 (Harrisburg), 17401 (York), 17046 (Lebanon), 17103 (Harrisburg), and 17403 (York). The CNI scores within these zip codes ranged from 5.0 to 4.4 which represent significant socioeconomic barriers to accessing healthcare (See Map 1). On the opposing spectrum, zip codes 17090 (Shermans Dale), 17319 (Etters), 17007 (Boiling Springs), 17339 (Lewisberry), and 17365 (Wellsville) have CNI scores that ranged from 1.4 to 1.2 indicating a low level of healthcare access issues. The CNI scores for the overall study area are mapped out (See Map 1) below, providing a geographic representation of the socioeconomic barriers to healthcare access of specific zip codes; and indicating an at-risk population in regards to community health.

⁵ This finding is consistent with the 2012 CHNA.

⁶ See Appendix H for additional information regarding CNI.

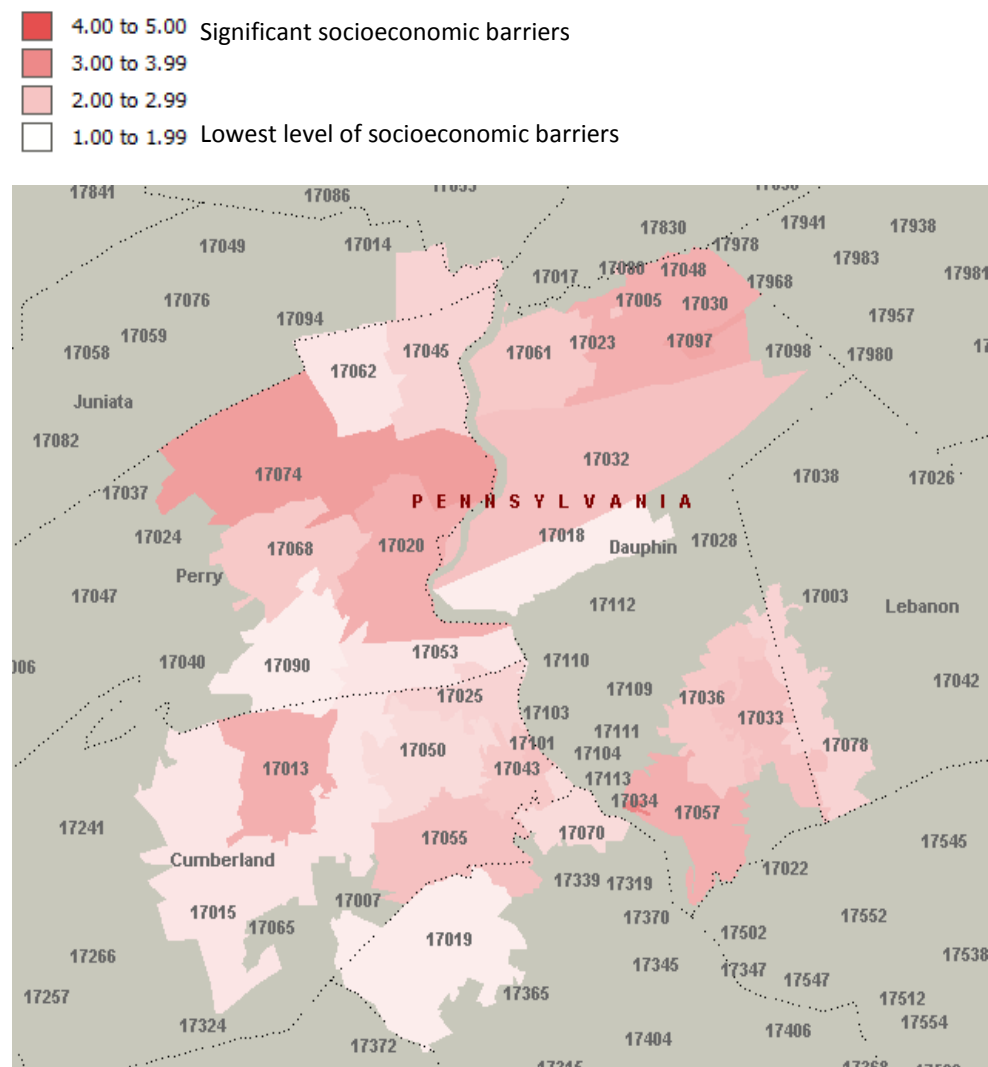
Map 1: Overall Study Area 2015 (Community Needs Index Map)



For the current study, PinnacleHealth System examined 30 zip codes which represented the community it served. This also represented 80.0 percent of inpatient discharges for the health system.

The CNI map below shows areas of significant to lowest socioeconomic barriers within PinnacleHealth System's study area. The map visually shows zip codes: 17034 (Highspire), 17074 (Newport), 17097 (Wiconisco), 17013 (Carlisle), and 17020 (Duncannon) as regions that face additional barriers to healthcare when compared to the remaining 25 zip codes in PinnacleHealth System's study area. Conversely, the zip codes that face the least amount of barriers to accessing healthcare are zip codes: 17053 (Marysville), 17062 (Millerstown), 17018 (Dauphin), 17019 (Dillsburg), and 17090 (Shermans Dale) (See Map 2).⁷

Map 2: PinnacleHealth System Study Area 2015 (Community Needs Index Map)



⁷ There are five prominent socioeconomic barriers to community health quantified in the CNI they are: Income Barriers, Cultural/Language Barriers, Educational Barriers, Insurance Barriers, and Housing Barriers. Each zip code is assigned a score on a scale of 5.0 to 1.0. 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.

A CHNA was conducted with mutual interests from healthcare institutions and organizations to ultimately address the needs of community residents in Central Pennsylvania. The region faces challenges that will limit the growth and expansion of new programs. Thus, continued collaboration and partnerships with healthcare organizations are vital to PinnacleHealth System's providing high-quality services and programs to all in the region.

This report fulfills the requirements of the Internal Revenue Code 501(r)(3), a statute established within the Patient Protection and Affordable Care Act requiring that nonprofit hospitals conduct CHNAs every three years. The CHNA process undertaken by PinnacleHealth System, with project management and consultation by Tripp Umbach, included extensive input from persons who represent the broad interests of the community served by the hospital facility, 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 the hospital. Tripp Umbach worked closely with members of The Collaborative to oversee and accomplish the assessment and its goals.

Regional Community Health Needs

Priority #1: Access to Health Services

Access to healthcare typically refers to the ability and ease in which people can obtain healthcare; it can also refer to utilization or having healthcare coverage. Health services should be effective and pertinent if the population is able to obtain them.

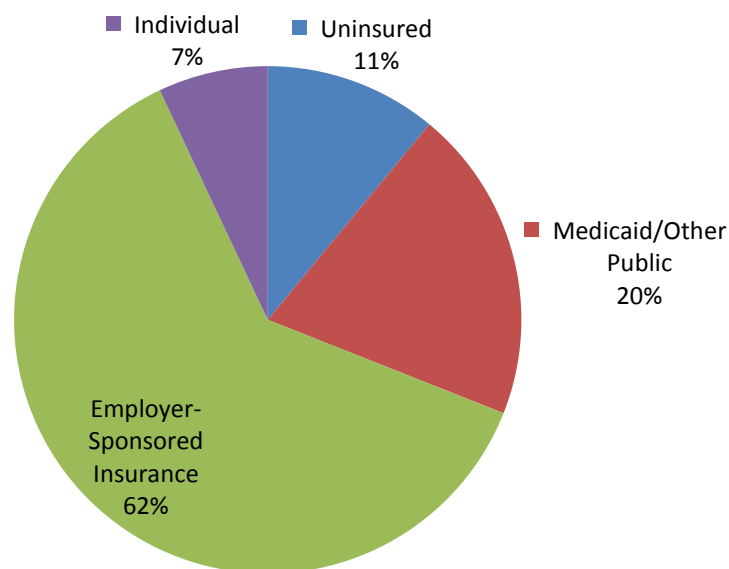
Overall access to health services is a challenge for many in the community. Health insurance coverage, affordability, health literacy, navigation through the healthcare system, the availability of physicians, and transportation are issues that prohibit residents from obtaining care and services. However, there are additional layers that affect community residents from gaining access to services that are readily available in South Central Pennsylvania. The collection and analysis of primary and secondary data confirms the difficulties community residents face when trying to obtain healthcare services.

Primary Care

Health insurance coverage is an essential and critical component to receiving and obtaining primary care. Individuals who lack health insurance do not receive the same amount of services and care and tend to have poor health outcomes and more severe illnesses. High deductibles, out-of-pockets costs, and providers accepting only certain types of insurance impact the frequency of residents obtaining services. The populations most affected by limitations in health coverage are low-income/economically challenged individuals and the vulnerable populations. Prior to the implementation of the PPACA coverage expansion in 2013, over 1.2 million people were uninsured: 11.0 percent for Pennsylvania with a national uninsured average of 15.0 percent. Among the 89.0 percent of Pennsylvanians with insurance in 2013, over six in 10 (62.0 percent) were covered under an employer plan. One in five Pennsylvanians (20.0 percent) were enrolled in Medicaid or the Children's Health Insurance Program (CHIP) (See Chart 1).⁸

⁸ The Henry J. Kaiser Family Foundation: <http://kff.org/health-reform/fact-sheet/the-pennsylvania-health-care-landscape/>

Chart 1: Pennsylvania Health Insurance Coverage 2013



Examining county level data, County Health Rankings reported 13.0 percent of Perry County residents are uninsured, which is higher than the other counties in the study area (See Table 2).⁹ Perry County specifically, will face additional disparities and gaps in services due to its rural geography. Cumberland County's uninsured rate is 10.0 percent, a low percentage when compared to Dauphin, Lebanon, Perry, and York.

The hand-distributed survey findings from the study area reported that 20.0 percent of survey respondents do not have health insurance. Of those who do not have health insurance, 70.3 percent of respondents stated that they do not qualify or cannot afford healthcare coverage; with 13.4 percent having had insurance, but lost coverage. In addition, 64.3 percent stated that not having health insurance affected their ability to acquire services and 65.6 percent did not seek care due to lack of coverage. These findings solidify statements made by community stakeholders that out-of-pocket costs are a detriment to community residents seeking care.

⁹ County Health Rankings: www.countyhealthrankings.org/app/pennsylvania/2015/measure/factors/85/data

Table 2: Pennsylvania County Health Insurance Coverage 2013

Pennsylvania Counties	Percent Uninsured
Cumberland	10%
Dauphin	12%
Lebanon	12%
Perry	13%
York	11%

Secondary data collected from the County Health Rankings database provided a snapshot and benchmark data on how each county 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.

Exploring clinical care rankings within the study area, Cumberland County improved their clinical care score in 2011 from a 10 to a ranking of four in 2014. Dauphin, Lebanon, Perry, and York counties had increased scores from 2011 to 2014, which indicated that a specific measurement affected the ranking negatively. The increased ranking scores indicated that 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; thus, altering the overall ranking outcome (See Table 3). It is important to further examine what specifically affected the higher ranking scores as a community group.

Table 3: County Health Rankings; Clinical Care

	Cumberland	Dauphin	Lebanon	Perry	York
2014	4	13	8	54	7
2011	10	6	5	52	4

Tripp Umbach utilized a socioeconomic database from Truven Health Analytics called Community Needs Index (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 zip code with the least need, while a score of 5.0 represents a zip code with the most need.¹⁰

The CNI insurance rankings for the overall study area shows Lebanon County had a score of 3, which indicates that community residents in Lebanon County have more insurance access issues when

¹⁰ Truven Health Analytics, formally known as Thomson Reuters is a multinational healthcare 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 H.

compared to the remaining four counties. It is also interesting to note that Lebanon County ranked a 4 under income ranking; thus, purchasing health insurance will be difficult for residents in that particular county (See Table 4).

In reviewing information from Table 4, CNI data revealed York (10.0 percent) and Dauphin counties (9.0 percent) had higher percentages of unemployment when compared to the remaining counties in the overall study area. Overall, Dauphin and Lebanon's CNI scores (3.0) reflect some socioeconomic issues community residents face. Higher unemployment rates in Dauphin County add greater accessibility issues to health, social, and daily living factors.

Table 4: Overall Study Area County CNI Scores

County	2014 Total Population	Poverty 65+	Married w/ children Poverty	Single w/ Children Poverty	Limit English	Minority %	No High School Diploma	Unemployment %	Uninsured %	Rental %	Income Rank	Cultural Rank	Education Rank	Insurance Rank	House Rank	2014 CNI Score	2010 CNI Score
Cumberland	263,257	6%	9%	16%	1%	12%	9%	6%	5%	27%	1	3	2	2	3	2.2	2.2
Dauphin	263,264	8%	16%	33%	2%	31%	11%	9%	8%	34%	3	4	2	2	4	3.0	2.9
Lebanon	136,658	7%	14%	38%	2%	15%	14%	8%	7%	28%	4	3	3	3	2	3.0	2.6
Perry	47,018	7%	12%	35%	0%	5%	15%	7%	5%	20%	3	1	3	2	2	2.3	2.1
York	341,009	6%	14%	33%	1%	18%	12%	10%	7%	26%	2	3	2	2	3	2.8	2.4

(*weighted average of total market)

Reviewing the CNI rankings for PinnacleHealth System's service area, particularly the insurance ranking in Table 5 (examining only the Top 5 Zip Code Scores and Bottom 5 Zip Code Scores) zip codes 17034 (Highspire) and 17013 (Carlisle), had scores of 4 and 3 which indicates these zip codes have barriers to accessing care based on their insurance needs.

Overall, PinnacleHealth System's weighted average for the study area was 2.2 from the 2014 data, a decrease from 2.5. This shows that the zip codes that make up PinnacleHealth System's service areas have less barriers to accessing care (See Table 5). The decreased CNI score is a positive sign for PinnacleHealth System's overall study region.

(For a complete listing of PinnacleHealth System's 2015 zip codes please refer to Appendix D)

Table 5: PinnacleHealth System's CNI -Top 5 Zip Code Scores and Bottom 5 Zip Code Scores¹¹

Zip	City	County	Income Rank	Insurance Rank	Education Rank	Culture Rank	Housing Rank	2014 CNI Score
17034	Highspire	Dauphin	4	4	3	3	5	3.8
17074	Newport	Perry	5	1	4	2	4	3.2
17097	Wiconisco	Dauphin	5	2	4	3	1	3.0
17013	Carlisle	Cumberland	2	3	2	2	5	2.8
17020	Duncannon	Perry	4	2	3	2	3	2.8
17053	Marysville	Perry	1	2	2	1	2	1.6
17062	Millerstown	Perry	2	1	3	1	1	1.6
17018	Dauphin	Dauphin	1	1	3	1	1	1.4
17019	Dillsburg	York	1	2	1	1	2	1.4
17090	Shermans Dale	Perry	1	1	3	1	1	1.4
PinnacleHealth System Study Area			2	3	2	1	4	2.2

(*weighted average of total market)

¹¹ There are factors that must be taken into consideration when examining the increased/decreased CNI scores from 2014 and 2010 data. 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. A zip code which may have had a positive score/negative score may not have been included or may have been excluded and additional zip codes were also added to the current study year; thus, potentially impacting the ranking. In total, 66 zip codes were analyzed from 2012, while 75 zip codes were analyzed for 2015.

The overall study area in Table 6 shows decreased CNI score changes in zip codes: 17006 (Blain), 17061 (Millersburg), 17026 (Fredericksburg), and 17071 (New Germantown). The decreased score changes indicate that individuals in these specific zip codes have fewer barriers to accessing care.

Of the 75 zip codes in the overall study area, 17 zip codes declined in CNI score (going to fewer barriers to healthcare), 15 zip codes remained the same, 43 zip codes increased in CNI score (now having more barriers to healthcare).

Table 6: Overall Study Area CNI; Largest CNI Score Change

Zip	City	County	2014 Population	2014 CNI Score	2010 CNI Score	CNI Score Change
17074	Newport	Perry	7,909	3.2	2.2	1.0
17403	York	York	38,873	4.4	3.6	0.8
17097	Wiconisco	Dauphin	112	3.0	2.2	0.8
17006	Blain	Perry	1,021	2.2	3.0	-0.8
17061	Millersburg	Dauphin	6,868	2.2	3.0	-0.8
17026	Fredericksburg	Lebanon	3,558	2.0	2.8	-0.8
17071	New Germantown	Perry	229	2.0	3.0	-1.0
Overall Study Area			1,051,206	2.7*	2.5*	+0.2

(*weighted average of total market)

Tripp Umbach examined changes in PinnacleHealth System's CNI scores from 2010 and 2014 data. The decreased CNI score changes are in zip codes: 17019 (Dillsburg), 17045 (Liverpool), and 17061 (Millersburg). The decreased score range differences indicate community residents have fewer barriers to accessing care within those zip codes. These noteworthy changes are encouraging. Based upon the improved score changes, residents in those communities have fewer barriers to obtaining care in their region (See Table 7).

In reviewing information from the 30 zip codes in PinnacleHealth System's study area, 8 saw declines in CNI score signifying they improved, 8 zip code areas remained the same, and 14 increased in CNI scores.

Newport (17074) saw the largest CNI increase, from 2.2 to 3.2. This increase of 1.0 indicates more access to barriers. Millersburg (17061) saw the largest declines in CNI score going from 3.0 to 2.2. A decrease of 0.8 indicates fewer barriers to care for those in the community (See Table 7).

Table 7: PinnacleHealth System Study Area CNI: Largest CNI Score Change

Zip	City	County	2014 Population	2014 CNI Score	2010 CNI Score	CNI Score Change
17055	Mechanicsburg	Cumberland	37,473	2.4	1.8	+0.6
17020	Duncannon	Perry	8,385	2.8	2.2	+0.6
17034	Highspire	Dauphin	2,192	3.8	3.2	+0.6
17097	Wiconisco	Dauphin	112	3.0	2.2	+0.8
17074	Newport	Perry	7,909	3.2	2.2	+1.0
17019	Dillsburg	York	17,999	1.4	2.0	-0.6
17045	Liverpool	Perry	3,682	2.0	2.6	-0.6
17061	Millersburg	Dauphin	6,868	2.2	3.0	-0.8
PinnacleHealth System Study Area			374,335	2.2*	2.5*	-0.3

(*weighted average of total market)

Disparities and gaps in services plague communities throughout Pennsylvania. Primary and secondary data figures collected from community stakeholder interviews, hand-distributed surveys, CNI scores, and the review of national, state, and local data, provided in-depth information to address and pinpoint areas of concern for improvement.

One area affecting community residents' access to care is transportation. Transportation is vital for those who do not have reliable options. The failure to adequately secure transportation impacts the individual's ability to purchase food, maintain employment, access care, and meet the needs of everyday life. Transportation barriers can lead to missed health appointments and the delay of healthcare services making health management difficult for the individual and for the health provider.

In examining the hand-distributed survey results, slightly more than half of survey respondents reported having a car as their primary mode of transportation (51.7 percent), while 48.3 percent relied on public transportation, family/friend, taxi/cab, walking, biking, or other modes as their main form of transportation. Community leaders reported transportation as a significant challenge to many community residents residing in rural sections within the study area.

Findings from community stakeholders interviewed as a part of the 2012 CHNA, echoed the same sentiments regarding transportation and the difficulties in securing adequate transportation options. Residents living in rural regions have limited access to needed health and social services due to their inability to obtain and secure transportation. Community leaders indicated that rural residents are the most at risk to "falling through the cracks" when seeking healthcare. Missed or canceled health appointments are frequent due to residents' inability to secure reliable transportation even though residents rely on family, friends, and community organizations to help address their transportation needs.

Access to health services is a key community need and healthcare providers and organizations must be ready to face and tackle these demands; in particular, addressing transportation barriers for their patient/client population.

Physician Shortages: A National View

Primary care is often referred to as the initial contact a patient has with a trained healthcare provider and is a continued mechanism for comprehensive care. Health providers will diagnosis, check for symptoms and health concerns of their patients, and identify the best methods to treat their ailments. Collaboration between primary care physicians and other healthcare providers, referred to as care coordination, is often employed in order to provide quality treatment and care for the patient in an effective manner.

Primary care also includes a variety of methods that educate, monitor, promote, and counsel patients on diseases and illnesses which can be obtained in a healthcare setting or other non-traditional healthcare locations. The CHNA identified the availability of primary care physicians as a top need for South Central Pennsylvania as well as access to primary care services.

The U.S. is facing the largest physician shortage in its history with the population both growing and aging. Many believe it will be difficult to close the gap between the number of physicians and healthcare providers who will provide care to the population.

As the physician shortages continue to grow, more physicians will retire and fewer will enter practice. The aging U.S. population and implementation of federal healthcare reform—resulting in approximately 41 million Americans gaining access to health insurance—will make the physician shortage more pronounced. “The nation’s goal of having the very best physician workforce in the world faces challenges. The healthcare delivery system is changing. Even as healthcare systems face these new problems, past problems remain unsolved – physicians are poorly distributed geographically in relation to population needs and have become increasingly specialized, while primary care remains under-resourced.”¹²

Physician shortages have gained national attention due to the demand for care. Approximately one in five Americans already live in a region designated as having a shortage of primary care physicians; the number of doctors entering the field is not expected to keep pace with demand.¹³

A report by the Pennsylvania Medical Society presents a number of trends that raise concerns regarding the future supply of physicians. The physician workforce in Pennsylvania is aging, with 50.0 percent of physicians over the age of 50 and less than 8.0 percent of physicians under the age of 35.¹⁴ Specialists have been on the decline since 1997, particularly in the areas of family medicine, internal medicine, and obstetrics.

¹² Council of Graduate Medical Education (COGME): Twenty-First Report: Improving Value in Graduate Medical Education (August 2013).

¹³ Newly Insured to Deepen Primary-Care Doctor Gap (June 2013).

¹⁴ Recent Studies and Reports on Physician Shortages in the US: <https://www.aamc.org/download/100598/data/>

According to The Association of American Medical Colleges (AAMC), in 2012 Pennsylvania had 12,626 practicing primary care physicians (PCPs) and was ranked 18 out of 50 states in active PCPs per 100,000 population (See Table 8). The percentage of active physicians who are aged 60 years and older in Pennsylvania is 27.3 percent, slightly higher than the state median of 26.5 percent. There were 98.8 active primary care physicians per 100,000 population in 2012 compared to the state median of 90.3 per 100,000 population (See Table 9).

Unfortunately, the current primary care physician shortages will likely worsen as thousands are insured under the PPACA, subsequently increasing the demand for healthcare services.

Table 8: Pennsylvania Physician Workforce Snapshot

	Population:	12,763,536
2	Population ≤ age 18:	2,921,417
0	Total Active Physicians:	38,565
1	Primary Care Physicians:	12,626
2	Total Medical or Osteopathic Students	7,949
	Total Residents:	7,661

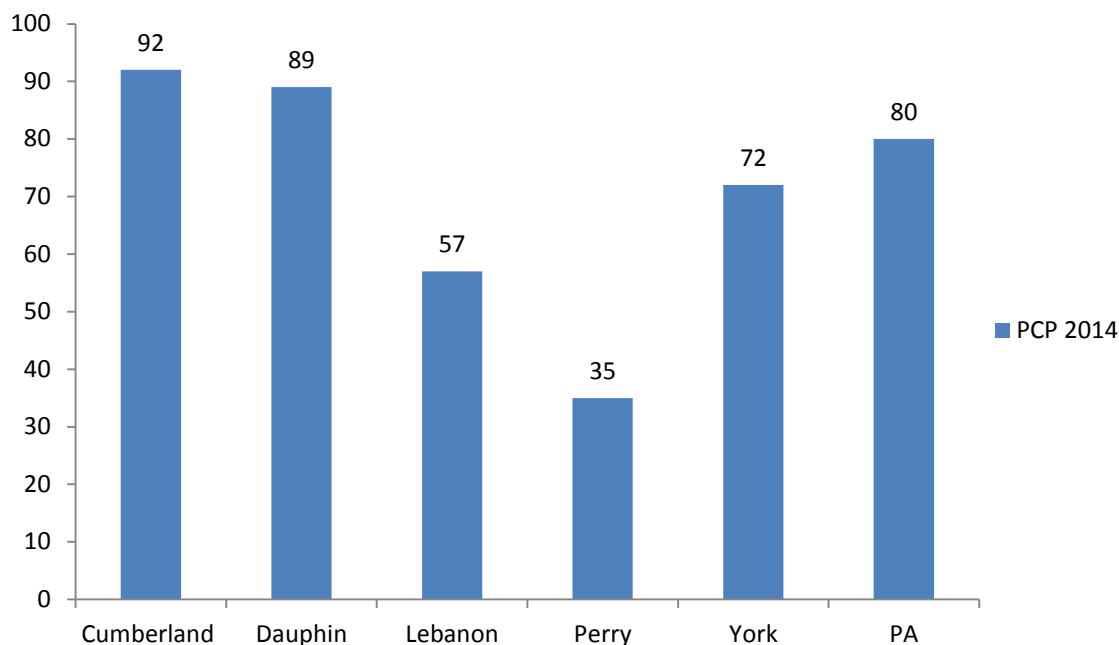
Table 9: Pennsylvania Physician Workforce Profile

Physician Supply	Pennsylvania	State Median
Active Primary Care Physicians per 100,000 Population, 2012	98.9	90.3
Percentage of Active Physicians Who Are Age 60 or Older, 2012	27.3%	26.5%
State Median: The value directly in the middle of the 50 states, so 25 are above the median and 25 are below and excludes the District of Columbia and Puerto Rico.		

Data reviewed from County Health Rankings shows Lebanon, Perry, and York counties having the fewest primary care physicians (PCP) when compared to the state. Perry County reported the fewest within the five-county study area with 35 PCPs per 100,000 population (See Chart 2).¹⁵ It is often difficult to recruit and retain physicians to rural regions. Social, environmental attractions (e.g. cultural events, school systems), and other urban amenities are more attractive to many physicians.

¹⁵ County Health Rankings 2014

Chart 2: Pennsylvania Physician Rates Per 100,000: Population 2014



The hand-distributed survey results from 2015 revealed that 23.2 percent of participants do not have a primary care physician (PCP). Of those who do 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. 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.

Information collected from the hand-distributed survey provides personal information regarding the health and social behaviors of community residents. Understanding the perspectives and the viewpoints of survey respondents can identify issues and subject matters that make access problematic for many in the community.

Primary care physicians are important to community residents for multiple reasons. Physicians assist with the health, wellness, care and care coordination of patients. Having care coordination and obtaining care through the same healthcare provider and facility creates relationships and interactions that contribute to high-quality care between provider and patients.

Community interview results from 2015 reported that health professional shortages, the aging physician population, and issues related to the recruitment and the retention of physician shortages have affected individuals from obtaining care in South Central Pennsylvania.

Despite differences in the types of stakeholders interviewed from the 2012 CHNA, the information collected revealed similar themes. In 2012, community leaders agreed there are gaps in the continuity of care among the uninsured and underinsured populations due to the dwindling numbers of primary care

and specialty physicians available to address the growing health concerns in the community. They reported that the aging “Baby Boomer” generation will tap into an already exhausted physician supply network, making the ability to secure timely appointments more difficult and healthcare costs and services more expensive.

It is important to evaluate and implement grassroots efforts and strategies to assist and help each community provide adequate healthcare services dedicated to the overall well-being of its citizens.

Specialty Care

It has been well documented that the United States is facing a large physician shortage; however, these shortages are not limited to just primary care physicians but also include specialists. Rural Pennsylvania will be more adversely affected with specialty shortages. Physicians tend to practice in more populated communities (e.g., urban and suburban communities) based on a variety of factors. Rural residents will be forced to travel further for care, making access to services more difficult due to transportation barriers. Community organizations, healthcare institutions, and human and social services groups will need innovative methods to address and fill gaps left by specialty care providers.

By 2020, the AAMC’s Center for Workforce Studies estimated that the United States will face a shortage of 46,100 surgeons and medical specialists. The estimates were calculated by taking into account the millions of patients who became eligible for Medicare, the 32 million patients who will become newly insured through the PPACA, and an aging physician workforce.¹⁶

The demand for physicians has grown significantly and the supply cannot match its pace. The AAMC reported that by 2025 a shortfall of between 28,200 and 63,700 non-primary care physicians will occur. Specifically, there will be an estimated specialty shortage of 5,100 to 12,300 medical specialists, 23,100 to 31,600 surgical specialists, and 2,400 to 20,200 other specialists in the U.S.¹⁷

With the growing obesity epidemic, increased lifespan, and a population of Americans who are becoming slightly more active, the demand for orthopedic surgeons has grown in order to address the health and social factors of those in the community. The demand for total knee arthroplasty is expected to increase significantly for patients aged 45 to 54 years old by 2030 according to a report presented at the 2008 American Association for Hip and Knee Surgeons. The demand for primary total hip arthroplasty in the same age category is projected to grow nearly six-fold by 2030.¹⁸

By 2025, the country’s need for oncologists will nearly double and lead to a shortfall of 1,500 cancer specialists. It was reported that more than 70.0 percent of U.S. counties do not have oncologists and the growth of new cancer cases will increase the need dramatically. According to the AAMC, general surgery

¹⁶ Association of American Medical Colleges: www.aamc.org/newsroom/reporter/february2014/370350/physician-shortage.html

¹⁷ Association of American Medical Colleges: www.aamc.org/download/426260/data/physiciansupplyanddemandthrough2025keyfindings.pdf

¹⁸ Association of American Medical Colleges: www.aamc.org/newsroom/reporter/february2014/370350/physician-shortage.html

is predicted to be among the hardest hit, with a shortage of 21,400 surgeons by 2020. The number of practicing general surgeons is expected to fall to 30,800 by 2020 from 39,100 in 2000.¹⁹

Information collected from the 2012 and 2015 CHNA highlighted the need for more specialists in South Central Pennsylvania. 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 healthcare system.

Focus group participants from 2012 reported the lack of specialty physicians in the region greatly impacted the healthcare services they received. Attendees stated that the absence of public transportation limited the accessibility to regional healthcare services, and along with the unavailability of specialists, impacted how rural residents obtained care.

The overall need for health professionals to provide care will grow. The overall goal is to support individuals to lead healthier lives. Understanding and providing avenues to assist community residents with obtaining care in order to reduce and close disparities and gaps will be the charge of regional and local healthcare providers, organizations, and agencies.

It is important to take into account health disparities and social determinants that adversely impact accessibility to healthcare and specialty care services. Home life, education levels, income, and employment are key social determinants, which affect how community residents live.

Dental Care

There are multiple factors, which make dental care a great need for many Americans. While many families and individuals are able to obtain dental care on a regular basis through dental insurance, the remaining individuals who are economically challenged, of a certain age, of different cultural and racial backgrounds, and those who have overall transportation issues face significant challenges in obtaining dental care.

Millions of Americans struggle to access basic primary and preventive oral healthcare services. Many will prioritize basic living necessities such as food, housing, and basic healthcare needs over the needs of dental care. An additional barrier that affects and limits individuals from obtaining dental care is the lack of awareness or need for oral care.

Understanding or being aware of the importance of good oral hygiene and its relationship to physical well-being is not commonly connected among the population. The maintenance of good oral hygiene is essential to overall good health. The lack of brushing, flossing, and poor oral care will likely increase tooth decay, gum disease, and can lead to severe forms of diseases.

Studies have suggested certain diseases, such as diabetes and HIV/AIDS, can lower the body's resistance to infection, making oral health problems more severe.²⁰ Oral health might affect, be affected by, or

¹⁹ Becker Hospital Review: www.beckershospitalreview.com/hospital-physician-relationships/15-things-to-know-about-the-physician-shortage.html

contribute to various diseases and conditions, such as: endocarditis, cardiovascular disease, premature birth, low birth weight, diabetes, HIV/AIDS, osteoporosis, Alzheimer's disease, and other conditions.²¹

While the PPACA has provided children and adults with improved access to dental coverage, much more needs to be done to address this growing issue. . In 2012, 14.2 percent of Pennsylvanians compared to 15.4 percent of the U.S. population lived in a Dental Health Provider Shortage Area (HPSA); with nearly half of the states not meeting federal guidelines for fluoridation of drinking water, an effective method to preventing tooth decay.²²

While Pennsylvania is home to three dental schools, accessibility to dental providers is also problematic for many in the community. In 2015, Pennsylvania reported having 8,466 practicing dentists; including all professionally practicing dentists (See Table 10) (See Map 3).²³ The Pennsylvania Department of Health specifically reports that rural counties have very few dentists practicing in the region. In 2013, approximately one out of every five dentists (1,243 or 20.0 percent) who provided direct patient care in Pennsylvania practiced in rural counties. The rate of dentists who provided direct patient care in Pennsylvania was 36 per 100,000 population in rural counties and 55 per 100,000 in urban counties.²⁴

The growing need for dental services along with the need for dental care providers will create additional gaps in care and regional organizations will need to tackle and address these issues. The Center for Rural Pennsylvania reported that Perry County had a total of 11 dentists in 2013 that have direct patient care, the lowest within the study area; while York County had 171 dentists. This figure is dramatic in the number of available dentists in the overall study area (See Table 11).

²⁰ Mayo Clinic: www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/dental/art-20047475

²¹ Mayo Clinic: www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/dental/art-20047475

²² The Henry J. Kaiser Family Foundation: Kaiser Commission on Key Facts

²³ The Henry J. Kaiser Family Foundation: www.kff.org/other/state-indicator/total-dentists/#map

²⁴ Pennsylvania Department of Health: [www.health.pa.gov/Your-Department-of-Health/Offices percent20and percent20Bureaus/Health percent20Planning/Healthcare percent20Workforce percent20Reports/Documents/2013 percent20Dentist percent20and percent20Dental percent20Hygienist percent20Final.pdf](http://www.health.pa.gov/Your-Department-of-Health/Offices%20and%20Bureaus/Health%20Planning/Healthcare%20Workforce%20Reports/Documents/2013%20Dentist%20and%20Dental%20Hygienist%20Final.pdf)

Map 3: Professional Active Dentists; 2015

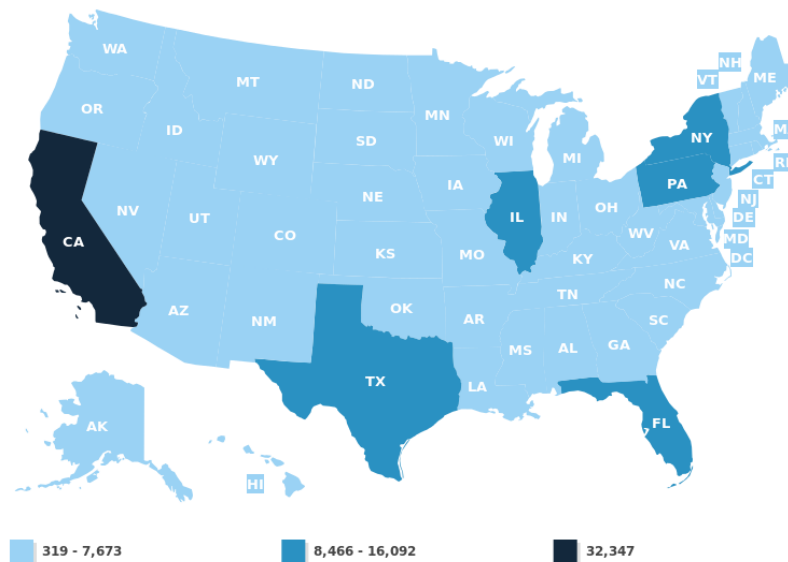


Table 10: Professional Active Dentists; 2015

Location	Dentists; 2015
USA	204,846
Pennsylvania	8,466

Table 11: Total Number of Dental Providers Providing Direct Dental Care in Pennsylvania²⁵

	Total # <u>Dentists</u> Providing Direct Patient Care, 2013
Cumberland	116
Dauphin	141
Lebanon	51
Perry	11
York	171

²⁵ Center for Rural Pennsylvania:
www.portal.state.pa.us/portal/server.pt/community/newsroom,_publications_and_reports/11602/dentist_dental_hygienist_report/607066

The need for dental care in the U.S. is growing and the need for dental care in South Central Pennsylvania is no exception. As a top prioritized need in the community, one factor that blocks community residents from oral healthcare is the lack of dental coverage, access, and the out-of-pocket costs associated with dental services. Community leaders interviewed in the overall study area reported oral health as an area of concern specifically, reporting dental provider shortages, limited dental providers accepting entitlement programs such as Medicare and Medicaid, high cost for dental services, and the need for dental information regarding prevention, disease treatment, and education on oral hygiene. Dental education and information that is easy to understand and communicates oral health information is an important element in addressing the community's dental needs.

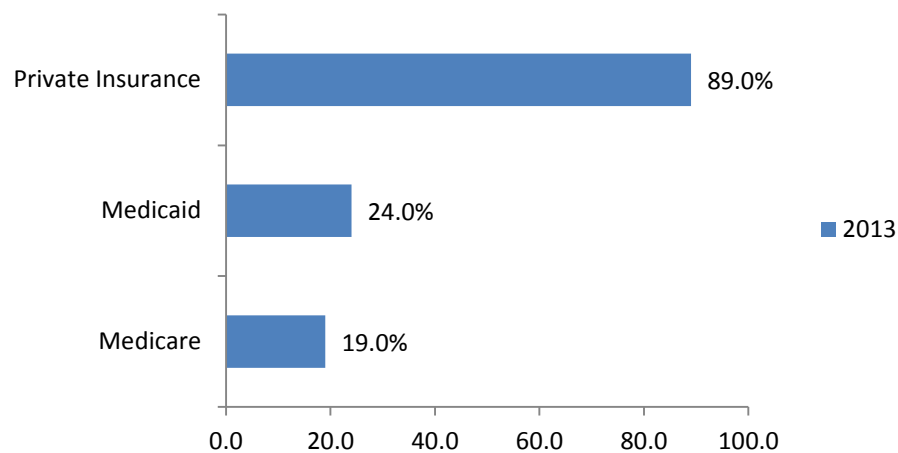
When examining the 2015 hand-distributed survey results, more than half of survey respondents (59.3 percent) go to a dentist's office when seeking dental care. However, roughly one out of five survey respondents (22.4 percent) reported that they do not go to the dentist. Half of survey respondents (50.6 percent) reported going within the past year. A combined 18.0 percent indicated that they have not seen a dentist in five or more years.

The American Dental Association (ADA) recommends regular dental visits. However, individuals who are more prone to or are high-risk for dental diseases (i.e., smokers, diabetics, people with gum disease, etc.) may need frequent visits to a dental care provider.

Financial barriers pose significant dental access challenges to many and results from the CHNA hand-distributed survey echo that statement. Close to a quarter of survey respondents (24.4 percent) reported having to pay out-of-pocket costs for their dental services, while another 9.7 percent did not pay for their services. The Pennsylvania Rural Health report on "Raising Awareness about Oral Health: Crucial for Rural Communities", reported the acceptance of Medicaid by dentists who provided direct patient care in Pennsylvania rose from 19.0 percent in 2007 to 24.0 percent in 2013 (See Chart 3).²⁶ This increased acceptance of Medical Assistance is a growing indication that oral health providers see the need for low cost affordable dental care services in their communities.

²⁶ Pennsylvania Rural Health: www.pennsylvaniaoralhealth.org/educational-material-pages/2015/4/15/raising-awareness-about-oral-health-crucial-for-rural-communities

Chart 3: Respondents Who Provided Direct Patient Care in Pennsylvania by Accepted Dental Coverage: 2013 Survey



Findings from community stakeholders, interviewed from the 2012 CHNA, resonate the same feelings regarding the need for dental and oral care. Community leaders reported that uninsured community residents do not have the accessibility to obtain healthcare and dental services. Free or reduced-cost dental services are limited in the region with many dentists not accepting entitlement programs. It was also reported in 2012, that the working poor are the most at risk for having dental problems. Many do not qualify for free or reduced dental services and many cannot afford the out-of-pocket costs for dental services. Preventive dental check-ups are seen as a luxury according to community stakeholders in 2012. It was mentioned that health clinics and mobile vans are able to address some of the dental needs of children, but adults needing dental services are often overlooked and underserved.

Gaps in oral care and overall access issues can reduce long-term community dental needs. Evidence-based programs such as school-based dental sealants and community water fluoridation programs are leading examples of intervention programs, which are effective in the prevention of tooth decay.²⁷ The Surgeon General's report on oral health indicates that sealants can reduce tooth decay in school-aged children by more than 70.0 percent, while fluorinated water can reduce decay in children and adults by 25.0 percent.²⁸ It is important to explore and evaluate different avenues and national programs on how to provide dental care access while including organizations that are already active in providing oral health and education in the community. It is also imperative to include organizations whose populations are in need of dental and oral services, in particular, children, the underserved, underinsured, and the vulnerable populations.

²⁷ Centers for Disease Control and Prevention: www.cdc.gov/fluoridation/

²⁸ Centers for Disease Control and Prevention: www.cdc.gov/oralhealth/dental_sealant_program/

Priority #2: Behavioral Health Services

Behavioral health, which includes mental health and substance abuse, is a major issue across the nation and is one of the main health concerns in the five-county study area as well as the PinnacleHealth System service area. Findings from community interviews, provider and community surveys, and secondary data demonstrate the growing effects of behavioral health on the region.

Behavioral health issues affect not only the mental well-being of an individual, but also a person's spiritual, emotional, and physical health. For example, mental illness is generally associated with increased occurrences of chronic diseases such as diabetes, cardiovascular disease, and cancer, as well as an overall decrease in accessing medical care, which increases the likelihood of adverse health outcomes. Behavioral health issues often co-occur with mental illness; if a person is struggling with mental illness, he or she is also likely to be abusing drugs, tobacco, and alcohol.

The shortage of physicians and providers play a major role in preventing individuals who struggle with behavioral health issues and other associated problems, from receiving the care they need. There is a physician shortage nationwide. The physician shortage is felt in South Central Pennsylvania, specifically in terms of specialty physicians and psychiatrists. Community leaders revealed that patients often deal with lengthy waiting periods, traveling long distances, and the inability to secure appointments for behavioral health specialty care. As identified by community leaders, shortages of physicians and psychiatrists, coupled with overall access issues in the South Central Pennsylvania region, a lack of funding for mental and behavioral health services, and rates of mental health and substance abuse all come together to create growing concerns about the current and future state of mental health and substance abuse in the region and the growing need for additional focus on providing adequate behavioral health services.

According to The Substance Abuse and Mental Health Services Administration (SAMHSA), "behavioral health is essential to overall health, prevention works, treatment is effective, and people can and do recover."²⁹ Those with mental illness need to have access to providers and health services to be able to receive proper care and treatment that will allow them to lead healthier lives.

Mental Health

Mental illness is defined as "collectively, all diagnosable mental disorders" or "health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning."³⁰ Mental illness is a major issue across the U.S. While the percentage of individuals with mental illness in the U.S. decreased from 2008-2009 to 2010-2012 from 19.7 percent to 18.2 percent, approximately 61.5 million Americans, or one in four adults, are still

²⁹ Substance Abuse and Mental Health Services Administration (SAMSHA) National Survey on Drug Use and Health. www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf.

³⁰ Centers for Disease Control and Prevention: CDC U.S. Adult Mental Illness Surveillance Report. <http://www.cdc.gov/Features/MentalHealthSurveillance/>

affected by mental illness in a given year.³¹ The majority of adults with mental illness, or 60.0 percent, received no mental health treatment in the last year, indicating a nationwide issue with individuals being able to receive proper mental health services and treatment.³² This is due in part to the lack of mental health providers across the U.S. According to the U.S. Department of Health and Human Services, almost 91 million adults live in areas where shortages of mental health professionals made obtaining treatment difficult. A departmental report to Congress in 2014 said 55.0 percent of the nation's 3,100 counties have no practicing psychiatrists, psychologists or social workers.³³

The percentage of individuals aged 18 or older with mental illness in the U.S. has decreased from 2008-2009 to 2010-2012, yet the percentage of those with any mental illness in Pennsylvania has increased from 17.7 percent in 2008-2009 to 17.9 percent in 2010-2012.³⁴ The percentage of individuals in the state of Pennsylvania with mental illness is on the lower side compared to other states in the U.S. (See Map 4), but the issue is still prevalent across the state with over 118,000 state residents being seen for mental illness in 2013.³⁵ Mental illness rates are also increasing among children in Pennsylvania, with 17.0 percent of children having a mental illness in 2007, compared to 19.0 percent in 2012.³⁶

³¹ Centers for Disease Control and Prevention: CDC U.S. Adult Mental Illness Surveillance Report www.cdc.gov/Features/MentalHealthSurveillance/

³² National Alliance on Mental Illness, Mental Illness Facts and Numbers. www2.nami.org/factsheets/mentalillness_factsheet.pdf.

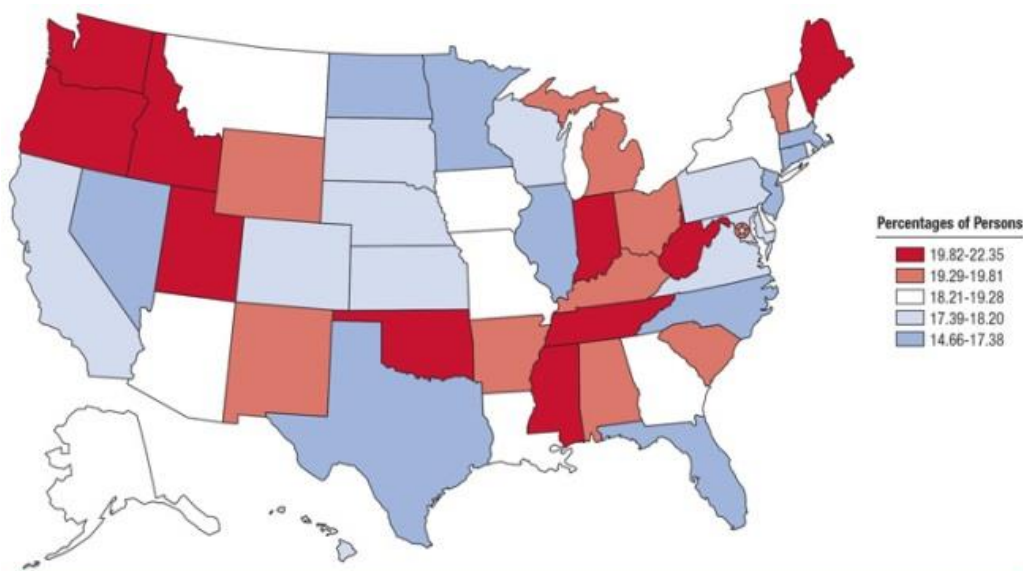
³³ The Wall Street Journal, "For the Mentally Ill, Finding Treatment Grows Harder." www.wsj.com/articles/

³⁴ SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health. www.samhsa.gov/data/sites/default/files/substate2k12-NationalMaps/NSDUHsubstateNationalMaps2012.pdf. 2010, 2011, and 2012

³⁵ Pennsylvania Healthcare Cost Containment Council. Hospital Readmissions in Pennsylvania. www.phc4.org/reports/readmissions/10/

³⁶ National Kids Count: www.aecf.org/resources/the-2012-kids-count-data-book/.

Map 4: Any Mental Illness in the Past Year among Persons 18 and Older by State; 2011-2012



Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Surveys on Drug Use and Health (NSDUHs), 2011 (revised October 2013) and 2012.

Looking at the overall five-county study area, the sub-state region³⁷ of Cumberland and Perry counties has the highest rate of mental illness with 18.4 percent of residents affected with some form of mental illness. This is an increase from 17.9 percent of residents having a mental illness in 2008-2010. In the sub-state region with Dauphin, Lebanon, and York counties, 17.2 percent of residents have some form of mental illness, a decline from 17.9 percent in 2008-2010. 4.0 percent of residents in Cumberland and Perry counties have a serious mental illness, while 3.7 percent of residents in Dauphin, Lebanon, and York have a serious mental illness. Both of these percentages have declined from 2008-2010 to 2010-2012.³⁸

Perry County also reports the highest suicide rate of the region (15.2 per 100,000 population). Suicide rates for the other counties are 12.9 in York, 12.8 in Dauphin, 12.0 in Cumberland, and 11.0 in Lebanon (all per 100,000 population).³⁹ At the same time, Perry County has the lowest mental health provider rate in the region with only 15 providers per 100,000 population, compared to 119 per 100,000 population in Pennsylvania. York County also has fewer mental health providers per 100,000 populations than the state, while Cumberland, Dauphin, and Lebanon counties have more providers

³⁷ Every state is parceled into regions defined by SAMHSA. The regions are defined in the 'Sub-state Estimates from the 2010-2012 National Surveys on Drug Use and Health'.

³⁸ SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health. www.samhsa.gov/data/sites/default/files/substate2k12-NationalMaps/NSDUHsubstateNationalMaps2012.pdf. 2010, 2011, and 2012

³⁹ Healthy People 2020, Mental Health and Mental Disorders – Pennsylvania Counties. www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders.

(See Table 12).^{40 41} 29.8 percent of hand-distributed survey respondents said they can find mental healthcare services in the region.

Table 12: Number of Mental Health Providers (per 100,000 population)

County	Number of MH Providers (per 100,000 population)
Cumberland	130
Dauphin	144
Lebanon	166
Perry	15
York	63
Pennsylvania	119

The shortage of mental health providers in Perry and York counties, both of which are specific to PinnacleHealth System’s study area, makes it difficult for those with mental health issues to get the necessary services for treatment in these areas. Health providers in the overall five-county study area and the PinnacleHealth System study area themselves realize that mental health services are lacking in the region; a majority of health providers (13.1 percent) list “access to mental healthcare” as the top improvement they would like to see in the current healthcare system as part of the provider survey. 11.7 percent of nurses would like to see “access to mental healthcare” as an improvement to the healthcare system, compared to 14.2 percent of other providers, which includes primary care physicians, dentists, physician assistants, and mental health therapists.

Hand-distributed survey results show that residents in the study area are dealing with mental health issues as reported in the secondary data. Among survey respondents, 15.2 percent reported a mental limitation in their daily lives, which is an increase from 14.5 percent in 2012. 35.9 percent of respondents indicated that they have been told they have a mental health concern, with Cumberland and York counties reporting the highest rate among survey respondents as 47.6 percent indicated they have mental health concerns. The most common mental health concerns were depression or bipolar disorders with 39.0 percent of respondents citing these conditions.

Additional information collected from the hand-distributed survey revealed 29.8 percent of respondents with a mental health concern reported that they have needed treatment in the past year but did not receive mental health services. When asked why they did not receive services, the majority said they “could make it on their own (20.3 percent).” The second highest response was that individuals “felt overwhelmed or confused by the system” (11.3 percent), followed by “they did not know where to go for treatment” (10.5 percent). For patients who have received mental health services, the majority did so via a mental health counselor (33.1 percent).

⁴⁰ County Health Rankings: www.countyhealthrankings.org/

⁴¹ Cumberland, Dauphin, Lebanon, Perry and York counties comprise the overall study area, as well as PinnacleHealth’s study area.

In the current study year, community leaders cited mental illness, on its own, is a barrier to receiving treatment in that an individual with mental illness may not necessarily recognize the need to seek treatment. Treatment, if any, is often reactive in the form of crisis intervention through hospital emergency rooms.

Community leaders stated that shortages in mental health providers, lack of access, and lack of knowledge and awareness of mental health treatment services are preventing residents in the region from obtaining the care they need. Community leaders cited this as a reason for the rise in mental health in 2012, stating that the demand for mental health services is growing and the supply is unavailable to treat those affected with mental health problems. Focus group participants in 2012 also reported long wait times and the lack of available mental health providers as being problematic to receiving mental health services. According to community leaders interviewed for the current CHNA, this is an issue that is still pressing and yet to be resolved.

Additional barriers include out-of-pocket costs/insurance coverage, negative social stigmas, and lack of health education also prevents individuals from seeking care. Many residents who have mental health issues tend to also have multiple behavioral diagnoses, making it even more essential for those in need to have access to and receive continuous treatment.

Substance Abuse

Along with mental illness, substance abuse is a major and growing issue across the United States, in the state of Pennsylvania, and the five-county study area. 24.6 million individuals 12 years or older were current illicit drug users during the time of the Substance Abuse and Mental Health Services Administration (SAMSHA) 2013 National Survey of Drug Use and Health. Specifically, marijuana usage is on the rise. Marijuana is the most commonly used illicit drug in the U.S., with 19.8 million users in 2013 compared to 14.5 in 2007. More than half of Americans aged 12 or older were current alcohol users in 2013 - approximately 137 million individuals. Of the 22.7 million individuals 12 or older in 2013 who needed treatment for an illicit drug or alcohol problem, only 2.5 million received treatment in a specialty facility.⁴²

Rates of marijuana usage are prevalent in the overall study area and the PinnacleHealth System study area, specifically in the sub-state region that includes Cumberland and Perry counties. Marijuana usage has increased in this region from 4.7 percent of individuals using marijuana in 2002-2004 to 5.6 percent in 2010-2012. Marijuana usage has remained at 4.7 percent in Dauphin, Lebanon and York counties from 2002-2004 to 2010-2012. In addition to marijuana, alcohol usage is increasing. The sub-state region that includes Cumberland and Perry counties saw an increase in the percentage of individuals who drank alcohol in the past month from 2002-2004 to 2010-2012 (44.0 percent to 50.6 percent); the same can be seen in the sub-state region that includes Dauphin, Perry, and York counties (49.2 percent to 52.3 percent).

⁴² SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health. www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf.

It is interesting to note that the counties with the highest percentage of individuals using marijuana and alcohol also have the highest perceptions of the risks of these substances.⁴³ One would expect to see that with higher perceptions of risk, there would be lower usage; unfortunately, this is not the case in the five-county study area.

Residents and health service providers in the five-county study area recognize the dangers of drugs and alcohol. Hand-distributed survey data shows drug and alcohol use as the most cited top health concern for the region, with respondents marking this 13.2 percent of the time. 23.9 percent of hand-distributed survey respondents said they can find services for people who drink too much and 25.1 percent said they can find services for people who use drugs in the region. In the 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.

Community leaders also understand the severity of substance abuse in the region. Community leaders cited that poor social economic factors in the region tend to evoke residents to use/abuse drugs, especially among those with preexisting mental health issues. If young people begin using drugs, the issue usually carries into adulthood.

Behavioral health is a major concern across the U.S., in the overall five-county study area, and the PinnacleHealth System study area. Undiagnosed and untreated behavioral health issues, including mental health and substance abuse, can lead to physical, emotional, and spiritual issues that generate into greater health problems. Individuals dealing with these issues need to have proper access to care and knowledge of where to receive care. A lack of behavioral health providers is an issue that is plaguing the nation. Continued failure to provide the necessary behavioral health services and treatment to those who need it could have detrimental effects on communities.

Priority #3: Healthy Lifestyles

A person's behaviors and lifestyle choices can affect one's health. Health behaviors, such as smoking or lack of physical activity, are risky health behaviors that can lead to chronic diseases. Oftentimes, people can control their health lifestyles. In some cases, though, socioeconomic factors and lack of education are reasons why people do not lead healthy lifestyles. It is important for health providers to begin teaching healthy behaviors and their benefits to their patients and community.

⁴³ SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health. www.samhsa.gov/data/sites/default/files/substate2k12-NationalMaps/NSDUHsubstateNationalMaps2012.pdf. 2010, 2011, and 2012

Lack of Physical Activity

Physical activity plays a large role in a person's overall health. Just like other health behaviors, such as smoking and alcohol usage, one's level of physical activity is a determinant of health. Failing to be physically active can increase a person's chance for chronic diseases and can have a negative effect on one's overall health. A study conducted by Stanford University School of Medicine found that inactivity plays a large role in the surge of obesity in the U.S.⁴⁴

The Office of Disease Prevention and Health Promotion created the Physical Activity Guidelines for Americans to provide recommendations on how to improve health through physical activity with the ultimate goal of increasing levels of physical activity in the U.S. According to the guide, regular physical activity includes participation in moderate and vigorous physical activities and muscle-strengthening activities.⁴⁵ Across the U.S., the majority of adults do not meet the Physical Activity Guidelines (See Table 13). The majority of youth, in Pennsylvania, also do not meet the Physical Activity Guidelines with over 70.0 percent failing to do enough aerobic physical activity to meet guidelines for youth.^{46,47}

Table 13: Percentage of Adults 18 and Older in the U.S. Who Met the Physical Activity Guidelines (2014)

Physical Activity Guideline	Percentage Who Met Guideline
Aerobic Physical Activity ⁴⁸	51.6%
Muscle-Strengthening Activity ⁴⁹	29.3%
Both Aerobic and Muscle-Strengthening Activity	20.6%

⁴⁴ Stanford Medicine. "Lack of exercise, not diet, linked to rise in obesity, Stanford research shows." <https://med.stanford.edu/news/all-news/2014/07/lack-of-exercise--not-diet--linked-to-rise-in-obesity--stanford.html>.

⁴⁵ Centers for Disease Control and Prevention: State Indicator Report on Physical Activity. www.cdc.gov/physicalactivity/downloads/pa_state_indicator_report_2014.pdf.

⁴⁶ Centers for Disease Control and Prevention: State Indicator Report on Physical Activity. www.cdc.gov/physicalactivity/downloads/pa_state_indicator_report_2014.pdf.

⁴⁷ Centers for Disease Control and Prevention. Youth Guidelines. <http://www.cdc.gov/healthyyouth/physicalactivity/guidelines.htm>. 2014. 60 minutes of aerobic activity per day, muscle strengthening three days per week, and bone strengthening three days per week.

⁴⁸ The Office of Disease Prevention and Health Promotion: Physical Activity Guide. <http://health.gov/paguidelines>. At least 150 minutes (2 hours and 30 minutes) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous intensity aerobic activity. Aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the week.

⁴⁹ The Office of Disease Prevention and Health Promotion: Physical Activity Guide. <http://health.gov/paguidelines/>. Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits.

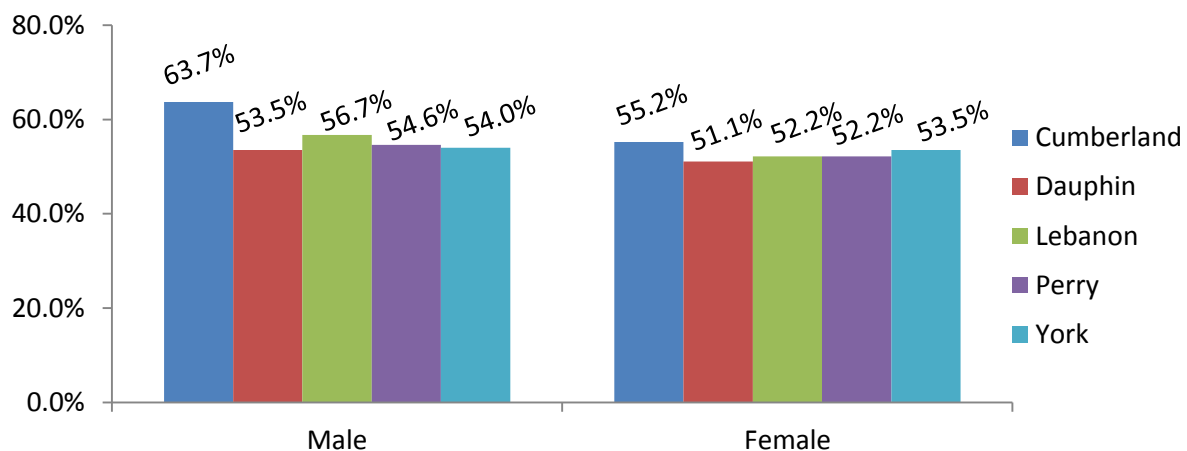
The majority of adults and youth in Pennsylvania also fail to meet Physical Activity Guidelines (See Table 2).⁵⁰ Rates fall slightly below U.S. national averages.

Table 14: Percentage of Adults 18 and Older in Pennsylvania Who Met the Physical Activity Guidelines (2014)

Physical Activity Guideline	Percentage Who Met Guideline
Aerobic Physical Activity	49.4%
Muscle-Strengthening Activity	27.8%
Both Aerobic and Muscle-Strengthening Activity	18.8%

In addition to the physical guideline percentages, 26.3 percent of adults in Pennsylvania engage in no leisure time physical activity and only 27.7 percent of adolescents in Pennsylvania are physically active daily. Aerobic physical activity percentages in the five-county study area fall between 50.0-60.0 percent for both males and females (See Chart 4). Health information and education in schools, community organizations, and media outlets need to reinforce the importance of daily physical activities and the overall health benefits of exercising.

Chart 4: Percentages of Adults 18 and Older Who Meet Aerobic Physical Activity Requirements, by Gender and County (2011)^{51,52}



⁵⁰ Centers for Disease Control and Prevention: Adult Obesity Facts. www.cdc.gov/obesity/data/adult.html.

⁵¹ Institute for Health Metrics and Evaluation. County Profiles. www.healthdata.org/sites/default/files/files/county_profiles/US. 2011.

⁵² The five counties that make up the overall study areas are also the counties in the PinnacleHealth study area.

In 2011, the aerobic physical activity rates in the PinnacleHealth System study area, which also has the same counties as the overall five-county study area, were higher than the 2014 rates in the state and nation almost across the board; primary data results show that physical inactivity is an issue in the region. According to the health provider survey, 20.6 percent of respondents listed “lack of exercise” as a top risky behavior in the communities they serve. Community leader interviews also revealed that physical inactivity is an issue in the overall five-county study area and the PinnacleHealth System study area.

Community leaders cite poor socioeconomic factors as one of the reasons for poor lifestyle habits, including a lack of physical activity. Studies show that people living in rural locations are more likely to be physically inactive, overweight, and obese compared to those living in more urban locations. Many of the resources available in urban communities for promotion of physical activity are not available in more rural locations.⁵³ The study area is predominantly rural and this may account for the physical inactivity in the region.

Education also plays a role in the lack of physical activity in the region. In 2012, focus group participants and community leaders discussed a lack of education on the importance of regular physical activity as a reason for the lack of physical activity in the region. In 2015, community leaders once again cited this as a main reason for physical inactivity in the region, stating that education and intervention needs to start early in a person’s life as a way to prevent larger health concerns in the long-run and prevent unhealthy lifestyles from being passed on through generations.

Hand-distributed survey results revealed an increase in physical activity levels despite the continued concern over physical activity in the region. In 2012, more than half of survey participants (68.1 percent) reported engaging in regular physical activity. In 2015, 75.2 percent of survey respondents reported partaking in regular physical activity, an increase of 7.1 percent between study years. This increase is an encouraging sign that community residents are aware that physical activity is necessary.

Inadequate Nutrition and Obesity

Obesity is a major issue across the U.S. and is prevalent among adults and youth in the nation. A number of lifestyle behaviors attribute to obesity rates, especially inadequate nutrition. Obesity can lead to a number of serious health conditions, such as heart disease, diabetes, and stroke. More than one-third of U.S. adults, or 78 million Americans, are obese.⁵⁴ Childhood obesity is also an issue in the U.S. where 17.0 percent or 12.7 million children aged 2 to 19 are obese.⁵⁵ Obesity affects some groups more than others, particularly non-Hispanic blacks and Hispanics (See Table 15).⁵⁶

⁵³ Schwantes, Timothy. “Using Active Living Principles to Promote Physical Activity in Rural Communities.” <http://activelivingresearch.org/using-active-living-principles-promote-physical-activity-rural-communities>.

⁵⁴ Centers for Disease Control and Prevention. “Adult Obesity Facts.” www.cdc.gov/obesity/data/adult.html.

⁵⁵ Centers for Disease Control and Prevention. “Childhood Obesity Facts.” <http://www.cdc.gov/healthyyouth/obesity/facts.htm>

⁵⁶ Centers for Disease Control and Prevention. “Adult Obesity Facts.” www.cdc.gov/obesity/data/adult.html

Table 15: Age-Adjusted Rates of Obesity by Race

Race	Percentage of Obese
Non-Hispanic Black	47.8%
Hispanic	42.5%
Non-Hispanic White	32.6%
Non-Hispanic Asian	10.8%

Obesity is also highest among middle-age adults (age 49-59) than any other age group with 39.5 percent of middle-age adults being obese.

Obesity rates also fare poorly in the state, having the 19th highest adult obesity rate in the nation at 30.0 percent. This was an increase from 24.0 percent in 2004 and 13.7 percent in 1990.⁵⁷ 11.7 percent of adolescents in Pennsylvania are obese.⁵⁸ Families, schools, and community organizations need to address and understand ways to combat the regional obesity problem specifically targeted towards youth.

The overall five-county study area and the PinnacleHealth System study area have high rates of obesity; almost one-third of all residents in the counties of the study areas are obese. In addition, obesity rates in these counties have either stayed the same or increased from 2010 to 2014; none have decreased (See Table 16).⁵⁹

Table 16: Percentage of Obese Adults by County

County	Adult Obesity Percent 2014	Adult Obesity Percent 2010
Cumberland	26%	26%
Dauphin	32%	32%
Lebanon	32%	29%
Perry	31%	30%
York	33%	31%

Looking specifically at childhood obesity, Lebanon County has the highest obesity rate among children in grades K-6 out of the five counties with 17.4 percent of children being obese. Among children in grades 7-12, Perry County has the highest obesity rate at 22.8 percent.⁶⁰

⁵⁷ The State of Obesity: Better Policies for a Healthier America. "The State of Obesity in Pennsylvania." <http://stateofobesity.org/states/pa/>.

⁵⁸ Centers for Disease Control and Prevention: "Obesity Prevalence." www.cdc.gov/obesity/data/prevalence-maps.html.

⁵⁹ County Health Rankings

⁶⁰ Pennsylvania Department of Health, Division of School Health Services 2012-2013

Poor nutrition is a top reason for obesity rates in the region. Community leaders, health providers, and community residents all recognize that obesity is an issue in the region and that poor nutrition leads to obesity. Community leaders interviewed for the current CHNA cite obesity and poor nutrition as top health issues. Health providers list obesity (17.5 percent) as “the most pressing health problem in the community they serve,” and heart disease/stroke (12.9 percent) and diabetes (12.7 percent) as the second and third most pressing health problems, both of which can stem from obesity. Health providers also listed poor eating habits as the riskiest behavior in the community, with 23.4 percent of health providers giving this response. 42.3 percent of hand-distributed survey respondents said they had been told that they were overweight or obese by a healthcare professional. Perry County had the highest rate of survey respondents being told they were overweight or obese with 54.7 percent reporting this.

Similar to the reasons for physical inactivity in the five-county study area, socioeconomic and education are the top reasons for inadequate nutrition in the region and subsequent obesity rates. In 2012, community leaders and focus group participants discussed the promotion of health education and access to healthy foods as two issues that are adding to the obesity issue in the region. The same sentiments are shared in 2015. Foremost, some residents are unable to afford and obtain fresh and healthy foods. 10.5 percent of residents in Perry County and 10.3 percent of residents in Cumberland County reported not being able to get healthy foods in the hand-distributed survey, both of which are the highest rates in the overall study area. Cumberland County also had the highest rate of residents who are unable to get healthy foods according to the 2012 hand-distributed survey. Many times, healthier, fresh foods are more expensive. This makes it difficult for some residents to obtain these types of foods and makes it more likely for poorer residents to purchase processed foods. Some leaders also said that some residents did not have a supermarket in the neighborhood. Some only had a “corner market” with little fresh food available. Community leaders see this as a major issue that adds to the obesity problem; healthy foods need to be more accessible.

Education also plays a role in the obesity problem. In 2012, focus group participants stressed the importance of teaching residents how to eat properly and healthy, especially for those on a budget. Community leaders also shared these sentiments in their interviews in 2012, stating that parents need to be taught how to eat nutritious meals and the importance of having a balanced nutritious diet so they instill these behaviors in their children. In 2015, community leaders once again stressed the need to provide health information and education on proper eating habits and the health issues that come from an improper diet and poor nutrition. Health information and education needs to be taught in schools to children as a means to pass on good and healthy eating habits.

Smoking

Tobacco is still a leading cause of death in the world according to the World Health Organization's published analysis (2000 and 2012). It is projected that lung cancers (along with trachea and bronchus cancers) caused 1.6 million (2.9 percent) deaths in 2012, up from 1.2 million (2.2 percent) deaths in 2000.⁶¹ Nearly one in five deaths is caused by smoking, equating to more than 480,000 deaths yearly in the United States (including deaths from secondhand smoke).⁶²

Remarkably, the rates of U.S. adult smokers have decreased from 20.3 percent in 2005 to 17.8 percent in 2013 representing the lowest rate since the Centers for Disease Control and Prevention (CDC) began tracking these figures.⁶³ The onset of more public awareness on the harmful effects of tobacco, the cost to smoke, strict work policies, and public policies banning and restricting smoking areas are examples that have reduced individuals from beginning to smoke or have influenced them to quit.

Americans of multiple race, American Indians/Alaska Natives, males, those who live in the South or Midwest, those who have a disability or limitation, those who are lesbian/gay/bisexual, the economically challenged, and those who have low education levels continue to have high rates of smokers.⁶⁴ Thus, work to inform the public on the dangers of smoking still needs to be completed in order to assist those in need.

Smoking harms nearly every organ in the human body and causes many diseases, and negatively affects the overall health of the user. People who are regularly around environmental tobacco smoke (secondhand smoke) have an increased risk of cancer because tobacco products and secondhand smoke have many chemicals that damage DNA.⁶⁵ Due to this risk, non-smokers should be more cognitive to where secondhand smoke is tolerated (e.g., public spaces, the home, the work environment, and other locations where smoking is enclosed).

When analyzing the 2015 hand-distributed surveys, more than one-third of survey respondents smoked (39.5 percent), while 22.4 percent smoked at some time in the past. Health providers who responded to the 2015 survey reported "tobacco use (14.3 percent)" as being a risky behavior in their community. Out of 13 risky behavior options to select from the survey, "tobacco use" was in the top third of responses.

Community leaders who were interviewed also specified smoking as a health-risk behavior due to stress, depression, cultural lifestyles, environmental factors, and the weak economy as contributors to residents engaging in tobacco use. Based upon these findings, it is clear that access to smoking cessation programs and preventative measures must be promoted and easily obtainable for community residents.

⁶¹ World Health Organization: <http://www.who.int/mediacentre/factsheets/fs310/en/>

⁶² Centers for Disease Control and Prevention: www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/

⁶³ Centers for Disease Control and Prevention: <http://www.cdc.gov/media/releases/2014/p1126-adult-smoking.html>

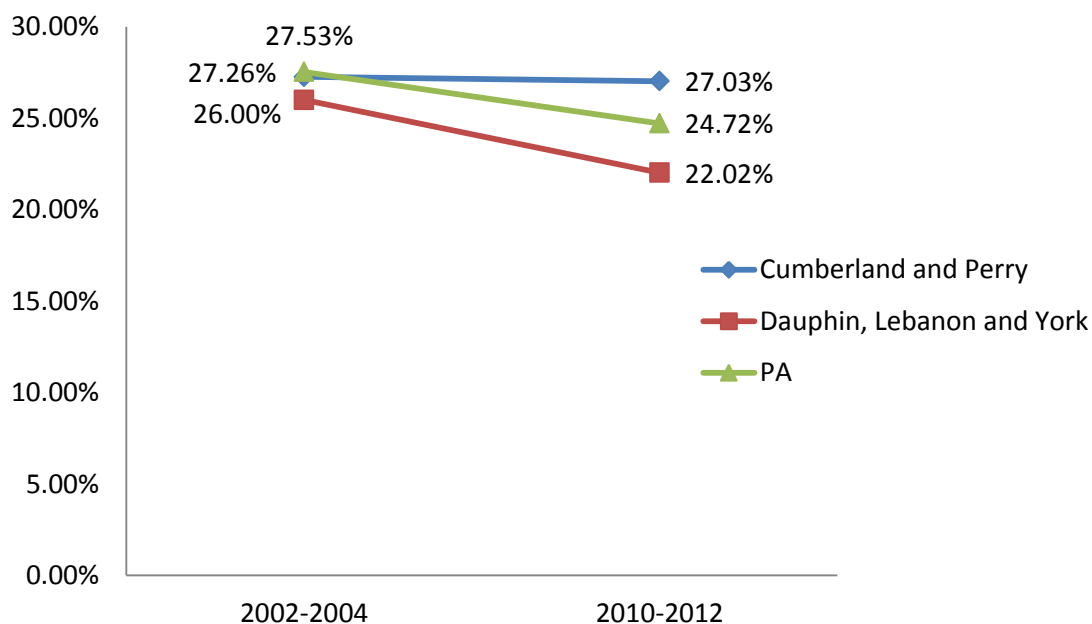
⁶⁴ Centers for Disease Control and Prevention: www.cdc.gov/media/releases/2014/p1126-adult-smoking.html

⁶⁵ National Cancer Institute: www.cancer.gov/about-cancer/causes-prevention/risk/tobacco

Organizations and health providers with available resources need to collaborate and identify ways to eliminate and reduce smoking in the community.

The National Survey on Drug Use and Health conducted by Substance Abuse and Mental Health Services Administration (SAMSHA; study years 2010, 2011, and 2012) reported that Cumberland and Perry counties have the highest rates of cigarette use and tobacco use within the study area at 27.0 percent and 34.0 percent, respectively. These rates are also higher than the Pennsylvania rate of 24.7 percent. However, all of the counties in the study area had decreased rates of cigarette use. Dauphin, Lebanon, and York counties went from 26.0 percent down to 22.0 percent and Cumberland and Perry counties went from 27.5 percent down to 27.0 percent (See Chart 5). The decreased percentages are encouraging signs that community members understand the long-term detrimental health effects of smoking; however, there is still a need for continued outreach regarding smoking cessation and the risks of smoking.

Chart 5: Cigarette Use (aged 12 years and older)



Smoking Cessation

Smoking is a preventable habit and quitting is not an easy feat for even the most committed individual. There are programs, information, and support units in the community that make quitting easier. Studies have shown that individuals who are young and are able to quit could be as healthy as those who are non-smokers.⁶⁶ According to the CDC, strategies such as the implementation of smoke free laws, raising tobacco prices, and increased funding for tobacco control programs can effectively put an end to tobacco use.⁶⁷

The information below, obtained from the CDC, highlights smokers who attempted to quit.⁶⁸ It is important to understand that smokers who attempt to quit smoking often fail within their first several attempts. Having a plan and being mentally and physically ready can assist individuals in overcoming hurdles that make quitting difficult.

- Among all current U.S. adult cigarette smokers, nearly 7 out of every 10 (68.8 percent) reported in 2010 that they wanted to quit completely.
 - Since 2002, the number of former smokers has been greater than the number of current smokers.
- Percentage of adult daily cigarette smokers who stopped smoking for more than 1 day in 2012 because they were trying to quit:
 - More than four out of 10 (42.7 percent) of all adult smokers
 - Nearly five out of 10 (48.5 percent) smokers aged 18–24 years
 - More than four out of 10 (46.8 percent) smokers aged 25–44 years
 - Nearly four out of 10 (38.8 percent) smokers aged 45–64 years
 - More than three out of 10 (34.6 percent) smokers aged 65 years or older
- Percentage of high school cigarette smokers who tried to stop smoking in the past 12 months:
 - Nearly five out of 10 (48 percent) high school students smoke

There are ample national and local support programs to assist those in need. Community residents must be able to utilize existing resources. Most programs have fundamental steps individuals should observe: being prepared, obtaining support and encouragement from family, friends, and healthcare providers, learning new skills and behaviors (changing daily routines), using medication correctly (nicotine patches, gum, etc.), and preparing for relapse and difficult situations.⁶⁹ Understanding why quitting smoking is important and having outlets to turn to is an essential channel for individuals to utilize within the first

⁶⁶ The Real Cost: <http://therealcost.betobaccofree.hhs.gov/costs/health-costs/index.html>

⁶⁷ Centers for Disease Control and Prevention: www.cdc.gov/media/pdf/releases/2014/p1126-adult-smoking.pdf

⁶⁸ Centers for Disease Control and Prevention:

www.cdc.gov/tobacco/data_statistics/fact_sheets/cessation/quitting/index.htm#overview

⁶⁹ Agency for Healthcare Research and Quality: www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/tobacco/clinicians/tearsheets/tearsheet.html

several weeks. Cigarette cravings along with temptation and withdrawal symptoms are daily struggles. Many programs encourage quitting smoking support options to be readily available and within reach.

Modifying and changing negative behaviors is challenging however, success is the ultimate reward. Information and the promotion of available resources are vital to encourage and support positive changes in behavior. Community residents must set goals and develop coping mechanisms and methods in order to accomplish small steps which will lead to noteworthy behavioral changes.

Smoking Prevention

Smoking prevention was seen as an important component under health behaviors. Smoking cigarettes has gained national attention over the last several decades and the negative health risks have been well-advertised. It is important to health and social services providers that smoking cigarettes does not begin for many in the community. Smoking prevention can be successful with combined efforts from families, schools, community, and government leaders' involvement.

It is alarming that a majority of today's smokers begin smoking before they are 18 years old. According to the American Lung Association, parents can set positive examples by not smoking and keeping their homes smoke-free. It was also noted that schools can provide tobacco prevention programs to educate students about the dangers of smoking. Government leaders can pass legislation to increase taxes on tobacco products, pass and implement comprehensive smoke free indoor air laws, and limit minors' access to tobacco products.⁷⁰

Media campaigns and social influences are factors that mold and influence children to want to try smoking. Unfortunately, many kids try smoking and ultimately become addicted. Studies reported that only 5.0 percent of high school-age smokers believe they will still be smoking five years after graduation, and many do not understand how difficult it is to quit smoking. Research shows that after eight years, 75.0 percent of those smokers will still be using some form of tobacco.⁷¹

Prevention programs are essential to the community's well-being and advocating for continued programs and involving strong local organizations and government leaders can produce robust public health partnerships.

Tobacco companies are bombarding media outlets in the hopes that new consumers use their products. The CDC reported that the tobacco industry spends about \$9.94 billion each year, or \$27 million every day, on cigarette advertising and promotion—72.0 percent of these dollars are spent on discounts to offset tobacco taxation and other tobacco control policies.⁷² It is clear further work is needed in schools,

⁷⁰ American Lung Association: www.lung.org/stop-smoking/about-smoking/preventing-smoking/

⁷¹ American Lung Association: www.lung.org/stop-smoking/about-smoking/preventing-smoking/why-kids-start.html

⁷² Centers for Disease Control and Prevention: www.cdc.gov/vitalsigns/adultsmoking/index.html

community organizations, agencies, and healthcare systems to educate and inform youth on the dangers of smoking and the long-term negative health effects of tobacco use.

Conclusions & Recommendations

PinnacleHealth System, partnering with community organizations and regional partners, understands that the community health needs assessment document is not the last step in the assessment phase but rather the first step in an ongoing evaluation process. Communication and continuous planning efforts are vital throughout the next phase of the CHNA. Information regarding the CHNA findings will be important to residents, community groups, leaders, and organizations that seek information.

In the assessment process, common themes and issues rose to the top as each project component was completed. The data collected from the overall assessment included feedback and input from community leaders, and hard-to-reach, underserved, and vulnerable populations. The information collected provides The Collaborative with a framework to begin evaluating, identifying, and addressing gaps in services and care, which will ultimately alleviate challenges for individuals living in the community.

Solidifying and reinforcing existing relationships and creating new relationships must be paramount in order to address the needs of community residents. Expanding and creating new partnerships with multiple regional entities is vital to developing community-based strategies to tackle the region's key community health needs.

The regional community health needs identified by The Collaborative include access to health services (which includes primary care, specialty care, and dental care), behavioral health services (focusing on mental health and substance abuse), and healthy lifestyles (concentrating on lack of physical activity, inadequate nutrition, obesity, and smoking cessation and prevention). The collection and analysis of primary and secondary data provided working group members with an abundance of information which enabled the group to identify regional health services gaps. Collaborating with local, regional, statewide, and national partners, PinnacleHealth System understands the CHNA is one component to creating strategies to improve the health and well-being of community residents.

Implementation strategies should take into consideration the higher need areas that exist in regions that are poorer and have greater difficulties in obtaining and accessing services. Tripp Umbach recommends the following actions be taken by PinnacleHealth System in close partnership with community organizations over the next several months.

Recommended Action Steps:

- Communicate the results of the CHNA document to PinnacleHealth staff, providers, leadership, boards, community stakeholders, and the community as a whole.
- Utilize the inventory of available resources in the community in order to explore further partnerships and collaborations.

- Implement a comprehensive grassroots, community engagement strategy to build upon the resources that already exist in the community including committed community leaders that have been engaged in the CHNA process.
- Develop working groups to focus on specific strategies to address the top identified needs of the health system and develop a comprehensive implementation plan.

APPENDICES



Appendix A: Project Mission

- Understand and plan for the current and future health needs of the communities in Cumberland, Dauphin, Lebanon, Perry, and Northern York counties.
- Identify the health needs of the communities served by The Collaborative, develop a deeper understanding of these needs, and identify community health priorities.
- Identify resources and system opportunities to increase access and utilization of services and improve the health and well-being of the population.

Appendix B: Process Overview

In the spring of 2015, PinnacleHealth System along with Carlisle Regional Medical Center, Hamilton Health Center, Holy Spirit–A Geisinger Affiliate, Penn State Milton S. Hershey Medical Center, and the Pennsylvania Psychiatric Institute, formed a collective workgroup to identify and address the needs of community residents living in Dauphin, Cumberland, Perry, Lebanon, and the northern tier of York County. The group, collectively known as The Collaborative, was established to evaluate and understand the region’s community health needs based upon their collective interests in the health and well-being of residents; in particular, addressing those needs in their service region.

A comprehensive community-wide CHNA process linked a wide-range of public and private organizations, such as health and human service entities, government officials, faith-based organizations, and educational institutions to evaluate the needs of the community. The 2015 assessment included primary and secondary data collection, which included: community stakeholder interviews, a hand-distributed survey, a health provider survey, public commentary surveys, and community forums. Trending information was provided to The Collaborative to provide additional insights into areas that the region improved upon and/or fell short.

An in-depth review of all primary and secondary data collected brought about the identification of key community health needs in the region. The Collaborative will explore and develop actions through an implementation phase, which will highlight, discuss, and identify ways each individual health system will meet the needs of the communities they serve.

Tripp Umbach directed, managed, and worked closely with members of The Collaborative to collect, analyze, review, and discuss the results of the CHNA, culminating in the identification and prioritization of community’s needs at the regional level.

The flow chart below depicts and outlines the process of each project component piece in the CHNA (See Chart 6).

Chart 6: Assessment Process Methods



Secondary Data

The health of a community is largely related to the characteristics of its residents. An individual's age, race, gender, education and ethnicity often directly or indirectly impact health status and access to care. Tripp Umbach completed a comprehensive analysis of health status and socioeconomic environmental factors related to the health and well-being of residents in the community from existing data sources such as: state and county public health agencies, The Centers for Disease Control and Prevention (CDC), County Health Rankings, The Substance Abuse and Mental Health Services Administration (SAMHSA), Healthy People 2020, Capital Area Coalition on Homelessness, Truven Health Analytics, and other additional data sources. Tripp Umbach benchmarked data against state and national trends and from the 2012 CHNA results, where applicable.

Tripp Umbach obtained data through Truven Health Analytics to quantify the severity of health disparities for every zip code in the needs assessment area, based on specific barriers to healthcare access. Truven Health Analytics provides data and analytics to hospitals, health systems, and health-supported agencies. The data resource, commonly referred to as Community Need Index (CNI), was used in the health assessment.

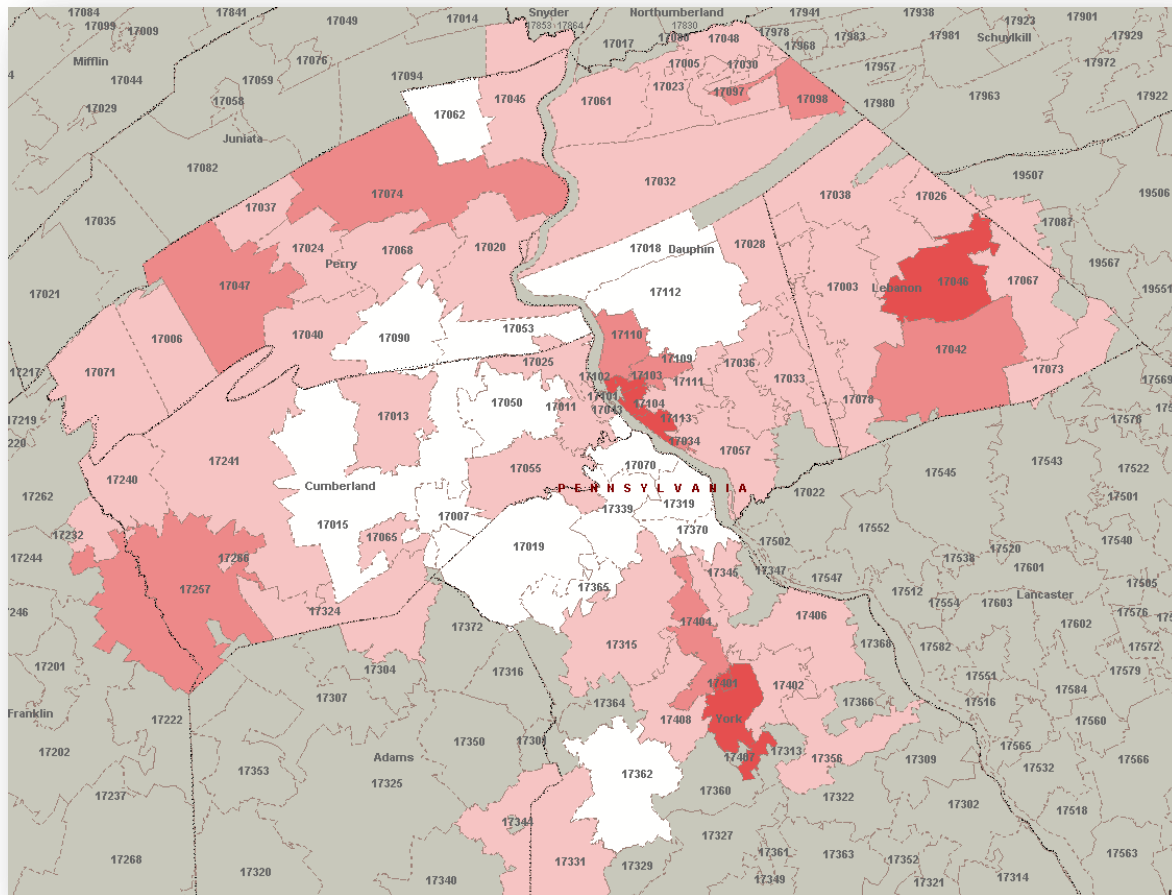
CNI considers multiple factors that are known to limit healthcare access; the tool is useful in identifying and addressing the disproportionate unmet health-related needs of neighborhoods. Five prominent

socioeconomic barriers to community health quantified in the CNI are: Income Barriers, Cultural/Language Barriers, Educational Barriers, Insurance Barriers, and Housing Barriers.

For 2015, the overall project study area was composed of 75 populated zip codes, while the PinnacleHealth System study area consisted of 30 populated zip codes. The collection and analysis of secondary data began March 2015 until April 2015.

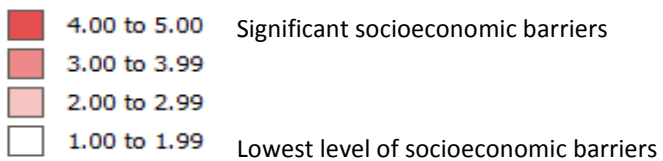
For reporting purposes, the overall study area or region refers to the 75 zip codes that were analyzed (See Map 5), while the PinnacleHealth System study area refers to the 30 zip codes (See Map 6).

Map 5: Overall Study Area 2015 (Community Needs Index Map)

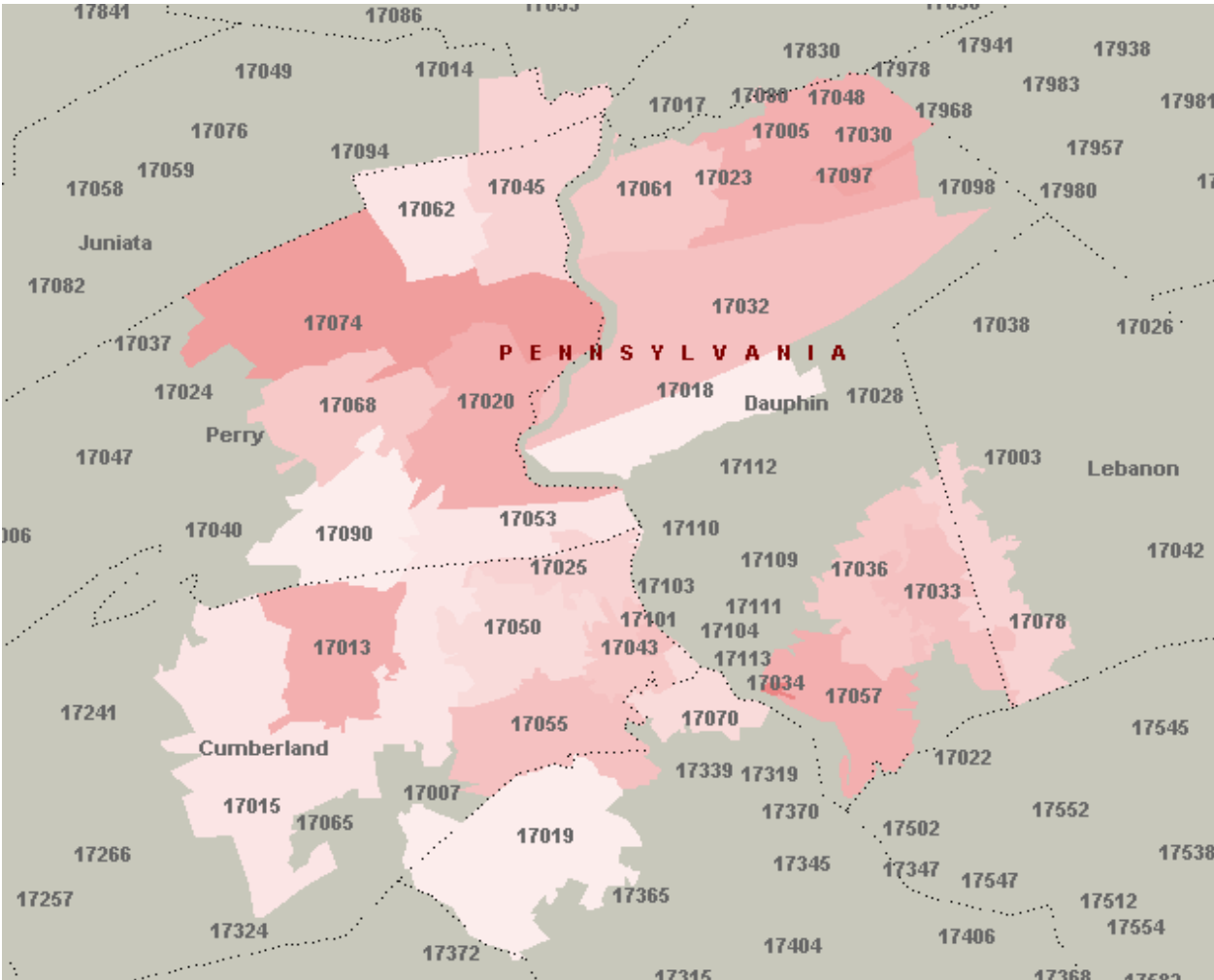


(*The darker shading indicates greater barriers to healthcare access)

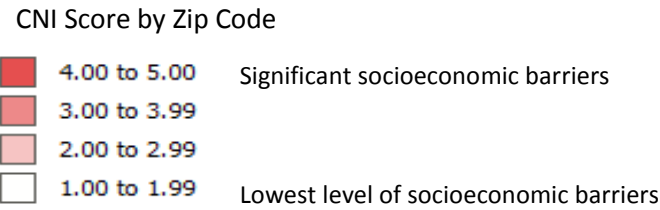
CNI Score by Zip Code



Map 6: PinnacleHealth System Study Area 2015 (Community Needs Index Map)



(*The darker shading indicates greater barriers to healthcare access)



The information below reflects key information collected from CNI.

Overall Study Area CNI Results

- The CNI score for the overall study area is 2.7. This is below the median CNI score of 3.0 (See Table 17).
- At the zip code level, the highest CNI score in the study area is 5.0 in the zip code areas of Harrisburg in Dauphin County (17104) and York in York County (17401). This indicates that these two zip code areas have the most barriers to accessing healthcare across the overall study area (See Table 17).
 - Harrisburg (17104) shows the highest rates across the overall study area for:
 - Children in poverty with married parents (52.0 percent)
 - Limited English proficiency (7.0 percent)
 - Minority population (82.0 percent)
 - Uninsured (18.0 percent)
 - York (17401) shows the highest rates across the overall study area for:
 - Unemployment (26.0 percent)
 - Rentals (70.0 percent)
- The lowest CNI score in the study area is 1.2 in the zip code areas of Boiling Springs (17007), Lewisberry (17339), and Wellsville (17365). These zip codes have the least barriers to healthcare access in the study area but, this does not mean that these areas require no attention (See Table 17).

Table 17: Overall Study Area CNI -Top 5 Zip Code Scores and Bottom 5 Zip Code Scores

Zip	City	County	Income Rank	Insurance Rank	Education Rank	Culture Rank	Housing Rank	2014 CNI Score
17104	Harrisburg	Dauphin	5	5	5	5	5	5.0
17401	York	York	5	5	5	5	5	5.0
17046	Lebanon	Lebanon	5	4	4	4	5	4.4
17103	Harrisburg	Dauphin	4	5	4	4	5	4.4
17403	York	York	5	4	4	4	5	4.4
17090	Shermans Dale	Perry	1	1	3	1	1	1.4
17319	Etters	York	2	2	1	1	1	1.4
17007	Boiling Springs	Cumberland	1	2	1	1	1	1.2
17339	Lewisberry	York	1	2	1	1	1	1.2
17365	Wellsville	York	1	1	2	1	1	1.2
Overall Study Area			2	3	2	2	4	2.7*

(*weighted average of total market)

- Of the 75 current zip code in overall study area:
 - 17 zip codes saw declines in CNI score (going to fewer barriers to healthcare)
 - 15 zip codes remained the same
 - 43 zip codes experienced rises in CNI score (now having more barriers to healthcare)
 - Zip code area 17074 (Newport) saw the largest increase in CNI score going from 2.2 to 3.2 (above the average).

- Of the five counties in the overall study area, Dauphin and Lebanon counties have the highest CNI score, or most barriers to healthcare access, with a score of 3.0. This score is equal to the median CNI score and typically indicates a specific socioeconomic factor is impacting the community's access to care (See Table 18; the below information also refers to Table 18).
 - This echoes findings from the 2012 study in which Dauphin and Lebanon counties reported the highest CNI score of 2.9 and 2.6.
 - Four of the five counties reported rises in their CNI scores, including Dauphin and Lebanon counties as well as Perry and York counties.
 - Lebanon and York counties experienced the largest rises in CNI scores from 2010 to 2014, each showing a 0.4 score rise.
- Unlike the previous study, Cumberland County now reports the fewest barriers to accessing care with a CNI score of 2.2 (the lowest across the counties in the study area).
 - Previously, it was Perry County that reported the lowest county level CNI score; for the current study, Perry County reports the second lowest CNI score.

Table 18: Overall Study Area County CNI Scores

County	2014 Total Population	Poverty 65+	Married w/ children Poverty	Single w/ Children Poverty	Limit English	Minority %	No High School Diploma	Unemployment %	Uninsured %	Rental %	Income Rank	Cultural Rank	Education Rank	Insurance Rank	House Rank	2014 CNI Score	2010 CNI Score
Cumberland	263,257	6%	9%	16%	1%	12%	9%	6%	5%	27%	1	3	2	2	3	2.2	2.2
Dauphin	263,264	8%	16%	33%	2%	31%	11%	9%	8%	34%	3	4	2	2	4	3.0	2.9
Lebanon	136,658	7%	14%	38%	2%	15%	14%	8%	7%	28%	4	3	3	3	2	3.0	2.6
Perry	47,018	7%	12%	35%	0%	5%	15%	7%	5%	20%	3	1	3	2	2	2.3	2.1
York	341,009	6%	14%	33%	1%	18%	12%	10%	7%	26%	2	3	2	2	3	2.8	2.4

(*weighted average of total market)

- The CNI score for the PinnacleHealth System study area is 2.2. This is a decrease from a CNI score of 2.5 from the 2010 data. Both scores are below the median CNI score of 3.0 (See Table 19).
- At the zip code level, the highest CNI score in PinnacleHealth System study area is 3.8 in the zip code areas of Highspire, Dauphin County (17034) and Newport, Perry County (17074). This indicates that these two zip code areas have the most barriers to accessing healthcare possible (See Table 19).
- The lowest CNI score in the PinnacleHealth System study area is 1.4 in the zip code areas of 17018 (Dauphin), 17019 (Dillsburg), and 17090 (Shermans Dale). These zip codes have the least barriers to healthcare access in the PinnacleHealth System study area, but this does not mean that these areas require no attention (See Table 19).
- Of the 30 zip codes in the PinnacleHealth System study area:
 - 8 zip codes saw declines in CNI score (going to fewer barriers to healthcare)
 - 8 zip codes remained the same
 - 14 zip codes experienced rises in CNI score (now having more barriers to healthcare)

Table 19: PinnacleHealth System CNI -Top 5 Zip Code Scores and Bottom 5 Zip Code Scores

Zip	City	County	Income Rank	Insurance Rank	Education Rank	Culture Rank	Housing Rank	2014 CNI Score
17034	Highspire	Dauphin	4	4	3	3	5	3.8
17074	Newport	Perry	5	1	4	2	4	3.2
17097	Wiconisco	Dauphin	5	2	4	3	1	3.0
17013	Carlisle	Cumberland	2	3	2	2	5	2.8
17020	Duncannon	Perry	4	2	3	2	3	2.8
17053	Marysville	Perry	1	2	2	1	2	1.6
17062	Millerstown	Perry	2	1	3	1	1	1.6
17018	Dauphin	Dauphin	1	1	3	1	1	1.4
17019	Dillsburg	York	1	2	1	1	2	1.4
17090	Shermans Dale	Perry	1	1	3	1	1	1.4
PinnacleHealth System Study Area			2	3	2	1	4	2.2

(*weighted average of total market)

- The PinnacleHealth System study area weighted CNI average score saw a decrease; going from 2.5 in the previous study to 2.2 (See Table 20). Both of these values fell below the median score of 3.0, still indicating fewer than average number of barriers to healthcare across the entire PinnacleHealth System study area.
- The zip code areas that experienced the largest rises in CNI for the PinnacleHealth System study area fell in Newport (17074), Wiconisco (17097 – with only 112 residents), Highspire (17034), Duncannon (17020), and Mechanicsburg (17055).

Table 20: PinnacleHealth System's Study Area CNI: Largest CNI Score Change

Zip	City	County	2014 Population	2014 CNI Score	2010 CNI Score	CNI Score Change
17055	Mechanicsburg	Cumberland	37,473	2.4	1.8	+0.6
17020	Duncannon	Perry	8,385	2.8	2.2	+0.6
17034	Highspire	Dauphin	2,192	3.8	3.2	+0.6
17097	Wiconisco	Dauphin	112	3.0	2.2	+0.8
17074	Newport	Perry	7,909	3.2	2.2	+1.0
17019	Dillsburg	York	17,999	1.4	2.0	-0.6
17045	Liverpool	Perry	3,682	2.0	2.6	-0.6
17061	Millersburg	Dauphin	6,868	2.2	3.0	-0.8
PinnacleHealth System's Study Area			374,335	2.2*	2.5*	-0.3

(*weighted average of total market)

Community Stakeholder Interviews

Community stakeholder interviews were conducted throughout the region to gain a deep understanding of the community's health needs from professionals, organizations, and agencies that have in-depth knowledge of the populations in need. The information collected provided committee members with knowledge and information regarding community resources, service gaps, risk utilization, and the community's health status.

Leaders from organizations that had public health expertise; were professionals with access to community health related data; and were representatives of underserved and vulnerable populations were invited to participate in the interviews. A list of community stakeholders was provided to Tripp Umbach to conduct interviews. An introduction letter was mailed announcing the reassessment and the importance of securing input from the community leaders. A total of 21 stakeholder interviews were conducted specifically in the PinnacleHealth System community; while 56 completed interviews in total were completed in the overall five-county service area.

A complete listing of organizations that were interviewed in the overall study area as part of the community stakeholder interviews process can be found in Appendix E. The community stakeholder interview process lasted from March 2015 until April 2015.

The overarching themes collected from community stakeholder interviews in the overall study area were (in chronological order of needs reported):

1. Health services
2. Behavioral & mental health
3. Access to care
4. Organizations
5. Environment
6. Health issues (obesity, diabetes, heart disease, respiratory problems, and cancer)
7. Health risk behaviors (alcohol & drug use, nutrition, exercise, smoking, and sexually transmitted diseases)
8. Dental health
9. Physician issues (insurance acceptance, availability, and physician shortages)
10. Language Issues (non-English languages)

The main themes collected from community stakeholder interviews in PinnacleHealth System's service area were (in chronological order of needs reported):

1. Mental and Behavioral Health
2. Health Services
3. Knowledge, Awareness, and Information
4. Access to care
5. Children and Families

Hand-Distributed Surveys

Tripp Umbach worked closely with The Collaborative to ensure that community residents, including underrepresented, underserved, low-income, vulnerable, and minority populations, or individuals/organizations representing those populations were included in the needs assessment through a survey process. A hand-distributed survey methodology was disseminated to hard-to-reach and vulnerable populations within the study area. The 2012 hand-distributed survey was revised to include additional mental and behavioral health questions.

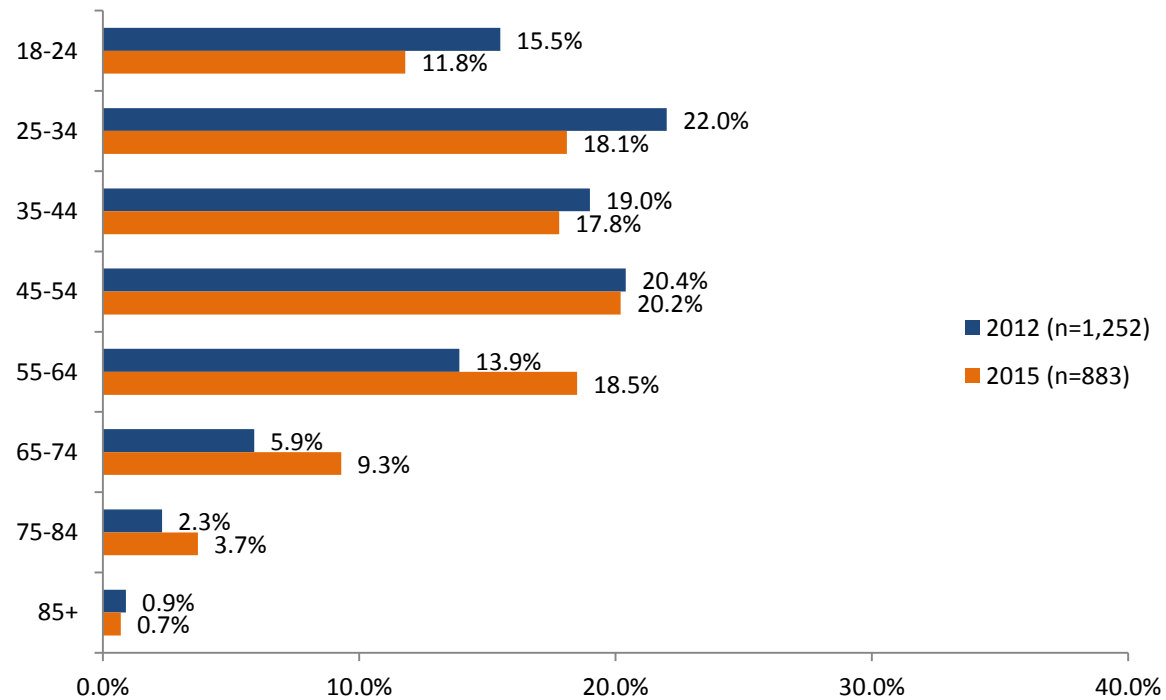
Working through community-based organizations, Tripp Umbach distributed the hand-distributed surveys to end-users in hard-to-reach, underserved, and vulnerable populations. Populations that were important to collect data from included: mental health individuals, seniors (fragile), homeless residents, substance abusers, non-English speaking populations, veterans, ex-offenders, victims of domestic violence, the uneducated/illiterate, and the working poor. Surveys were analyzed using SPSS software.

Partnering with community-based organizations was vital to the success and distribution of the hand-distributed surveys. Available in both English and in Spanish, 883 surveys were used for analysis in 2015 (where applicable Tripp Umbach provided trending information from the 2012 hand-distributed survey). 790 surveys were collected in English and 93 surveys were collected in Spanish. A total of 40 community organizations were involved in the dissemination and collection of the community hand-distributed survey in 2015. Key survey findings collected from the hand-distributed survey are outlined in the following sections.

Demographics:

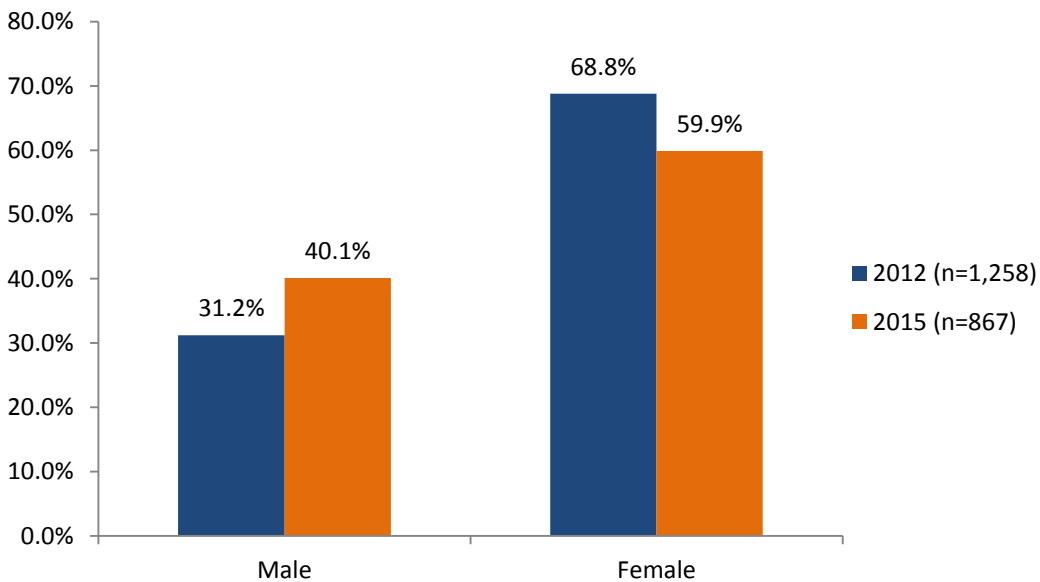
- The age break-out of survey respondents for the 2015 study was a standard distribution of ages, the largest age group being those aged 45-54 (20.2 percent), 0.7 percent aged 85+, and 11.8 percent aged 18-24 (See Chart 7).

Chart 7: Age



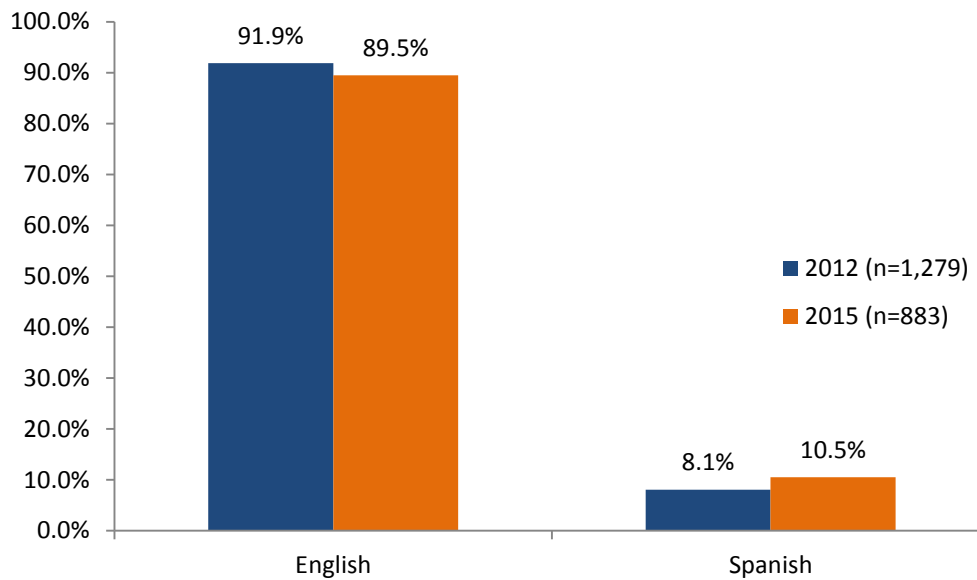
- The gender breakdown of survey respondents was closer to the area population (50.0 percent male/50.0 percent female) for the 2015 survey than the 2012 survey. For the current study, 59.9 percent of the survey respondents were female and 40.1 percent of the respondents were male (compared to 68.8 percent female and 31.2 percent male in the 2012 study) (See Chart 8).

Chart 8: Gender



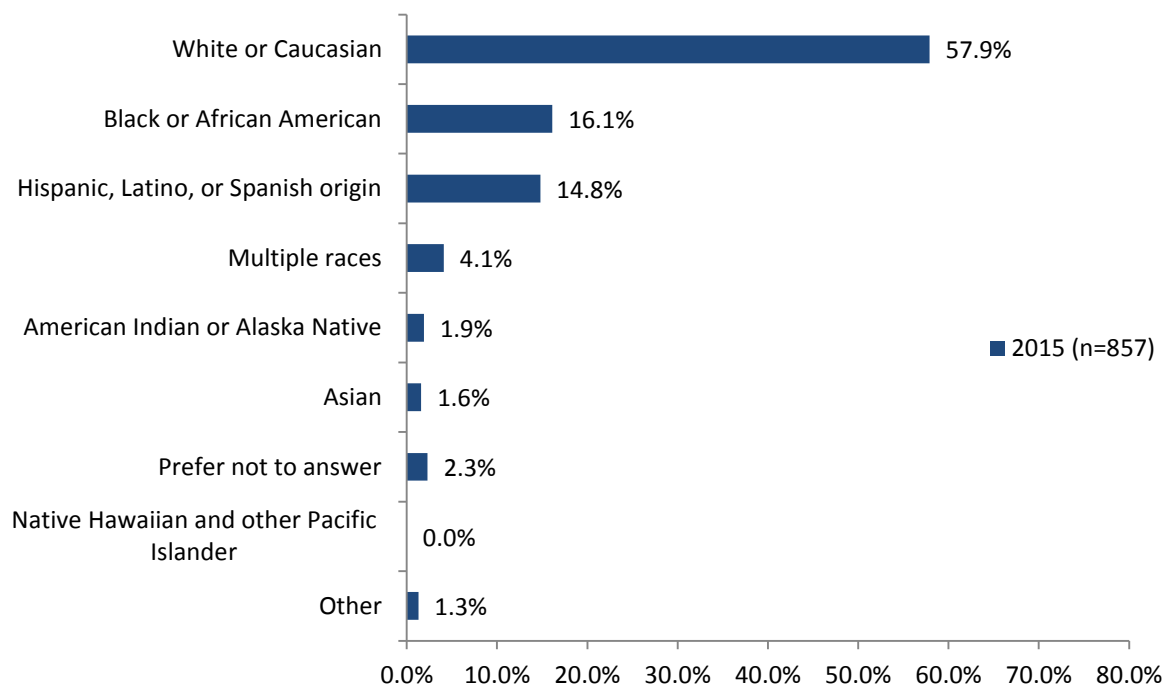
- In 2012, a total of 8.1 percent of the surveys were completed in Spanish. In the current study (2015), a higher percentage of the surveys were completed in Spanish (10.6 percent) indicating that this population was accessed to a greater degree in the current study (See Chart 9).

Chart 9: Survey Language



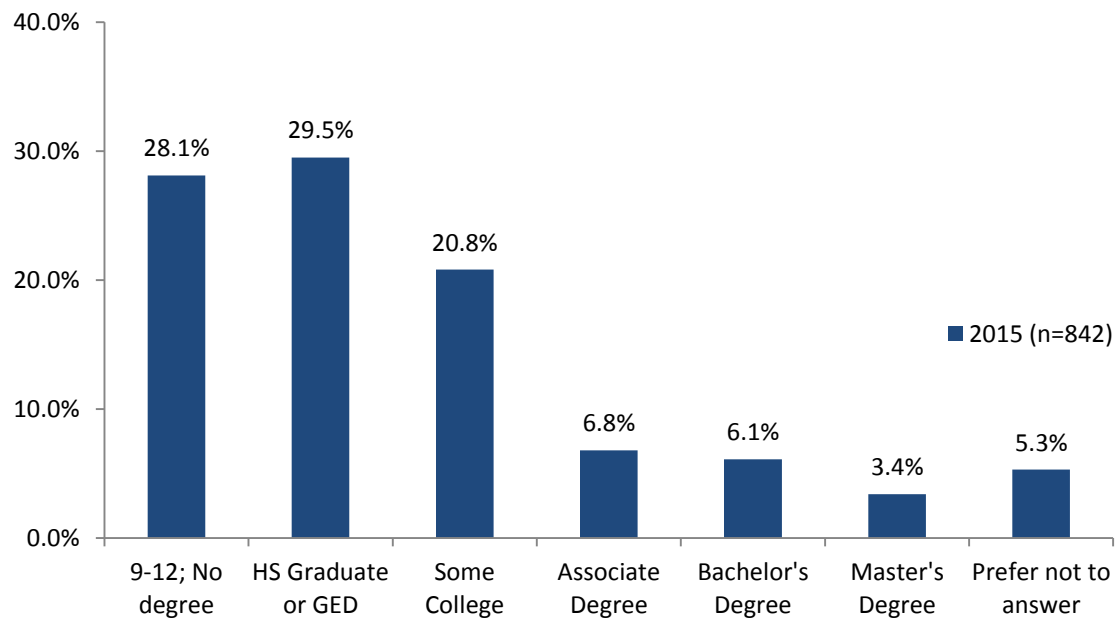
- White/Caucasian was the majority race of survey respondents at 57.9 percent; 14.8 percent of the survey population was Hispanic/Latino/Spanish; 16.1 percent was Black or African-American (See Chart 10).
 - Dauphin County reported the most diversity among the five study area counties where 39.8 percent of the survey respondents identified as White/Caucasian, 26.1 percent as Hispanic/Latino/Spanish, and 22.2 percent as Black/African-American.
 - Perry County reported the least diversity among the counties where 95.7 percent of the survey respondents identified as White/Caucasian, 2.1 percent as Hispanic/Latino/Spanish, and the final 2.1 percent as American Indian or Alaska Native.

Chart 10: Race and Ethnicity



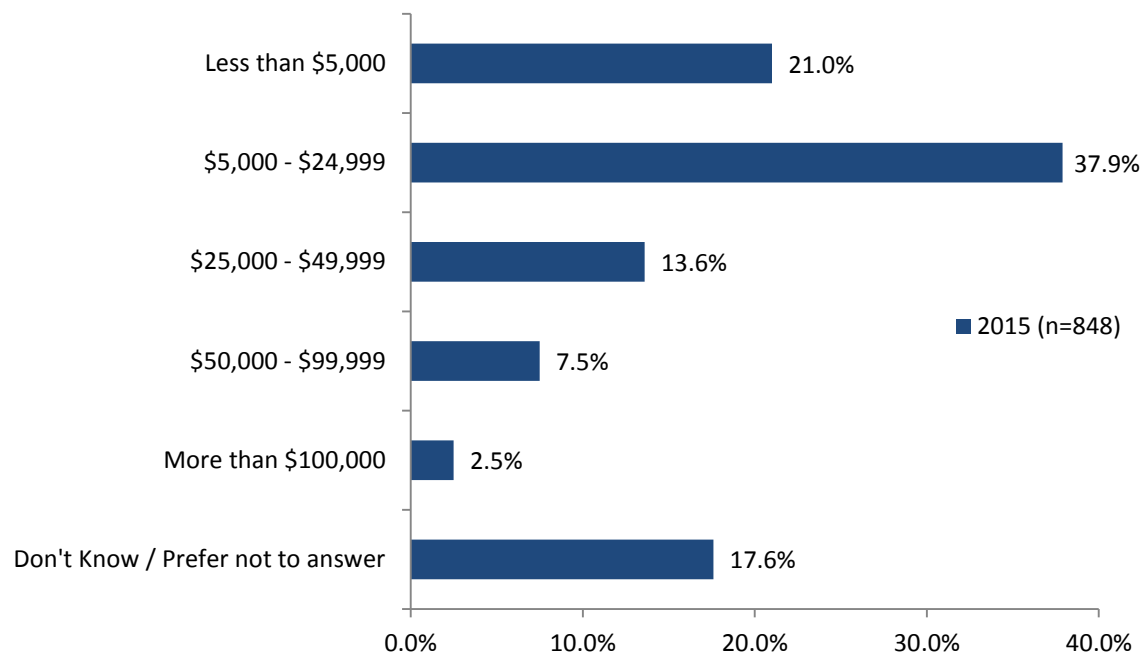
- Survey respondents reported having a high school diploma or GED at the highest rate (29.5 percent); 28.1 percent of the survey population had less than a high school diploma; 9.5 percent of the survey respondents had a Bachelor's degree or higher (See Chart 11).
 - All five of the study area counties reported the highest proportions of education levels falling in the high school graduate/GED and lower (no high school diploma or GED).

Chart 11: Education



- Survey respondents reported being in the \$5,000 - \$24,999 annual household income bracket at the highest rate (37.9 percent). This was important to gather input on community health needs of the area from those in lower-income brackets to understand the health needs of those needing services and care (See Chart 12).

Chart 12: Household Income



Overall Survey Response:

- In 2012, a total of 1,279 surveys were collected and analyzed.
- For the current 2015 study, a total of 883 surveys were analyzed (from a total of 978 surveys returned, surveys were omitted from analysis if respondents were under the age of 18 and/or their permanent residence was outside of the five-county study area: Cumberland, Dauphin, Lebanon, Perry, or York).
- A total of 40 community organizations were involved in the dissemination and collection of the hand-distributed survey in 2015.

Primary Healthcare

- 76.7 percent of survey respondents reported having a primary care provider (PCP).
 - This rate has declined slightly since the last study in which 78.1 percent of the survey respondents reported having a PCP.

- In 2015, survey respondents from Lebanon County reported the lowest rate of those having a doctor or PCP with only 63.1 percent.
- From both the previous study to the current study, the most common reason for respondents not having a primary care provider remained that they “cannot afford one” (66.3 percent in 2012, 51.9 percent in 2015).
 - Cannot afford was the top reason across the five-county study area.
 - For those in Cumberland and Dauphin counties, the next most common reason for not having a doctor/PCP was that they “cannot find one” (19.4 percent and 14.3 percent, respectively).
 - For Lebanon County, the second most common reason cited for not having a doctor/PCP was that respondents feel that they “don’t need one” (30.8 percent).
- Similar to the past study, survey respondents indicated that they seek care most often from the doctor’s office (60.0 percent for 2015).
 - The rate of survey respondents reporting going to the ER for care increased from the previous study (9.8 percent in 2012 to 10.0 percent in 2015).
 - The rate of respondents seeking care at urgent care centers rose from 2.0 percent in 2012 to 2.8 percent in 2015.
 - For Cumberland, Dauphin, Lebanon, and Perry counties; the second most common place that survey respondents went for primary care was a free or reduced cost clinic. For York County, the second most common place that survey respondents sought care was the emergency room (13.6 percent).
- 81.2 percent of survey respondents reported having seen their PCP within the past year. 3.4 percent reported seeing their doctor 5 or more years ago.
 - Due to the differences in number of surveys collected in each county (Dauphin=486, York=22), conclusions for how often respondents see their doctor by county was uneven. York County reported the highest rates of individuals seeing their doctor more than 5 years ago at 4.5 percent, but this was only one respondent; while Dauphin County reported 3.8 percent of the respondents seeing their doctor more than 5 years ago (this being 18 respondents).

Health Insurance

- 80.0 percent of survey respondents reported having health insurance (20.0 percent of respondents did not have health insurance).
 - This rate increased since the 2012 study in which 71.1 percent of the survey respondents reported having health insurance. It can be assumed that the PCA has a close relationship to

this rise in those reporting having health insurance; however, it is still noteworthy that this many new residents are taking advantage of and eligible for the PPACA.

- Lebanon and Dauphin counties reported the highest rates of residents without health insurance (24.5 percent and 24.4 percent, respectively); approximately one in every four residents did not have health insurance in these counties. York and Perry counties reported the lowest rates of residents not having health insurance (4.5 percent and 7.4 percent, respectively).
- Of respondents without health insurance, the most common reason for not having it was that they “cannot afford it” (51.0 percent); this is consistent with the 2012 study (49.2 percent could not afford it in 2012).
 - Not being able to afford it was the top response across the study area for residents not having health insurance.
- A shift in questions occurred from 2012 to 2015 for those without health insurance. In 2015, only those without health insurance were asked to respond to the following items; in the previous round, all respondents answered.
 - 64.3 percent of those without health insurance reported that not having insurance affected their ability to get services.
 - 65.6 percent reported not seeking care due to their lack of insurance.
 - Cumberland and Dauphin counties reported higher rates of respondents feeling that not having health insurance caused them to not seek care (71.4 percent and 68.6 percent, respectively). On the other hand, Perry and Lebanon counties reported higher rates of residents reporting that not having health insurance did not impact whether or not they sought care (60.0 percent and 52.6 percent, respectively).

Dental Care

- Understandably, the majority of survey respondents said they go to a dentist’s office when seeking dental care (58.4 percent in 2015).
 - However, a large number of respondents indicated that they do not go to the dentist (22.4 percent). Survey respondents of Cumberland County reported the highest rate of not going to the dentist (29.7 percent).
 - York County reported the highest rate of residents who go to a dentist’s office for dental care across the five-county study area (72.7 percent); however, they also had the highest rate of residents who seek dental care at the emergency room (9.1 percent, again, this can be related to the small sample size, 9.1 percent = 2 respondents).

- The majority of respondents reported going for dental care within the past year (50.6 percent).
 - A combined 18.0 percent of the respondents indicated that they have not seen a dentist in five or more years (10.1 percent) or they are not sure when the last time they saw a dentist (7.9 percent).
 - Lebanon County reported the highest rate of survey respondents indicating that the last time that they went to the dentist was five or more years ago (11.9 percent = 12 respondents).
- The majority of respondents reported paying for their dental services with dental insurance coverage (57.2 percent). Close to one-quarter of survey respondents (24.4 percent) reported having to pay out-of-pocket for their dental services while another 9.7 percent did not pay for their services.
 - Perry County reported the highest rate of survey respondents indicating that they had to pay out-of-pocket for their dental services (35.2 percent = 31 respondents).

General Health

- 75.2 percent of the survey respondents reported doing regular physical activity to stay healthy.
 - This rate increased since the last study in which 68.1 percent of the survey respondents reported doing physical activity.
 - Survey respondents from Perry County reported not doing physical activity to stay healthy at the highest rate (28.7 percent).
- Slightly more respondents reported being able to get healthy foods in 2015 (90.6 percent) than in 2012 (90.4 percent). Identical to the 2012 study, 90.9 percent of survey respondents reported that they ate fresh, healthy foods.
 - Survey respondents from Perry and Cumberland counties reported the highest rates of not being able to get fresh, healthy foods (10.5 percent and 10.3 percent, respectively).
 - Survey respondents from Cumberland County reported not eating fresh, healthy foods at the highest rate (15.3 percent).
- Close to half (42.3 percent) of the survey population reported being told that they are overweight or obese by a healthcare professional.
 - Perry County reported the highest rate of survey respondents being told that they are overweight or obese at 54.7 percent.
- In 2012, 28.9 percent of respondents indicated that they have high blood pressure; in 2015, this rate rose to 40.0 percent.
 - Perry County reported the highest rate of survey respondents that report having high blood pressure (45.3 percent).

- 18.7 percent of the survey population reported having diabetes.
 - Perry County reported the highest rate of survey respondents that report having diabetes (28.4 percent).
- In 2012 the rate of respondents reporting heart problems was 16.1 percent; in 2015 it rose to 18.9 percent.
 - Perry County reported the highest rate of survey respondents with heart problems (27.4 percent).
- 39.5 percent of survey respondents reported that they currently smoke, 22.4 percent smoked in the past, and 38.1 percent never smoked.
 - Lebanon County reported the highest rate of survey respondents who “currently smoke” at 58.3 percent.
- Of the respondents who indicated limitations to their daily activities, the most common limitation was physical at 26.4 percent, followed by mental (15.2 percent), emotional (13.2 percent), and spiritual (2.1 percent).
 - The rates of respondents reporting limitations declined from 2012 to 2015 for physical, spiritual, and emotional limitations.
 - The rate of respondents reporting mental limitations to their daily life rose from 14.5 percent in 2012 to 15.2 percent in 2015.
 - Survey respondents from Perry County reported physical limitations to their daily activities at the highest rate (35.5 percent) as compared with the other counties in the study area.
 - Cumberland County saw the highest rate, across the five-county study area, where respondents indicated that mental limitations affected their daily activities (22.2 percent).
- The rate of respondents indicating that they received a flu shot or flu nasal spray within the previous year rose from 48.7 percent in 2012 to 51.8 percent in 2015.
 - The majority of survey respondents from Cumberland, Dauphin, and Perry counties reported receiving the flu shot in the previous year.
 - However, a majority of survey respondents in Lebanon and York counties reported that they did not receive the flu shot or flu nasal spray within the previous year (61.6 percent and 68.2 percent, respectively).
- The rate of respondents reporting children or grandchildren (only those with children or grandchildren) with current immunizations fell from 83.0 percent in 2012 to 80.4 percent in 2015.
 - Perry and Cumberland counties reported the lowest rates of survey respondents indicating that their children/grandchildren’s immunizations were current (70.0 percent and 73.2 percent, respectively).

Community

- In 2012 and in 2015, the most common method from which respondents got information about their community was TV (21.4 percent).
 - The next most common methods were: Word-of-Mouth (20.7 percent), Newspaper (16.7 percent), and Internet (16.1 percent).
 - The Internet saw the largest rise in usage for respondents getting information about their communities (going from 12.7 percent in 2012 to 16.1 percent in 2015).
- The most common form of transportation for respondents was their car (51.7 percent).
- 71.5 percent of respondents indicated that they wear their seatbelt every time that they ride in a car.
 - Lebanon County survey respondents report “never” wearing a seatbelt at the highest rate (12.0 percent) compared to the other counties in the study area.
- Respondents reported feeling “somewhat safe” in their neighborhood/community at the highest rate (46.4 percent).
 - Respondents in Dauphin County reported feeling "Not at all safe" at the highest rate (17.4 percent or 82 respondents).
 - The top reasons why respondents did not feel safe in their community were crime (25.6 percent) and drug use or sales (22.9 percent).

Services

- For no very clear reason, in 2015, survey respondents reported being able to find or use services in their community at lower rates than they did in 2012.
 - Respondents reported being able to “find” services for people who use drugs, people who drink too much, and people over 60 years old at higher rates in 2015 verses 2012, but these are the only services that saw rises. Services for dental, vision, mental health, children, wellness education, employment assistance, housing assistance, pregnancy care, people with STDs, and people with HIV/AIDS all saw declines in the rates of respondents reporting they can “find” these services.
 - Respondents reported being able to “use” more services than they did in 2012. Survey respondents indicated the following services as being able to “use” at higher rates than they indicated in 2012: employment assistance, wellness education programs, mental health services, services for people over 60 years, services for people who drink too much, people who use drugs, and people with HIV/AIDS.
- In both 2012 and 2015, services for people with HIV/AIDS were the “hardest” services to find (reporting the lowest rate of “I can find” at only 14.2 percent in 2015).

- In 2012 and 2015, dental and eye care services were the “easiest” services for respondents to find.
- Respondents indicated the lowest rate of “I can use” for services for people with HIV/AIDS (3.5 percent).
- When asked to indicate the top five community health issues in their community, survey respondents indicated “Drug and Alcohol Use” at the highest rate (13.2 percent of respondents indicating this as a health concern).
 - The next top health concerns in the region were: Cancer (7.4 percent), Mental health (7.4 percent), Tobacco use (6.9 percent), and Diabetes (6.7 percent).
 - After drug and alcohol use, mental health was the second most mentioned health need for Cumberland, Dauphin and York counties with 9.1 percent, 7.4 percent, and 11.4 percent (respectively) of respondents indicating this. The second most mentioned health need in Lebanon County was Tobacco use with 8.5 percent of respondents reporting this. Finally, Cancer was the second most mentioned health need for Perry County with 10.9 percent of respondents indicating this.

Mental Health

- 35.9 percent of survey respondents indicated that they have been told that they have a mental health concern.
 - Cumberland and York counties report the highest rates of survey respondents indicating they have mental health concerns with 47.6 percent reporting this in each county.
- The most commonly reported mental health concerns were depression or bipolar disorders (39.0 percent reporting) and panic attacks, anxiety or PTSD (35.3 percent); the next highest being OCD at 9.3 percent.
- Of those reporting a mental health concern, 82.6 percent reported that they received services for their mental health concern in the past year; 17.4 percent reported that they did not receive services for their mental health concern in the past year.
 - Survey respondents from Perry County reported the highest rate of not receiving services for their mental health concern in the past year (24.1 percent).
- Those with mental health concerns obtained services from a mental health counselor at the highest rate (33.1 percent), followed by the county mental health system (21.1 percent).
- 60.1 percent of respondents with a mental health concern reported that their mental health concern has impacted their physical health.
 - The most commonly reported physical concern, as a result of a mental health concern, was chronic pain (27.3 percent) followed by high blood pressure (18.4 percent).

- 29.8 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 rate was highest in York (55.6 percent) and Lebanon (39.3 percent) counties.
 - 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 (20.3 percent). This finding is consistent for Dauphin and Lebanon counties. For Cumberland County, the top reason that survey respondents with a mental health concern did not receive services in the past year was that their insurance did not cover it (29.2 percent).
 - 11.3 percent of survey respondents indicated that they felt overwhelmed or confused by the system.
 - Other top reasons included: not knowing where to go (10.5 percent), not having insurance coverage for mental health services (10.5 percent), and being afraid to seek services (9.8 percent).

Provider Health Surveys

A provider health survey was created to collect thoughts and opinions of the health providers' community regarding the care and services they provide. A work session was held to create a provider health survey with members of The Collaborative. The Collaborative sent emails to their health providers requesting survey participation. An additional avenue used by Penn State Milton S. Hershey Medical Center was the posting of the provider health survey link in their internal company email to increase the response rate.

Survey data were collected from Survey Monkey from April 2015 – May 2015. In total, 654 surveys were collected.

Demographics:

- The rate of female respondents (72.1 percent) was much higher than male respondents (24.4 percent).
- More than three-fourths of survey respondents (82.9 percent) reported that they practice in Dauphin County, while 13.7 percent practice in Cumberland, 2.1 percent in Lebanon, 1.1 percent in Perry and 0.2 percent in York.
- More than one-half of respondents (61.9 percent) were 26-54 years old, while more than one-quarter (29.4 percent) were 55 years old and older.
- Slightly less than half of survey respondents (46.0 percent) planned on retiring in 15 or more years. 11.6 percent planned on retiring in less than five years.

- A majority of health providers are White/Caucasian (83.4 percent) while 6.5 percent reported being Asian, Black/African American, Hispanic/Latino/Spanish, Native Hawaiian/Pacific Islander, or American Indian/Alaska Native.
- More than three-fourths of respondents indicated that they are married (75.2 percent).
- 10.0 percent indicated that they have a GED/high school diploma or an associate degree, with 30.8 percent having a college degree, close to one-quarter having a post graduate degree (24.8 percent), and 26.7 percent reported having a medical degree.
- 30.7 percent of health providers reported having a household income of \$150,000 or more, 31.9 percent indicated having an income of \$75,000-\$149,999, and 11.9 percent stated having an income of \$74,999 and under.

Overall Survey Results:

- Slightly less than half of all survey respondents (48.2 percent) reported themselves as nurses – while one quarter (25.0 percent) reported that they were a physician specialist or a primary care physician.
- 77.6 percent of survey respondents indicated that they work in a hospital (55.4 percent) or a health clinic/hospital outpatient clinic (22.2 percent); with 13.5 percent practicing from a doctor's office.
- On average, 107 patients were seen at survey respondents' main facility per week. 42.1 percent of survey respondents reported seeing one to 40 patients, while 25.7 percent saw 41-80 patients and 30.2 percent saw 81 and more patients per week.
- Slightly more than one-third of survey respondents (33.8 percent) stated that they volunteer health services to people in the community. Of those volunteers, 82.1 percent volunteered 1-5 hours of health services per month.
- A vast majority of respondents (92.2 percent) rated the care that is provided at their main facility as "very good" and "good."
- Slightly more than half of respondents (51.5 percent) reported that the community where they provide care or services was "somewhat healthy"; while 10.5 percent reported the same community as "unhealthy."
- More than three-fourths of health providers (79.7 percent) indicated that they "strongly agree" and "agree" that there are high-quality healthcare programs and services in the community where they provide care. 16.3 percent reported a "neutral" agreement regarding high quality healthcare programs and services in the community.
- 63.1 percent "strongly agree" and "agree" that there are ample employment opportunities in the community where they provide care. More than one third (43.5 percent) "strongly agree" and "agree" there are ample human and social programs in the community.

- A majority of health professionals (83.5 percent) “strongly agree” and “agree” that the community where they provide care and services is a safe place to live.
- Barriers such as “out of pocket costs/high deductibles” and “no insurance coverage” (37.0 percent) prevent people from receiving care, according to health providers. The inability to “navigate the healthcare system” (14.5 percent) was another perceived barrier that has restricted people from receiving care.
- The top five most pressing health problems in the community, according to health providers, are: obesity (17.5 percent), heart disease and stroke (12.9 percent), diabetes (12.7 percent), mental health problems (11.5 percent), and aging problems (hearing/vision loss, arthritis etc.) (9.5 percent).
- Poor eating habits (23.4 percent), lack of exercise (20.6 percent), tobacco use (14.3 percent), alcohol abuse (11.4 percent), and substance abuse (11.2 percent) are the top five most pressing risky behaviors reported by health providers.
- The top five types of improvements that health providers would like to see in the current healthcare system were: affordable medication (13.1 percent), access to mental healthcare (13.1 percent), affordable healthcare (13.0 percent), timely access to specialty care (11.3 percent), and coordination of care (10.9 percent).
- It was reported that only 8.8 percent of health providers’ patients are 81-100 percent compliant with their treatment plan after they are seen.
- High cost of healthcare or medications (14.6 percent), personal reasons (11.9 percent), lack of insurance coverage (11.2 percent), lack of understanding treatment plan (10.6 percent), and difficulty “getting around” (8.6 percent) were reasons survey respondents believed their patients may be noncompliant to treatment/medication plans.
- More than three-fourths (80.4 percent) of health providers have adequate access to interpreter services.
- More than three-fourths of survey respondents (88.2 percent) require interpreter services one to five times per week.
- If interpreter services were needed, Spanish (60.4 percent) and Chinese (9.5 percent) were the top two languages needed for patients.
- Telephone service (64.0 percent) was the most reported type of service used for interpretation needs.

Cross Tabulation: Nurses vs. Other Health Providers

For reporting purposes, Tripp Umbach ran cross tabulations on nurses vs. other health providers to draw comparisons between the groups. Dental assistants, dentists, holistic providers, mental health counselors/therapists, midwives, nurse practitioners, pharmacists, physician assistants, physician specialists, and primary care physicians were grouped together and identified as “other health providers.” Respondents who self-reported their profession as being a nurse was its own separate category. Broken down, nurses encompassed 315 respondents and other health providers encompassed 339 respondents.

The following data are results from the cross tabulations.

- A majority of both nurses (92.8 percent) and other health providers (73.8 percent) practice in Dauphin County. 22.8 percent of other health providers practiced in Cumberland County compared to only 3.8 percent of nurses in the same county.
- The facility where nurses mostly provide care and services is in a hospital environment (69.5 percent); 42.2 percent of other health providers work in a hospital environment, while 29.8 percent work in a health/hospital outpatient clinic.
- On average, nurses typically see 3.8 patients in a week, while other health providers see 4.1 patients in a week.
- More than one-third of nurses (39.4 percent) and 28.9 percent of other health providers volunteer health services to people in the community.
 - Of those who volunteer, more than three-fourths of nurses (88.1 percent) and other health providers (75 percent) volunteer 1-5 hours per month for care.
- More than half of other health providers (59.1 percent) rate the care that is provided at their main facility as being “very good” compared to 43.9 percent of nurses.
- A very small percentage of nurses (3.2 percent) and other health providers (4.1 percent) rate the community where they provide care or services as being “very healthy.” 6.1 percent of nurses and 14.4 percent of other health providers rated the community where they provide care or services as being “unhealthy.”
- More than half of both nurses (60.0 percent) and other health providers (50.5 percent) “agree” there are high-quality healthcare programs and services in the community where they provide care and services.
- Other health providers (15.0 percent) “strongly agree” there are ample employment opportunities in the community where they provide care and services, compared to only 10.2 percent of nurses.
- Both nurses (23.4 percent) and other health providers (28.3 percent) “disagree” and “strongly disagree”, respectively, that there are ample human and social service programs in the community where they provide care and services.

- A majority of both nurses (85.3 percent) and other health providers (82.0 percent) “strongly agree” and “agree”, respectively, that the community where they provide care or services is a safe place to live.
- The top three perceived barriers nurses reported for people not receiving care are: “out of pocket costs/high deductibles (21.1 percent), no insurance (16.5 percent), and not being able to navigate the healthcare system (14.7 percent).”
- “No health insurance coverage (18.6 percent), out of pocket costs/high deductibles (17.8 percent), and not being able to navigate the healthcare system (14.4 percent)” were barriers to people not receiving care reported by other health providers.
- Nurses (15.6 percent) and other health providers (19.2 percent) both reported that obesity was the top health problem in the community. Nurses reported heart disease/strokes (15.6 percent) and diabetes (14.0 percent) were additional health problems in the community. Other health providers indicated mental health problems (14.7 percent) and diabetes (11.7 percent) as being health problems in the community.
- Top risky behaviors in the community, reported by both nurses and other health providers, were poor eating habits (23.2 percent vs. 23.6 percent) and lack of exercise (21.2 percent vs. 20.1 percent).
- Other health providers reported that increased access to mental healthcare is an improvement they would like to see in the current healthcare system (14.2 percent); while 11.7 percent of nurses reported this. Affordable medication (13.3 percent vs. 12.9 percent) and affordable healthcare (13.7 percent vs. 12.3 percent) were additional improvements nurses and other health providers would like to see in the current healthcare system.
- Only 9.7 percent of nurses and 8.1 percent of other health providers believe that 81 percent-100 percent of their patients are compliant with their treatment plans. “High cost of healthcare/medications” was the top reason why nurses and other health providers reported patients may be non-compliant to treatment or medication plans (14.5 percent).
- Both nurses (79.0 percent) and other health providers (81.6 percent) have adequate access to interpreter services. With more than half of both nurses (66.5 percent) and other health providers (55.6 percent) needing this services one to five times per week. Spanish was reported as being the most frequent language needed when translation services were required (nurses 64.0 percent; other health providers 56.9 percent). Telephone was the most common type of interpreter service used between by both groups (nurses 69.2 percent; other health providers 59.2 percent).

Public Commentary Surveys

Tripp Umbach solicited public comments from community leaders and residents. Survey respondents were asked to review the 2012 CHNA and adopted implementation plan. Respondents were then asked to complete a questionnaire, which provided open and closed response questions. The survey was offered in hard copy form at locations within the hospital, as well as electronically using a web-based platform (PinnacleHealth System collected public comments through a kiosk in lieu of a hard copy form). There were no restrictions or qualifications required from survey respondents to reply to the survey.

The collection period for the public comments began March 2015 through May 2015. A majority of the surveys were collected through the online survey platform and two surveys were collected from the kiosks. In total, 33 surveys were collected and analyzed.

Public Comments

When asked if the assessment “included input from community members or organizations” a majority of the survey commenters reported that it did (93.9 percent); while 6.1 percent did not know.

More than three-fourths (81.8 percent) of survey respondents reported the assessment that was reviewed did not exclude any community members or organizations that should have been involved in the assessment; with six participants or 18.2 percent not being sure.

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 presented in the CHNA”; 60.6 percent of commenters did not indicate that there were any needs not represented in the 2012 CHNA. However, two respondents (6.1 percent) reported that there are not enough mental health facilities to treat acute problems and issues related to domestic violence. Of the two respondents: women, young adults, seniors, and children were populations who experienced barriers to mental health treatment facilities to treat acute problems and issues related to domestic violence.

A majority of survey respondents (96.7 percent) indicated that the Implementation Plan was directly related to the needs identified in the CHNA.

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

Improving Access to Care:

- Assisting those to gain access to care
- Overall increased participation and activity level
- A new health care facility in Newport opened for primary care, specialty care, and diagnostic services to meet the needs of the community.

Improving Healthy Behaviors:

- Identified issues that are key to health and highlighted that health is a community effort
- Raised awareness and benefited from the community's dental services
- Identified key areas to target by soliciting community feedback
- Provided information that is required
- Raised awareness, focusing on quality of life for women, children, and minority groups in the community.
- Worked with population health management data

Additional feedback collected from survey respondents include:

- Mental health services in the area are needed. PinnacleHealth has indirectly served the community with mental health services and given assistance to the homeless population.

Community Forums

On June 18 and June 26, 2015, Tripp Umbach facilitated two public input sessions (community forums) with community organization leaders, religious leaders, government stakeholders, and other key community leaders at Hamilton Health Center and Holy Spirit–A Geisinger Affiliate's auditorium. The purpose of the community forums was to present the CHNA findings, which included existing data, in-depth community stakeholder interviews results, hand-distributed survey findings, and provider health survey results to obtain input in regards to 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, and identified and prioritized the top community health needs in the community. With input received from forum participants, The Collaborative prioritized and identified three top priority areas. They included: access to health services, behavioral health, and healthy lifestyles. Each of the prioritized areas has subcategories, which further illustrate the identified need.

1) ACCESS TO HEALTH SERVICES

- a. Primary care
- b. Specialty care
- c. Dental care

2) BEHAVIORAL HEALTH SERVICES

- a. Mental health
- b. Substance abuse

3) HEALTHY LIFESTYLES

- a. Lack of physical activity

- b. Inadequate nutrition and obesity
- c. Smoking cessation and prevention

Provider 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 priority 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; thus, it's available online on PinnacleHealth System's website.

Final Reports/Presentations

On July 28, 2015, Tripp Umbach presented the final findings from the CHNA to PinnacleHealth System. Top community health needs were identified by analyzing secondary data, primary data collected from key stakeholder interviews, hand-distributed surveys, provider health surveys, and community forums. Tripp Umbach provided support to the prioritized needs with secondary data (where available), and consensus with community stakeholders results, hand-distributed surveys, and health provider surveys. A final report was developed that summarized key findings from the assessment process including the final prioritized community needs.

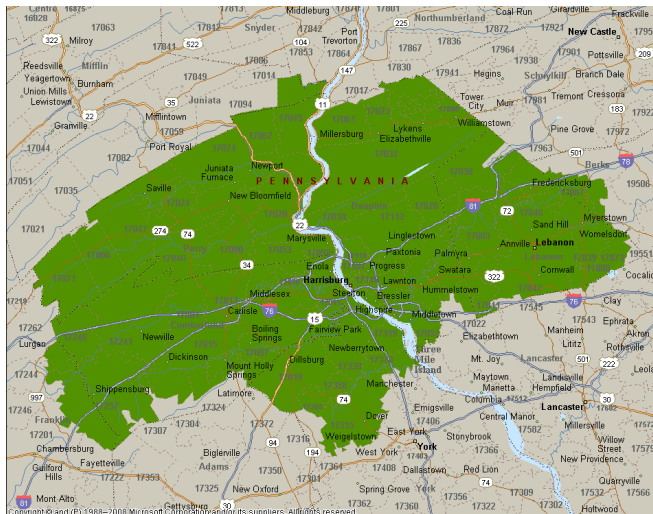
Appendix C: Overall Study Area Community Definition

The community defined by The Collaborative encompassed 75 zip codes for the 2015 CHNA study. The 75 zip codes represent the community served by Holy Spirit–A Geisinger Affiliate, Penn State Milton S. Hershey Medical Center, and PinnacleHealth System. The zip codes also represented 80.0 percent of inpatient discharges falling into five counties in South Central Pennsylvania: Cumberland, Dauphin, Lebanon, Perry, and York.

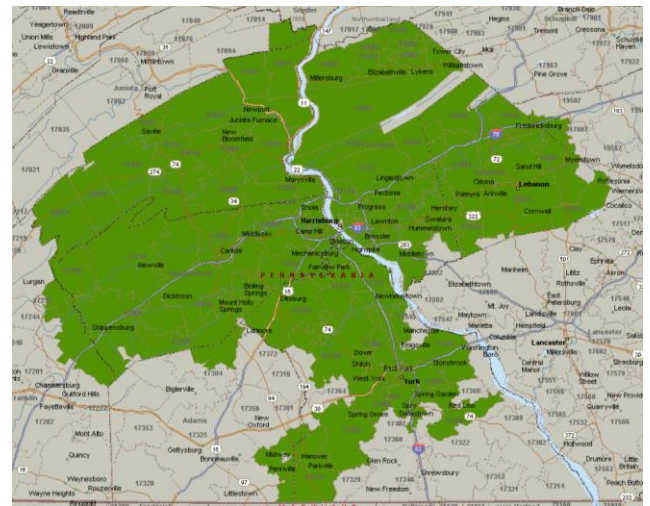
In 2012, a total of 66 zip codes were analyzed for The Collaborative, at the time representing 80.0 percent of inpatient discharges for the hospitals/health systems in the five-county area (Cumberland, Dauphin, Lebanon, Perry and York) (See Map 7).

Map 7: Overall Study Area for 2012 and 2015

2012 Overall Study Area Map



2015 Overall Study Area Map



The Overall Population and Demographics Snapshot

- Perry County is the only county in the study area that is predicted to have a population loss from 2014 to 2019. The overall study area is expected to have a population increase of 1.6 percent. For the 2012 study, all five of the study-area counties reported growth in population.
- Lebanon County has the highest 65+ population in the study area (17.9 percent). This rate is expected to increase in 2019 to 20.1 percent.*⁷³
- Cumberland County has the highest average household income at \$75,079. This is higher than the national average (\$71,320). Lebanon County has the lowest average household income at \$65,934.*

⁷³ *This finding is consistent with the 2012 CHNA study.

- Dauphin County has the highest percentage of individuals earning less than \$15K in 2014 (10.7 percent).
- Cumberland County has the highest rate of individuals earning a Bachelor's degree or greater. On the other hand, Perry County has the highest percentage of individuals without a high school diploma.*
- Dauphin County is the most racially diverse of the study-area counties; 17.1 percent of the population identify as Black, Non-Hispanic and 8.1 percent identify as Hispanic.*

The overall study area for the 2015 CHNA encompassed 75 zip codes. The 75 zip codes fell into five counties in South Central Pennsylvania: Cumberland, Dauphin, Lebanon, Perry, and York (See Table 21).

Table 21: Overall Study Area Community Zip Codes		
Zip Code	County	Zip City
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
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

17098	Williamstown	Dauphin
17102	Harrisburg	Dauphin
17103	Harrisburg	Dauphin
17104	Harrisburg	Dauphin
17109	Harrisburg	Dauphin
17110	Harrisburg	Dauphin
17111	Harrisburg	Dauphin
17112	Harrisburg	Dauphin
17113	Steelton	Dauphin
17003	Annaville	Lebanon
17026	Fredericksburg	Lebanon
17028	Grantville	Lebanon
17038	Jonestown	Lebanon
17042	Lebanon	Lebanon
17046	Lebanon	Lebanon
17067	Myerstown	Lebanon
17073	Newmanstown	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
17071	New Germantown	Perry
17074	Newport	Perry
17090	Shermans Dale	Perry
17019	Dillsburg	York
17315	Dover	York
17319	Etters	York
17331	Hanover	York
17339	Lewisberry	York
17345	Manchester	York
17356	Red Lion	York
17362	Spring Grove	York
17365	Wellsville	York
17370	York Haven	York
17401	York	York

17402	York	York
17403	York	York
17404	York	York
17406	York	York
17408	York	York

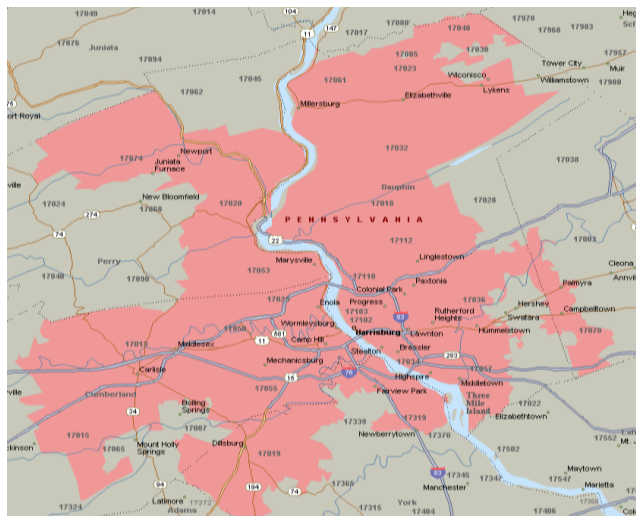
Appendix D: PinnacleHealth System Community Definition

A community can be defined in many different ways; the community served by PinnacleHealth System encompassed 30 zip codes for the 2015 CHNA study. The 30 zip codes fell into five counties in South Central Pennsylvania: Cumberland, Dauphin, Lebanon, Perry, and York (See Table 22).

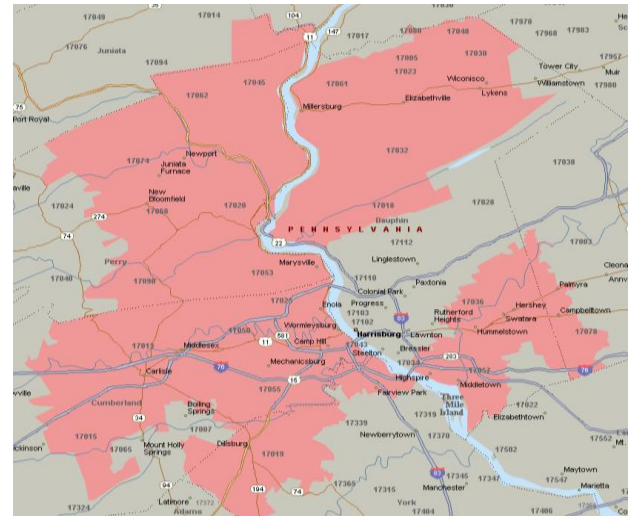
In 2012, a total of 31 zip code areas were analyzed for PinnacleHealth System, at the time representing 80.0 percent of inpatient discharges for the health system (See Map 8).

Map 8: PinnacleHealth System's Study Area for 2012 and 2015

2012 PinnacleHealth Study Area Map



2015 PinnacleHealth Study Area Map



PinnacleHealth System's Population and Demographics Snapshot

- The PinnacleHealth System study area is expected to have a population growth of 1.8 percent from 2014 to 2019.*
- 17.1 percent of residents in the PinnacleHealth System study area are age 65+. This is higher than the state rate (16.6 percent) and the national rate (14.2 percent).
- The PinnacleHealth System had lower rates of older individuals than the state in the 2012 study.
- The PinnacleHealth System study area has an average income of \$76,362. This is higher than both the state (\$69,931) and the nation (\$71,320).*
- The PinnacleHealth System study area has 15.7 percent of households earning less than \$15K in 2014. This is significantly lower than the rate in Pennsylvania (24 percent) and the nation (24.5 percent).*

- Cumberland County has the highest rate of individuals earning a bachelor's degree or greater. On the other hand, Perry County has the highest percentage of individuals without a high school diploma.*
- Dauphin County is the most racially diverse county of the study area, with 31.3 percent of its population identifying as a race other than White, Non-Hispanic. This is significantly higher than the PinnacleHealth System study area (11.0 percent).*

*The demographic information was consistent with the 2012 CHNA study to the 2015 CHNA study.

Table 22: PinnacleHealth System Study Area Community Zip Codes

Zip Code	City	County
17011	Camp Hill	Cumberland
17013	Carlisle	Cumberland
17015	Carlisle	Cumberland
17025	Enola	Cumberland
17043	Lemoyne	Cumberland
17050	Mechanicsburg	Cumberland
17055	Mechanicsburg	Cumberland
17070	New Cumberland	Cumberland
17005	Berrysburg	Dauphin
17018	Dauphin	Dauphin
17023	Elizabethville	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
17078	Palmyra	Lebanon
17020	Duncannon	Perry
17045	Liverpool	Perry
17053	Marysville	Perry
17062	Millerstown	Perry
17074	Newport	Perry
17090	Shermans Dale	Perry
17068	New Bloomfield	Perry
17019	Dillsburg	York

Appendix E: Overall Study Area Community Stakeholders

Tripp Umbach completed 56 interviews with community leaders in the overall study area to gain a deeper understanding of community health needs from organizations, agencies, and government officials that have a strong understanding from their day-to-day interactions with populations in greatest need. Some organizations had more than one person interviewed in their organization as part of the discussion process.

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

1. Alder Health Services
2. Capital Area Head Start
3. Capital Area Intermediate Unit
4. Carlisle School District
5. Catholic Charities
6. Central Pennsylvania Food Bank
7. Community Check-Up Center
8. CONTACT Helpline
9. County Commissioners Association of Pennsylvania
10. Cumberland – Perry Drug & Alcohol Commission
11. Cumberland – Perry Mental Health, Intellectual & Developmental Disabilities (MH.IDD)
12. Cumberland County Aging & Community Services
13. Cumberland County Crisis Intervention at Holy Spirit – A Geisinger Affiliate
14. Dauphin County Area Agency on Aging
15. Dauphin County Case Management Unit
16. Dauphin County Drug & Alcohol Services
17. Dauphin County Library System
18. Dauphin County Mental Health, Intellectual & Developmental Disabilities
19. Domestic Violence Services of Cumberland and Perry Counties
20. Gaudenzia, Inc.
21. Harrisburg Area Community College (HACC)
22. Harrisburg Area Dental Society
23. Harrisburg Center for Peace & Justice
24. Harrisburg Housing Authority
25. Health Ministries of Christ Lutheran Church
26. Hope Within
27. Latino Hispanic American Community Center of the Greater Harrisburg Region
28. Lebanon School District
29. Lebanon VA Medical Center
30. Mazzitti & Sullivan
31. Mechanicsburg School District

32. Mental Health Association of the Capital Region
33. National Alliance for the Mentally Ill (NAMI) of Dauphin County
34. Northern Dauphin Human Services Center
35. Partnership for Better Health
36. Pastoral Care at Holy Spirit–A Geisinger Affiliate
37. Pennsylvania Department of Health – South Central District Office
38. Pennsylvania Immigrant and Refugee Women's Network
39. Pennsylvania Psychiatric Institute
40. Pennsylvania State Representative
41. Perry County Commissioner
42. Philhaven Hospital
43. Pressley Ridge
44. Sadler Health Center
45. The Foundation for Enhancing Communities
46. The Hershey Company
47. Tri County Community Action
48. United Way of the Capital Region
49. Wesley Union African Methodist Episcopal Zion Church
50. YMCA Camp Curtin

Appendix F: PinnacleHealth System

PinnacleHealth System, in response to their community commitment, contracted with Tripp Umbach to facilitate a comprehensive CHNA.

The CHNA was conducted between February 2015 and August 2015. As a partnering hospital of a regional collaborative effort to assess community health needs; PinnacleHealth System collaborated with Carlisle Regional Medical Center, Hamilton Health Center, Holy Spirit—A Geisinger Affiliate, Penn State Milton S. Hershey Medical Center, and the Pennsylvania Psychiatric Institute across a five-county region (Cumberland, Dauphin, Lebanon, Perry, and York) during the CHNA process.

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 CHNAs every three years. The CHNA process undertaken by PinnacleHealth System 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 PinnacleHealth System.

PinnacleHealth System is a pioneer not-for-profit healthcare system dedicated to improving the health and quality of life for the people of Central Pennsylvania since 1873. A proven leader in medical innovation, PinnacleHealth System offers a wide range of services from primary care to the most complex surgeries and Magnet recognition for nursing excellence. The healthcare network includes four campuses (Community, West Shore, Harrisburg and Polyclinic) with three acute care hospitals with a total of 636 beds. PinnacleHealth System is part of River Health ACO, an accountable care organization (ACO) in the Medicare Shared Savings Program (MSSP). Medical services, including family practice, imaging, outpatient surgery and oncology are offered at multiple locations throughout the region. Through programs such as community health centers, senior living services, nutrition programs, nurse-family partnerships, and more, PinnacleHealth System provides more than \$12 million in charity care annually for healthcare services and health education.

For a complete list of services, visit our website at www.PinnacleHealth.org

Appendix G: The Collaborative

The CHNA was overseen by a committee of representatives from each of the six sponsoring organizations. Members of The Collaborative and the organizations they represent are listed below.

Name	Title	Organization
Carolyn Moore	Director of Marketing and Business Development	Carlisle Regional Medical Center
Terese DeLaPlaine J.D.	Senior Compliance Officer	Hamilton Health Center
Jeannine Peterson MPA	Chief Executive Officer	Hamilton Health Center
Steven Bucciferro	Administrative Director; Behavioral Health Services	Holy Spirit—A Geisinger Affiliate
Joni Fegan	Director of Planning	Holy Spirit—A Geisinger Affiliate
Sue Stuart, CFRE	Chief Development Officer	Holy Spirit—A Geisinger Affiliate
Austin Cohrs, MPH	Project Manager	Penn State College of Medicine
Elizabeth Conrad, BS	Administrative Associate	Penn State Milton S. Hershey Medical Center
Judy Dillion, MSN, MA, RN	Director of Community Health	Penn State Milton S. Hershey Medical Center
Jim George, BA	Director of Community Relations	Penn State Milton S. Hershey Medical Center
Cara Pennel	Assistant Professor	Penn State College of Medicine
Gail Snyder, MPA	Instructor	Penn State College of Medicine
Ruth Moore	Director; Business Development	Pennsylvania Psychiatric Institute
Tina L. Nixon	Vice President, Mission Effectiveness and Chief Diversity Officer	PinnacleHealth System
Buff Carlson, CPA, MBA	Director of Treasury Operations—Finance	PinnacleHealth System
Kathy Gertler, Paramedic, LPN	Community Paramedic Program Coordinator—Community LifeTeam, Inc.	PinnacleHealth System
Stefani McAuliffe, MPA	Manager, Community Initiatives—Mission Effectiveness	PinnacleHealth System
Keria Meals, BA	Marketing Coordinator—Marketing and Public Relations	PinnacleHealth System
Barbara J. Terry, RN, BSN, MS, NHA, DMin.	Community Health Advisor	PinnacleHealth System

Appendix H: 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 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 healthcare needs and is a strong indicator of a community's demand for various healthcare 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 2014 source data. The five barriers are listed below, along with the individual 2014 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, that 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

- 2014 Demographic Data, The Nielsen Company
- 2014 Poverty Data, The Nielsen Company
- 2014 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 I: Tripp Umbach

Carlisle Regional Medical Center, Hamilton Health Center, Holy Spirit—A Geisinger Affiliate, Penn State Milton S. Hershey Medical Center, Pennsylvania Psychiatric Institute, and PinnacleHealth System contracted with Tripp Umbach, a private healthcare consulting firm headquartered in Pittsburgh, Pennsylvania to complete the CHNA. Tripp Umbach is a recognized national leader in completing CHNAs, having conducted more than 250 CHNAs over the past 20 years; more than 25 of which were completed within the last three years. Today, more than one in five Americans lives in a community where Tripp Umbach has completed a CHNA.

