UPMC Horizon

Community Health Needs Assessment

And

Community Health Strategic Plan

June 30, 2016

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EXECUTIVE SUMMARY

UPMC Horizon Plays a Major Role in its Community:

UPMC Horizon is a nonprofit, 158-bed acute-care teaching hospital located in Mercer County, Pennsylvania, approximately an hour northwest of Pittsburgh, Pennsylvania. Operating from campuses located in Farrell and Greenville, Pennsylvania, this state-of-the-art hospital delivers a full range of quality medical services — including highly specialized medical and surgical treatment — to the residents of Mercer County.

UPMC Horizon maintains a historically strong connection with its community, and offers an array of community-oriented programs and services to improve the health of local residents. An example of the hospital's continuing involvement with the community is active participation in the Community Health Partnership of Mercer County, one of the Commonwealth of Pennsylvania's State Health Improvement Programs (SHIP). Across the state, SHIPs help increase broad awareness of public health issues by promoting community-based partnerships and empowering communities to address local health needs.

UPMC Horizon in the Community

UPMC Horizon employs nearly 900 individuals, and has an economic impact of $249 million.

In 2015, the hospital provided $8.3 million in charity care and unreimbursed amounts from programs for the poor.

UPMC Horizon is part of UPMC, a leading Integrated Delivery and Finance System (IDFS) headquartered in Pittsburgh, Pennsylvania.

Identifying the Community's Significant Health Needs:

In Fiscal Year 2016, UPMC Horizon conducted a Community Health Needs Assessment (CHNA) in keeping with requirements described in section 501(r)(3) of the Internal Revenue Code. Building on the initial CHNA conducted in Fiscal Year 2013, the Fiscal Year 2016 CHNA provided an opportunity for the hospital to re-engage with community stakeholders in a rigorous, structured process guided by public health experts.

An ongoing objective of the CHNA effort is to help align community benefit programs and resources with community health needs. This report documents progress toward addressing the significant health needs identified in Fiscal Year 2013, as well as an implementation plan to address new and ongoing community health needs throughout the Fiscal Year 2016-2019 period.

UPMC partnered with experts at the University of Pittsburgh Graduate School of Public Health (Pitt Public Health) to conduct the CHNA using a best-practice methodology. The assessment blended analysis of documented health and socioeconomic factors with a structured community input survey process that solicited feedback from a community advisory panel composed of leaders and organizations that represent patient constituencies, including medically-underserved, low-income, and minority populations within the hospital's community.

Addressing the Community's Significant Health Needs:

When the Fiscal Year 2013 CHNA was conducted, the significant health needs identified at that time were:

- **Cancer**
- **Care Coordination and Continuity**

Three years later, when the Fiscal Year 2016 CHNA was conducted, UPMC Horizon affirmed the following health need:

- **Primary Care**

By organizing efforts related to care management and chronic disease management — such as cancer, heart disease, and diabetes — under "Primary Care," UPMC Horizon will focus implementation efforts to make a greater impact on health improvement.

On April 26, 2016, the UPMC Horizon Board of Directors adopted an implementation plan to address the significant health needs identified in the Fiscal Year 2016 CHNA, and to set measurable targets for continued improvement. The plan drew support from an array of community partners, as well as from the larger UPMC system. This plan builds upon the Fiscal Year 2013 plan, recognizing that significant health issues will generally need more than two to three years to show meaningful improvement.

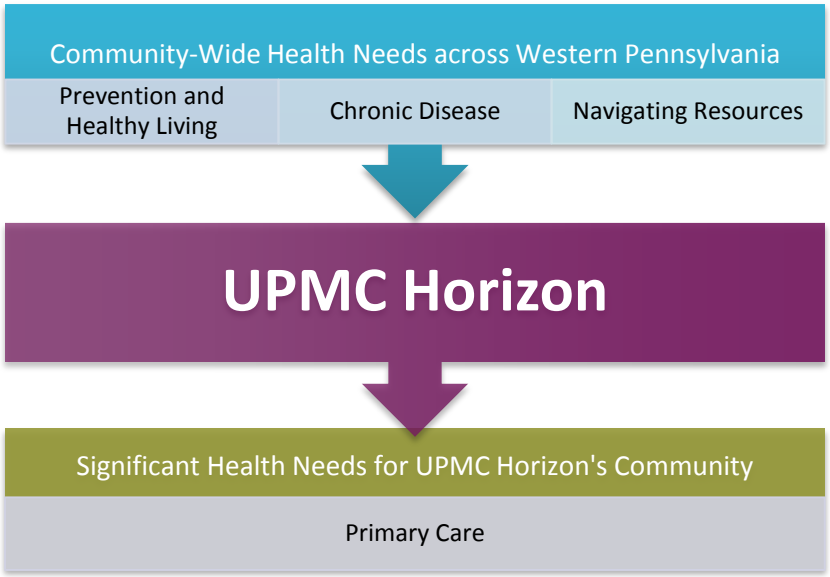
Topic	Importance to the Community
Primary Care	Chronic diseases, such as cancer, heart disease/stroke, and diabetes are prevalent in Mercer County. Primary care settings offer patients access to a wide spectrum of health services, including preventive care, preventive screenings, and coordinated care for chronic conditions.

Collective Impact Across Western Pennsylvania:

Western Pennsylvania has a diverse range of health needs. Key themes that emerged from the Fiscal Year 2016 UPMC Horizon CHNA process were consistent with those found through CHNAs conducted at other UPMC hospitals throughout western Pennsylvania. These themes are increasingly important in the rapidly changing landscape of health care reform:

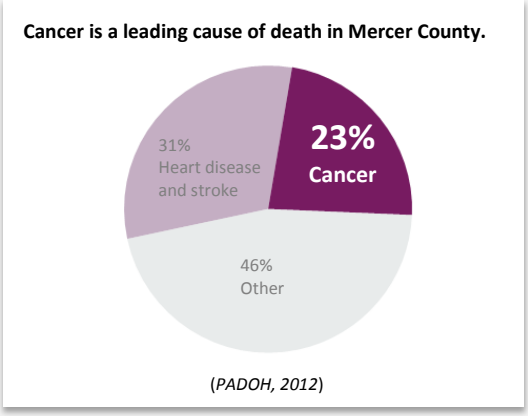
- **Focus on a Few High-Urgency Issues and Follow-Through:** The hospital is concentrating on a limited number of significant community health needs, and has developed concrete plans to chart measurable improvements.
- **Chronic Disease Prevention and Care:** Two-thirds of deaths in the community are attributable to chronic disease. UPMC Horizon is planning a wide range of prevention and chronic disease support activities.

- **Navigating Available Resources:** Established health care programs in UPMC Horizon's community are often untapped due, in part, to social and logistical challenges faced among populations and individuals lacking social support systems.
- **Community Partnerships:** UPMC Horizon is collaborating successfully with local organizations on improving community health. The hospital will also leverage resources and synergies within the UPMC system, which include population-focused health insurance products and comprehensive programs and resources targeted at areas including seniors and children.



PROGRESS REPORT 2013-2016: CANCER

GOAL: UPMC Horizon is increasing awareness of cancer prevention, screening, and management.



STRATEGY:
The hospital is leading efforts to address cancer in Mercer County.

To achieve this goal, the hospital is targeting all individuals. UPMC Horizon offers a range of programs aimed at cancer prevention, education, management, and support. Efforts to promote cancer prevention and to help patients better manage their disease include:

- Promoting cancer screenings
- Partnering with local services to support cancer patients during treatment
- Educating children and teens about preventing disease through healthy behaviors

PROGRESS:
UPMC Horizon is documenting a measurable impact in the community.

Supporting cancer screening and prevention efforts

The hospital participated in screening events for lung, prostate, and breast cancer, and saw an increase in the number of mammograms performed this year — totaling more than 11,000. UPMC Horizon continues to target hard-to-reach populations by hosting events at local churches, schools, and community centers. Overall, the hospital participated in more than 20 community events, including health fairs and local lectures.

From transportation to treatment

In partnership with local transportation services, and with support from UPMC Horizon Community Health Foundation, the hospital helps cancer patients get to and from their medical appointments. Additionally, the hospital connects patients to support networks, such as a monthly breast cancer support group hosted by UPMC Horizon.

Helping students get a healthy start

With support from the UPMC Horizon Community Health Foundation, the hospital piloted an evidence-based "Healthy Habits for Life" program, teaching students to eat healthier and encouraging increased physical activity. UPMC Horizon also joined forces with local community organizations to engage students in creating health promotion campaigns, such as ways to discourage smoking. A total of 1,600 students participated and were rewarded with an outing to a Pittsburgh Pirates game.

PROGRESS REPORT 2013-2016: CARE COORDINATION AND CONTINUITY

GOAL: UPMC Horizon is helping improve care transitions from hospital to home.

STRATEGY:
The hospital is taking proactive steps to deliver well-coordinated care.

In anticipation of the potential challenges faced after leaving the hospital, UPMC Horizon is focusing on helping patients and their families experience a seamless transition from hospital to home. These efforts include:

- Developing tools to help patients transition from hospital to home
- Partnering with community organizations to connect patients with local resources and help them get back on their feet

PROGRESS:
UPMC Horizon is achieving measurable results as it improves coordination of care.

Created and implemented improved discharge processes

The hospital has comprehensive discharge efforts to help prevent readmissions, including engaging families in a Plan of Care, developing a discharge checklist, and implementing an enhanced "teach back" method, in which nurses work one-on-one with patients to encourage medication compliance. These efforts helped reduce 30-day readmission rates for both COPD and Acute Myocardial Infarction patients.

2,432 pieces of medical equipment provided to patients in need

The UPMC Horizon Medical Equipment Recycling Program provides medical equipment to community members who lack insurance coverage or means to buy new equipment. In 2015, more than 1,745 community members received 2,432 pieces of medical equipment — such as wheelchairs, hospital beds, lift chairs, and transfer benches — at no charge.

Linking patients to community partners

The hospital links patients to local organizations to help them safely transition from hospital to home. For example, a grant from the UPMC Horizon Foundation connects eligible patients with St. Paul's Without Walls – Community Transitions, a program that assists recently discharged patients with obtaining rides home, medications, and groceries.

COMMUNITY HEALTH NEEDS ASSESSMENT (CHNA) REPORT

I. Objectives of a Community Health Needs Assessment

CHNA Goals and Purpose:

In Fiscal Year 2016, UPMC Horizon conducted a CHNA. In keeping with IRS 501(r) guidelines, the CHNA incorporated input from community stakeholders and public health experts, and established action plans to address identified significant community health needs. The plan builds upon a prior assessment and implementation plan developed in Fiscal Year 2013.

UPMC Horizon has many long-standing initiatives focused on improving the health of its community. UPMC approached this CHNA process as an opportunity to evaluate and assess needs through a formalized, rigorous, and structured process to ensure that health improvement efforts and resources are aligned with community health priorities. Goals of the CHNA were to:

- **Better understand community health care needs**
- **Develop a roadmap to direct resources where services are most needed and impact is most beneficial**
- **Collaborate with community partners where, together, positive impact can be achieved**
- **Improve the community's health and achieve measurable results**

The overall health of the community is a shared responsibility among many stakeholders and entities, including government agencies, health care providers, nongovernmental organizations, and community members themselves. While the new IRS CHNA requirements apply specifically to nonprofit hospital organizations, collaboration with community partners is essential for implementing and achieving effective community health improvement.

Description of UPMC Horizon:

VITAL STATISTICS
Fiscal Year 2015

Licensed Beds	158
Hospital Patients	10,001
Emergency Dept. Visits	36,431
Total Surgeries	8,262
Affiliated Physicians	158

JOBS AND STRENGTHENING THE LOCAL ECONOMY

UPMC Horizon Employees	857
Community Benefits Contributions	$14 million
Free and Reduced Cost Care	$8 million

$249 million Total Economic Impact of Hospital Operations

UPMC Horizon is a nonprofit, 158-bed acute-care hospital located in Mercer County, Pennsylvania. Operating from campuses located in Farrell and Greenville, Pennsylvania, the hospital offers a full range of quality medical services to the people of the surrounding region. The hospital provides area residents with access to medical, surgical, and rehabilitation care, as well as cutting-edge medical services not typically found at a local community hospital. Specialized services include telemedicine, CT imaging, diabetes care, MRI, stroke and coronary care, gastroenterology, women's health, and an on-site UPMC CancerCenter. During the Fiscal Year ended June 30, 2015, UPMC Horizon had a total of 10,001 admissions and observations, 36,431 emergency room visits, and 8,262 surgeries.

UPMC Horizon is supported by an active medical staff representing many disciplines. It is also part of UPMC, one of the country's leading Integrated Delivery and Finance Systems (IDFS), which positions the hospital to draw on the expertise of the larger organization when patients require access to more complex or highly specialized care. The medical staff is augmented by specialists who travel to Mercer County from Pittsburgh to hold regular office hours and provide inpatient consultations.

II. Definition of the UPMC Horizon Community

For the purpose of this CHNA, the UPMC Horizon community is defined as Mercer County. With 71 percent of patients treated at UPMC Horizon residing in Mercer County, the hospital primarily serves residents of this geographic region. By concentrating on the county, UPMC Horizon can both consider the needs of the great majority of its patients and do so in a way that allows accurate measurement using available secondary data sources.

Most Patients Treated at UPMC Horizon Live in Mercer County

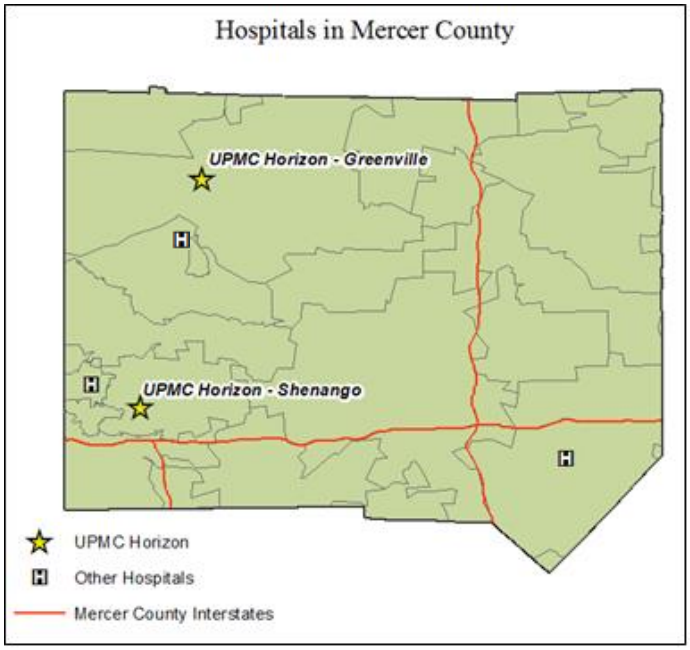
County	UPMC Horizon %	Medical Surgical Discharges
Mercer County	71.1%	4,542
All Other Regions	28.9%	1,849
Total Hospital Discharges	100%	6,391

Source: Pennsylvania Health Care Cost Containment Council, Fiscal Year 2015

The hospital campuses are situated in the southwestern and northwestern regions of Mercer County, which is located in Pennsylvania and includes portions that are rural. While the county represents the basic geographic definition of UPMC Horizon's community, this CHNA also considered specific focus areas within the hospital's immediate geographic "service area." Small "focus area" analyses were conducted to identify geographical areas within the county, as well as areas of concentration with potentially higher health needs — such as areas with high minority populations, low per-capita incomes, and areas with historically distinct health needs. Health data reflecting Zip Codes of neighborhoods within the service area was also analyzed.

Existing Healthcare Resources in the Area:

UPMC Horizon is the only UPMC licensed hospital and one of four total licensed hospitals in Mercer County.



In the immediate service area, UPMC Horizon is supported by more than 30 UPMC outpatient offices and other UPMC facilities located in the county. These facilities include UPMC CancerCenters, an Urgent Care Center, Centers for Rehabilitation Services, Imaging Centers, a Magee-Womens Hospital of UPMC satellite office, a Children's Hospital of Pittsburgh of UPMC satellite office, and pediatric, primary, and specialty care doctors' offices.

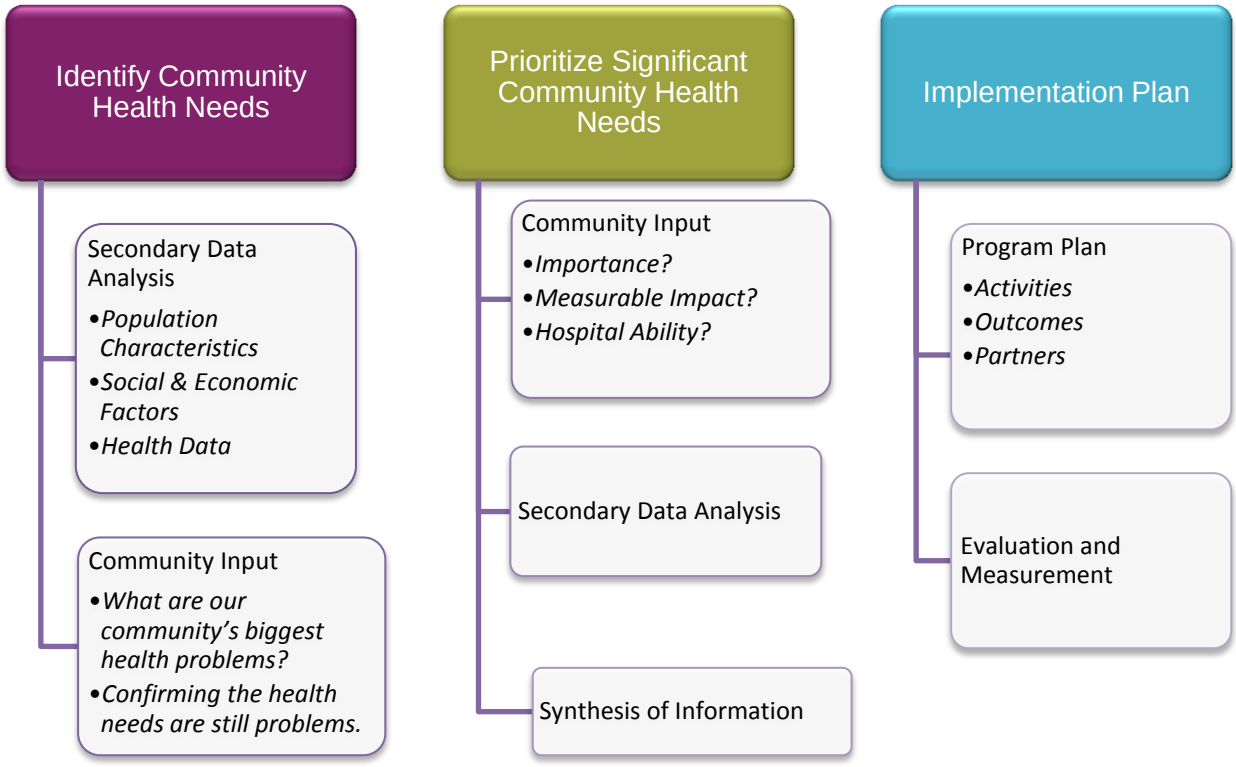
III. Methods Used to Conduct the Community Health Needs Assessment

Overview:

In conducting this CHNA and the prior CHNA conducted in Fiscal Year 2013, UPMC pursued an approach that was comprehensive, methodologically rigorous, inclusive, and open to the community's perspective on health care needs. To conduct the CHNA in a manner that reflects best practices, UPMC partnered with the University of Pittsburgh Graduate School of Public Health (Pitt Public Health). Pitt Public Health's mission is to provide leadership in health promotion, disease prevention, and the elimination of health disparities in populations. Pitt Public Health faculty and researchers' expertise supported a structured process for obtaining community input on health care needs and perceived priorities and helped establish criteria for the evaluation and measurement of progress.

Framework for Conducting the CHNA:

The Community Health Improvement Process developed by the Institute of Medicine served as a guiding framework in assessing the health needs of the UPMC hospital communities. The hospital adapted this model to guide the development of its CHNA.



Secondary Data Sources and Analysis:

To identify the health needs of a community, UPMC conducted an analysis of publicly available data. Secondary data — including population demographics, mortality, morbidity, health behavior, clinical care, and physical environmental data — were used to identify and prioritize significant community health needs. Data which informed this CHNA were compiled from a variety of state and national data sources and are reflected in the table below.

Population characteristics, socioeconomic, and health status data were also examined. Community-level data (usually county-level) were compared to the state, nation, and *Healthy People 2020* benchmarks to help identify key health issues. When available, data specific to low-income individuals, underserved minorities, and uninsured populations were examined. In addition, analysis considered federal designations of Health Professional Shortage Areas (HPSA) — defined as "designated as having a shortage of primary medical care providers" and Medically Underserved Areas (MUA) — which may consist of a whole county or a group of contiguous counties, a group of county or civil divisions, or a group of urban census tracts.

Publicly Available Data and Sources Used for Community Health Needs Assessment

Data Category	Data Items	Description	Source
Demographic Data	Population Change	Comparison of total population and age-specific populations in 2000 and 2010 by county, state, and nation.	U.S. Census
	Age and Gender	Median age, gender, and the percent of Elderly Living Alone by Zip Code, county, state, and nation in 2010.	
	Population Density	2010 total population divided by area in square miles by county, state, and nation.	
	Median Income/Home Values	By Zip Code, county, state, and nation in 2010.	
	Race/Ethnicity	Percent for each item by Zip Code, county, state, and nation in 2010. Note: Zip Code level data was not available for disabled.	
	Insurance: Uninsured, Medicare, Medicaid		
	Female Headed Households		
	Individuals with a Disability		
	Poverty		
	Unemployed		
	No High School Diploma		

Data Category	Data Items	Description	Source
Morbidity Data	Adult Diabetes	2010-2013 data collected and compared by county, state, and nation.	PA Department of Health Behavioral Risk Factors Surveillance System; Birth, Death, and Other Vital Statistics; Cancer Statistics. U.S. Centers for Disease Control and Prevention Behavioral Risk Factors Surveillance System. National Center for Health Statistics.
	Cancer		
	Mental Health		
	Asthma (Childhood)		
	Birth Outcomes		
Health Behaviors Data	Obesity (Childhood and Adult)		
	Alcohol Use		
	Tobacco Use		
	Sexually Transmitted Disease		
Clinical Care Data	Immunization	2010-2015 data collected and compared by county, state, and nation.	PA Department of Health Behavioral Risk Factors Surveillance System; Birth, Death, and Other Vital Statistics; Cancer Statistics. U.S. Centers for Disease Control and Prevention Behavioral Risk Factors Surveillance System. Health Resources and Services Administration (HRSA). National Center for Health Statistics.
	Cancer Screening (breast/colorectal)		
	Primary Care Physician Data		
Benchmark Data	Mortality Rates, Morbidity Rates, Health Behaviors and Clinical Care Data	National benchmark goal measures on various topics for the purpose of comparison with current measures for neighborhood, county, state, and nation.	Healthy People 2020.

Information Gaps Impacting Ability to Assess Needs Described:

The best available data were used to obtain the most meaningful comparison and analysis possible. Public data sources, however, are limited by some information gaps, and small sample sizes can represent statistically unreliable estimates.

The community definition hinged at the county-level, in part, because the quality and availability of data at this level was generally most comprehensive and allowed for meaningful comparisons with state and national data. In some cases, data from geographical sources below the county level (such as Zip Codes) were available with adequate sample size for analysis. Whenever possible, population health data were examined for individual neighborhoods and sub-populations including low-income, high-minority, and uninsured populations.

Community Input:

Community input on the perceived health needs of the region was used to complement analysis of publicly available data. UPMC used an inclusive and systematic process to collect information pertaining to the community's perceptions of its greatest needs, as well as its expectations of what the hospital's role should be in meeting those needs.

The Fiscal Year 2016 CHNA builds on the assessment process originally applied in Fiscal Year 2013. In the initial assessment, Pitt Public Health facilitated this process and employed "Concept Mapping," a participatory, qualitative research method with a proven track record for gaining stakeholder input and consensus. In the subsequent assessment, UPMC conducted a survey of community leaders and stakeholders specific to the hospital's community to assess the continuing importance of identified community health needs.

To gather community input, the hospital formed a community advisory panel to provide broad-based input on health needs present in the hospital's surrounding community. These groups were made up of:

- **Persons with special knowledge or expertise in public health**
- **Representatives from health departments or governmental agencies serving community health**
- **Leaders or members of medically underserved, low-income, minority populations, and populations with chronic disease**
- **Other stakeholders in community health *(see Appendices C and D for more information on Concept Mapping and for a complete list and description of community participants)***

The full community input survey process consisted of multiple stages:

- **Brainstorming on Health Problems:** During brainstorming, the hospital's community advisory council met to gather input on the question, "What are our community's biggest health care problems?" Brainstorming resulted in the development of a 50-item list of health problems.
- **Rating and Sorting Health Problems to Identify Significant Health Needs:** Community members participated in the rating and sorting process via the Internet to prioritize the 50 health problems and identify significant health needs according to their perceptions of the community health needs. Each participant sorted the list into overarching themes, and then rated the problems using a 1 to 5 Likert scale (1 = not important; 5 = most important), according to the following criteria:
  - How important is the problem to our community?
  - What is the likelihood of being able to make a measurable impact on the problem?
  - Does the hospital have the ability to address this problem?
- **Confirming Topics:** In Fiscal Year 2016, community advisory panels were again surveyed about the continuing importance of the identified health needs. Advisory panel members participated in an online Qualtrics survey that solicited feedback on new health problems and asked participants to rate whether the health problem "remains a major problem," "is somewhat of a problem," or "is no longer a problem."

Synthesis of Information and Development of Implementation Plan:

In the final phase of the process, the community input survey results were summarized by experts from Pitt Public Health and merged with results gathered from the analysis of publicly available data. Through this process, UPMC hospital leadership identified a set of significant health needs that are critical, addressable, and have high levels of urgency in the community. The process then matched those needs to:

- **Best-practice methods for addressing these needs**
- **Existing hospital community health programs and resources**
- **Programs and partners elsewhere in the community that can be supported and leveraged**
- **Enhanced data collection concerning programs**
- **A system of assessment and reassessment measurements to gauge progress over regular intervals**

IV. Results of the Community Health Needs Assessment and In-Depth Community Profile

Characteristics of the Community:

Parts of Mercer County are Rural: With a population of 116,638, and a population density of 173.4 residents per square mile, areas of Mercer County are relatively rural.

Sizable Elderly Population with High Social Needs: A notable characteristic of Mercer County is the large and increasing percentage of elderly residents (age 65 and over). Mercer County has a large elderly population (19 percent) compared to Pennsylvania (15 percent) and the United States (13 percent). A higher percentage of elderly in Mercer County live alone, compared with Pennsylvania and the United States. Reflective of the higher proportion of elderly, the percentage of Medicare recipients was higher in the county than the state and nation (See Appendix B).

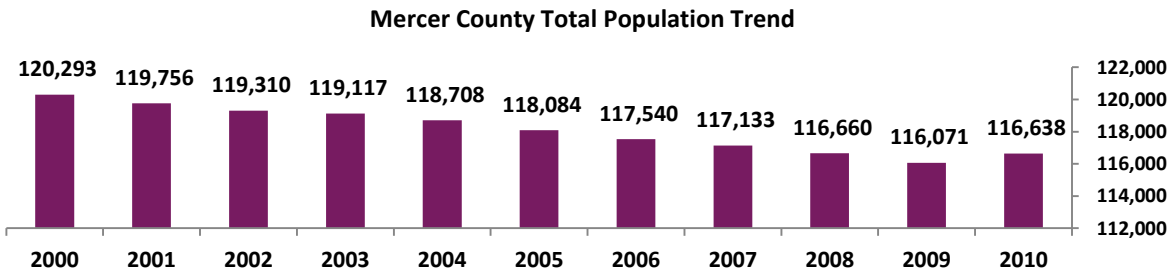
Mercer County Has a Sizable Elderly Population

Age Distribution - 2010			
	Mercer County	Pennsylvania	United States
Median Age	42.8	40.1	37.2
% Children (<18)	21.6%	22.0%	24.0%
% 18-64	59.9%	62.6%	63.0%
% 20-49	35.4%	39.0%	41.0%
% 50-64	21.3%	20.6%	19.0%
% 65+	18.5%	15.4%	13.0%
% 65-74	8.8%	7.8%	7.0%
% 75-84	6.6%	5.4%	4.3%
% 85+	3.1%	2.4%	1.8%
% Elderly Living Alone	13.9%	11.4%	9.4%

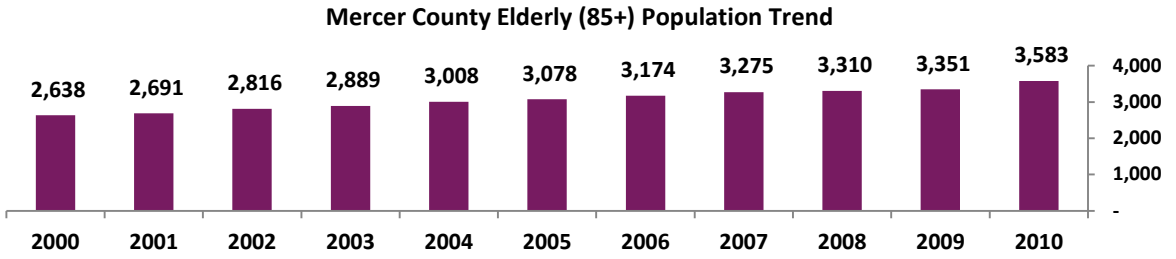
Source: U.S. Census

Total Population Stable in Mercer County but Aging Population Increasing: Although the population has remained stable since 2000, the county's most elderly population increased significantly (see figure below).

Mercer County's total population has seen a 3 percent decrease from 2000 to 2010.



However, the most elderly population in Mercer County (85+) has seen a 36 percent increase from 2000 to 2010.



Source: U.S. Census

Medically Underserved Areas in Mercer County: When compared to the Commonwealth of Pennsylvania and the nation, the overall population of Mercer County faces some economic challenges. Mercer County tends to have:

- **A lower median household income**
- **More residents in poverty**

Social and Economic Population Demographics			
	Mercer County	Pennsylvania	United States
Median Household Income	$40,398	$49,288	$50,046
Percent in Poverty	16.7%	13.4%	15.3%
Percent with No High School Diploma (among those 25+)	11.8%	11.6%	14.4%
Percent Unemployed (among total labor force)	10.0%	9.6%	10.8%
Racial Groups			
Percent White	91.6%	81.9%	72.4%
Percent African-American	5.8%	10.8%	12.6%
Percent Other Race	2.6%	7.3%	15.0%

Source: U.S. Census

In addition, areas in Mercer County are recognized by the federal government as being Medically Underserved Areas (MUA).

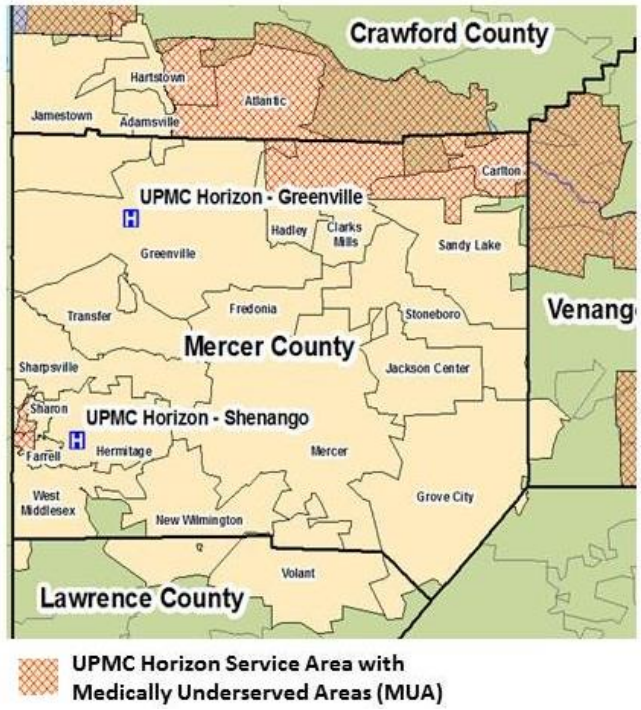
Federally Designated Medically Underserved Areas: Neighborhoods close to UPMC Horizon have characteristics of populations considered more likely to experience health disparities. In particular, the communities of Sharon (Zip Code 16146) and Farrell (Zip Code 16121) compared to Mercer County, had a lower median household income, higher percentage of families living in poverty, and higher percentage of residents with no high school diploma and who were unemployed. Sharon and Farrell are also federally designated as Medically Underserved Areas, and are both located in Mercer County.

The following factors are considered in the determination of MUAs:

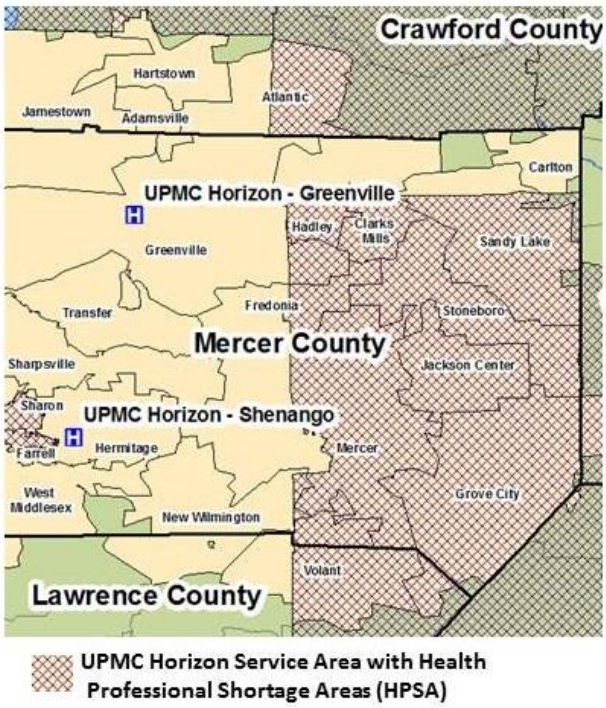
- **A high percentage of individuals living below the poverty level**
- **High percentages of individuals over age 65**
- **High infant mortality**
- **Lower primary care provider to population ratios**

Federally Designated Health Professional Shortage Areas: The eastern part of Mercer County is federally designated as a Health Professional Shortage Area. The designation is based on the ratio of the population to the number of primary care providers. In Mercer County, the ratio of primary care physicians to the population (73.8 per 100,000) was lower, compared to the state (82.0 per 100,000).

Federally Designated Medically Underserved Areas in Mercer County



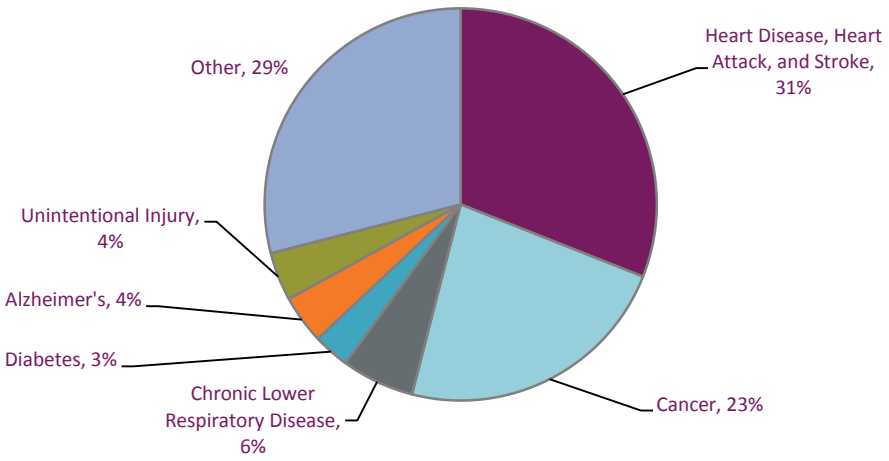
Federally Designated Health Professional Shortage Areas in Mercer County



Source: Health Resources and Services Administration, 2015

Chronic Disease and Mortality:

Two-thirds of deaths in Mercer County are attributable to chronic disease.



Source: Pennsylvania Department of Health, 2012

Significant Health Needs for UPMC Horizon's Community:

Concept Mapping input was deployed across all UPMC hospital communities within western Pennsylvania and yielded three overarching themes to contextualize the health care needs of the areas served by UPMC hospitals:

- **Chronic Disease**
- **Prevention and Healthy Living**
- **Navigating Resources**

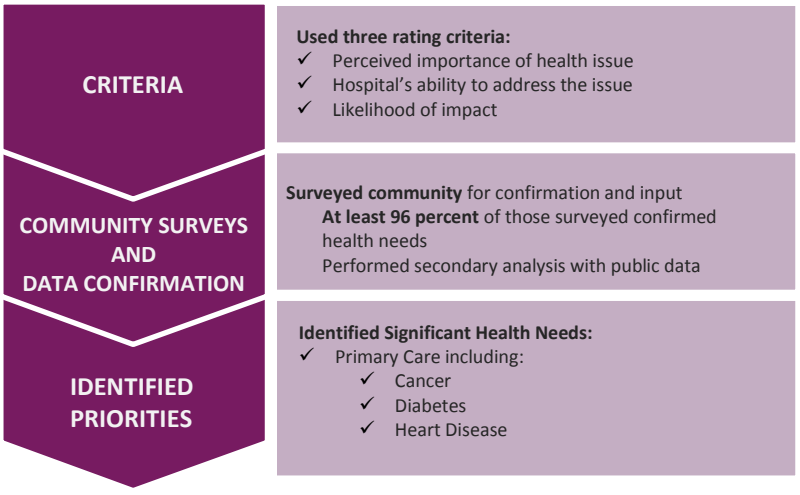
For UPMC Horizon's community, the assessment identified significant health needs that were rated highly across the three criteria of importance, likelihood of making a measurable impact, and the hospital's ability to address the problem. The significant health needs are:

- **Primary Care**

UPMC Horizon Significant Health Needs:

In-depth secondary data analysis reinforced that these health topics were areas of concern for the UPMC Horizon community.

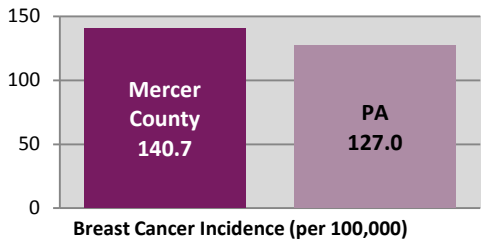
Prioritizing Community Health Needs



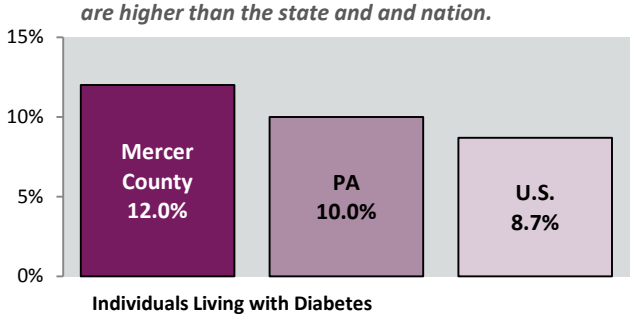
Primary Care – Importance to the Community:

- **Chronic diseases, such as cancer, heart disease/stroke, and diabetes are prevalent in Mercer County.**
- **Screening and other preventive measures can help identify diseases early on and improve care management of these diseases.**
- **Primary care offers preventive screenings for these chronic diseases and practices with an interdisciplinary team can help with continued monitoring to improve disease management.**

There is opportunity to promote breast cancer screening in Mercer County where breast cancer incidence is higher than the state.



There is an opportunity to promote diabetes screening in Mercer County where diabetes rates are higher than the state and and nation.



Source: Pennsylvania Department of Health, 2011-2013; U.S. Centers for Disease Control and Prevention, 2013

The prevalence of chronic diseases is high in Mercer County: Chronic diseases are significant in Mercer County. Two-thirds of all deaths in Mercer County are due to chronic diseases, such as cancer, heart disease/stroke, and diabetes. In addition, the incidence and prevalence of these diseases are high, compared to state, nation, and/or *Healthy People 2020* benchmarks. For example, breast cancer incidence is higher in Mercer County (140.7 per 100,000) compared to the state (127.0 per 100,000); the percentage of individuals living with diabetes is higher in Mercer County (12 percent) compared to the state (10 percent), and the nation (8.7 percent); and a higher percentage of residents in Mercer County reported having a heart attack (7 percent) compared to the state (6 percent).

Healthy behaviors, such as preventive screenings, can help identify disease early on and improve better management of chronic diseases: Preventive screenings can help identify these diseases early on— when treatment works best. Although most screening data are unavailable at the county level, regional survey data that include Mercer County indicate that mammogram screening in northwest Pennsylvania (59 percent) is much lower than the nation (74.0 percent) and benchmark (81.1 percent). Early detection of cancer and other chronic diseases can help delay progression or worsening. In addition, increasing awareness about other healthy behaviors, such as engaging in healthier eating, physical activity, and not smoking, can help prevent chronic diseases. Obesity, a risk factor for many chronic diseases, was much higher in Mercer County (35.0 percent), compared to the state (30.0 percent), nation (29.4 percent), and *Healthy People 2020* benchmark (30.5 percent). UPMC Horizon, in collaboration with community partners, has several initiatives in place to help address this issue.

Primary care offers patients prevention and care management: The primary care setting offers patients a medical home where person-focused, comprehensive, and coordinated care can be achieved. In addition, care coordination, especially with an interdisciplinary team of behavioral specialists and social workers, can help better manage disease prognosis. Recent analysis by the federal government suggests that demand for primary care will continue to grow as both the aging population increases, and as insurance coverage expands through the Affordable Care Act. UPMC Horizon has a network of primary care practices.

V. Overview of the Implementation Plan

Overview:

UPMC Horizon developed an implementation plan that addresses the significant community health needs identified through the CHNA process. The plan relies on collaboration and the leveraging of partnerships with many of the same organizations and stakeholders that participated in the assessment process. The plan also represents a synthesis of input from:

- **Community-based organizations**
- **Government organizations**
- **Non-government organizations**
- **UPMC hospital and Health Plan leadership**
- **Public health experts that include Pitt Public Health**

Adoption of the Implementation Plan:

On April 26, 2016 the UPMC Horizon Board of Directors adopted an implementation plan to address the identified significant health needs:

- **Primary Care**

A high level overview of the UPMC Horizon implementation plan is illustrated in the figure below and details are found in Appendix A:

High-Level Overview of UPMC Horizon Implementation Plan

Topic	Programs	Anticipated Impact Goal-Year 3	Planned Collaborations
Primary Care	Chronic disease prevention and care management	Enhance opportunities with primary care providers in the UPMC Horizon community to promote prevention and wellness efforts Increase prevention, awareness, and management of chronic diseases, including cancer, diabetes, and heart disease/stroke	ACS, CMI, UPP, Community Health Partnership, Chamber of Commerce, Adagio Health, local businesses, Primary Health Network, Mercer County Transit, local ambulance companies and taxis, UPMC Heart and Vascular Institute, UPMC Health System, local EMS, Joint Commission, PA Department of Health, Community Members, Minority Health, Emergency Room Providers, Hospitalists, Valley Baptist Church, Rehab Services, UPMC Stroke Institute, and UPMC Horizon Cancer Committee

The UPMC Horizon implementation plan calls for collaboration with community partners and leveraging UPMC system-wide resources, to support a number of initiatives focused on the identified health priorities.

VI. APPENDICES

APPENDIX A: Detailed Implementation Plan

Priority Health Issue: Addressing Primary Care

Primary care is a priority in UPMC Horizon's community: Two-thirds of deaths are due to chronic diseases in Mercer County, and the mortality rates for diseases such as cancer, heart disease/stroke, and diabetes, are higher in Mercer County, compared to the state or nation. Education about preventive health behaviors, preventive screenings, and care management of these diseases can help improve early detection of the disease and disease prognosis. Primary care settings offer patients access to a wide spectrum of health services, including preventive care, preventive screenings, coordinated care for chronic conditions, and comprehensive acute care. In addition, regular primary care visits are beneficial to an individual's overall health and wellness.

UPMC Horizon is leveraging UPMC and community resources to address primary care: UPMC Horizon will continue to offer events and education on prevention and management of chronic diseases, such as cancer, diabetes, and heart disease/stroke. In addition, UPMC Horizon can leverage several resources to help address these chronic diseases — UPMC CancerCenter at UPMC Horizon is an accredited cancer center and is designated by the American College of Surgeons as a Comprehensive Community Cancer Program, as well as a Comprehensive Breast Center; UPMC Heart and Vascular Institute provides excellent cardiac care at UPMC Horizon; and UPMC Horizon is currently augmenting its stroke care capabilities. In addition, the hospital has a network of primary care providers to help improve care coordination. UPMC Horizon programs are complemented by UPMC Insurance Services' efforts in many clinical areas, including through provider-focused incentives and primary care practice initiatives —care coordination, screenings, and preventive care — for health plan members. Finally, the hospital has ongoing collaborations with many community organizations to help address prevention and care coordination collectively.

Primary Care				
Program	**Intended Actions**	**Anticipated Impact** **Goal-Year 3**	**Target Population**	**Planned Collaborations**
Chronic disease prevention and care management	Offer cancer (breast, prostate, and colon) screenings, education prevention, and support to the community. Promote ACS's 80% by 2018 colonoscopy initiative Offer diabetes screenings and individualized self-management classes to the community. Host Annual Diabetes Health Fair Provide stroke education at various community events, senior centers, community centers, and churches. Augment stroke care capabilities Work with local primary care providers	Enhance opportunities with primary care providers in the UPMC Horizon community to promote prevention and wellness efforts Increase prevention, awareness, and management of chronic diseases, including cancer, diabetes, and heart disease/stroke	General community, including those diagnosed and at-risk for chronic disease	American Cancer Society, CMI, UPP, Community Health Partnership, Chamber of Commerce, Adagio Health, local businesses, Primary Health Network, Mercer County Transit, local ambulance companies and taxis, UPMC Heart and Vascular Institute, UPMC Health System, local EMS, Joint Commission, PA Department of Health, Community Members, Minority Health, Emergency Room Providers, Hospitalists, Valley Baptist Church, Rehab Services, UPMC Stroke Institute, and UPMC Horizon Cancer Committee

Outcomes and Evaluation of Hospital Implementation Plans:

UPMC engaged with researchers from Pitt Public Health at the University of Pittsburgh to develop evaluation metrics to measure and track progress related to this implementation plan. The metrics vary by hospital, according to health outcomes, current hospital efforts, and hospital resources.

The implementation plan was developed with the expectation that future progress would be reviewed by the hospital, as well as potentially by public health agencies. Therefore, two types of outcomes are considered:

- **Process Outcomes (directly relating to Hospital/Partner Delivery of Services)**
  Process outcomes indicate efforts hospitals and community partners can undertake to increase delivery of a service designed to change a health impact indicator. These mostly involve increases (or better targeting) in programming, outreach, publicity, or related efforts. Process outcomes can be measured by increases in investment (dollars or personnel), outreach (media messages, public service announcements), service units delivered (classes, screenings), people attending or completing programs, and number of sites for delivery of programs.
- **Health Impact Outcomes (applies to changes in population health for which the hospital's efforts are only indirectly responsible)**
  Health impact outcomes are changes in population health related to a broad array of factors, of which hospital and community partner efforts are only one contributing part. These outcomes include reductions in the prevalence of disease, risk factors, and health behaviors associated with disease. Benchmarks for progress in population indicators are available from *Healthy People 2020* and county rankings compiled by the Robert Wood Johnson Foundation.

APPENDIX B: Detailed Community Health Needs Profile

Population Demographics:

Characteristics	Mercer County	Pennsylvania	United States
Area (sq. miles)	672.58	44,742.70	3,531,905.43
Density (persons per square mile)	173.4	283.9	87.4
Total Population, 2010	116,638	12,702,379	308,745,538
Total Population, 2000	120,293	12,281,054	281,424,600
Population Change ('00-'10)	-3,655	421,325	27,320,938
Population % Change ('00-'10)	-3.0%	3.4%	9.7%
Age			
Median Age	42.8	40.1	37.2
%<18	21.6%	22.0%	24.0%
%18-44	31.3%	34.3%	36.5%
%45-64	28.6%	28.1%	26.4%
% >65+	18.5%	15.4%	13.0%
% >85+	3.1%	2.4%	1.8%
Gender			
% Male	49.0%	48.7%	49.2%
% Female	51.0%	51.3%	50.8%
Race/Ethnicity			
% White*	91.6%	81.9%	72.4%
% African-American*	5.8%	10.8%	12.6%
% American Indian and Alaska Native*	0.1%	0.2%	0.9%
% Asian*	0.6%	2.7%	4.8%
% Native Hawaiian/Other Pacific Islander*	0.0%	0.0%	0.2%
% Hispanic or Latino**	1.1%	5.7%	16.3%
Disability	15.9%	13.1%	11.9%

**Reported as single race; **Reported as any race*

Source: US Census

Social and Economic Factors:

Characteristics	Mercer County	Pennsylvania	United States
Income, Median Household	$40,398	$49,288	$50,046
Home Value, Median	$98,700	$165,500	$179,900
% No High School Diploma*	11.8%	11.6%	14.4%
% Unemployed**	10.0%	9.6%	10.8%
% of People in Poverty	16.7%	13.4%	15.3%
% Elderly Living Alone	13.9%	11.4%	9.4%
% Female-headed households with own children <18	6.5%	6.5%	7.2%
Health Insurance			
% Uninsured	11.3	10.2	15.5
% Medicaid	13.7	13.1	14.4
% Medicare	13.6	11.2	9.3

**Based on those ≥25 years of age; **Based on those ≥16 years and in the civilian labor force*
Source: US Census

Leading Causes of Mortality for the United States Compared to Pennsylvania and Mercer County (rates per 100,000 population):

Causes of Death	Mercer County	Pennsylvania	United States
	Percent of Total Deaths	Percent of Total Deaths	Percent of Total Deaths
All Causes	100.0	100.0	100.0
Diseases of Heart	24.8	24.3	23.5
Malignant Neoplasms	22.9	22.8	22.5
Chronic Lower Respiratory Diseases	6.3	5.2	5.7
Cerebrovascular Diseases	6.6	5.1	5.0
Unintentional Injuries	4.1	4.9	5.0
Alzheimer's Disease	3.7	2.8	3.3
Diabetes Mellitus	3.1	2.9	2.9
Influenza and Pneumonia	2.2	1.9	2.2
Nephritis, Nephrotic Syndrome and nephrosis	1.7	2.2	1.8
Intentional Self-Harm (Suicide)	0.7	1.3	1.6

Source: Pennsylvania Department of Health, 2012; National Center for Health Statistics, 2013

Comparison of Additional Health Indicators for Mercer County to Pennsylvania, United States, and Healthy People 2020:

Characteristics	Mercer County	Pennsylvania	United States	Healthy People 2020
Morbidity				
Diabetes (%)	12.0	10.0	8.7	NA
Mental Health (Mental health not good ≥1 day in past month) (%)	34.0	35.0	NA	NA
Low Birthweight (% of live births)	6.9	8.1	8.0	7.8
Health Behaviors				
Obesity (Adult) (%)	35.0	30.0	29.4	30.5
Excessive Alcohol Use (%)	15.0	17.0	16.8	24.4
Current Tobacco Use (%)	24.0	21.0	19.0	12.0
STDs (Gonorrhea per 100,000)*	67.3	150.5	250.6	251.9
Clinical Care				
Immunization: Ever had a Pneumonia Vaccination, 65+ (%)	74.0	69.0	69.5	90.0
Cancer Screening				
Mammography (%)	NA	60.0	74.0	81.1
Colorectal Screening (%)	NA	69.0	67.3	70.5
Primary Care Physician: Population (PCP Physicians/100K Population)	73.8	82.0	75.8	NA
Receive Prenatal Care in First Trimester (%)	72.9	72.4	71.0	77.9

Sources:

Mercer County Data: Pennsylvania Department of Health, 2010-2012; Data from Behavioral Risk Factor Surveillance System, 2011-2013; Health Resources and Services Administration (HRSA), 2014-2015

Pennsylvania Data: Pennsylvania Department of Health, 2012; Data from Behavioral Risk Factor Surveillance System, 2013; Health Resources and Services Administration (HRSA), 2014-2015

U.S. Data: U.S. Centers for Disease Control and Prevention, 2013; Health Resources and Services Administration (HRSA), 2014-2015; Healthy People, 2020

**Gonorrhea data: County and Pennsylvania rates are per 15-35+ year old women; National and Healthy People 2020 rates are per 15-44 year old women*

APPENDIX C:

Input from Persons Representing the Broad Interests of the Community

Overview:

To identify and prioritize health needs of the communities served by UPMC hospitals, the organization solicited and took into account input from persons who represent the broad interests of the community. During June through July 2015, more than 1,500 community leaders and members representing medically underserved, low-income and minority populations, consumer advocates, nonprofit organizations, academic experts, local government officials, local school districts, community-based organizations, and health care providers were invited to participate in UPMC's community health needs survey. More than 500 individuals completed the survey, and greater than 70 percent of those participants self-identified as being a representative or member of a medically underserved, minority, or low-income population. The goal of the survey was not only to provide community members with an opportunity to comment on UPMC's 2013 CHNA and implementation strategy, but also to identify other potential significant health needs.

To ensure the CHNA community input process was conducted in a rigorous manner reflecting best practices, UPMC sought support and guidance from individuals and organizations with expertise in public health. UPMC engaged with the University of Pittsburgh Graduate School of Public Health (Pitt Public Health) Department of Behavioral and Community Health Sciences to build on the methodology employed in UPMC's 2013 CHNA. Pitt Public Health assisted in:

- Developing a framework to itemize and prioritize community health needs
- Developing a survey tool for obtaining structured input from community leaders and community members
- Administering the online survey using Qualtrics web software (and also in paper format upon request)
- Analyzing survey results

In addition, local and state public health department input and data were obtained and utilized in this community health needs assessment. UPMC relied on publicly available Pennsylvania Department of Health reports and additional local health department information accessed via telephone conversations and in-person meetings.

Stakeholder Input

UPMC Horizon's Fiscal Year 2016 CHNA builds on the assessment process originally applied in 2013. That assessment used concept mapping to elicit stakeholder prioritization of health problems and develop group consensus on priorities. In the concept mapping effort, community advisory panels at each hospital participated in focus groups to brainstorm and then sort a set of 50 community health problems (see Appendix D for list of 50 topics). Concept mapping software uses this sorting data to create a display that illustrates the relationships between health topics, and allows aggregation of topics into thematic areas. The 50 topics were grouped into three main thematic areas: prevention and healthy living, chronic disease, and navigating the health care system. For example, stakeholders reliably sorted "access to specialist care" and "care coordination and continuity" into a common group. These form clusters in concept maps and allow rational aggregation into larger health priority areas, in this case "navigating the health care system."

Community panel members then rated community health problem areas according to the following three dimensions — importance of the problem to the community, the likelihood of having a measurable impact on the problem, and the ability of the hospital to address the problem. Using a criterion of high ratings on all three dimensions, combined with results of secondary analysis of population health indicators, generated health topics which were considered significant health needs.

Confirming Community Health Needs

In Fiscal Year 2015, surveys of hospital community advisory panels were used to assess the stability and continuing importance of Fiscal Year 2013 significant health needs. Advisory panels were invited to participate in an online Qualtrics survey, administered by Pitt Public Health. Survey respondents were presented community health priorities from Fiscal Year 2013 and asked to rate these on whether the health problem "remains a major problem," "is somewhat of a problem," or "is no longer a problem." Before the survey was sent out, advisory panels were able to nominate new health priorities, which were added to this initial list. In addition, panels repeated their ratings of importance, impact, and hospital ability for a set of all 18 community health priorities identified by all UPMC hospitals in the previous Fiscal Year 2013 CHNA to identify potentially new community health needs. Finally, the survey included an open-ended question to allow participants an opportunity to suggest other health problems.

Overall, nearly 90 percent of participants responded that health topics identified in the first round of CHNAs continue to remain or are somewhat a problem in UPMC's hospital communities. Stability and consistency are not surprising, given that these are significant health issues that need more than two to three years to show meaningful improvement. Fiscal Year 2013 community health need priorities were considered to remain priorities if more than half of respondents considered them to "remain a major problem." If a Fiscal Year 2013 health priority did not achieve this rating, new priorities were added based on ratings of other health priorities. These new health priorities were identified by high scores on the dimensions of importance, measurable impact, and hospital ability and also represented health concerns not subsumed in current specified priorities.

Community Representation and Rationale for Approach

Each hospital community advisory panel consisted of hospital board members, hospital staff, and community members. Community members were leaders of organizations that represented different patient constituencies and medically underserved, low-income, and minority populations and were invited to participate to ensure that a wide range of community interests were engaged in identifying community health needs. Organizations serving the medically underserved were well represented on the panels. In addition to hospital panels, the CHNA also included a community-wide panel consisting of health departments, mental health service providers, philanthropies, and other agencies providing health services not linked to particular hospitals.

Analyses disaggregated ratings to confirm that ratings were stable across different stakeholders.

The panels ensured that a wide variety of constituencies had an opportunity to weigh in on hospital community health priorities. Use of advisory panels and a survey explicitly assessing the continuing relevance of prior health priorities offers a number of advantages:

- It explicitly assesses stability/change of community health needs, while allowing participants an opportunity to consider new health priorities
- It uses the same measures to assess importance, impact, and hospital ability to address health priorities, which will allow tracking over time
- It elicits perceptions of a broad and inclusive list of hospital and community leaders who in turn represent a broad group of constituents
- It allows assessment of consensus across different kinds of stakeholders

UPMC Horizon invited representatives from the following organizations to participate in the community needs survey conducted in June 2015:

- **American Cancer Society, New Castle, PA**
- **AWARE, Hermitage, PA**
- **Buhl Farm Park, Hermitage, PA**
- **Ekker, Kuster, McCall & Epstein, LLP, Sharon, PA**
- **Health Link Services, Hermitage, PA**
- **Jamestown Coating Technologies, Jamestown, PA**
- **Mercer County Area Agency on Aging, Mercer, PA**
- **Mercer County Behavioral Health Commission, Mercer, PA**
- **Mercer County State Health Center, PA Department of Health, Jackson Center, PA**
- **Mindicino, Oman & Associates, Sharon, PA**
- **Pennsylvania House of Representatives, Hermitage, PA**
- **Primary Health Network, Federally Qualified Health Center, Sharon, PA**
- **Record-Argus, Greenville, PA**
- **Shenango Valley Urban League, Farrell, PA**
- **Southwest Regional Mercer County Police Department, Farrell, PA**
- **St. Pauls – Continuing Care Community, Greenville, PA**
- **Thiel College, Greenville, PA**

The UPMC Horizon community survey was also supported by members of the hospital's Board of Directors and physicians, as well as hospital leadership.

Additionally, a UPMC system-wide group comprised of individuals and organizations representing the broad interests of the region's communities — including representatives from medically underserved, low-income, and minority populations — was invited to participate in the survey. Invitees included representatives from the following organizations:

- **Achieva, Pittsburgh, PA**
- **Action Housing, Inc., Pittsburgh, PA**
- **Allegheny County Area Agency on Aging, Pittsburgh, PA**
- **Allegheny County Department of Human Services, Pittsburgh, PA**
- **Allegheny County Office of Children, Youth, and Families, Pittsburgh, PA**
- **Allegheny Intermediate Unit, Homestead, PA**
- **Bethlehem Haven, Pittsburgh, PA**
- **Big Brothers Big Sisters of Greater Pittsburgh, Pittsburgh, PA**
- **Carlow University, Pittsburgh, PA**
- **Catholic Charities Free Health Care Center, Pittsburgh, PA**
- **Center for Engagement and Inclusion, UPMC, Pittsburgh, PA**
- **City of Pittsburgh Bureau of Police, Pittsburgh, PA**
- **Community College of Allegheny County, Monroeville, PA**
- **Consumer Health Coalition, Pittsburgh, PA**
- **Coro Center for Civic Leadership, Pittsburgh, PA**
- **EDSI Solutions, Pittsburgh, PA**
- **Erie Regional Chamber and Growth Partnership, Erie, PA**
- **Expanding Minds, LLC, Pittsburgh, PA**
- **Goodwill of Southwestern Pennsylvania, Pittsburgh, PA**
- **Greater Pittsburgh Community Food Bank, Duquesne, PA**
- **Healthy Lungs Pennsylvania, Cranberry Township, PA**
- **Higher Achievement, Pittsburgh, PA**
- **Hosanna House, Inc., Wilkinsburg, PA**
- **iGate Corporation, Pittsburgh, PA**
- **Imani Christian Academy, Pittsburgh, PA**
- **Jewish Family and Children's Service of Pittsburgh, Pittsburgh, PA**
- **Josh Gibson Foundation, Pittsburgh, PA**
- **Junior Achievement of Western Pennsylvania, Pittsburgh, PA**
- **Kaplan Career Institute, Pittsburgh, PA**
- **Kingsley Association, Pittsburgh, PA**
- **LEAD Pittsburgh, Pittsburgh, PA**
- **Let's Move Pittsburgh, Pittsburgh, PA**
- **Mainstay Life Services, Pittsburgh, PA**
- **The Mentoring Partnership of Southwestern PA, Pittsburgh, PA**
- **NAMI Southwest Pennsylvania, Pittsburgh, PA**
- **Neighborhood Learning Alliance, Pittsburgh, PA**
- **Office of Human Services, Allegheny County Department of Human Services, Pittsburgh, PA**
- **Operation StrongVet Western Pennsylvania, Wexford, PA**
- **Pennsylvania Health Access Network, Pittsburgh, PA**

- Pennsylvania Health Law Project, Pittsburgh, PA
- Persad Center, Pittsburgh, PA
- Pittsburgh Action Against Rape, Pittsburgh, PA
- Pittsburgh Black Nurses in Action, Pittsburgh, PA
- Pittsburgh Board of Education, Pittsburgh, PA
- Pittsburgh Disability Employment Project for Freedom, Pittsburgh, PA
- Pittsburgh Job Corps Center, Pittsburgh, PA
- The Pittsburgh Promise, Pittsburgh, PA
- Ralph A. Falbo, Inc., Pittsburgh, PA
- Randall Industries, LLC, Pittsburgh, PA
- Salvation Army of Western Pennsylvania, Carnegie, PA
- Smart Futures, Pittsburgh, PA
- United Way of Allegheny County, Pittsburgh, PA
- University of Pittsburgh School of Health and Rehabilitation Sciences, Pittsburgh, PA
- University of Pittsburgh Health Sciences, Pittsburgh, PA
- UPMC Board Diversity and Inclusion Committee, Pittsburgh, PA
- Urban League of Greater Pittsburgh, Pittsburgh, PA
- Ursuline Support Services, Pittsburgh, PA
- VA Pittsburgh Healthcare System, Pittsburgh, PA
- The Waters Foundation, Pittsburgh, PA
- The Wynning Experience, Pittsburgh, PA
- Vibrant Pittsburgh, Pittsburgh, PA
- Western Pennsylvania Conservancy, Pittsburgh, PA
- Women for a Healthy Environment, Pittsburgh, PA
- Women's Center and Shelter of Greater Pittsburgh, Pittsburgh, PA
- YMCA of Greater Pittsburgh, Pittsburgh, PA
- YWCA of Greater Pittsburgh, Pittsburgh, PA

APPENDIX D: Concept Mapping Methodology

Overview:

UPMC Horizon, with consultation and support from Pitt Public Health, utilized a research method known as concept mapping to develop a better understanding of perceived health problems for its community. Concept mapping is well suited for a Community Health Needs Assessment because the research method involves stakeholders in the process and allows for prioritization of health problems based on community input.

Concept mapping is a participatory research method that yields a conceptual framework for how a group of stakeholders views a particular topic or issue. The method explores the relationships of ideas and concepts and allows for the development of group consensus. It allows for the collection of a wide range of stakeholder-generated ideas and applies quantitative analytical tools (i.e., multidimensional scaling and hierarchical cluster analysis). Concept mapping output includes a concept map, which is a diagram that illustrates the relationships between ideas. The research method is used to facilitate the creation of a shared vision and understanding within a group. The research method synthesizes individual data and includes a rating process that is used to prioritize key issues.

Each UPMC hospital completed the concept mapping and through the process identified hospital-specific priority community health problems based on stakeholder input.

Application of Concept Mapping for UPMC Horizon:

UPMC Horizon established a community advisory council. Participants contributed through face-to-face meetings and online input.

The concept mapping research method consisted of two stages:

- **Brainstorming — gathering stakeholder input**
- **Sorting and Rating — organizing and prioritizing the stakeholder input**

Brainstorming - Identifying Health Needs:

In the brainstorming meeting, the UPMC Horizon Community Advisory Council met in person to solicit members' input on the focal question, "What are our community's biggest health problems?"

Council members first brainstormed independently and then shared their lists with the Pitt Public Health research team. Their responses were then compiled to generate a full list of community health problems for the hospital. The Pitt Public Health research team shared the full list with the group and facilitated a group discussion of the responses to ensure the list was comprehensive and reflected the scope of health problems faced in the UPMC Horizon community.

The UPMC Horizon brainstorming list was integrated with brainstorming lists from the other UPMC hospitals to develop a final master list of community health problems to be used in the subsequent concept mapping sorting and rating. A consolidated final master list of the 50 community health problems was distilled from the robust community input. The following table presents each of the 50 community health problems and provides a numerical value in parentheses so that the item can be linked with the concept map presented in the following figure.

Final Master List of 50 Community Health Problems				
Nutrition and healthy eating (1)	Diabetes (11)	Medication management and compliance (21)	High blood pressure/ Hypertension (31)	Smoking and tobacco use (41)
Immunizations/ Vaccinations (2)	Health literacy – ability to understand health information and make decisions (12)	Exercise (22)	Breast cancer (32)	Adolescent health and social needs (42)
Lung cancer (3)	Urgent care for non-emergencies (13)	Navigating existing healthcare and community resources (23)	Pediatrics and child health (33)	Depression (43)
Maternal and infant health (4)	End of life care (14)	Preventive Screenings (cancer, diabetes, etc) (24)	Sexual health including pregnancy and STD prevention (34)	Support for families/caregivers (44)
Alcohol abuse (5)	Asthma (15)	Heart Disease (25)	Dementia and Alzheimer's (35)	Health insurance: understanding benefits and coverage options (45)
Adult obesity (6)	Prenatal care (16)	Primary Care (26)	Chronic Obstructive Pulmonary Disease (COPD) (36)	Preventive health/wellness (46)
Drug abuse (7)	Dental care (17)	Childhood obesity (27)	Stroke (37)	Injuries including crashes and sports related, etc (47)
Access to specialist physicians (8)	Financial access: understanding options (18)	Intentional injuries including violence and abuse (28)	Post-discharge coordination and follow-up (38)	Childhood developmental delays including Autism (48)
Behavioral health /mental health (9)	High cholesterol (19)	Cancer (29)	Arthritis (39)	Eye and vision care (49)
Geographic access to care (10)	Care coordination and continuity (20)	Social support for aging and elderly (30)	Senior health and caring for aging population (40)	Environmental health (50)

Sorting and Rating – Prioritizing Health Needs:

The UPMC Horizon Community Advisory Council completed the sorting and rating activities via the Internet. Each participant was asked to sort the master list of 50 community health problems into thematic areas, and to then rate the problems using a 1 to 5 Likert scale, according to the following criteria:

Importance:
How important is the problem to our community?
(1 = not important; 5 = most important)

Measurable Impact:
What is the likelihood of being able to make a measurable impact on the problem?
(1 = not likely to make an impact; 5 = highly likely to make an impact)

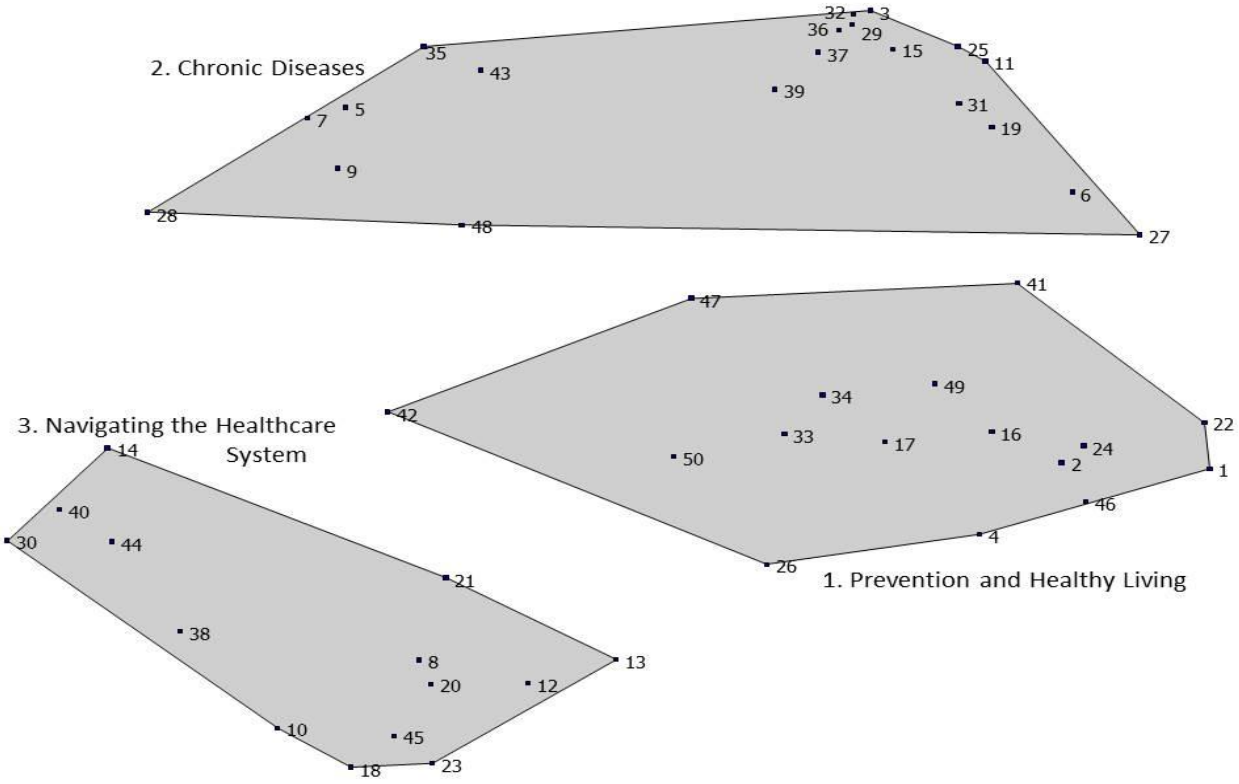
Hospital Ability to Address:
Does the hospital have the ability to address this problem?
(1 = no ability; 5 = great ability)

Multi-dimensional scaling was applied to the sorting data to examine similarities between the 50 community health problems. Hierarchical clustering was used to group the sorting data into common thematic areas and to establish a final cluster map, which provided a visual representation of the data. The final cluster map of the 50 community health problems reflects three thematic areas (See Figure below):

- **Prevention and Healthy Living (16 items)**
- **Chronic Diseases (20 items)**
- **Navigating the Healthcare System (14 items)**

Each of the 50 community health problems are represented in the figure below as a point. The numbers next to each point correspond to the item number. For example, item #31 is High Blood Pressure/Hypertension. The proximity of the points to each other illustrates the group thoughts about the degree of similarity between the items. For example, item #31 (High Blood Pressure/Hypertension) and item #19 (High Cholesterol) were felt to be very similar. Those two community health problems appear on the right side of the Chronic Diseases cluster.

Final Cluster Map:



For each of the rating criteria, the rating levels were broken into three equal distributions (tertiles) representing high, moderate, and low priority. The cut points for each rating criteria are as follows:

Importance:
Low (1-3.67); Moderate (3.68-4.06); High (4.07-5.0)

Measurable Impact:
Low (1-3.33); Moderate (3.34-3.83); High (3.84-5.0)

Hospital Ability to Address:
Low (1-3.20); Moderate (3.21-3.85); High (3.86-5.0)

Within each cluster, the rating data for each individual community health problem was examined across all three rating criteria. For example, in the Prevention and Healthy Living cluster, the 16 individual community health problems were identified as being low, moderate, or high for the importance, measurable impact, and hospital ability to address rating criteria.

The rating categories results were then combined with results from secondary data analyses and used to identify high priority community health problems for UPMC Horizon. UPMC Horizon leadership next consulted with experts from Pitt Public Health and members of the community advisory council to review the list of high priority community health problems and identify the set of needs that are critical, addressable, and have high levels of urgency in the community. The resulting list constituted the top tier of health problems for the community.