Community Health Needs Assessment
And
Community Health Strategic Plan

June 30, 2016

UPMC Bedford Memorial

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EXECUTIVE SUMMARY

UPMC Bedford Memorial Plays a Major Role in its Community:

UPMC Bedford Memorial is a nonprofit, 49-bed acute-care hospital located in Bedford County, Pennsylvania. It is the county's only hospital and delivers a full range of quality medical services — including highly specialized medical and surgical treatment — to the residents of Bedford County.

UPMC Bedford Memorial maintains a historically strong connection with its rural community. In addition to being the primary source of health care services in the county, the hospital offers an array of community-oriented programs and services to improve the health of local residents.

UPMC Bedford Memorial in the Community

The only hospital in Bedford County

Providing high-quality health care, as well as economic support, to this rural community

Total economic impact of the hospital is $85.9 million
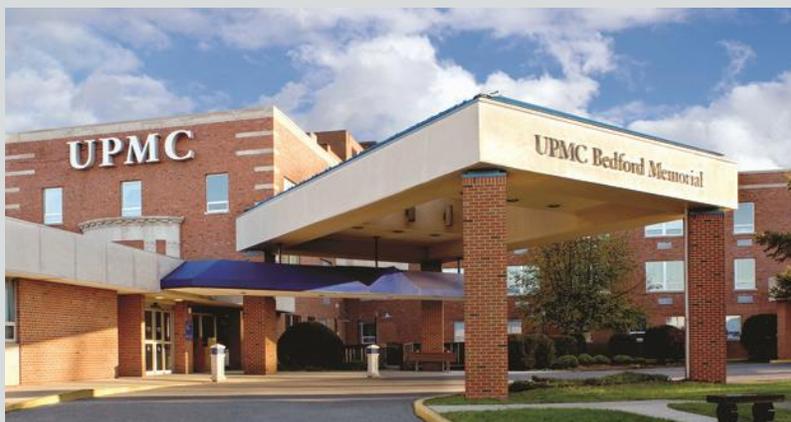
UPMC Bedford Memorial is part of UPMC, a leading Integrated Delivery and Finance System (IDFS) headquartered in Pittsburgh, Pennsylvania.

Identifying the Community's Significant Health Needs:

In Fiscal Year 2016, UPMC Bedford Memorial 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 over 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:

- **Diabetes**
- **Access to Providers—Primary and Specialty Care**

Three years later, when the Fiscal Year 2016 CHNA was conducted, UPMC Bedford Memorial affirmed the following significant health needs:

- **Diabetes**
- **Access to Providers—Primary and Specialty Care**
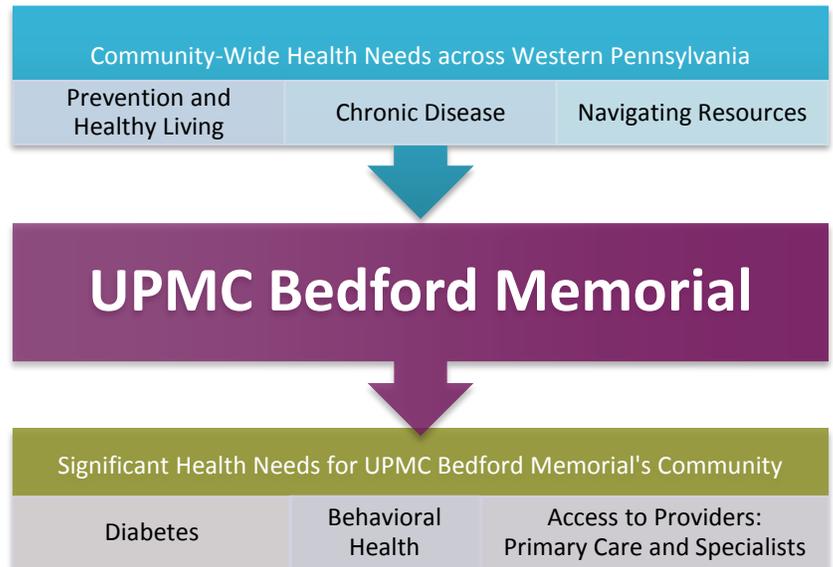- **Behavioral Health**

On March 24, 2016, the UPMC Bedford Memorial 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
Diabetes	Diabetes is a leading cause of death in Bedford County. Obesity, a risk factor associated with diabetes, is high in Bedford County.
Access to Providers: Primary Care and Specialists	Bedford County is designated by the federal government as a Health Professional Shortage Area. Reflecting the rural nature of the area, there are fewer people per square mile and fewer doctors per person compared to the state and the nation.
Behavioral Health	31 percent of adults in Bedford County reported experiencing poor mental health in the past month. Prevention, early diagnosis, and management of behavioral health issues can enhance the quality of life of those affected, including individuals, families, and communities.

Collective Impact Across Western Pennsylvania:

Western Pennsylvania has a diverse range of health needs. Key themes that emerged from the Fiscal Year 2016 UPMC Bedford Memorial 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:** Nearly two-thirds of deaths in the community are attributable to chronic disease. UPMC Bedford Memorial is planning a wide range of prevention and chronic disease support activities.

- **Navigating Available Resources:** Established health care programs in UPMC Bedford Memorial'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 Bedford Memorial 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.

Community-Wide Health Needs across Western Pennsylvania

Prevention and Healthy Living	Chronic Disease	Navigating Resources

UPMC Bedford Memorial

Significant Health Needs for UPMC Bedford Memorial's Community

Diabetes	Behavioral Health	Access to Providers: Primary Care and Specialists

PROGRESS REPORT 2013-2016: DIABETES

GOAL: UPMC Bedford Memorial is increasing community members' participation in prevention, detection, and management of diabetes.

STRATEGY:
The hospital takes a comprehensive approach to addressing diabetes in Bedford County.

Community Need

Diabetes is an important health issue in Bedford County.

Bedford County
11.0%

PA
10.0%

U.S.
8.7%

Individuals living with diabetes

(*PADOH, 2011-2013; CDC, 2013*)

To achieve this goal, the hospital is targeting all residents of Bedford County, particularly pre-diabetics and individuals with diabetes. UPMC Bedford Memorial's Diabetes Prevention and Management Program reaches out to county residents in convenient locations — at health fairs, in senior living communities, and in doctors' offices. Efforts include:

» Raising awareness about diabetes prevention and screening

» Empowering community members to better manage diabetes

» Offering one-on-one consultations with diabetes educators

PROGRESS:
UPMC Bedford Memorial is documenting measurable impact in community health.

800 community members screened

The hospital offers monthly health screenings to help community members detect disease, including diabetes, in the early stages. By offering a full panel of screenings that measure glucose, cholesterol, and triglyceride levels, the hospital helps raise individuals' awareness of their current health status.

Educated 140 community members about diabetes

In April 2015, UPMC Bedford hosted its annual *National Diabetes Day Health Fair*, offering nutritional information, cooking demonstrations, and free health screenings. In addition, at the *Leadership Bedford County* event, representatives from UPMC Bedford gave presentations raising awareness about diabetes, and led educational sessions incorporating lessons about diabetes.

140 patients with diabetes connected with diabetes educators

First offered in January 2014, the *Glucose to Goal* program has linked many patients to certified diabetes educators — an approach considered highly effective in primary care settings. By harnessing the potential of electronic medical records, UPMC Bedford Memorial identifies individuals with diabetes who need help managing their disease. The hospital connects these individuals with a certified diabetes educator who can help modify behaviors, such as controlling sugar levels through healthier eating. Participants have demonstrated a decrease in glucose levels (HbA1c), indicating improved management of their condition.
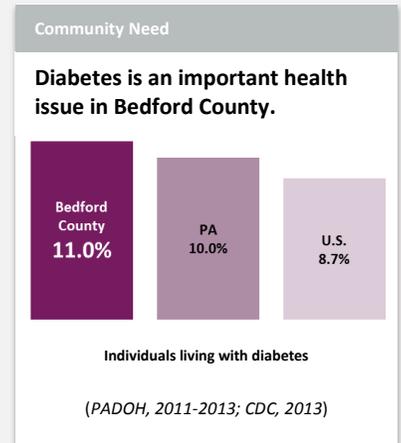
PROGRESS REPORT 2013-2016: ACCESS TO SPECIALISTS AND PRIMARY CARE PROVIDERS

GOAL: UPMC Bedford Memorial is increasing community members' access to specialty and primary care.

Community Need

Bedford County is designated by the federal government as a **Health Professional Shortage Area**.

STRATEGY:
The hospital is leveraging UPMC's extensive provider network.

To achieve this goal, the hospital is targeting all individuals. By using telemedicine, the hospital is improving residents' access to physicians and specialized services. Through the UPMC Bedford Memorial Teleconsult Center, the hospital can:

» Connect patients in Bedford County with UPMC specialists in Pittsburgh

» Help community members take advantage of UPMC's world-class clinical care while remaining close to home

» Fill the gap in Bedford County, where subspecialty care is limited

» Reduce patients' cost and time burden due to travel

PROGRESS:
UPMC Bedford Memorial is documenting measurable impact in community health.

Established a teleconsult center, making telemedicine visits available to Bedford County residents
Founded in 2013, the UPMC Bedford Memorial Teleconsult Center is a multi-specialty outpatient clinic which uses advances in technology to connect patients with specialists. Over the last three years, patients have made 443 telemedicine visits, saving more than $69,000 in total travel expenses and an astounding 107,436 in miles traveled.

Offered 10 new specialties to community members
The hospital is advancing patient care through improved access to specialists in a rural setting. Established in 2013, the UPMC Bedford Teleconsult Center offers patients access to 10 new specialties, including Endocrinology, Maternal Fetal Medicine, Voice Therapy, Pediatric Gastroenterology, and Genetics.

Expanding access to local primary care providers
The hospital will improve access to primary care by implementing an open-access office, and coordinating with the local federally qualified health center. In addition, UPMC Bedford nurses help to connect patients with their PCP after a hospital stay, which contributes to lower readmission rates. To encourage more physicians to practice in Bedford County, the hospital is offering medical school scholarships for Bedford County residents, and is partnering with UPMC Altoona's medical residency program.

COMMUNITY HEALTH NEEDS ASSESSMENT (CHNA) REPORT

I. Objectives of a Community Health Needs Assessment

CHNA Goals and Purpose:

In Fiscal Year 2016, UPMC Bedford Memorial 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 Bedford Memorial 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 Bedford Memorial:

UPMC Bedford Memorial is a nonprofit, 49-bed acute-care hospital located in Bedford County, Pennsylvania. It is the only hospital in Bedford County, and 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 virtual care, CT imaging, MRI, stroke and coronary care, and cardiopulmonary rehab.

VITAL STATISTICS
Fiscal Year 2015

Licensed Beds	49
Hospital Patients	2,998
Emergency Dept. Visits	18,407
Total Surgeries	2,789
Affiliated Physicians	43

JOBS AND STRENGTHENING THE LOCAL ECONOMY
UPMC Bedford Memorial is the fifth largest employer in the county.

UPMC Bedford Memorial Employees	301
Community Benefits Contributions	$4.6 million
Free and Reduced Cost Care	$2.7 million
Total Economic Impact of Hospital Operations	**$85.9 million**

UPMC Bedford Memorial is supported by an active medical staff representing many disciplines. It is 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 Bedford County from Pittsburgh to hold regular office hours and provide inpatient consultations.

II. Definition of the UPMC Bedford Memorial Community

For the purpose of this CHNA, the UPMC Bedford Memorial community is defined as Bedford County. With 89 percent of patients treated at UPMC Bedford Memorial residing in Bedford County, the hospital primarily serves residents of this geographic region. By concentrating on the county, UPMC Bedford Memorial 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 Bedford Memorial Live in Bedford County

County	UPMC Bedford Memorial %	Medical Surgical Discharges
Bedford County	88.5%	1,539
All Other Regions	11.5%	200
Total Hospital Discharges	100%	1,739

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

The hospital is situated centrally in Bedford County, Pennsylvania. This area is known for being rural, with only 49.2 persons per square mile as compared with 283.9 persons per square mile in Pennsylvania.

Existing Healthcare Resources in the Area:

Hospitals in Bedford County
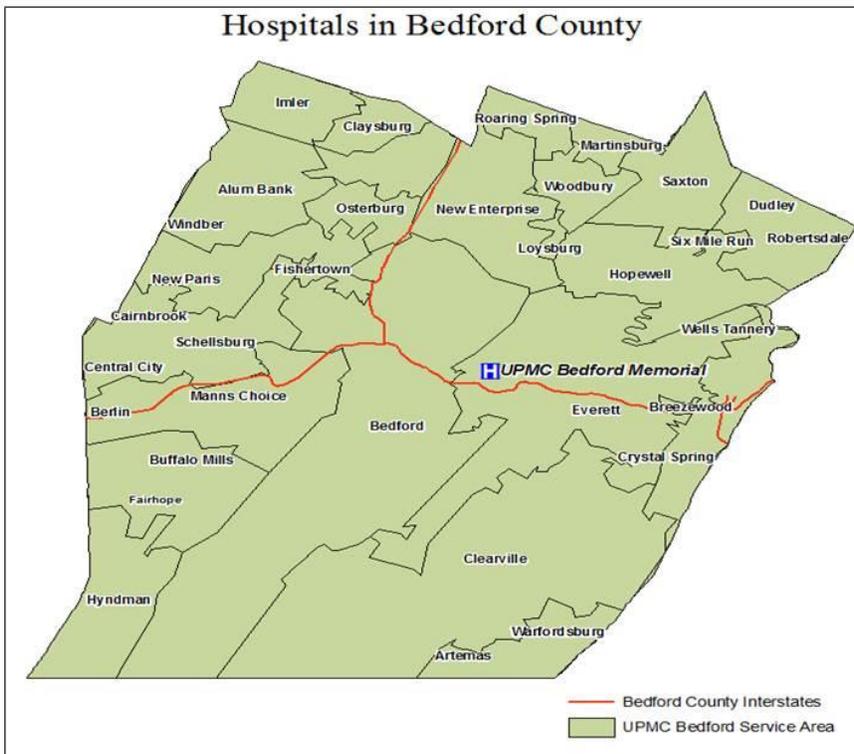
UPMC Bedford Memorial is the only licensed hospital in Bedford County.

In the immediate service area, UPMC Bedford Memorial is supported by 13 UPMC outpatient offices and other UPMC facilities located in the county. These facilities include an imaging center, laboratory services, and primary and specialty care doctors' offices.

III. Methods Used to Conduct the Community Health Needs Assessment

Overview:

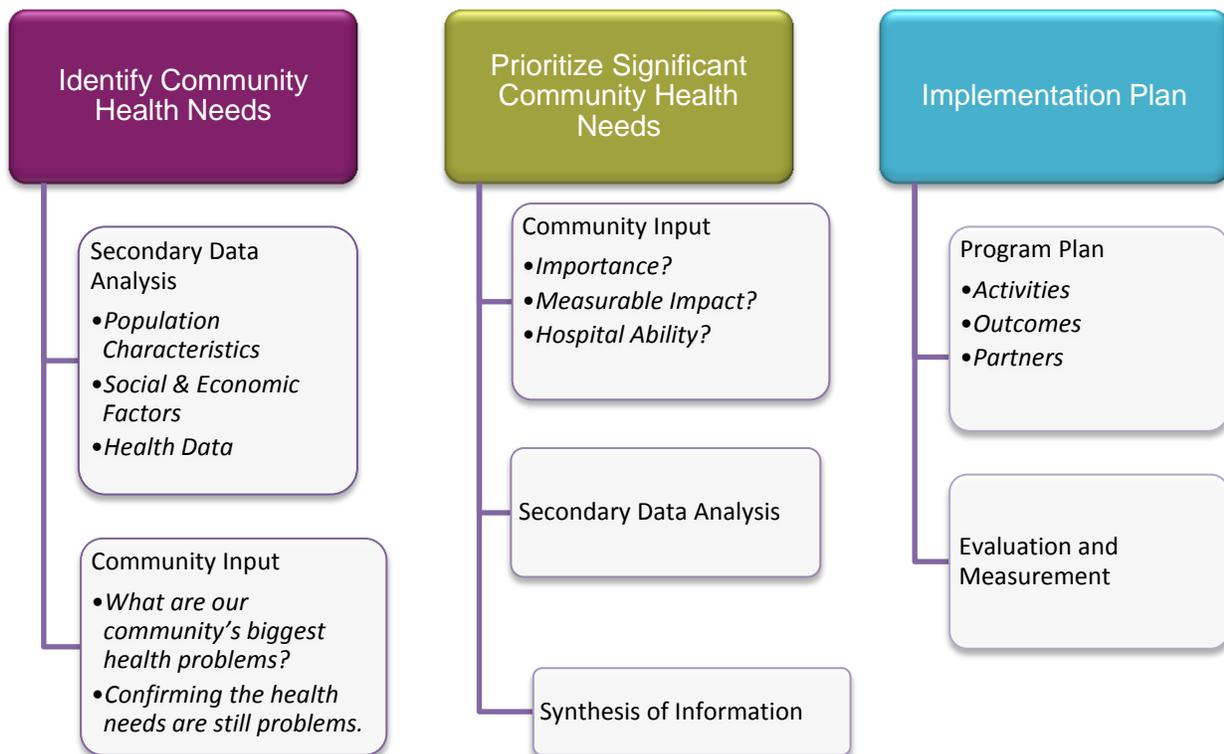In conducting this CHNA and the prior CHNA conducted in Fiscal Year 2013, UPMC pursued an approach that was comprehensive, methodologically rigorous, inclusive, and open to the community's perspective on health care needs. To conduct the CHNA in a manner that reflects best practices, UPMC partnered with 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.

Identify Community Health Needs

Secondary Data Analysis
- *Population Characteristics*
- *Social & Economic Factors*
- *Health Data*

Community Input
- *What are our community's biggest health problems?*
- *Confirming the health needs are still problems.*

Prioritize Significant Community Health Needs

Community Input
- *Importance?*
- *Measurable Impact?*
- *Hospital Ability?*

Secondary Data Analysis

Synthesis of Information

Implementation Plan

Program Plan
- *Activities*
- *Outcomes*
- *Partners*

Evaluation and Measurement

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:

Bedford County is Rural: With a population of 49,762, and a population density of 49.2 residents per square mile, Bedford County is a rural area.

Sizable Elderly Population with High Social Needs: A notable characteristic of Bedford County is the large and increasing percentage of elderly residents (age 65 and over). Bedford 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 Bedford 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).
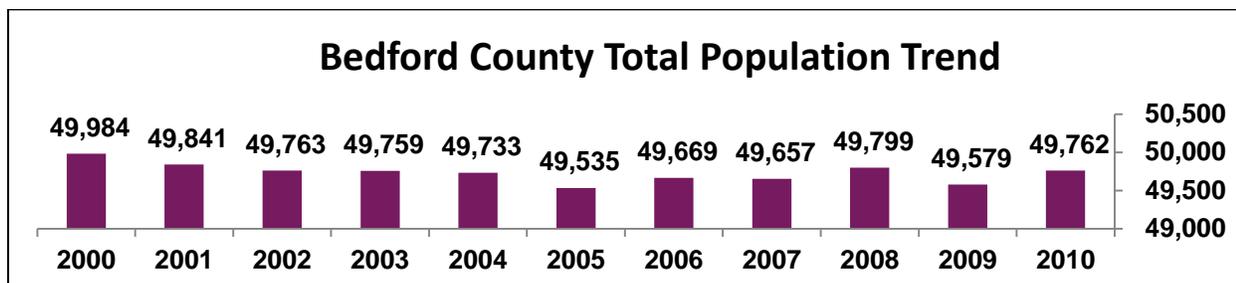
Bedford County Has a Sizable Elderly Population

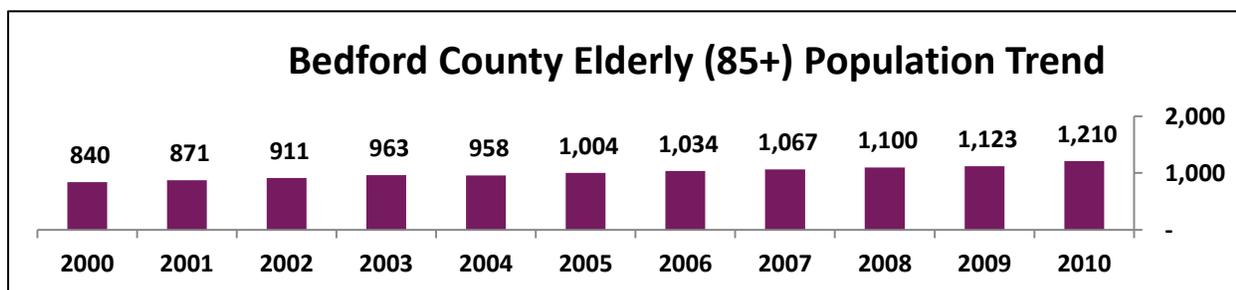| Age Distribution – 2010			
	Bedford County	**Pennsylvania**	**United States**
Median Age	43.9	40.1	37.2
% Children (<18)	21.6%	22.0%	24.0%
% 18-64	59.4%	62.6%	63.0%
% 20-49	35.4%	39.0%	41.0%
% 50-64	21.8%	20.6%	19.0%
% 65+	19.0%	15.4%	13.0%
% 65-74	10.2%	7.8%	7.0%
% 75-84	6.3%	5.4%	4.3%
% 85+	2.4%	2.4%	1.8%
% Elderly Living Alone	12.5%	11.4%	9.4%

Source: U.S. Census, 2010

Total Population Stable In Bedford County But Aging Population Increasing: Although the population has remained stable since 2000, the county's most elderly (age 85 and over) population increased significantly (see figure below).

Bedford County's total population has seen a decrease of less than 1 percent from 2000 to 2010.

Bedford County Total Population Trend

Year	Population
2000	49,984
2001	49,841
2002	49,763
2003	49,759
2004	49,733
2005	49,535
2006	49,669
2007	49,657
2008	49,799
2009	49,579
2010	49,762

However, the most elderly population in Bedford County (85+) has seen a 44 percent increase from 2000 to 2010.

Bedford County Elderly (85+) Population Trend

Year	Population
2000	840
2001	871
2002	911
2003	963
2004	958
2005	1,004
2006	1,034
2007	1,067
2008	1,100
2009	1,123
2010	1,210

Source: U.S. Census

Socioeconomic challenges in Bedford County: When compared to the Commonwealth of Pennsylvania or the nation, the overall population of Bedford County faces some economic challenges. Bedford County tends to have:
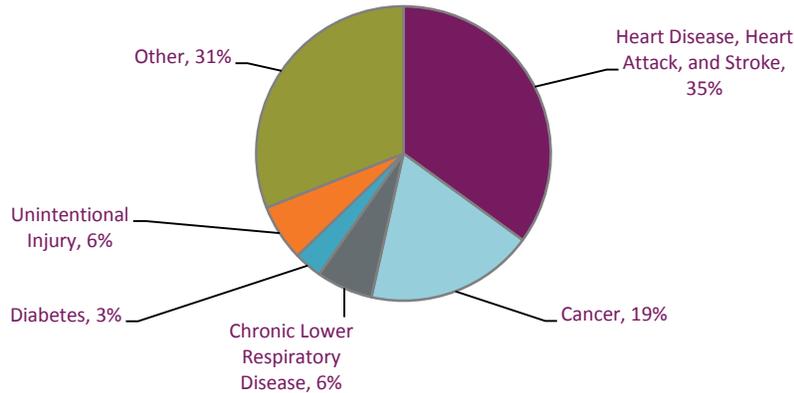
- **A lower median household income**
- **More residents with no high school diploma**
- **More recipients of the income-based Medicaid health insurance program and uninsured (see Appendix B)**

Social and Economic Population Demographics			
	Bedford County	**Pennsylvania**	**United States**
Median Household Income	$40,313	$49,288	$50,046
% in Poverty	12.8%	13.4%	15.3%
% with No High School Diploma (among those 25+)	15.4%	11.6%	14.4%
% Unemployed (among total labor force)	7.6%	9.6%	10.8%
Racial Groups			
% White	98.0%	81.9%	72.4%
% African-American	0.5%	10.8%	12.6%
% Other Race	1.5%	7.3%	15.0%

Source: U.S. Census, 2010

Chronic Disease and Mortality:

Nearly two-thirds of deaths in Bedford County are attributable to chronic disease.

Other, 31%

Heart Disease, Heart Attack, and Stroke, 35%

Unintentional Injury, 6%

Diabetes, 3%

Chronic Lower Respiratory Disease, 6%

Cancer, 19%

Source: Pennsylvania Department of Health, 2012

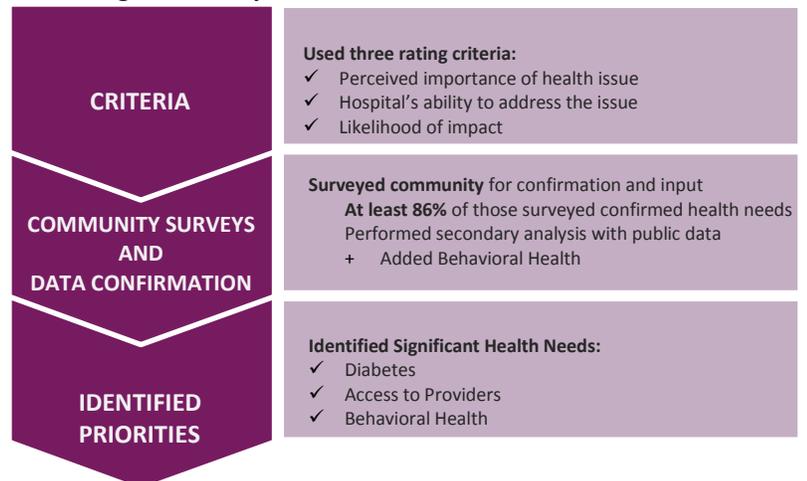*Significant Health Needs for UPMC Bedford Memorial's Community:*

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 community:

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

For UPMC Bedford Memorial'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:

- **Diabetes**
- **Access to Providers: Primary and Specialty Care**
- **Behavioral Health**

Prioritizing Community Health Needs

CRITERIA

Used three rating criteria:
- ✓ Perceived importance of health issue
- ✓ Hospital's ability to address the issue
- ✓ Likelihood of impact

COMMUNITY SURVEYS AND DATA CONFIRMATION

Surveyed community for confirmation and input
At least 86% of those surveyed confirmed health needs
Performed secondary analysis with public data
+ Added Behavioral Health

IDENTIFIED PRIORITIES

Identified Significant Health Needs:
- ✓ Diabetes
- ✓ Access to Providers
- ✓ Behavioral Health

UPMC Bedford Memorial Significant Health Needs:

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

Diabetes – Importance to the Community:

- **Diabetes is a leading cause of death in Bedford County and is associated with heart disease, the #1 leading cause of death.**
- **A high percentage of individuals in Bedford County are living with diabetes.**
- **Obesity, a risk factor associated with diabetes, is high in Bedford County.**

Diabetes is an important health issue in Bedford County

Bedford County 11.0%	**PA 10.0%**	**U.S. 8.7%**

Individuals Living with Diabetes
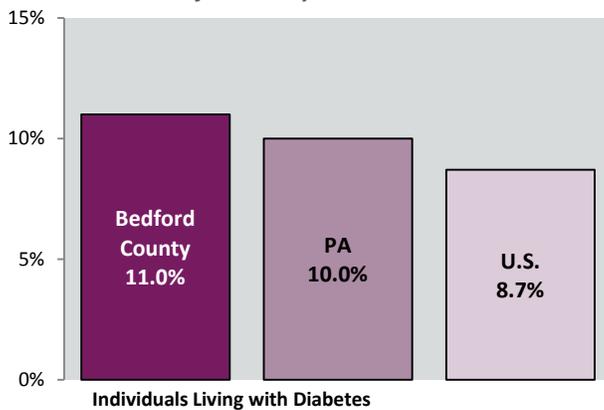
36% of Bedford County residents are obese, which is higher than the state and the nation

Bedford County 36.0%	**PA 30.0%**	**U.S. 29.4%**

Obese Adults (Percent)
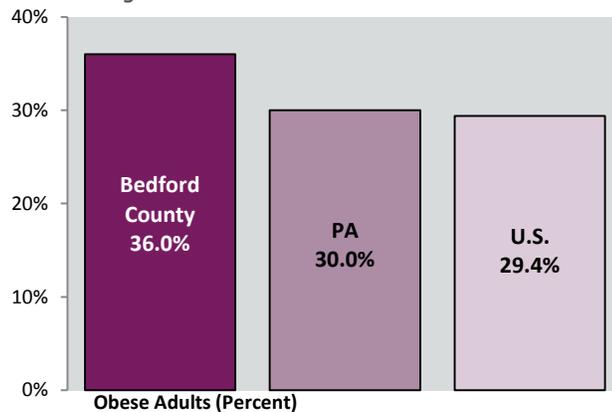
Sources: Pennsylvania Department of Health, 2011-2013; U.S. Centers for Disease Control and Prevention, 2013

Diabetes affects many people: Nationally, 8.7 percent of the total population has been diagnosed with diabetes, and it is estimated that almost one-third of people with the disease have not been diagnosed. Diabetes is a leading cause of death in Bedford County. Two-thirds of deaths in Bedford County are due to chronic disease, and diabetes is a major cause of many of them, including heart disease and stroke. Unmanaged diabetes can lead to hypertension, blindness, kidney disease, and lower-limb amputations. In Bedford County, 11 percent of residents reported having diabetes, which was higher than the state and the nation. UPMC Bedford Memorial has existing programs that address diabetes, and there is potential to leverage strong community partnerships to enhance these efforts.

Diabetes is particularly problematic for sub-populations, including low-income and underserved minorities: Within Bedford County, specific sub-populations had higher prevalence of diabetes, compared to the total population, specifically older individuals (65+, 21 percent) and those earning less than $25,000 (15 percent). Due to small sample sizes, results by race/ethnicity, other than White, are not reported.

Primary Care and Access to Specialists – Importance to the Community:

- **Characteristics of Bedford County reflect the many health care challenges that rural areas across the nation experience.**
- **The whole of Bedford County is designated by the federal government as a Health Professional Shortage Area – there are fewer people per square mile and fewer primary care doctors per person as compared to the state of Pennsylvania.**
- **Areas within Bedford County are also federally designated as Medically Underserved Areas.**
- **UPMC's virtual care capabilities offer the potential to offset these geographic constraints.**

Many areas within Bedford County are federally designated as Medically Underserved Areas.

UPMC Bedford Service Area with Medically Underserved Areas (MUA)
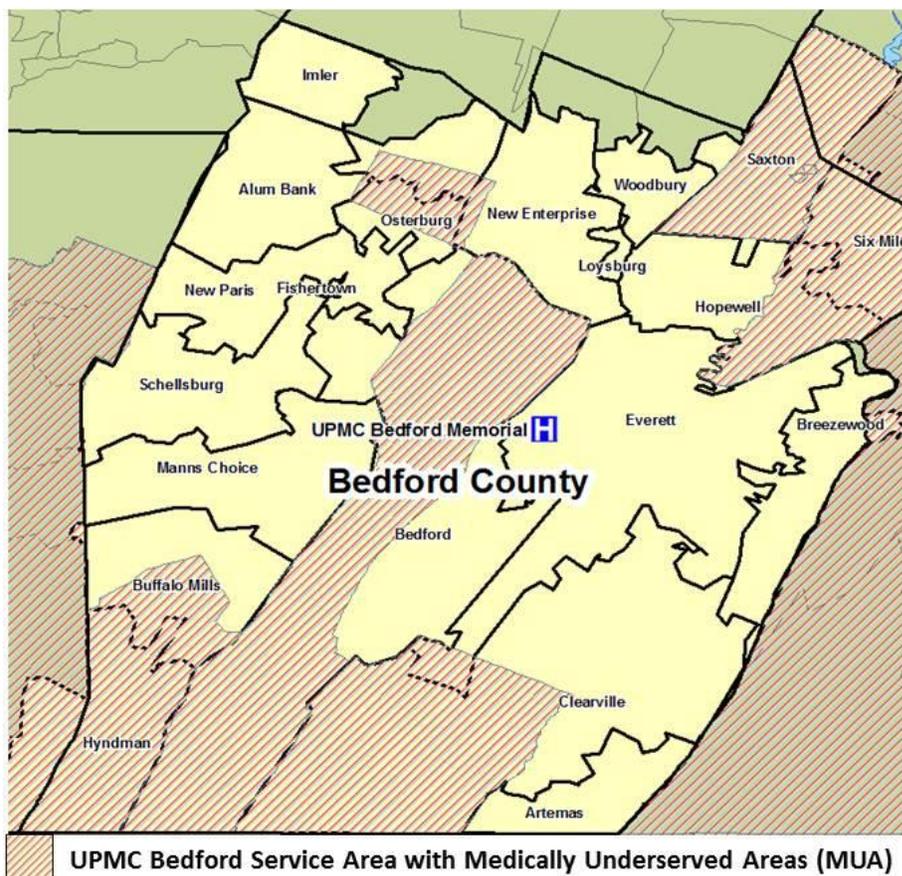
Source: Health Resources and Services Administration, 2015

Rural areas experience different health care challenges: National reports show that rural residents may have challenges in accessing health care services, including the services of primary care providers and specialists. Augmenting these access issues are that rural areas—in comparison to urban areas—tend to have a larger proportion of elderly residents and residents living in poverty.

Provider supply in Bedford County is similar to rural areas: One of the challenges in rural areas is provider supply. Bedford County is federally designated as a Health Professional Short Area (HPSA), which is based on the ratio of the population to the number of primary care providers. In Bedford County, the ratio of primary care physicians to the population (32.6 per 100,000) was lower, compared to the state (82.0 per 100,000).

Medically Underserved Areas within Bedford County: Areas in Bedford County are also designated by the federal government as Medically Underserved Areas (MUA). 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**

Behavioral Health – Importance to the Community:

- **More than 18 percent of U.S. adults have a mental illness.**
- **Nearly one-third of Bedford County adults reported experiencing poor mental health in the past month.**
- **More so, access to behavioral health services for seniors (65+), especially in rural areas can be challenging. About one in five seniors in Bedford County reported poor mental health in the past month.**
- **Prevention and early diagnosis of behavioral health issues may decrease the risk for or mitigate the worsening of other chronic diseases. Management of existing behavioral health issues can increase the quality of life for those living with these issues.**

Behavioral health affects many individuals: Behavioral health includes mental health (state of well-being) and mental illness (diagnosable mental disorders). National data suggest that more than 18 percent of U.S. adults have a mental illness. Data on the prevalence of mental illness is unavailable at the local level, but about 31 percent of adults in Bedford County reported poor mental health in the past month.

Access to behavioral health services can be challenging in rural areas: Many rural areas in the United States have a shortage of mental health professionals which can increase the burden of accessing care. Bedford County is designated as a mental health professional shortage area by the federal government.

Behavioral health can affect certain sub-populations, especially seniors (65+): In addition, about one in five seniors (65+) reported poor mental health in the past month. UPMC Bedford Memorial has the potential to leverage existing behavioral health programs through Western Psychiatric Institute and Clinic of UPMC and strong community partnerships to help improve access to behavioral health services in Bedford County.

V. Overview of the Implementation Plan

Overview:

UPMC Bedford Memorial 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 March 24, 2016 the UPMC Bedford Memorial Board of Directors adopted an implementation plan to address the identified significant health needs:

- **Diabetes**
- **Access to Providers: Primary and Specialty Care**
- **Behavioral Health**

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

High-Level Overview of UPMC Bedford Memorial Implementation Plan

Topic	Programs	Anticipated Impact ———— Goal-Year 3	Planned Collaborations
Diabetes	Diabetes Management through Primary Care Settings. Community-Wide Health Fairs, Presentations, Screenings	Improved control of diabetes. Increased education and awareness in the population	Working with primary care practices in Bedford County, including Chestnut Ridge Medical Center, Pennwood Medical Center, Bedford Internal Medicine, area gyms, Bedford County Cooperative Extension Office, Penn State University, St. Francis University, Homewood Spring House Estates, Hyndman Area Health Center
Access to Providers (Primary and Specialty Care)	UPMC Bedford Teleconsult Center. Primary Care Access. PCP Follow-Up After Discharge Initiative	Improved access to specialty services and provider services. Improve percentage of patients scheduled with follow-up appointments	UPMC System. Hyndman Area Health Center. PA Department of Health. Area Agency on Aging and other local agencies and organizations
Behavioral Health	Bedford County Mental HealthPlus Senior Outreach	Improve health outcomes of elderly individuals with depressive symptoms while increasing access to primary care and physician specialist care	Community Nursing, Home Nursing Agency, and the UPMC Aging Institute, Bedford Area Office on Aging

The UPMC Bedford Memorial 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 Chronic Disease - Diabetes

Diabetes is an important priority in UPMC Bedford Memorial's community: Diabetes is the seventh leading cause of mortality in Bedford County, where there is a much larger percentage of people living with diabetes (11.0 percent) than the state (10.0 percent) and nation (8.7 percent). Diabetes is also associated with other leading causes of death, including heart disease, which is number one. A major risk factor for diabetes is obesity, which can be prevented through increased physical activity and a healthy diet. For those living with diabetes, education about the disease and the best way to manage it can greatly improve wellness and quality of life.

UPMC Bedford Memorial is leveraging UPMC and community resources to address diabetes: The only hospital in Bedford County, UPMC Bedford Memorial not only exceeds the care typically found at a community hospital, but also offers community members direct access to UPMC's extensive network of physicians and specialized programs. UPMC Bedford serves as an important resource for the community, promoting diabetes prevention and detection and helping individuals with diabetes manage their condition. With efforts ranging from health fairs to one-on-one consultations for patients with diabetes, the hospital takes a comprehensive approach to addressing diabetes in the community. In addition, UPMC Bedford programs are complemented by UPMC Insurance Services' efforts in many clinical areas, including preventive care and care coordination efforts that support health plan members with diabetes.

Chronic Disease: Diabetes				
Program	**Intended Actions**	**Anticipated Impact** ——————— **Goal-Year 3**	**Target Population**	**Planned Collaborations**
Diabetes Management through Primary Care Settings	Provide diabetes education and intervention (*Glucose to Goal*) at several primary care practices in Bedford County. Education includes consultation with registered dietitians and a certified diabetes educator for diabetes management and obesity/weight loss plans. Measure # of individuals educated, weight, and HbA1c levels.	Improved control of diabetes	Pre-diabetics and individuals with diabetes	Working with primary care practices in Bedford County, including Chestnut Ridge Medical Center, Pennwood Medical Center, Bedford Internal Medicine Hyndman Area Health Center
Community-Wide Health Fairs, Presentations, and Screenings	Host annual health fair on National Diabetes Day. Provide presentations about diabetes and prevention throughout the community. Offer multi-phasic screenings, which includes tests for measuring glucose and HbA1c levels. Measure number of attendees, including number of screenings performed.	Increased education and awareness in the population	General population	Area Gyms, Bedford County Cooperative Extension Office, Penn State University, St. Francis University, Homewood Spring House Estates

Priority Health Issue: Addressing Access to Providers

Access to primary and specialty care is an important priority in UPMC Bedford Memorial's community: To enhance its efforts to provide care in this rural community, UPMC Bedford Memorial is pursuing a strategic program for expanding access to specialty care via virtual care. Bedford County's status as a Health Professional Shortage Area (HPSA) represents a challenge to community health; however, the technological support afforded to UPMC Bedford Memorial by the larger UPMC system, which has made virtual care a particular focus, represents an opportunity to address the issue. While it is difficult to recruit physicians to rural areas in general, virtual care is a promising, practical, and relatively quick approach to providing high level specialty services.

UPMC Bedford Memorial is leveraging UPMC and community resources to address access to providers: The UPMC Bedford Teleconsult Center is a dedicated, multi-specialty outpatient clinic which uses technology to provide patients in Bedford County with access to UPMC specialists located in Pittsburgh or Erie. This new model of care delivery – called telemedicine - lets patients remain in their community while taking advantage of UPMC's world-class clinical care. The UPMC Bedford Teleconsult Center helps patients reduce the significant cost and time burden often associated with travel to Pittsburgh or Erie from locations where subspecialty care is limited. In addition, because telemedicine visits are provided in a patient's community, family members can more easily attend appointments and provide support. To improve access to primary care, UPMC Bedford continues to recruit primary care providers and will implement an open-access office to improve timely access to primary care. In addition, UPMC Bedford programs are complemented by UPMC Insurance Services' efforts in many clinical areas. Primary care programming, coupled with provider-focused incentives, help to improve the care for health plan members.

Access to Physician Specialists and Primary Care				
Program	**Intended Actions**	**Anticipated Impact** Goal-Year 3	**Target Population**	**Planned Collaborations**
UPMC Bedford Teleconsult Center	Continue to provide teleconsult services for specialty care, including expanding specialty services. Measure patient satisfaction outcomes, new specialties added, number of patients receiving teleconsult services, costs saved.	Improved access to specialty services	General population	UPMC System Hyndman Area Health Center PA Department of Health Area Agency on Aging and other local agencies and organizations
Primary Care Access	Continue to support pipeline of providers through support of medical school scholarships and incentives to encourage medical residents to practice in Bedford County. Implement an open-access office. Measure number of medical school scholarships distributed, number of medical residents committed to practice in Bedford County, number of patients served at open-access office.	Improved access to primary care services	General population, Medical students and residents	
PCP Follow-Up After Discharge Initiative	Schedule all appropriate appointments with PCPs and specialists prior to patient discharge. Measure percent of patients with post-discharge appointments scheduled within 5-7 days of discharge, readmission rates.	Improved percentage of patients scheduled with follow-up appointments	All inpatients	

Priority Health Issue: Addressing Behavioral Health

Access to behavioral health is an important priority in UPMC Bedford Memorial's community: To enhance its efforts to provide behavioral health care in this rural community, UPMC Bedford Memorial is pursuing a strategic approach to improve behavioral services, especially for the senior population. Bedford County is designated as a mental health professional shortage area by the federal government. In addition, results from a state survey demonstrated that about one in five seniors (65+) reported poor mental health in the past month.

UPMC Bedford Memorial is leveraging UPMC and community resources to address behavioral health: UPMC Bedford Memorial is leveraging behavioral health programs through UPMC's Western Psychiatric Institute and Clinic and its strong community partnerships to help improve access to local behavioral health services. UPMC Bedford, with support from U.S. Health Resources and Services Administration, will increase depression screenings and access to care for seniors. More specifically, an individual who is identified as "at-risk" for depression will have several options to receive care in the most appropriate and least restrictive setting (of his/her choice), including management by his/her Primary Care Physician (PCP) and home visits from a behavioral health nurse. In addition, UPMC Bedford programs are complemented by UPMC Insurance Services' efforts in many clinical areas, including primary care initiatives, targeted care coordination, and referral support for health plan members requiring behavioral health care services.

Access to Physician Specialists and Primary Care				
Program	**Intended Actions**	**Anticipated Impact** Goal-Year 3	**Target Population**	**Planned Collaborations**
Bedford County Mental Health*Plus* Senior Outreach	Identify health care settings in Bedford County to screen for depression utilizing a standard assessment tool. Collaborate with other area health care providers to improve access, diagnosis, and treatment of geriatric depression by offering screening, education, and outreach. Measure the number of individuals screened and referred to appropriate levels of care.	Improved health outcomes of elderly individuals with depressive symptoms while increasing access to primary care and physician specialist care	Senior population	Community Nursing, Home Nursing Agency, and the UPMC Aging Institute, Bedford Area Office on Aging

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. 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.

UPMC Bedford Memorial

APPENDIX B:

Community Health Needs Profile

Population Demographics

Characteristics	Bedford County	Pennsylvania	United States
Area (sq miles)	1,012.30	44,742.70	3,531,905.43
Density (persons per square mile)	49.2	283.9	87.4
Total Population, 2010	49,762	12,702,379	308,745,538
Total Population, 2000	49,984	12,281,054	281,424,600
Population Change ('00-'10)	-222	421,325	27,320,938
Population % Change ('00-'10)	-0.4%	3.4%	9.7%
Age			
Median Age	43.9	40.1	37.2
%<18	21.6%	22.0%	24.0%
%18-44	30.1%	34.3%	36.5%
%45-64	29.4%	28.1%	26.4%
% >65+	19.0%	15.4%	13.0%
% >85+	2.4%	2.4%	1.8%
Gender			
% Male	49.6%	48.7%	49.2%
% Female	50.4%	51.3%	50.8%
Race/Ethnicity			
% White*	98.0%	81.9%	72.4%
% African-American*	0.5%	10.8%	12.6%
% American Indian and Alaska Native*	0.2%	0.2%	0.9%
% Asian*	0.2%	2.7%	4.8%
% Native Hawaiian/Other Pacific Islander*	0.0%	0.0%	0.2%
% Hispanic or Latino**	0.9%	5.7%	16.3%
Disability	16.4%	13.1%	11.9%

*Reported as single race; **Reported as any race*
Source: US Census

Social and Economic Factors

Characteristics	Bedford County	Pennsylvania	United States
Income, Median Household	$40,313	$49,288	$50,046
Home Value, Median	$117,300	$165,500	$179,900
% No High School Diploma*	15.4%	11.6%	14.4%
% Unemployed**	7.6%	9.6%	10.8%
% of People in Poverty	12.8%	13.4%	15.3%
% Elderly Living Alone	12.5%	11.4%	9.4%
% Female-headed households with own children <18	4.2%	6.5%	7.2%
Health Insurance			
% Uninsured	11.9	10.2	15.5
% Medicaid	14.3	13.1	14.4
% Medicare	13.7	11.2	9.3

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

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

Causes of Death	Bedford 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	28.4	24.3	23.5
Malignant Neoplasms	18.5	22.8	22.5
Chronic Lower Respiratory Diseases	6.2	5.2	5.7
Cerebrovascular Diseases	6.6	5.1	5.0
Unintentional Injuries	6.2	4.9	5.0
Alzheimer's Disease	4.8	2.8	3.3
Diabetes Mellitus	3.1	2.9	2.9
Influenza and Pneumonia	2.9	1.9	2.2
Nephritis, Nephrotic Syndrome and nephrosis	1.5	2.2	1.8
Intentional Self-Harm (Suicide)	2.1	1.3	1.6

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

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

Characteristics	Bedford County	Pennsylvania	United States	Healthy People 2020
Morbidity				
Diabetes (%)	11.0	10.0	8.7	NA
Mental Health (Mental health not good ≥1 day) in past month (%)	31.0	35.0	NA	NA
Low Birthweight (% of live births)	3.9	8.1	8.0	7.8
Health Behaviors				
Obesity (Adult) (%)	36.0	30.0	29.4	30.5
Excessive Alcohol Use (%)	15.0	17.0	16.8	24.4
Current Tobacco Use (%)	22.0	21.0	19.0	12.0
STDs (Gonorrhea per 100,000)*	6.4	150.5	250.6	251.9
Clinical Care				
Immunization: Ever had a Pneumonia Vaccination (65+) (%)	69.0	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)	32.6	82.0	75.8	NA
Receive Prenatal Care in First Trimester (%)	78.1	72.4	71.0	77.9

Sources:

Bedford 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 Bedford Memorial'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 Bedford Memorial invited representatives from the following organizations to participate in the community needs survey conducted in June 2015:

- **Bedford County Area Agency on Aging, Bedford, PA**
- **Bedford County Chamber of Commerce, Bedford, PA**
- **Bedford Memorial Hospital Auxiliary, Bedford, PA**
- **Blackburn-Russell Co., Bedford, PA**
- **First National Bank, Bedford, PA**
- **Gatter and Diehl, Inc., Bedford, PA**
- **McFarland's Furniture, Everett, PA**
- **Midstate Tool and Supply, Inc., Altoona, PA**

- **Penn State Cooperative Extension, Ebensburg, PA**
- **Pennwood Family Medicine, Everett, PA**
- **Personal Solutions, Inc., Bedford, PA**
- **Reed, Wertz, and Roadman, Inc., Bedford, PA**
- **Somerset Mental Health Mental Retardation Services**
- **Structural Fiberglass, Inc., Bedford Township, PA**
- **Trinity Lutheran Church, Bedford, PA**
- **Unified Family Services System, Everett, PA**

The UPMC Bedford Memorial 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:

In 2013, UPMC Bedford Memorial, 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 CHNA 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 Bedford Memorial:

UPMC Bedford Memorial 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 Bedford Memorial 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 Bedford Memorial community.

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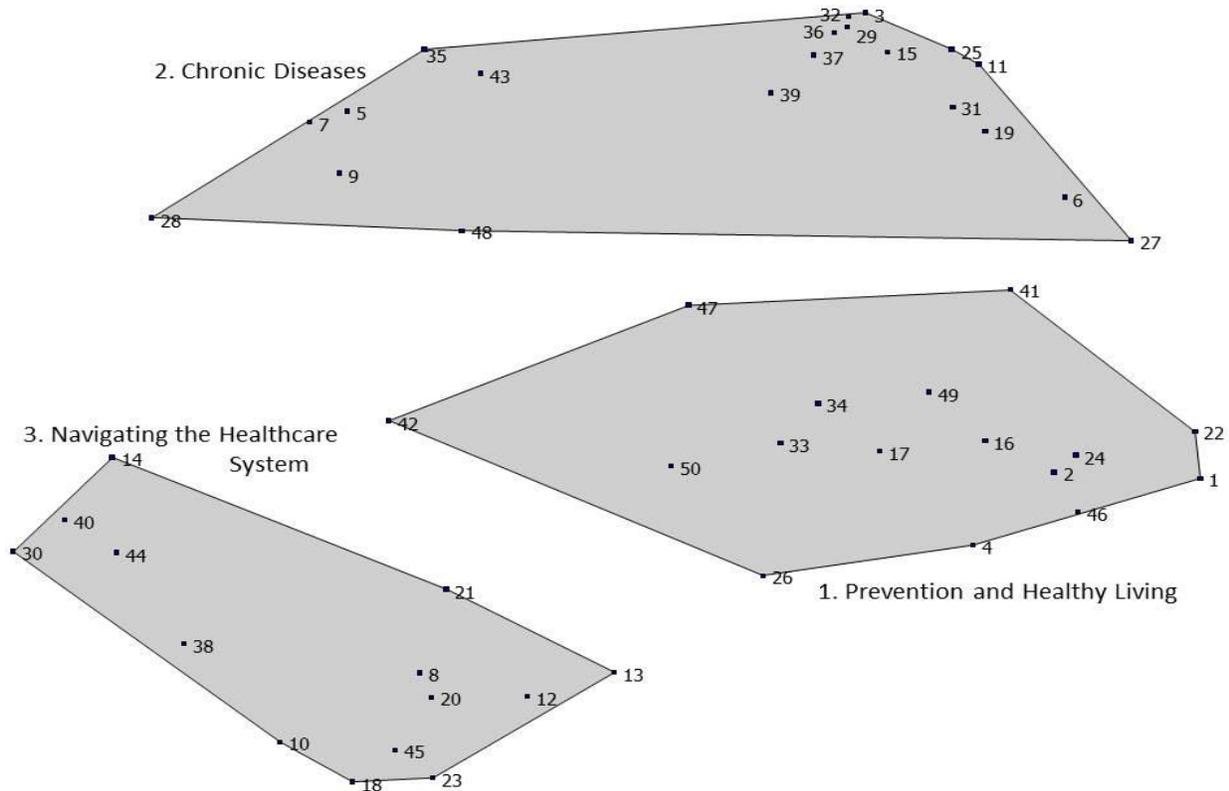
For each of the rating criteria, the rating levels were broken into three equal distributions (tertiles) representing high, moderate, and low priority. The cut points for each rating criteria are as follows:

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 Bedford Memorial. UPMC Bedford Memorial leadership next consulted with experts from Pitt Public Health and members of the community advisory panel 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.