



Allegheny
Health Network



**Community Health Needs Assessment
Research Report
2015**

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BAKER TILLY

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Our Commitment to Community Health

Improving the health of western Pennsylvanians is not only in the best interest of our communities and the region, but also the mission of Allegheny Health Network. We are proud to be part of the communities we serve and are committed to making the lives of our patients, staff, and friends better through the work we do. To gain a better understanding of health needs across the communities we serve, Allegheny Health Network (AHN) undertook a system-wide Community Health Needs Assessment (CHNA) in 2015.

The 2015 CHNA builds upon our hospitals' previous CHNAs conducted in 2013 and provides a comprehensive guide for Allegheny Health Network's community benefit and community health improvement efforts. We identified needs within each of our hospital communities and will be a catalyst to work with our community partners to take a collaborative approach to community health improvement while directing system-wide resources to improve population health throughout the region.

Our initiative aligned with ongoing community health improvement activities in our local hospital service areas as well as public health efforts directed by the Allegheny and Erie County Health Departments. Where applicable, we have aligned our priorities and planning with these local and regional initiatives to foster collaboration in community health improvement.

Our timeline is consistent with IRS requirements for all not-for-profit hospitals to conduct a CHNA every three years. Allegheny Health Network views the value of a Community Health Needs Assessment to be far beyond regulatory compliance and we look forward to continued partnership to improve the health of the communities we serve.

An integral part of the CHNA process was community engagement. A Steering Committee of AHN leadership and an Advisory Committee made up of a diverse selection of community representatives guided the CHNA process from inception to completion. Additionally, we solicited input from community stakeholders and residents through surveys, focus groups, and other dialogue.

Our research partner, Baker Tilly, was instrumental in collecting and analyzing data and preparing the following report. Baker Tilly's expertise ensured the validity of the research and assisted in developing a long-term action plan to address the highest health needs across the AHN service area.

Now begins the challenge of using our findings to measure outcomes in addressing health disparities within our communities. This will not be an easy task nor will all of its impact be immediately felt. It will require the commitment of AHN, partnerships with organizations throughout the community, and with individual members of the communities we serve. AHN is excited about our role in driving positive outcomes in addressing these priorities.

Our Partners

The following individuals participated in the CHNA planning and oversight as part of the AHN CHNA Steering and Advisory Committees:

James Amsterdam, MD, Chief Medical Officer, Saint Vincent Hospital, Allegheny Health Network
Ron Andro, CEO, West Penn Hospital, Allegheny Health Network
Kyle Bird, MHA, Director, Allegheny Health Network Research Institute
David A. Blandino, MD, Chairman of the Board, Allegheny Health Network, Board Member, Highmark Health and Board Member, Highmark Inc.
Hon. Robert Brooks, Mayor, Municipality of Murrysville
Aggie Brose, Deputy Executive Director, Bloomfield Garfield Corporation
Yvonne Cook, President, Highmark Foundation
Angela Costa, Division Director Nursing Administration, Allegheny Health Network
Basil Cox, Community Leader; Board Member, West Penn Allegheny Health System
Elizabeth Cuevas, MD, Allegheny Health Network
Michelle Cunningham, CEO, Highlands Hospital
William Englert, CEO, Allegheny Valley Hospital, Allegheny Health Network
David Goldberg, Executive Vice President, Allegheny Health Network
Leslie Grenfell, Executive Director, SWPA Area Agency on Aging
Mary Phan Gruber, Executive Director, Jefferson Regional Foundation
Karen Hacker, MD, Director, Allegheny County Health Department
Michael Harlovic, CEO, Allegheny General Hospital, Allegheny Health Network
AJ Harper, President, Hospital Council of Western PA
Bill Johnjulio, MD, Forbes Hospital, Allegheny Health Network
Melissa Kovtun, Vice President, Ancillary Services, Allegheny Health Network
Jack Krahn, President, Allegheny County Medical Society
Kevin Kusic, System Wide Services Decision Support, Allegheny Health Network
Patricia Liebman, Chief Operating Officer, Allegheny Health Network
Deborah Linhart, Vice President, Women's Services, Allegheny Health Network
Robert McCaughan, Vice President, Prehospital Services, Allegheny Health Network
Kathleen McKenzie, Vice President, Community & Civic Affairs, Allegheny Health Network
Joseph Macerelli, Esq., Board Member, Allegheny Health Network
Jeff Manners, Tax Director, Highmark Health
Sister Carol Morehouse, SVP/Mission Integration, Saint Vincent Hospital, Allegheny Health Network
John Paul, CEO, Allegheny Health Network
Duke Rupert, CEO, Forbes Hospital, Allegheny Health Network
Jane Sarra, CEO, Canonsburg Hospital, Allegheny Health Network
Louise Urban, CEO, Jefferson Hospital, Allegheny Health Network
Scott Whalen, CEO, Saint Vincent Hospital, Allegheny Health Network
Doris Carson Williams, President and CEO, African American Chamber of Commerce; Board Member, West Penn Allegheny Health System and Highmark, Inc.
Sharon Wolf, Executive Director, North Hills Community Outreach

Executive Summary of CHNA

A System-Wide Approach to Community Health Improvement

As a health network, we can extend our reach to more people than ever and offer them a broad spectrum of care and services. The reach of the AHN network covers Western Pennsylvania with primary service areas surrounding Pittsburgh and Erie. The AHN system is made up of eight hospitals: Allegheny General, Allegheny Valley, Canonsburg, Forbes, Jefferson, Saint Vincent, Westfield Memorial, and West Penn and more than 200 primary- and specialty-care practices. We employ approximately 1,700 physicians in every clinical specialty, 17,000 staff members, and 2,000 volunteers. Together, we provide world-class medicine to patients in our communities, across the country, and around the world.

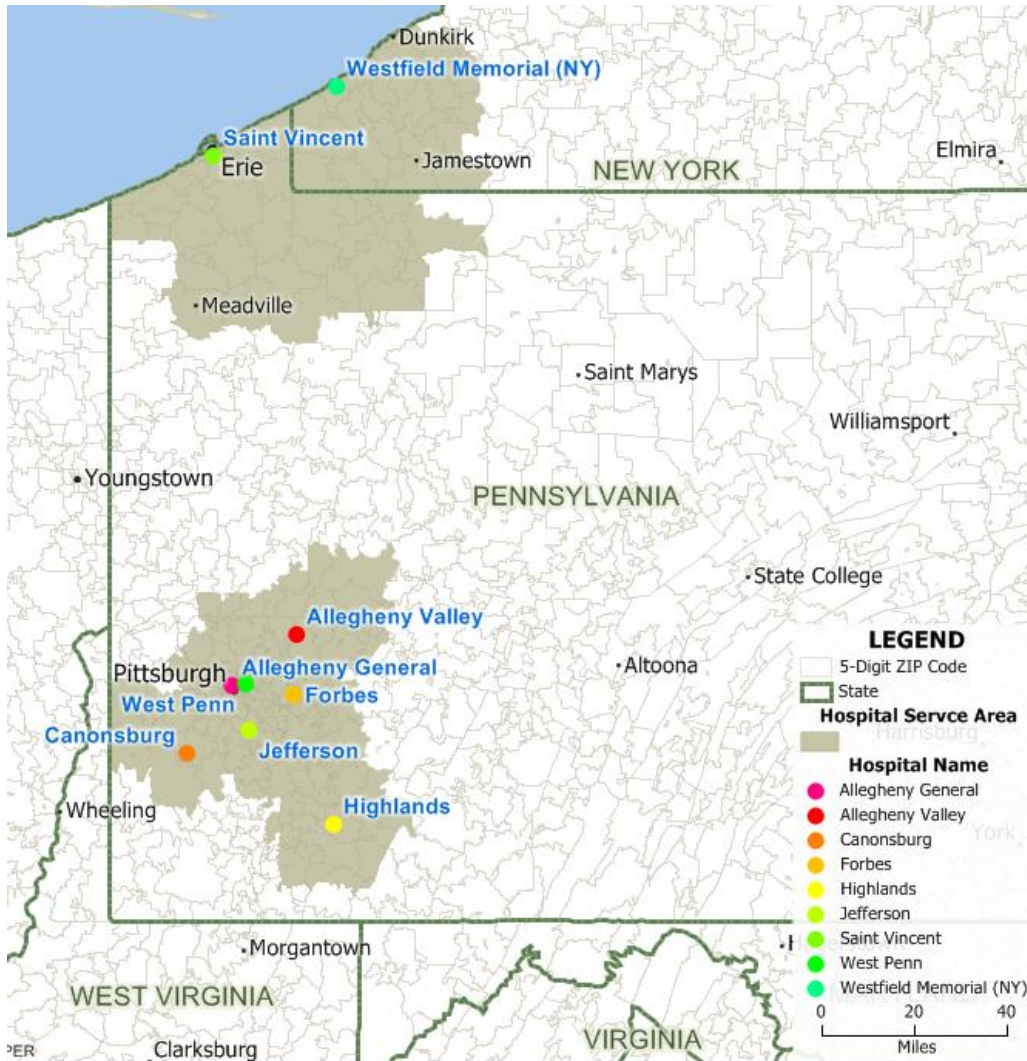
In 2015 Allegheny Health Network (AHN) embarked on a comprehensive Community Health Needs Assessment (CHNA) to collect health and socio-economic data to determine health needs across AHN's Western PA service area. The participating hospitals in the CHNA were

- 1) Allegheny General Hospital
- 2) Allegheny Valley Hospital
- 3) Canonsburg Hospital
- 4) Forbes Hospital
- 5) Jefferson Hospital
- 6) Highlands Hospital*
- 7) Saint Vincent Hospital
- 8) West Penn Hospital
- 9) Westfield Memorial Hospital

*Highlands Hospital is not part of the AHN system but was a collaborating partner on the CHNA and in ongoing community health initiatives.

In taking a system-wide approach to community health improvement, AHN sought to identify regional health trends and unique disparities within hospital service areas. System-wide priorities were developed to delegate resources across the system to impact the region's most pressing health needs, while hospital-specific strategies were outlined to guide local efforts and collaboration with community partners to address those prioritized needs.

The AHN Service Area



Allegheny Health Network serves residents of Western PA through its hospitals, outpatient centers, primary and specialty care providers, and multiple partners. The system-wide CHNA focused on the two primary service areas for AHN: Greater Pittsburgh and Greater Erie to identify community health needs, compare issues across the region, and develop system-wide priorities for community health improvement that hospitals could address through use of local resources and hospital initiatives.

CHNA Methodology

Leadership

The AHN CHNA was overseen by a Steering Committee of key health system representatives and an Advisory Committee made up of individual hospital leaders and community stakeholders who represent individuals who are medically underserved, low income, minorities or other special populations within the AHN service area. A list of committee members is included on Page 4 of this report.

Research Partner

Baker Tilly assisted AHN in all phases of the CHNA including project management, quantitative and qualitative data collection, report writing, and development of the Implementation Strategy.

Data Collection

In conducting the CHNA, AHN sought to identify unique socio-economic measures, health indicators, and service delivery trends for each of its hospital communities. In addition to individual hospital service area analysis, hospitals in the Pittsburgh area were compared to a Pittsburgh aggregate (P-AHN) due to their overlapping service areas. Saint Vincent Hospital and Westfield Hospital in the Greater Erie area were analyzed together. Additionally health and socio-economic measures for all hospitals were compared to state and national benchmarks, where applicable.

Quantitative research used to illustrate and compare health trends across the AHN service areas consisted of:

- > Publicly reported health indicators
- > Demographic data
- > Socio-economic statistics
- > Healthcare utilization and claims records

Qualitative research was conducted with key community stakeholders and others representing the broad interests of the community, including experts in public health, members of medically underserved, low-income, and minority populations, and other representatives of special populations within the communities. Qualitative research methodology used to solicit feedback from community stakeholders included:

- > Key Informant Survey of 107 community representatives to solicit feedback on community health priorities, underserved populations, and partnership
- > Six focus groups were conducted with target populations including pregnant and postpartum mothers, seniors, behavioral health consumers, EMS providers, and care coordinators to inform implementation strategies
- > Prioritization of health needs was determined by the AHN CHNA Steering and Advisory Committees

Identified Priority Needs

Selection of Priority Areas

The AHN CHNA Steering and Advisory Committees reviewed findings from the CHNA research, including public health data, socio-economic measures, responses from the key informant survey, and hospital utilization trends to determine the highest needs in each hospital community and develop system-wide priorities to focus community health improvement efforts. The committee members recommended the following issues be adopted as priority health needs across the AHN service area:

- > Behavioral Health
- > Cancer
- > Chronic Disease
- > Maternal & Child Health

The rationale and criteria used to select these system-wide priorities included:

- > Prevalence of disease and number of community members impacted
- > Rate of disease in comparison to state and national benchmarks
- > Health disparities among racial and ethnic minorities
- > Existing programs, resources, and expertise to address the issue
- > Input from representatives of underserved populations
- > Alignment with concurrent Public Health Department initiatives in Allegheny and Erie Counties

Alignment with Public Health

AHN compared its research findings and identified priority areas to CHNAs conducted by the Allegheny County Health Department and Erie County Health Department. The table below shows identified priority needs across research methodologies in the AHN 2013 and 2015 CHNAs, as well as priorities identified from the Allegheny and Erie Counties Health Department Assessments.

The priority areas of Behavioral Health, Cancer, Chronic Disease, and Maternal and Child Health represent cross-cutting issues across the regional research initiatives.

Identified Priorities across Research Initiatives

(Priorities are listed in alphabetical order for each research initiative)

2015 CHNA Priority Areas from Research Findings			Priority Areas from previous and related CHNAs		
AHN 2015 CHNA Key Informant Survey	AHN 2015 CHNA Hospital Data	AHN 2015 CHNA Public Health Data	AHN Hospitals 2013 CHNA Priorities	Allegheny Co. Health Dept 2015 CHNA Priorities	Erie Co. Health Dept 2015 CHNA Priorities
Behavioral Health	Asthma	Cancer	Cancer	Access to Care	Cancer Prevention and Early Detection
Diabetes	Chronic Heart Failure (CHF)	Diabetes	Chronic Diseases (Diabetes and Heart Disease)	Chronic Disease Health Risk Behaviors	Chronic Disease Prevention/ Control
Heart Disease	COPD	Heart Disease	Pneumonia	Environment	Lifestyle Behavior Change
Overweight/ Obesity	Diabetes	Maternal and Child Health	Maternal and Child Health	Maternal and Child Health	Mental Health
Substance Abuse	Hypertension	Obesity	Mental Health	Mental Health and Substance Abuse	

Development of Community Health Improvement Plan (CHIP)

Allegheny Health Network developed a Community Health Improvement Plan (CHIP) to guide community benefit and population health improvement activities across the AHN service area. The CHIP builds upon our previous health improvement activities and aligns with the Allegheny County Health Department's Plan for a Healthy Allegheny (PHA) and Erie County Health Department's Community Health Improvement Plan to ensure ongoing collaboration with public health and other community partners to address the region's most pressing community health needs.

Health Priority: Behavioral Health

Goal: Reduce mortality and morbidity related to mental and substance use disorders.

Objectives:

- 1) Increase utilization of outpatient behavioral health services, particularly for the most vulnerable populations.
- 2) Increase knowledge and skills of first responders and community members around behavioral health.
- 3) Increase the number of healthcare providers integrating behavioral health and physical health.

Health Priority: Cancer

Goal: Reduce the number of new cancer cases, as well as the illness, disability, and death caused by cancer.

Objectives:

- 1) Increase the percentage of adults who receive timely age-appropriate cancer screenings based on the most recent guidelines.
- 2) Reduce the incidence rate for the top four most commonly diagnosed cancers: prostate (male), lung and bronchus, colon and rectum, and breast (female) and the overall cancer mortality rate by promoting healthy lifestyle behaviors related to tobacco use and diet and exercise.
- 3) Provide health screenings and education to high-risk populations.

Health Priority: Chronic Disease

Goal 1: Decrease preventable chronic disease by ensuring access to resources, knowledge, and opportunities for residents to adopt healthy behaviors.

Objectives:

- 1) Increase primary care provider (PCP) recommendations for preventive screenings per risk and age guidelines.
- 2) Provide health screenings and education to high-risk populations.
- 3) Partner with community organizations to promote healthy lifestyles.

Goal 2: Improve management and outcomes for patients diagnosed with a chronic disease.

Objectives:

- 1) Reduce hospital 30-day readmissions rates for chronic disease.
- 2) Manage high risk populations through care coordination and partnership with social service partners.
- 3) Partner with community organizations to promote healthy lifestyles.

Health Priority: Maternal and Child Health

Goal: Reduce morbidity and mortality, by improving the health and quality of life of women, infants, children, caretakers, and their families, especially in vulnerable communities.

Objectives:

- 1) Reduce the proportion of preterm and low birth weight births and reduce the disparity between White, Black, and Hispanic populations.
- 2) Reduce the disparity between White, Black, and Hispanic mothers who receive prenatal care within the first trimester.
- 3) Reduce occurrence of Neonatal Abstinence Syndrome (NAS).
- 4) Increase the proportion of mothers who breastfeed for the first six months after birth and reduce the disparity between White, Black, and Hispanic populations.
- 5) Reduce the disparity between White, Black, and Hispanic births resulting in infant mortality.
- 6) Partner with community organizations to improve prenatal indicators (including not smoking during pregnancy, not drinking during pregnancy, prenatal care in first trimester, etc.).

Board Approval

A Community Health Improvement Plan for AHN was developed to build upon past efforts and measure ongoing initiatives for community health improvement. Since a system-wide approach to AHN's CHNA was used, both the CHNA Final Report and Implementation Plan were reviewed and adopted by the AHN System Board, in addition to each AHN Hospital Board. The AHN system board adopted the CHNA Final Report and a system-wide Implementation Plan on December 9, 2015. Individual hospital boards adopted the CHNA Final Report on the following dates:

November 5, 2015: Jefferson Hospital

November 9, 2015: Saint Vincent Hospital and Westfield Memorial Hospital

November 19, 2015: Allegheny Valley Hospital, Canonsburg Hospital, and West Penn Allegheny Health System (for Allegheny General Hospital, Forbes Hospital, and West Penn Hospital)

Each AHN hospital will adopt a specific Implementation Plan that outlines community health improvement activities and resources by May 15, 2016. A copy of the CHNA Final Report is posted on each hospital's website.

Summary of CHNA Research Findings

Health Priority Data by County

The following is an overview of significant findings by county for each of the four priority areas. Hospitals that serve each county are indicated in parenthesis () next to each county.

Allegheny County (Allegheny General Hospital, Allegheny Valley Hospital, Canonsburg Hospital, Forbes Hospital, Jefferson Hospital, West Penn Hospital)

Chronic Disease:

Allegheny County has higher age-adjusted death rates for coronary heart disease (among both White and Black residents). In addition, while the age-adjusted death rate due to diabetes is significantly lower for the overall county compared to the state, it is notably higher among Black residents.

Cancer:

The overall cancer incidence rate in Allegheny County is similar to the state. However, the overall cancer mortality rate in Allegheny County is higher than the state. This finding may indicate cancer cases are not being identified and treated in a timely manner. Cancer incidence rates in Allegheny County are higher for female breast and lung cancers.

Behavioral Health:

Allegheny County has higher age-adjusted death rates for drug-induced deaths (among both White and Black residents) and mental and behavioral disorders (particularly among Black residents) compared to the state despite having the best resident to mental health provider ratio among the AHN counties. A positive finding is that the county suicide rate is significantly below the state rate and nearly meets the HealthyPeople 2020 goal.

Maternal and Child Health:

Allegheny County experiences a number of disparities in regard to maternal and child health, including:

- A higher percentage of teen births among Black and Hispanic women
- A higher percentage of Black low birth weight babies despite a county-wide percentage that meets the HealthyPeople 2020 goal and is significantly below the state
- A higher overall percentage of low birth weight babies in Pittsburgh, but particularly among Blacks

- A lower percentage of Black and Hispanic mothers receiving prenatal care in the first trimester for both the county overall and Pittsburgh
- A higher percentage of Black mothers smoking during pregnancy
- A lower percentage of mothers who breastfeed, particularly among Blacks
- Allegheny County's overall infant mortality rate meets the HealthyPeople 2020 goal. However, the rate is nearly double for Blacks and is notably higher in Pittsburgh.
- West Penn Hospital experienced 120 Neonatal Abstinence Syndrome (NAS) babies in the neonatal intensive care unit (NICU) in 2014. The count represents 12.8% of all NICU babies. Eighteen percent of all babies in the Continuing Care Nursery at Jefferson Hospital were also NAS babies in 2014.

Armstrong County (Allegheny General Hospital, Allegheny Valley Hospital)

Chronic Disease:

Armstrong County is ranked 45th out of the 67 counties in Pennsylvania for poor health behaviors related to smoking, excessive drinking, and obesity. Youth in grades K-12 and adults are more likely to be obese and all residents are less likely to have access to exercise opportunities. In addition, the county has a higher age-adjusted death rate for chronic lower respiratory disease.

Cancer:

Armstrong County has similar overall cancer incidence and mortality rates to the state. However, incidence rates are higher in the county for colorectal and prostate cancers.

Behavioral Health:

Armstrong County has a resident to mental health provider ratio that is nearly double the state average and has a higher percentage of residents who drink excessively.

Maternal and Child Health:

Armstrong County has a higher percentage of mothers who smoke during pregnancy and a lower percentage of mothers who breastfeed when compared to the state. However, the percentage of infants born with low birth weight meets the HealthyPeople 2020 goal.

Butler County (Allegheny General Hospital, Allegheny Valley Hospital)

Chronic Disease:

Butler County has a higher age-adjusted death rate for chronic lower respiratory disease when compared to the state. In addition, the county experiences the following contributors to chronic disease:

- Lower access to exercise opportunities
- A higher percentage of obese adults and youth (grades 7-12)

Cancer:

Butler County has a higher incidence rate for all cancers combined and prostate cancer when compared to the state and other AHN counties. However, the overall cancer mortality rate in the county is similar to the state. This finding may indicate that cancer cases are more readily identified and treated.

Behavioral Health:

Butler County experiences fewer days of poor mental health, but has a higher age-adjusted mental and behavioral disorder death rate compared to the state. In addition, the resident to mental health provider ratio exceeds both state and national ratios.

Maternal and Child Health:

Butler County has a lower percentage of Black and Hispanic mothers receiving prenatal care in the first trimester and a lower percentage of Black mothers who breastfeed. In addition, the infant mortality rate in the county is higher than both the state rate and the HealthyPeople 2020 goal.

Chautauqua County, New York (Westfield Hospital)

Chronic Disease:

Chautauqua County has a ranking of 48 out of 62 NY counties for poor health behaviors related to smoking, excessive drinking, and physical inactivity. Residents may be less physically active due to reported limited access to physical activity opportunities. In addition, the county's age-adjusted death rate for chronic lower respiratory disease is higher.

Cancer:

Chautauqua County has a higher incidence rate for all cancers combined, female breast, lung, and prostate cancers. However, the overall cancer mortality rate in the

county is similar to Pennsylvania. This finding may indicate that cancer cases are more readily identified and treated.

Behavioral Health:

Chautauqua County experiences more days of poor mental health and has fewer mental health providers to serve the area.

Maternal and Child Health:

Chautauqua County experiences a number of disparities in regard to maternal and child health, including:

- The percentage of babies born with low birth weight in Chautauqua County does not meet the HealthyPeople 2020 goal.
- The percentage of mothers receiving prenatal care is nearly 14 percentage points lower than the HealthyPeople 2020 goal.
- The infant mortality rate does not meet the HealthyPeople 2020 goal.

Erie County (Saint Vincent Hospital, Westfield Hospital)

Chronic Disease:

Erie County has a higher percentage of smokers and a higher age-adjusted death rate for chronic lower respiratory disease when compared to the state. In addition, residents are more likely to be physically inactive.

Cancer:

The overall cancer incidence rate in Erie County is similar to the state. However, the overall cancer mortality rate in Erie County is higher than the state. This finding may indicate that cancer cases are not being identified and treated in a timely manner. Cancer incidence rates in Erie County are higher for prostate cancer.

Behavioral Health:

Erie County experiences more days of poor mental health despite having one of the best resident to mental health provider ratios among the AHN counties. In addition, the county experiences the following behavioral health disparities:

- A higher percentage of non-Whites, including Hispanics, experience poor mental health
- A higher percentage of residents, particularly among non-Whites, including Hispanics, have a depressive disorder
- A higher percentage of vehicular deaths are due to driving under the influence

Maternal and Child Health:

Erie County experiences a number of disparities in regard to maternal and child health, including:

- A higher percentage of teen births among Black and Hispanic women
- A higher percentage of low birth weight babies among Black and Hispanic babies
- A higher percentage of low birth weight babies among all races in Erie City
- A lower percentage of Black and Hispanic mothers receiving prenatal care in the first trimester
- A lower percentage of mothers of all races receiving prenatal care in the first trimester in Erie City
- A higher percentage of mothers smoking during pregnancy
- A lower percentage of mothers who breastfeed, particularly among Black and Hispanic mothers
- A higher infant mortality rate, particularly in Erie City

Fayette County (Highlands Hospital, Jefferson Hospital)

Chronic Disease:

Fayette County has one of the worst rankings in Pennsylvania for length of life (64 out of 67) and health behaviors (66 out of 67). In regard to length of life, Fayette County has a higher age-adjusted death rate for chronic lower respiratory disease, diabetes, and coronary heart disease when compared to the state. In regard to health behaviors, the county has a higher percentage of diabetic residents compared to the state and experiences the following contributors to chronic disease:

- A higher percentage of smokers
- A higher percentage of obese adults and youth (grades 7-12)
- Lower access to exercise opportunities

Cancer:

Fayette County has similar overall cancer incidence and mortality rates to the state. However, incidence rates are higher in the county for colorectal and lung cancers.

Behavioral Health:

Fayette County has a mental health provider ratio similar to the top 10% in the nation. However, the county experiences more poor mental health days, more vehicular deaths due to driving under the influence, and a higher age-adjusted drug-induced death rate. One positive finding is that the age-adjusted death rate due to mental and behavioral disorders is significantly lower in the county compared to the state.

Maternal and Child Health:

Fayette County experiences a number of disparities in regard to maternal and child health, including:

- A higher teen birth rate
- A higher percentage of low birth weight babies (the highest of the AHN counties), particularly among Black babies
- A lower percentage of Black and Hispanic mothers receiving prenatal care in the first trimester
- A higher percentage of mothers smoking during pregnancy, particularly among Black mothers
- A lower percentage of mothers who breastfeed, particularly among Black mothers

Washington County (Canonsburg Hospital, Jefferson Hospital)

Chronic Disease:

Washington County has a higher age-adjusted death rate for chronic lower respiratory disease and diabetes when compared to the state.

Cancer:

The overall cancer incidence rate in Washington County is lower than the state. However, the overall cancer mortality rate in Washington County is higher than the state. This finding may indicate that cancer cases are not being identified and treated in a timely manner. Cancer incidence rates in Washington County are higher for colorectal and lung cancers.

Behavioral Health:

Washington County has a resident to mental health provider ratio that is nearly double the state average. The county is not considerably more likely to experience poor mental health days compared to the state and the nation, however, it does have the highest suicide rate among the AHN counties. The rate is only slightly higher than the state rate.

Maternal and Child Health:

The percentage of all infants in the county born with low birth weight meets the HealthyPeople 2020 goal. Washington County experiences a number of disparities in regard to maternal and child health, including:

- A higher percentage of Black low birth weight babies
- A lower percentage of Black and Hispanic mothers receiving prenatal care in the first trimester

- A higher percentage of mothers smoking during pregnancy, particularly among Black mothers
- A lower percentage of mothers who breastfeed, particularly among Black mothers

Westmoreland County (Allegheny Valley Hospital, Forbes Hospital, Jefferson Hospital, Highlands Hospital)

Chronic Disease:

Westmoreland County residents are less likely to have access to exercise opportunities and are more likely to be physically inactive when compared to the state and the nation. In addition, residents are less likely to have access to healthy foods. These factors and others contribute to a higher percentage of obese youth (grades 7-12).

Cancer:

Westmoreland County has similar overall cancer incidence and mortality rates to the state. However, incidence rates are higher in the county for colorectal and lung cancers.

Behavioral Health:

Residents of Westmoreland County are not considerably more likely to report poor mental health days or drink excessively, but the percentage of vehicular deaths due to driving under the influence and the age-adjusted drug-induced death rate are both higher in the county when compared to the state and the nation. In addition, the resident to mental health provider ratio is higher in the county when compared to state and national ratios.

Maternal and Child Health:

Westmoreland County experiences a number of disparities in regard to maternal and child health, including:

- A higher percentage of Black low birth weight babies
- A higher percentage of mothers smoking during pregnancy, particularly among Black mothers
- A lower percentage of mothers who breastfeed, particularly among Black mothers
- 18% of all babies in the Continuing Care Nursery at Jefferson Hospital were NAS babies in 2014.

Hospital Utilization Analysis: Population Health Management Improvement Opportunities

The following analyses are based on 2013 and 2014 data provided by individual AHN hospitals. The P-AHN average is used as a benchmark for the six Allegheny Health Network Hospitals located in the Pittsburgh area: Allegheny General Hospital (AGH), Allegheny Valley Hospital (AVH), Forbes Hospital (FH), Canonsburg Hospital (CH), Jefferson Hospital (JH), and West Penn Hospital (WPH). Generally the hospitals have similar commercial, Medicaid, and Medicare utilization, although Jefferson Hospital has a disproportionately high share of Medicare and a disproportionately low Medicaid mix compared to the rest of the network.

The summary below reviews a subset of key utilization findings as follows:

- > ER utilization (patients with more than 6 visits in a calendar year)
- > Chronic condition prevalence rates (using AHRQ target conditions)
 - Asthma
 - CHF
 - COPD
 - Diabetes
 - Hypertension
- > 30 day all cause readmission rate analysis at the zip code level
- > Impact of chronic condition prevalence rates on 30 day all cause readmission rates
- > Prevalence of high-risk patients with behavioral health and/or substance abuse conditions coupled with a diagnosis of asthma, CHF, COPD, diabetes, or hypertension
- > An analysis of inpatient encounters driven by 11 key Ambulatory Care Sensitive Conditions (ACSC) as defined by CMS

Emergency Room Utilization

While the vast majority of patients visiting AHN ERs did so less than 3 times in calendar year 2014, over 1,800 patients visited the ER 6 times or more within the AHN system. The distribution of these patients was as follows:

- > SVH (29%)
- > AVH (24%)
- > AGH (16%)
- > FH (15%)

This level of ER utilization likely demonstrates a need for further community outreach and education to more effectively manage the patients' conditions in the appropriate setting.

Chronic Condition Prevalence Rates

Notable opportunities for chronic care management intervention are as follows:

- > The prevalence rates for CHF, COPD, diabetes, and hypertension at AVH are all substantially higher than the P-AHN average (CHF 24% vs. 16% P-AHN, COPD 28% vs. 18% P-AHN, diabetes 32% vs. 26% P-AHN, and hypertension 52% vs. 43% P-AHN).
- > The prevalence rate of COPD (23% vs. 18% P-AHN), diabetes (30% vs. 26% P-AHN), and hypertension (50% vs. 43% P-AHN) are higher than the P-AHN average at JH.

Readmissions

The 30 day all cause readmission rates below represent zip codes of interest based on utilization and variance to the P-AHN average.

- > AGH: The 15212 zip code in Pittsburgh has the highest overall utilization rate (10% of all visits) and its readmission rates are notably higher than the P-AHN averages for commercial payers (11% vs. 8% P-AHN), Medicaid (15% vs. 12% P-AHN), and Medicare (20% vs. 16% P-AHN). Readmission rates also exceeded the P-AHN averages in Pittsburgh zip code 15204 for commercial payers (18% vs. 8% P-AHN), Medicaid (17% vs. 12% P-AHN), and Medicare readmission rates (20% vs. 16% P-AHN).
- > AVH: The 15065 zip code in Natrona Heights has the second highest overall utilization rate (10% of all visits) and its readmission rates are notably higher than the P-AHN averages for commercial payers (17% vs. 8% P-AHN) and Medicaid (17% vs. 12% P-AHN).
- > FH: The 15147 zip code in Monroeville has the highest overall utilization rate (14% of all visits) and its readmission rates are notably higher than the P-AHN average for Medicaid payers (17% vs. 12% P-AHN).
- > WPH: The 15217 zip code in Pittsburgh has the third smallest overall utilization rate (2% of all visits) and its readmission rates are notably higher than the P-AHN average for Medicaid payers (27% vs. 12% P-AHN).
- > JH: The 15063 zip code in Monongahela has the smallest overall utilization rate (2% of all visits) and its readmission rates are notably higher than the P-AHN average for Medicaid payers (32% vs. 12% P-AHN).

Chronic Conditions and Readmissions

While the system appears to be managing chronic conditions effectively from a readmission standpoint, AGH, AVH, and WPH present some noteworthy findings:

- > AGH has a slightly lower prevalence of COPD (23% vs. 26% P-AHN) but the readmission rate for this condition (17%) matches the P-AHN average. To the extent that the prevalence rate of chronic conditions is an indicator of population morbidity, we would expect a lower prevalence rate to be associated with a lower readmission rate. AGH has similar prevalence and readmission rates for asthma, CHF, diabetes and hypertension, indicating the management of these conditions is within expectations.
- > AVH's prevalence rate of CHF (35% vs. 26% P-AHN), COPD (38% vs. 26% P-AHN), diabetes (37% vs. 34% P-AHN), and hypertension (50% vs. 46% P-AHN) are all higher than the P-AHN average. However, the readmission rates for these conditions match the P-AHN average so it would seem that these conditions are being managed well.
- > WPH showed prevalence rates for CHF (16% vs. 26% P-AHN), COPD (16% vs. 26% P-AHN), and hypertension (37% vs. 46% P-AHN) that are lower than those of P-AHN. However, readmission rates for these conditions matched the P-AHN average, indicating the need for increased community resources to assist patients with these conditions.

High-Risk Patients

Patients who present with both behavioral health and chronic medical conditions are one of the ways to define high-risk patients. In performing this identification analysis, we identified the following:

- > AGH's Medicare behavioral health population had a CHF prevalence rate of 22% vs. a P-AHN average of 5%.
- > AVH's Medicaid substance abuse population shows high chronic condition prevalence rates for CHF (17% vs. 2% P-AHN), COPD (17% vs. 11% P-AHN), and diabetes (25% vs. 10% P-AHN).

Ambulatory Care Sensitive Conditions (ACSC)

It appears the majority of the system seems to be managing the ACSCs well; however, the following trends were noted:

- > AVH, CH, and JH's ACSCs have the top three highest prevalence rates in the system for all payer groups in bronchitis and asthma, CHF, COPD, and pneumonia conditions.

- > JH's prevalence rate for commercial (4% vs. 1%) and Medicaid (5% vs. 1%) patients with bronchitis and asthma was substantially higher than the P-AHN average.
- > AVH's CHF prevalence rate for Medicaid patients was double the P-AHN average (6% vs. 3%).
- > Medicaid admissions for COPD at CH were 4% higher than the P-AHN average (6% vs. 2%).
- > CH had the highest pneumonia prevalence rates among Medicaid (5% vs. 2%) and Medicare (5% vs. 3%) payers compared to the P-AHN average.

Detailed Demographic Analysis by Hospital Service Area

Allegheny General Hospital (AGH)

Local Service Area

Allegheny General Hospital is the largest hospital in Allegheny Health Network's system, housing 631 beds. The acute care hospital's service area reaches into three counties, but primarily serves Allegheny and Butler Counties. The total population in the hospital's service area is estimated to be 517,624 people in 2015. The population has increased 2% from 2010, which is marginally higher than P-AHN's 1% growth. The geographic service area can be seen below in Figure 1 Allegheny General Hospital Service Area.

Figure 1: Allegheny General Hospital Service Area



Allegheny General Hospital Service Area Zip Codes			
15007 Bakerstown	15108 Coraopolis	15205 Pittsburgh	15233 Pittsburgh
15015 Bradford Woods	15116 Glenshaw	15209 Pittsburgh	15237 Pittsburgh
15017 Bridgeville	15136 McKees Rocks	15211 Pittsburgh	15243 Pittsburgh
15044 Gibsonia	15142 Presto	15212 Pittsburgh	15275 Pittsburgh
15056 Leetsdale	15143 Sewickley	15214 Pittsburgh	16046 Mars
15086 Warrendale	15202 Pittsburgh	15216 Pittsburgh	16059 Valencia
15090 Wexford	15203 Pittsburgh	15220 Pittsburgh	16066 Cranberry Township
15101 Allison Park	15204 Pittsburgh	15225 Pittsburgh	
15106 Carnegie	15228 Pittsburgh	15229 Pittsburgh	

Age Demographics

The service area's age distribution is similar to PA. However, the six zip codes below have markedly different distributions for at least one age bracket compared to the rest of AGH.

15203 Pittsburgh

- Smaller percent in 0-9 year age group (5% vs. 11% AGH)
- Higher percent in 18-24 year age group (16% vs. 8% AGH)
- Higher percent in 25-44 year age group (46% vs. 26% AGH)

15233 Pittsburgh

- Smaller percent in 0-9 year age group (5% vs. 11% AGH)
- Higher percent in 25-44 year age group (46% vs. 26%)
- Smaller percent in 65 and older age group (9% vs. 17%)

15275 Pittsburgh

- Higher percent in 25-44 year age group (35% vs. 26% AGH)
- Smaller percent in 65 and older age group (7% vs. 17% AGH)

15007 Bakerstown

- Higher percent in 0-9 year age group (16% vs. 11% AGH)

15211 Pittsburgh

- Higher percent in 25-44 year age group (39% vs. 26% AGH)

15243 Pittsburgh

- Higher percent in 65 and older age group (27% vs. 17% AGH)

Race Demographics

While AGH's overall service area has a similar age distribution to PA, it is decidedly dissimilar when examined by race. The service area has a much larger population of White residents (86%) compared to PA (60%) and the US (55%). On the other hand, the hospital's service area has a smaller population of Hispanic or Latino residents (2%) compared to PA (15%) and the US (14%). Not all zip codes in AGH's service area have the same racial profile. The following Pittsburgh zip codes have a considerably higher percentage of Black residents than AGH (7%): 15233 (51%), 15204 (43%), 15214 (40%), 15212 (31%). Additionally, 15220 Pittsburgh has a higher percentage of Asian residents (13%) compared to AGH (3%).

Gender Demographics

The overall AGH proportion of males (49%) to females (51%) is similar to both PA and national demographics. The only area of note is 15233 Pittsburgh, which has a considerably higher percentage of males (70%). This anomaly may be attributable to the Riverside Community Corrections Center located in this zip code, which is an all-male facility.

Occupation and Financial Demographics

Allegheny General Hospital's service area has a higher percentage of residents with white collar jobs (72% vs. 66% P-AHN) and a lower percentage of residents with blue collar jobs (13% vs. 17% P-AHN). However, income levels are similar to P-AHN's average. All income categories for AGH's service area are within 2 percentage points of the P-AHN average. The overall percentage of families living in poverty in AGH's service area (7%) is slightly lower than Pennsylvania (9%) and even lower when compared to the national average (12%). However, the following Pittsburgh zip codes have higher than average poverty rates that are closer to the national average: 15204 (13%), 15214 (13%), 15233 (11%), and 15212 (10%).

Education Demographics

Allegheny General Hospital's service area as a whole has a higher level of education than the state and national averages with 42% of residents holding a bachelor's degree or higher, compared to PA (28%) and the US (29%). However, many of the zip codes listed above as higher poverty level areas also have lower levels of education than the service area average. Pittsburgh zip codes 15204 (13%), 15212 (12%), and 15233 (17%) have a higher percentage of residents with less than a high school diploma than the AGH service area average (6%). Additionally, the following zip codes have a larger percent of residents with less than a bachelor's degree compared to the service area average of 53% and moreover do not have a high percentage of people with education levels higher than a bachelor's degree: 15056 Leetsdale (67%), 15106 Carnegie (65%), 15136 McKees Rocks (66%), and Pittsburgh zip codes 15202 (61%), 15204 (72%), 15205 (62%), 15209 (63%), 15212 (63%), 15214 (66%), 15225 (76%) and 15233 (64%).

Allegheny General Hospital Key Findings-Demographics

Overall, AGH's service area has a similar age distribution compared to PA. However, the racial demographic statistics are dissimilar, with a higher percent of White residents and a smaller percentage of Hispanic/Latino residents. On average the service area has a lower level of poverty and higher level of education compared to greater PA.

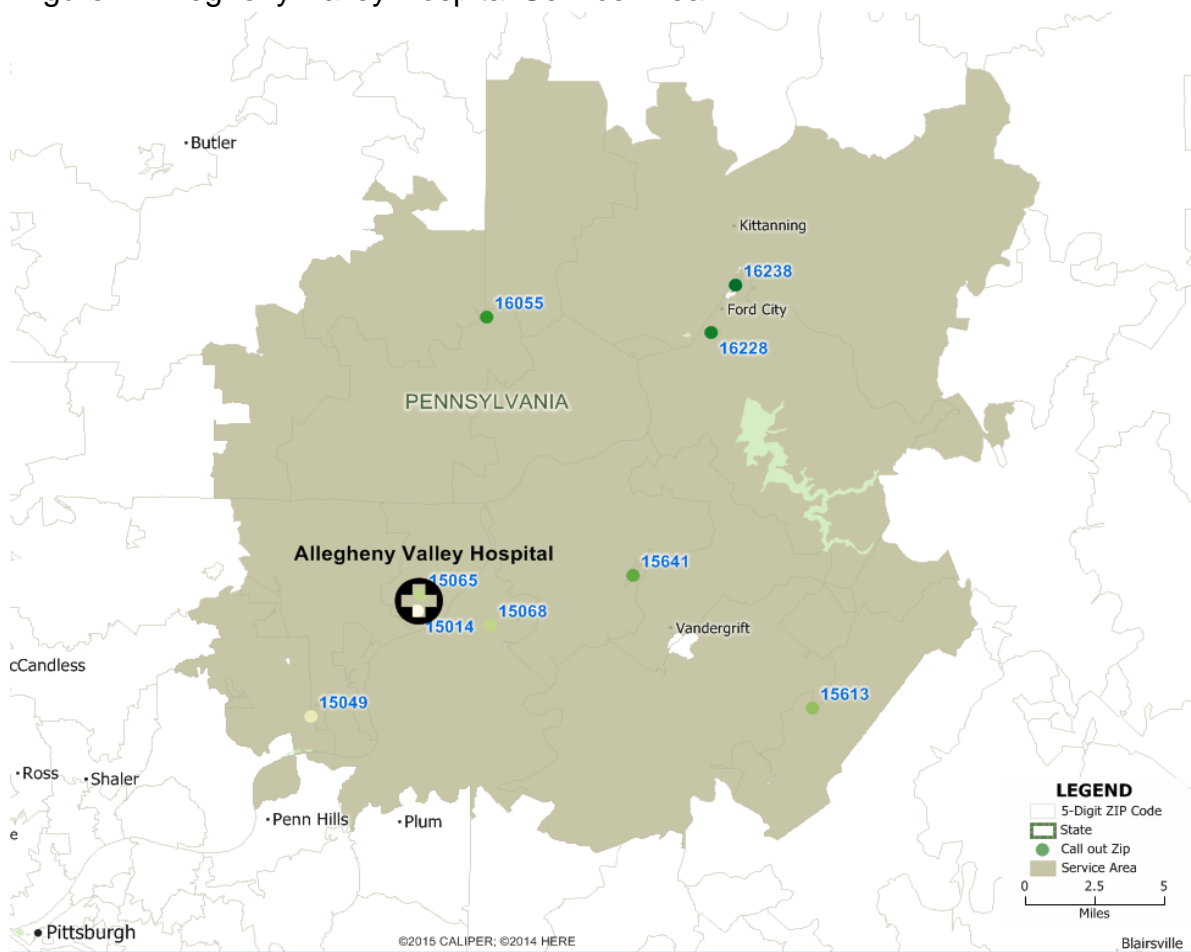
Pittsburgh zip codes 15204, 15212, 15214, and 15233 deviate from P-AHN's averages in multiple demographic categories. All four have a higher percentage of Black residents, a higher poverty rate, and lower level of education compared to AGH's service area. Additionally, zip code 15233 has a larger percent of residents 65 and older as well as a higher percent of males.

Allegheny Valley Hospital (AVH)

Local Service Area

Allegheny Valley Hospital is a 228 bed acute care hospital in the P-AHN system. Its service area reaches into four counties, but it primarily serves Allegheny and Westmoreland Counties. The total population in the hospital's service area is estimated to be 175,764 people in 2015, which is a 1% decrease from 2010 and unlike P-AHN's 1% population growth. The geographic service area can be seen below in Figure 2 Allegheny Valley Hospital Service Area.

Figure 2: Allegheny Valley Hospital Service Area



Allegheny Valley Hospital Service Area Zip Codes		
15014 Brackenridge	15144 Springdale	16201 Kittanning
15024 Cheswick	15613 Apollo	16212 Cadogan
15030 Creighton	15618 Avonmore	16226 Ford City
15049 Harwick	15641 Hyde Park	16228 Ford Cliff
15051 Indianola	15656 Leechburg	16229 Freeport
15065 Natrona Heights	15686 Spring Church	16238 Manorville
15068 New Kensington	15690 Vandergrift	16262 Worthington
15076 Russellton	16023 Cabot	
15084 Tarentum	16055 Sarver	
15139 Oakmont	16056 Saxonburg	

Age Demographics

The age distribution of AVH’s service area is similar to that of PA and the US, with the only deviation being a larger percent of residents 65 and older (21% vs. 17% PA and 15% US).

Race Demographics

The majority of zip codes in AVH’s service area have a substantially different racial profile than state and national averages. The service area has far more White residents (94%), compared to PA (60%) and the US (55%). The region has a smaller population of Black (3% vs. 11% PA and 10% US), Hispanic (1% vs. 15% PA and 14% US) and “Other” residents (2% vs. 9% PA and US). The only zip code of note that differs from the overall service area is 15068 New Kensington, which has a much larger percent of “Other” residents (14%) compared to AVH (2%).

Gender Demographics

The proportion of males and females in AVH’s service area is 49% and 51% respectively. These proportions are consistent with PA averages and all zip codes within the service area have similar proportions.

Occupation and Economic Demographics

Compared to P-AHN, AVH has a larger percentage of residents holding blue collar jobs (27% vs. 17% P-AHN) and a lower percentage of residents holding white collar jobs (56% vs. 66% P-AHN). Allegheny Valley Hospital has a slightly larger percentage of the lowest income levels. However, the difference in percentages between AVH and P-AHN is no more than 2 percentage points for each income bracket. The poverty level in AVH’s service area (9%) matches the state average and is slightly lower than the

national average of 12%. The only area of note is 15641 Hyde Park which has a moderately higher percentage of families in poverty (11%) compared to AVH.

Education Demographics

Allegheny Valley Hospital has a slightly smaller percent of residents with less than a high school diploma (9%) compared to the state average (11%) and a lower percent of people with more than a bachelor's degree (21% vs. 28% PA). The majority of the service area's residents fall in the middle category of "Greater than high school but less than a bachelor's degree" (70%), which is higher than PA (61%) and the US (57%). However, there are a few zip codes that have a larger percent of residents with less than a high school diploma compared to AVH (9%), including 15049 Harwick (14%), 16228 Ford Cliff (14%), and 16238 Manorville (13%). Additionally, the following zip codes have a larger percent of residents with less than a bachelor's degree compared to the service area average of 70%: 16023 Cabot (76%) and 16262 Worthington (77%).

Allegheny Valley Hospital Key Findings-Demographics

Overall, AVH's service area is similar to PA with regard to age distribution and poverty level. The area's education level is concentrated in the "More than a high school diploma but less than a bachelor's degree" category compared to the state and national averages. Additionally, the service area has a larger percent of White residents and a smaller percent of Black and Hispanic/Latino residents.

Only 15641 Hyde Park deviates from the AVH service area averages. The zip code has a larger percentage of residents in the 0-9 year old and 65 and older age brackets as well as a higher poverty rate than AVH.

West Penn Hospital (WPH)

Local Service Area

West Penn Hospital is a 317 bed acute care hospital in the P-AHN system that primarily serves Allegheny County. The total population in the hospital's service area is estimated to be 288,729 people in 2015, which is a 1% increase from 2010 and matches P-AHN's population growth. The geographic service area can be seen below in Figure 3 West Penn Hospital Service Area.

Figure 3: West Penn Hospital Service Area



West Penn Hospital Service Area Zip Codes	
15139 Oakmont	15219 Pittsburgh
15147 Verona	15221 Pittsburgh
15201 Pittsburgh	15222 Pittsburgh
15206 Pittsburgh	15223 Pittsburgh
15208 Pittsburgh	15224 Pittsburgh
15213 Pittsburgh	15232 Pittsburgh
15215 Pittsburgh	15235 Pittsburgh
15217 Pittsburgh	15238 Pittsburgh
15218 Pittsburgh	15260 Pittsburgh

Age Demographics

The service area's age distribution is similar to PA averages, with the exception of a larger percent of residents in the 18-24 year age bracket (15% vs. 10% PA). This difference is most likely due to zip code 15260, which includes the University of Pittsburgh. There are 13 zip codes that deviate from the service area averages.

15222 Pittsburgh

- Smaller percent in 0-9 year age group (3% vs. 9% WPH)
- Higher percent in 18-24 year age group (25% vs. 15% WPH)

15213 Pittsburgh

- Smaller percent in 0-9 year age group (4% vs. 9% WPH)
- Higher percent in 18-24 year age group (48% vs. 15% WPH)
- Smaller percent in 45-64 year age group (9% vs. 24% WPH)
- Smaller percent in 65 and older age group (11% vs. 17% WPH)

15232 Pittsburgh

- Smaller percent in 0-9 year age group (5% vs. 9% WPH)
- Higher percent in 24-44 year age group (50% vs. 28% WPH)
- Smaller percent in 45-64 year age group (14% vs. 24% WPH)
- Smaller percent in 65 and older age group (11% vs. 17% WPH)

15208 Pittsburgh

- Higher percent in 0-9 year age group (13% vs. 9% WPH)

15219 Pittsburgh

- Higher percent in 18-24 year age group (34% vs. 15% WPH)

15260 Pittsburgh

- Higher percent in 18-24 year age group (96% vs. 15% WPH)

15224 Pittsburgh

- Higher percent in 25-44 year age group (39% vs. 28% WPH)

15238 Pittsburgh

- Higher percent in 45-64 year age group (33% vs. 42% WPH)
- Higher percent in 65 and older age group (23% vs. 17% WPH)

15215 Pittsburgh

- Higher percent in 45-64 year age group (31% vs. 42% WPH)

15219 Pittsburgh

- Smaller percent in 65 and older age group (11% vs. 17% WPH)

15235 Pittsburgh

- Higher percent in 65 and older age group (22% vs. 17% WPH)

15139 Oakmont

- Higher percent in 65 and older age group (24% vs. 17% WPH)

15147 Verona

- Higher percent in 65 and older age group (22% vs. 17% WPH)

Race Demographics

In comparison to PA and national averages, WPH's service area has a larger population of White (63% vs. 60% PA and 55% US) and Black residents (25% vs. 11% PA and 10% US). Conversely, the area has a smaller population of Hispanic/Latino (3% vs. 15% PA and 14% US) and "Other" residents (3% vs. 9% PA and US). The zip codes that differ from the service area average for White residents are Pittsburgh zip codes 15215 (80%), 15238 (92%), 15223 (96%), and 15139 Oakmont (97%). Five Pittsburgh zip codes have a higher than average percent of Black residents compared to WPH, including 15235 (38%), 15206 (43%), 15221 (48%), 15219 (52%), and 15208 (61%). Lastly, three Pittsburgh zip codes have a larger percent of Asian residents than WPH, including 15217 (13%), 15232 (17%), and 15213 (17%).

Gender Demographics

The proportion of males (48%) to females (52%) is similar to the state and national averages of 49% males and 51% females. Only Pittsburgh zip code 15260 deviates from the service area average with 61% of the population being female.

Occupation and Economic Demographics

West Penn Hospital's service area has a higher percentage of residents holding white collar jobs (70% vs. 66% P-AHN) and a smaller percentage of residents holding blue collar jobs (11% vs. 17% P-AHN). However, WPH has a larger percentage of residents in the lower income categories. Eighteen percent of the service area is making less than \$15,000 compared to the P-AHN average of 12%. As a result, the service area's poverty level (12%) is higher compared to PA (9%). The high poverty level seems to be driven by Pittsburgh zip codes 15219 (15%) and 15208 (12%). Most other zip codes in the service area are at or below 8%.

Education Demographics

Overall, WPH's service area has a higher level of education than state and national averages, with 42% percent of residents holding a bachelor's degree or higher. This percentage is substantially higher than PA (28%) and the US (29%). However, three Pittsburgh zip codes have a larger percent of residents with less than a high school diploma compared to the service area average of 7%: 15201 (11%), 15219 (13%), and 15260 (16%).

West Penn Hospital Key Findings-Demographics

Overall, WPH's service area has a similar age distribution to PA, with the exception of a larger percent of residents in the 18-24 year old age group. This difference is most likely due to the presence of the University of Pittsburgh in the hospital's service area. There is a larger population of White and Black residents in the area and a smaller population of Hispanic/Latino residents compared to PA. The service area has a higher percent of families living in poverty compared to PA, but it seems to be driven by zip codes 15208 and 15219. Lastly, the service area's education level is higher than PA.

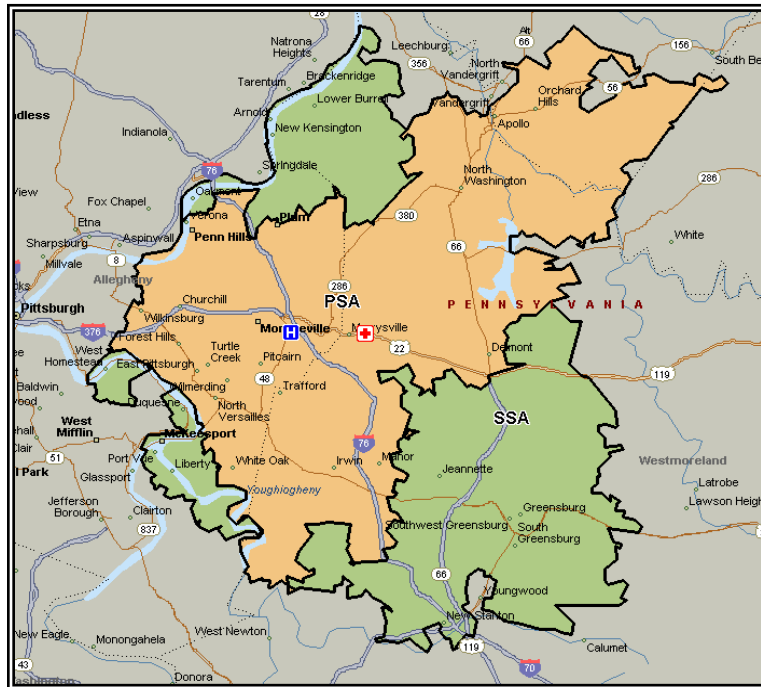
After examining demographics at the zip code level, four areas stand out as noticeably deviating from the rest of the service area: Pittsburgh zip codes 15208, 15213, 15219, and 15232. When compared to WPH averages, 15213 and 15232 both have a smaller percent of 0-9 year olds and residents 65 and older and a higher percent of Asian residents. Zip code 15208 has a larger percent of 0-9 year olds, larger percent of Black residents and larger percent of residents living below the poverty level than WPH averages. Lastly, zip code 15219 has a smaller percent of residents 65 and older, larger percent of Black residents, larger percent of families living in poverty, and a higher percent of residents with less than a high school diploma.

Forbes Hospital (FH)

Local Service Area

Forbes Hospital is a 329 bed acute care hospital in the P-AHN system serving both Allegheny and Westmoreland Counties. The total population in the hospital's service area is estimated to be 487,801 people in 2015, which is a 1% decrease from 2010 and unlike P-AHN's 1% population growth. The geographic service area can be seen below in Figure 4 Forbes Hospital Service Area.

Figure 4: Forbes Hospital Service Area



Forbes Hospital Service Area Zip Codes			
15035 East McKeesport	15137 North Versailles	15611 Adamsburg	15644 Jeannette
15068 New Kensington	15139 Oakmont	15613 Apollo	15647 Larimer
15085 Trafford	15140 Pitcairn	15615 Ar dara	15663 Madison
15104 Braddock	15145 Turtle Creek	15617 Arona	15665 Manor
15110 Duquesne	15146 Monroeville	15618 Avonmore	15668 Murrysville
15112 East Pittsburgh	15147 Verona	15623 Claridge	15672 New Stanton
15120 Homestead	15148 Wilmerding	15626 Delmont	15675 Penn
15131 McKeesport	15218 Pittsburgh	15632 Export	15678 Rillton
15132 McKeesport	15221 Pittsburgh	15634 Grapeville	15684 Slickville
15133 McKeesport	15235 Pittsburgh	15636 Harrison City	15692 Westmoreland City
15135 McKeesport	15239 Pittsburgh	15637 Herminie	
	15601 Greensburg	15642 Irwin	

Age Demographics

The age distribution of Forbes Hospital service area is similar to state and national averages with the exception of a larger percent of residents in the 65 and older age bracket (20% vs. 17% PA and 15% US). There are four zip codes that deviate from the service area averages.

15110 Duquesne

- Higher percent in 0-9 year age group (16% vs. 10% FH)

15148 Wilmerding

- Higher percent in 0-9 year age group (18% vs. 10% FH)

15218 Pittsburgh

- Higher percent in 25-44 year age group (31% vs. 23% FH)

15692 Westmoreland City

- Smaller percent in 65 and older age group (14% vs. 20% FH)

Race Demographics

The service area's racial demographic profile is markedly different compared to state and national demographics. Forbes Hospital has a much smaller percent of Hispanic/Latino (2% vs. 15% PA and 14% US), Asian (1% vs. 4% PA and US), and "Other" residents (3% vs. 9% PA and US). On the other hand, the service area has a larger population of White (80% vs. 60% PA and 55% US) and Black residents (14% vs. 11% PA and 10% US). There are multiple zip codes that have a larger percent of Black residents than the service area average, including Pittsburgh zip codes 15218 (27%), 15235 (38%), and 15221 (48%), 15132 McKeesport (31%), 15112 East Pittsburgh (34%), 15110 Duquesne (57%), and 15104 Braddock (62%).

Gender Demographics

The proportion of males and females in Forbes' service area is 48% to 52% respectively. This proportion is consistent with the PA and US averages of 49% male and 51% female. All zip codes within the service area have similar proportions.

Occupation and Economic Demographics

In comparison to P-AHN, Forbes has a slightly higher percentage of residents with blue collar jobs (20% vs. 17% P-AHN) and a lower percentage of residents with white collar jobs (62% vs. 66% P-AHN). The income distribution is also slightly different compared to P-AHN, but all income categories are within 2 percentage points of the corresponding P-AHN average. Additionally, the service area's poverty level matches PA (9%).

However, there are two zip codes that have a larger than average percent of families living in poverty: 15110 Duquesne (16%) and 15104 Braddock (17%).

Education Demographics

The service area's education level is higher than the state and nation overall, with a smaller percentage of residents with less than a high school degree (7% vs. 11% PA and 14% US) and a larger percent of residents in the less than a bachelor's degree category (65% vs. 61% PA and 57% US). However, there are many zip codes that do not share this trend. Two zip codes have a higher percentage of residents with less than a high school diploma: 15132 McKeesport (12%) and 15104 Braddock (13%). The following zip codes have a higher percentage of residents with less than a bachelor's degree compared to Forbes (65%): 15663 Madison (71%), 15112 East Pittsburgh (71%), 15613 Apollo (71%), 15135 McKeesport (72%), 15131 McKeesport (72%), 15145 Turtle Creek (72%), 15137 North Versailles (73%), 15615 Ardara (74%), 15675 Penn (74%), 15618 Avonmore (75%), 15148 Wilmerding (75%), 15132 McKeesport (76%), 15035 East McKeesport (76%), 15104 Braddock (76%), 15133 McKeesport (80%), and 15110 Duquesne (80%).

Forbes Hospital Key Findings-Demographics

Overall, Forbes Hospital's service area age distribution is fairly similar to PA's, except for a larger percent of residents 65 and older. The racial demographics of the area are different from PA in every category with a larger percent of White and Black residents, and a smaller percent of Hispanic, Asian, and "Other" residents. The poverty level in the service area matches that of PA, but the education level is higher than the state.

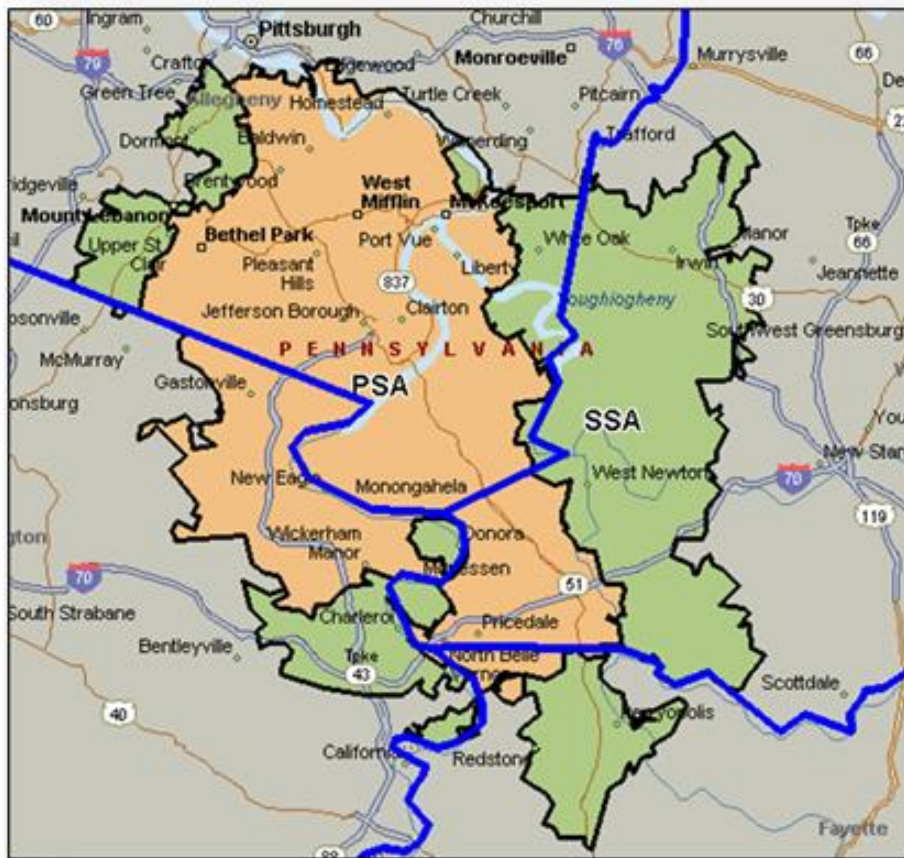
After considering each demographic category there are three zip codes that are largely different than the service area's averages: 15104 Braddock, 15110 Duquesne, and 15132 McKeesport. All of these areas have a larger percent of residents with less than a bachelor's degree and a larger percent of Black residents than the service area average. Zip codes 15104 and 15132 also have a higher percentage of residents with less than a high school degree, while zip codes 15104 and 15110 have a larger percent of families living in poverty and zip code 15110 has a higher percent of residents 0-9 years old.

Jefferson Hospital (JH)

Local Service Area

Jefferson Hospital is a 341 bed acute care hospital in P-AHN's system. The service area spans four counties, but primarily serves Westmoreland and Allegheny Counties. The total population in the hospital's service area is estimated to be 430,665 people in 2015, which is a 1% decrease from 2010 and unlike P-AHN's 1% population growth. The geographic service area can be seen below in Figure 5 Jefferson Hospital Service Area.

Figure 5: Jefferson Hospital Service Area



Jefferson Hospital Service Area Zip Codes	
15012 Belle Vernon	15135 McKeesport
15018 Buena Vista	15207 Pittsburgh
15022 Charleroi	15210 Pittsburgh
15025 Clairton	15216 Pittsburgh
15033 Donora	15226 Pittsburgh
15034 Dravosburg	15227 Pittsburgh
15037 Elizabeth	15234 Pittsburgh
15045 Glassport	15236 Pittsburgh
15062 Monessen	15332 Finleyville
15063 Monongahela	15412 Allenport
15067 New Eagle	15432 Dunlevy
15083 Sutersville	15434 Elco
15089 West Newton	15473 Perryopolis
15102 Bethel Park	15477 Roscoe
15110 Duquesne	15479 Smithton
15120 Homestead	15482 Star Junction
15122 West Mifflin	15483 Stockdale
15129 South Park	15637 Herminie
15131 McKeesport	15642 Irwin
15132 McKeesport	15647 Larimer
15133 McKeesport	15678 Rillton

Age Demographics

The service area has a similar age distribution compared to PA and the nation, with the exception of a slightly smaller percent of residents in the 18-24 year age group (7% vs. 10% PA and US) and a slightly larger percent of residents in the 65 and older age group (20% vs. 17% PA and 15% US). There are three zip codes that deviate from the service area distribution.

15110 Duquesne

- Higher percent in 0-9 year age group (16% vs. 10% JH)

15434 Elco

- Higher percent in 10-17 year age group (16% vs. 9% JH)
- Higher percent in 65 and older age group (27% vs. 20% JH)

15216 Pittsburgh

- Higher percent in 25-44 year age group (33% vs. 23% JH)

Race Demographics

Jefferson Hospital's service area has noticeably different racial demographics than PA and the nation overall. The area has a much larger percent of White (80% vs. 60% PA and 55% US) and Black residents (14% vs. 11% PA and 10% US). Additionally, the service area has a smaller population of Hispanic/Latino (2% vs. 15% PA and 14% US), Asian (1% vs. 4% PA and US) and "Other" residents (3% vs. 9% PA and US). The following zip codes have a larger percent of Black residents than the service area average: 15207 Pittsburgh (21%), 15210 Pittsburgh (31%), 15132 McKeesport (31%), and 15110 Duquesne (57%).

Gender Demographics

The proportion of males and females in JH's service area is 48% and 52% respectively. This proportion is consistent with the PA and US averages of 49% and 51% and all zip codes within the service area have similar proportions.

Occupation and Economic Demographics

Jefferson Hospital has a slightly larger percent of residents holding blue collar jobs (20% vs. 17% P-AHN) and a smaller percent of residents holding white collar jobs (61% vs. 66% P-AHN). The income distribution is also slightly different, but all income categories are within 2 percentage points of the corresponding P-AHN average. Additionally, the percent of families in JH's service area living in poverty matches PA (9%). However, 15110 Duquesne has a significantly higher poverty rate of 16%.

Education Demographics

Jefferson Hospital's service area has a smaller percent of residents with less than a high school degree (8% vs. 11% PA and 14% US) and a higher percent of residents with less than a bachelor's degree (66% vs. 61% PA and 57% US). Ten zip codes have a higher than average percent of residents with less than a bachelor's degree compared to the JH average of 66%: 15063 Monongahela (75%), 15483 Stockdale (75%), 15022 Charleroi (75%), 15045 Glassport (75%), 15034 Dravosburg (75%), 15434 Elco (75%), 15132 McKeesport (76%), 15067 New Eagle (79%), 15133 McKeesport, and 15110 Duquesne (80%). Additionally, three zip codes have a higher percentage of residents with less than a high school diploma compared to the service area, including 15432 Dunlevy (15%), 15083 Sutersville (16%), and 15482 Star Junction (16%).

Jefferson Hospital Key Findings-Demographics

Jefferson Hospital's service area has a slightly larger percent of residents 18-24 years old as well as a larger percent of residents 65 years and older compared to the state and national averages. Furthermore, racial demographics are drastically different, with a larger percent of White and Black residents and a smaller percent of Hispanic, Asian,

and “Other” residents. The percent of families living in poverty in the service area is the same as PA, however, education levels overall are higher than the state.

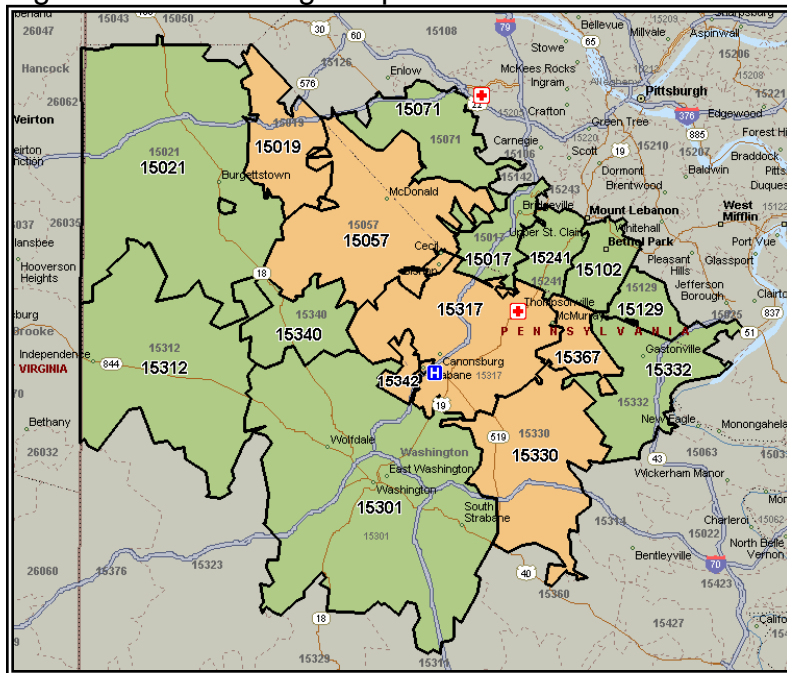
Taking into consideration all demographics listed above, two areas of interest deviate from service area norms: 15110 Duquesne and 15132 McKeesport. Both zip codes have a higher than average percent of residents with less than a bachelor’s degree as well as a higher percentage of Black residents. Additionally, Duquesne has a higher percent of families living in poverty and a higher percent of residents in the 0-9 year age group compared to the hospital’s service area.

Canonsburg Hospital (CH)

Local Service Area

Canonsburg Hospital is a 104 bed acute care hospital. The service area spans Washington and Allegheny Counties, but the hospital mainly serves Washington County. The total population in the hospital's service area is estimated to be 237,622 people in 2015. The current population represents a 2% increase from 2010, which is marginally higher than P-AHN's 1% population growth. The geographic service area can be seen below in Figure 6 Canonsburg Hospital Service Area.

Figure 6: Canonsburg Hospital Service Area



Canonsburg Hospital Service Area Zip Codes	
15017 Bridgeville	15129 South Park
15019 Bulger	15241 Pittsburgh
15021 Burgettstown	15301 Washington
15031 Cuddy	15312 Avella
15053 Joffre	15317 Canonsburg
15055 Lawrence	15321 Cecil
15057 Mc Donald	15330 Eighty Four
15060 Midway	15332 Finleyville
15064 Morgan	15340 Hickory
15071 Oakdale	15342 Houston
15078 Slovan	15363 Strabane
15102 Bethel Park	15367 Venetia

Age Demographics

Overall, the age distribution in CH's service area is similar to PA and national averages, with the exception of a larger 45-64 year age group (31% vs. 28% PA and 26% US). The only zip code that deviates from the service area is 15078 Slovan, whose population of residents 65 and older is 24%, compared to the CH average of 20%.

Race Demographics

The racial demographic profile of the hospital's service area is drastically different than the state and nation as a whole. The service area has a much larger percent of White residents (92% vs. 60% PA and 55% US). The percentages of all other racial groups in the area are smaller than PA and national averages: Hispanic and Latino (1% vs. 15% PA and 14% US), Black (3% vs. 11% PA and 10% US), Asian (2% vs. 9% PA and US), and "Other" residents (2% vs. 9% PA and US). None of the zip codes in the service area deviated from the overall racial distribution.

Gender Demographics

The proportion of males and females in CH's service area is 49% to 51% respectively, which matches state and national proportions. All zip codes within the service area have similar proportions.

Occupation and Economic Demographics

CH's percentage of white collar (66%) and blue collar jobs (18%) match the corresponding P-AHN percentage. The income level distribution is roughly similar to P-AHN with the exception of fewer residents making less than \$15,000 a year (7% vs. 12% P-AHN). The percent of families living in poverty in CH's service area (5%) is much lower than the 9% state average. Additionally, all zip codes in this area fall below the state average for families living in poverty, with East McKeesport 15053 having the highest percentage (7%).

Education Demographics

The hospital's service area also has a higher level of education than both PA and the US. The service area has fewer residents with less than a high school diploma (7% vs. 11% PA and 14% US) and more residents with a bachelor's degree or higher (36% vs. 28% PA and 29% US). There are six zip codes with larger percentages of residents with less than a high school diploma compared to the service area average, including 15019 Bulger (12%), 15312 Avella (12%), 15053 Joffre (13%), 15363 Strabane (14%), 15021 Burgettstown (14%), and 15078 Slovan (14%).

Canonsburg Hospital Key Findings-Demographics

Canonsburg Hospital's service area overall has a similar age distribution to PA and the US, with the exception of a slightly larger percent of residents in the 45-64 age bracket. This area has a significantly larger population of White residents and a smaller population of all other racial groups compared to PA and the US. Lastly, the percent of families living in poverty in this area is notably smaller and the education level is notably higher than state averages.

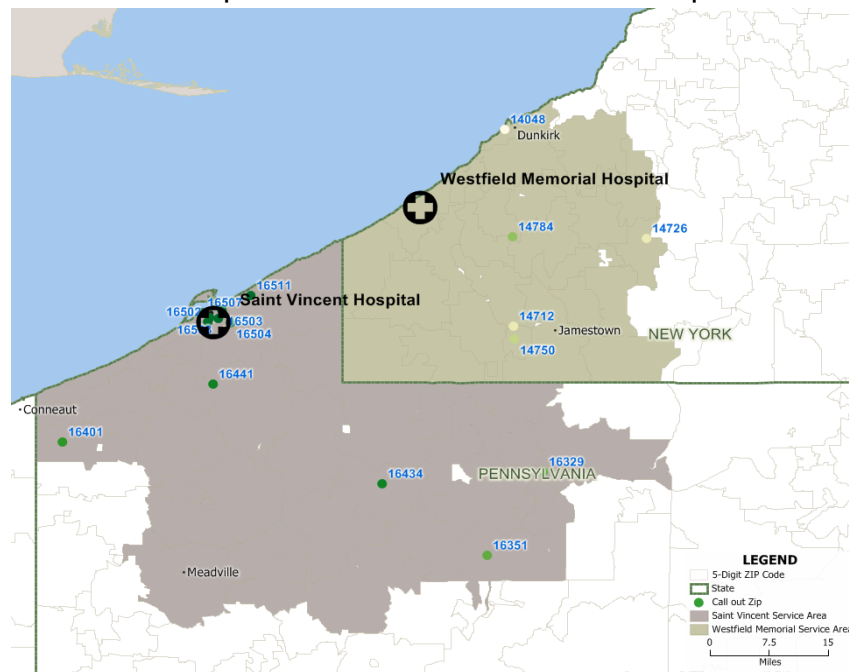
While most of the zip codes are fairly similar to each other demographically, 15078 Slovan is unique in two ways. It has a larger percent of residents 65 and older as well as a larger percentage of residents with less than a high school diploma.

Saint Vincent Hospital (SVH) and Westfield Memorial Hospital (WMH)

Local Service Area

Saint Vincent Hospital is a 371 bed acute care hospital serving Erie, PA. The hospital works in conjunction with Westfield Memorial Hospital, a 4 bed acute care hospital serving Chautauqua County, NY. While the two hospitals are separate entities, they are closely tied and serve approximately the same population. Therefore, the analysis of the two hospitals is done collectively and differences are noted where they exist. The total population in the hospital's service area is estimated to be 376,728 people in 2015. This count is a 1% decrease from 2010, unlike P-AHN's 1% population growth. The geographic service area can be seen below in Figure 7 Saint Vincent Hospital and Westfield Memorial Hospital Service Area.

Figure 7: Saint Vincent Hospital and Westfield Memorial Hospital Service Area



Saint Vincent Hospital Service Area Zip Codes	
16327 Guys Mills	16426 Mc Kean
16329 Irvine	16428 North East
16335 Meadville	16430 North Springfield
16340 Pittsfield	16433 Saegertown
16350 Sugar Grove	16434 Spartansburg
16351 Tidioute	16436 Spring Creek
16354 Titusville	16438 Union City
16360 Townville	16440 Venango
16365 Warren	16441 Waterford
16371 Youngsville	16442 Wattsburg
16401 Albion	16443 West Springfield
16402 Bear Lake	16444 Edinboro
16403 Cambridge Springs	16501 Erie
16404 Centerville	16502 Erie
16405 Columbus	16503 Erie
16407 Corry	16504 Erie
16410 Cranesville	16505 Erie
16411 East Springfield	16506 Erie
16412 Edinboro	16507 Erie
16415 Fairview	16508 Erie
16417 Girard	16509 Erie
16420 Grand Valley	16510 Erie
16421 Harborcreek	16511 Erie
16423 Lake City	

Westfield Memorial Hospital Service Area Zip Codes	
14048 Dunkirk	14716 Brocton
14063 Dunkirk	14733 Jamestown
14712 Bemus Point	14724 Jamestown
14718 Dunkirk	14775 Westfield
14726 Dunkirk	14747 Jamestown
14728 Westfield	14757 Westfield
14738 Jamestown	14782 Jamestown
14740 Jamestown	14710 Jamestown
14769 Westfield	14767 Jamestown
14784 Stockton	14062 Dunkirk
14736 Jamestown	14138 Dunkirk
14750 Lakewood	14701 Jamestown
14787 Westfield	14702 Jamestown

Age Demographics

The median age of the hospitals' service area (43.3 years) is slightly higher than both PA (40.6 years) and the US (37.9 years). The service area has a larger percentage of residents 65 and older (20%) compared to PA (17%) and the US (14%). Five zip codes have an even higher percentage of residents 65 and older than the service area average, including 16329 Irvine (30%), 16351 Tidioute (25%), 16501 Erie (24%), 14712 Bemus Point (27%), and 14750 Lakewood (24%).

Race Demographics

Overall, the service area has a substantially larger percentage of White residents (91%) than PA (60%) and the US (55%). The service area has a much smaller percentage of Hispanic (2%) and Black residents (5%) than PA (15% and 11% respectively) and the US (14% and 10% respectively). However, three zip codes have a higher percentage of Hispanic residents than the service area: 14048 Dunkirk (25%), 16503 Erie (15%), and 16507 Erie (10%). Additionally, six zip codes have a higher percentage of Black residents than the service area: 16401 Albion (15%), 16501 Erie (16%), 16502 Erie (14%), 16503 Erie (37%), 16504 Erie (12%), and 16507 Erie (23%).

Gender Demographics

While the overall percentages of males (49%) and females (51%) in the service area are similar to PA and the US (49% male and 51% female), two zip codes have a higher than average percentage of males: 14716 Brocton (57%) and 16401 Albion (67%).

Occupation and Economic Demographics

The percentage of white collar jobs (56%) in the hospitals' service area is slightly lower than the PA (61%) and US averages (61%). Correspondingly, the percentage of blue collar jobs (25%) in the service area is slightly higher than PA (21%) and US averages (20%). The difference in occupation groups could be contributing to the higher percentage of residents making \$35,000 or less (53%) compared to PA (47%) and the US (48%). There are also numerous zip codes that have a substantially larger percentage of residents living in poverty: 14048 Dunkirk (14%), 14726 Dunkirk (19%), 14784 Westfield (16%), 16434 Spartansburg (15%), 16502 Erie (14%), 16503 Erie (21%) and 16507 Erie (16%).

Education Demographics

The hospitals' service area has a larger percentage of residents with an education level between a high school diploma and a bachelor's degree (66%) compared to PA (61%) and the US (57%). This finding corresponds with a smaller percentage of residents holding a bachelor's degree or more (20%) compared to PA (28%) and the US (29%). There are also two zip codes with a higher than average percentage of residents with less than a high school diploma: 14726 Dunkirk (31%) and 16434 Spartansburg (26%).

Saint Vincent Hospital and Westfield Memorial Hospital Key Findings- Demographics

Overall, the hospitals' service area is older than PA and the nation. Additionally, it has a larger percentage of White residents and those with blue collar jobs. Furthermore, the service area has a larger percentage of residents with less than a bachelor's degree, but more than a high school diploma compared to PA and the US.

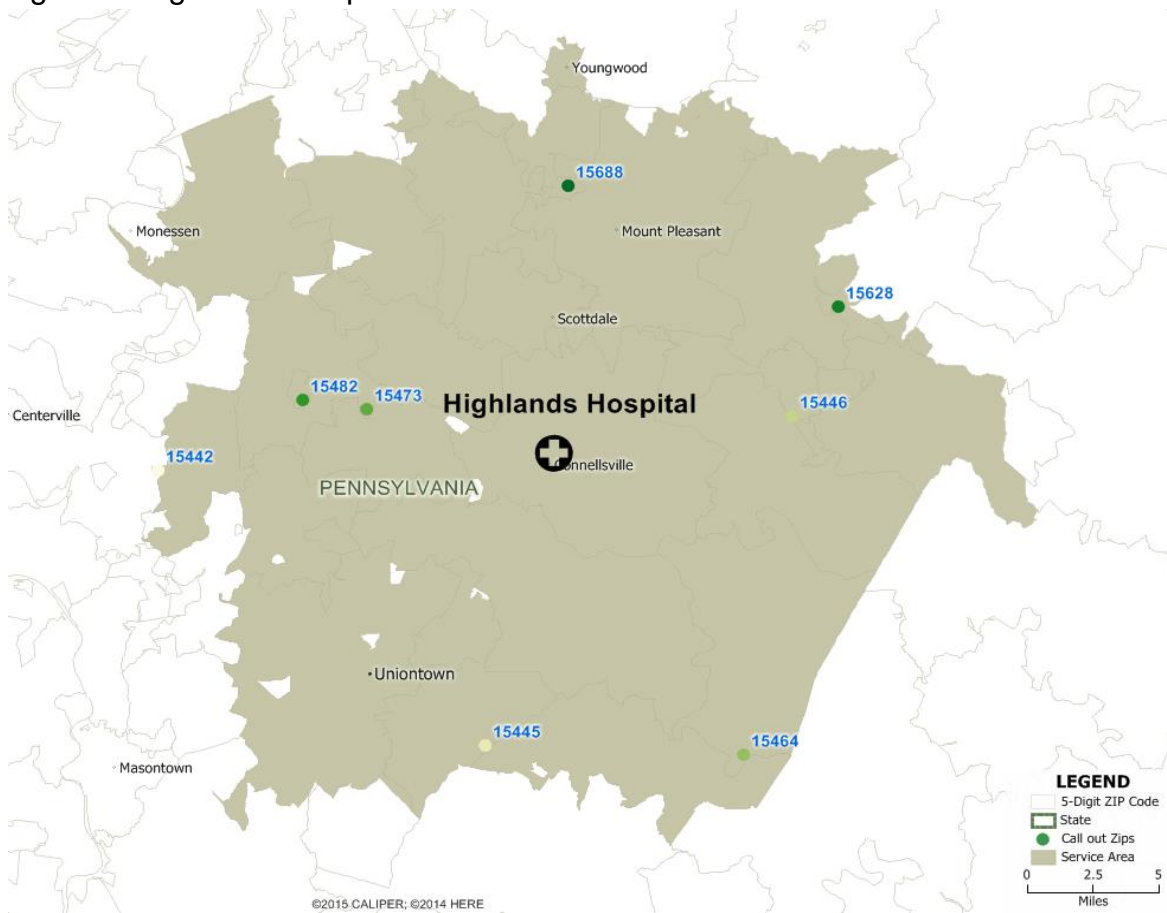
There are three zip codes of particular interest that deviate from the service area average across multiple demographic measures. The zip code 16434 Spartansburg has a higher percentage of residents in the 0-9 year age bracket, a higher percentage of residents living in poverty and a higher percentage of residents with less than a 9th grade education. The zip code 16503 Erie has a higher percentage of Hispanic, Black, and "Other" residents, a higher percentage of residents living in poverty, and a higher percentage of residents with less than a 9th grade education. The zip code 16507 Erie has a higher percentage of Black and "Other" residents and a higher percentage of residents living in poverty.

Highlands Hospital (HH)

Local Service Area

Highlands Hospital is a 64 bed acute care hospital. The service area spans Fayette and Westmoreland Counties, but the hospital mainly serves Fayette County. The total population in the hospital's service area is estimated to be 141,355 people in 2015. This count represents a 2% decrease from 2010, which is unlike P-AHN's 1% population growth. The geographic service area can be seen below in Figure 8 Highlands Hospital Service Area.

Figure 8: Highlands Hospital Service Area



Highland Hospital Service Area Zip Codes		
15401 Uniontown	15488 Waltersburg	15634 Grapeville
15425 Connellsville	15490 White	15636 Harrison City
15428 Dawson	15601 Greensburg	15639 Hunker
15431 Dunbar	15610 Acme	15641 Hyde Park
15442 Grindstone	15611 Adamsburg	15644 Jeannette
15445 Hopwood	15612 Alverton	15646 Jones Mills
15446 Indian Head	15613 Apollo	15656 Leechburg
15456 Lemont Furnace	15615 Ardara	15663 Madison
15462 Melcroft	15617 Arona	15665 Manor
15464 Mill Run	15618 Avonmore	15666 Mount Pleasant
15469 Normalville	15622 Champion	15668 Murrysville
15470 Ohiopyle	15623 Claridge	15688 Tarrs
15473 Perryopolis	15626 Delmont	15672 New Stanton
15480 Smock	15628 Donegal	15675 Penn
15482 Star Junction	15631 Everson	15679 Ruffs Dale
15486 Vanderbilt	15632 Export	15683 Scottdale

Age Demographics

The median age of the hospital's service area (43.9 years) is slightly higher than both PA (40.6 years) and the US (37.9 years) and corresponds to a slightly larger percentage of residents 65 and older (19%) compared to PA (17%) and the US (14%). Three zip codes have an even higher percentage of residents 65 and older than the service area average, including 15445 Hopwood (23%), 15473 Perryopolis (24%), and 15628 Donegal (25%).

Race Demographics

Overall, the service area has a substantially larger percentage of White residents (89%) than PA (60%) and the US (55%). The service area has a much smaller percentage of Hispanic (2%) and Black residents (7%) than PA (15% and 11% respectively) and the US (14% and 10% respectively). Only 15442 Grindstone has a larger percentage of Black residents (10%) than the service area average.

Gender Demographics

The overall percentages of males (49%) and females (51%) in the service area are similar to PA and the US (49% male and 51% female). Additionally, all zip codes in the service area have a similar percentage of males and females.

Occupation and Economic Demographics

The percentage of white collar jobs in the HH service area (50%) is lower than the PA (61%) and US averages (61%). On the other hand, the percentage of blue collar jobs (30%) in the service area is higher than PA (21%) and US averages (20%). The difference in occupation groups could be contributing to the higher percentage of residents making \$35,000 or less (56%) compared to PA (47%) and the US (48%). The overall percentage of residents living in poverty (7%) is consistent with the PA average 9%, however, three zip codes have a higher percentage than the service area average: 15446 Indian Head (10%), 15482 Star Junction (13%) and 15688 Tarrs (11%).

Education Demographics

The hospital's service area has a larger percentage of residents with an education level between a high school diploma and a bachelor's degree (76%) compared to PA (61%) and the US (57%). In addition, the service area has slightly fewer residents without a high school diploma (8%) than PA (11%) and the US (14%), as well as fewer residents with a bachelor's degree or higher (16%) compared to PA (28%) and the US (29%). The smaller percentage of residents with a high school diploma or less seems to be driven by a few zip codes, as most are between 11% and 15%. The zip code 15464 Mill Run has the highest percentage of residents having less than a high school diploma (18%).

Highlands Hospital Key Findings-Demographics

Overall, HH's service area is slightly older than PA and the US and has a larger percent of White residents and residents with blue collar jobs. The service area has a larger percentage of residents with less than a bachelor's degree, but more than a high school diploma. More than half of the service area residents (56%) earn \$35,000 or less annually. The overall percentage of residents living in poverty (7%) is consistent with the PA average 9%, however, three zip codes have a higher percentage than the service area average: 15446 Indian Head (10%), 15482 Star Junction (13%) and 15688 Tarrs (11%).

Detailed Public Health Analysis by County

The following analysis uses data from multiple publicly available sources, including the County Health Rankings (CHR), the Pennsylvania Department of Health (PA DOH), the Allegheny County Health Department, the Erie County Department of Health, and the Centers for Disease Control and Prevention (CDC). A full listing of data references is included in Appendix C. County averages are compared to the Pennsylvania average, national standards, and the HealthyPeople 2020 goals, where applicable.

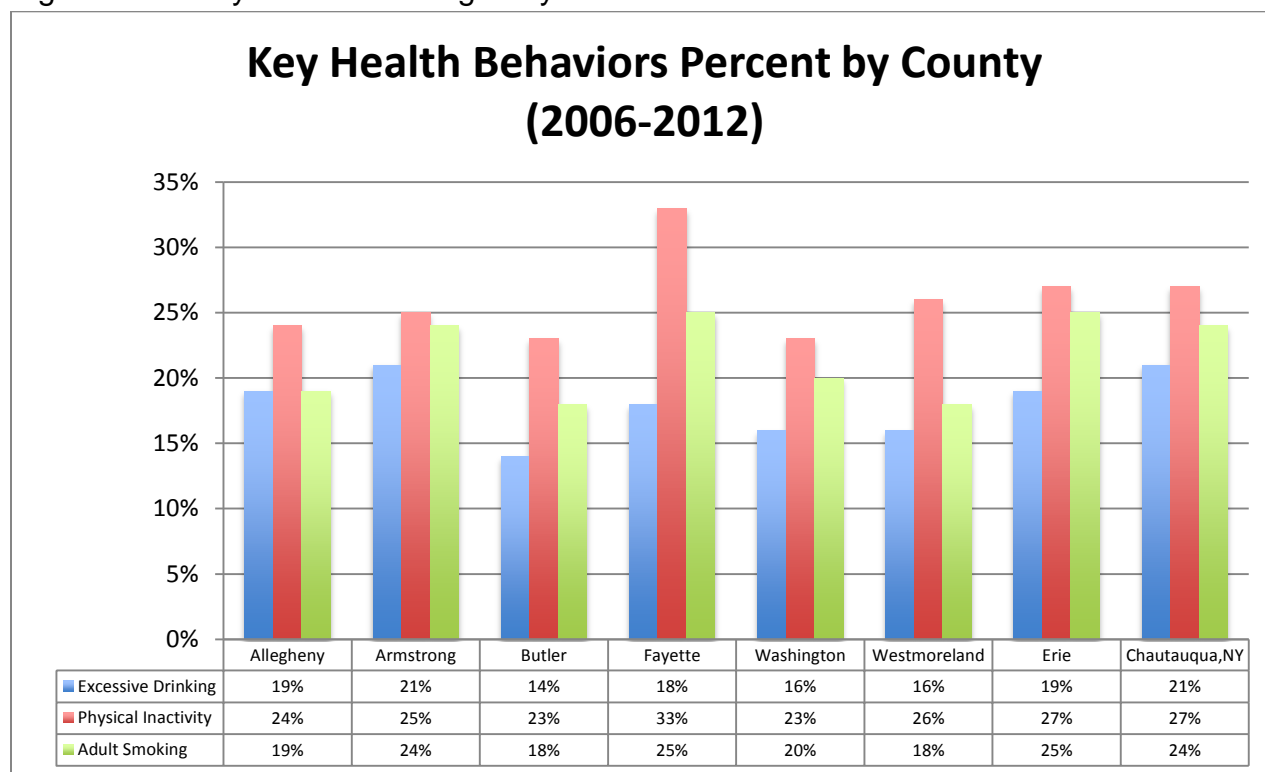
The County Health Rankings & Roadmaps program is an organization that annually collects and reports on national health statistics. The goal of the program is to improve health through providing information to communities in order to facilitate change. Data referenced to compile the present report are from the 2015 County Health Rankings Pennsylvania report. The Pennsylvania Department of Health provides detailed data related to vital statistics, health behaviors, and chronic conditions. This data is available through a variety of reports and query systems maintained by the Department of Health. The CDC provides data on a variety of conditions including diabetes, cancer, heart and lung disease prevalence and death rates. These data are continually collected by the CDC through the Nation Program of Cancer Registries (NPCR) and the National Vital Statistical System (NVSS).

The county averages are compared to national averages and the HealthyPeople 2020 goals. When referenced, the national average is drawn from the same source as the county statistic to which it is compared. The HealthyPeople 2020 goals are national goals created by the US Department of Health and Human Services to set a benchmark for all counties to strive towards. HealthyPeople goals are updated every ten years and progress is tracked throughout the decade. Data are pulled from various sources, such as national surveys and registries, and made available to the public.

Health Behaviors

Numerous behaviors have been discovered to contribute to or reduce the chance of disease. Smoking, excessive drinking, physical inactivity, obesity, and sexually transmitted infections are health behaviors, or the result of a health behavior, that increase the probability of developing disease. Presented below are CHR data on the prevalence of these health behaviors for all of the AHN service area compared to PA and national averages and the HealthyPeople 2020 goals. In addition, data for Beaver County is provided as a secondary service area, but it is not considered one of the primary counties served by AHN.

Figure 9: County Health Rankings Key Health Behaviors



Source: County Health Rankings, 2006-2012

Key Health Behaviors Benchmark Comparisons

	HealthyPeople 2020	United States	Pennsylvania
Excessive Drinking	N/A	15%	17%
Physical Inactivity	33%	23%	24%
Adult Smoking	12%	20%	20%

County Health Rankings data show 20% of Pennsylvania residents report being current smokers, which is consistent with the national average. However, Armstrong County (24%), Chautauqua County (24%), Fayette County (25%), and Erie County (25%) all have a considerably higher percentage of smokers than both the US and PA. While the other four counties in AHN's service area match the PA and US averages, no AHN counties meet the HealthyPeople 2020 goal of 12% current smokers.

AHN counties do not meet the HealthyPeople 2020 goal for smoking

The counties of Allegheny, Armstrong, Fayette, Erie, and Chautauqua have moderately higher percentage of residents who report excessive drinking when compared to PA

(17%) and the nation (15%). Armstrong County and Chautauqua County have the highest percentage of residents who are excessive drinkers (21%).

Physical inactivity is an impactful behavior on one's health. Pennsylvania and the AHN counties already perform better on this measure when compared to the HealthyPeople 2020 goal (33%). However, the counties of Fayette, Erie, Chautauqua, and Westmoreland have a higher percentage of residents reporting physical inactivity when compared to the state and the nation.

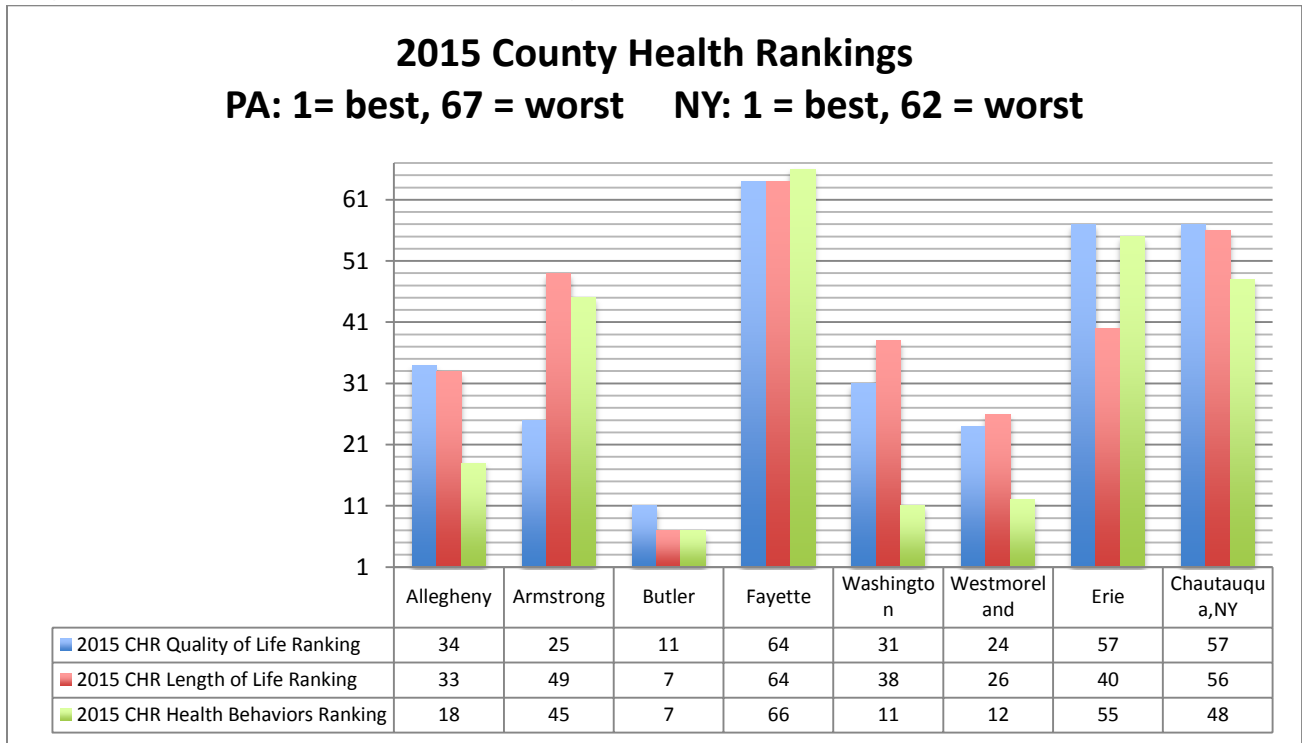
All AHN counties meet the HealthyPeople 2020 goal for physical activity

Lastly, sexually transmitted infections are not only a result of risky health behaviors, but can also lead to other, more serious, health conditions. County Health Rankings reports the rate of newly diagnosed sexually transmitted infections in PA is 431 per 100,000 people. Allegheny County and Erie County have considerably higher rates of 524 per 100,000 people and 515 per 100,000 people respectively. However, all other AHN counties have considerably lower rates than the PA average.

Allegheny and Erie Counties have higher rates of sexually transmitted diseases

The County Health Rankings compiles multiple health behavior measures to create an overall health behavior ranking score for each county. The ranking includes the five health behavior measures listed and discussed in this section, as well as two more diet and exercise measures, one additional alcohol and drug use measure, and one further sexual activity measure. Only Fayette was in the bottom 25th percentile of this measure with a score of 66 out of 67 counties. Armstrong County had the second lowest ranking (45th out of 67 counties) of the AHN counties.

Figure 10: 2015 County Health Rankings



Source: County Health Rankings, 2015

Behavioral Health

Behavioral health is an important aspect of the healthcare system and encompasses both mental health and substance abuse conditions. While substance abuse is a distinctive condition and is addressed separately in the utilization section of the present report, it falls under the umbrella of behavioral health. The CHR and the PA DOH provide multiple measures for mental health and substance abuse. Together the measures for the two conditions give a larger view of the overall behavioral health status of AHN’s service area.

Fayette County has a mental health provider ratio similar to the top 10% in the nation (426:1) and the highest rate of poor mental health days (4.5)

Mental Health

County Health Rankings provides an age-adjusted average number of poor mental health days in the last 30 days. This number is self-reported and all AHN counties are similar to the PA average of 3.6 days with the exception of Butler County (3.2), Erie County (4.1), Chautauqua County (4.1), and Fayette County (4.5). The national average for this measure is 3.4 days with the bottom 10% of counties reporting 4.9 days. The County Health Rankings also provides the ratio of residents to mental health providers for each county. The PA average is 623 to1, which is above the national average of

529:1. All of the AHN counties with the exception of Allegheny, Fayette, and Erie have notably higher resident to mental health provider ratios.

County Health Rankings Mental Health Measures

	Poor Mental Health Days	Mental Health Provider Ratio
Allegheny County	3.5	398:1
Armstrong County	3.7	1,238:1
Butler County	3.2	851:1
Fayette County	4.5	426:1
Washington County	3.7	1,170:1
Westmoreland County	3.7	784:1
Erie County	4.1	615:1
Chautauqua County, NY	4.1	837:1
Pennsylvania	3.6	623:1
United States	3.4	529:1

The PA DOH provides additional measures related to poor mental health days and depression. These measures are available for select AHN counties (Allegheny, Erie, and Westmoreland), and may include differences based on race. The Pennsylvania average for the percent of adults experiencing poor mental health in the past month is 36%. Data for the three counties overall mirror the state average. However, the percentage for non-Whites, including Hispanics, is considerably higher in Erie County (48%).

The state average for adults reporting a depressive disorder diagnosis is 18%. Allegheny County and Westmoreland County mirror the state average, however, the percentage in Erie County is 21%. In addition, the percentage among non-Whites, including Hispanics, in Erie County is 23%.

Erie County non-Whites, including Hispanics, are more likely to have poor mental health and have a depressive disorder

Mortality measures for mental and behavioral disorders and suicide are also indicators of overall mental health. The age-adjusted mental and behavioral disorder death rate in Pennsylvania is 40.3 per 100,000 people. The rates among all AHN counties, except Allegheny, Butler, and Fayette, closely match the state rate. The rates in Allegheny and Butler Counties (43.3 and 47.1

Mental and behavioral disorder mortality is significantly higher in Allegheny and Butler Counties compared to PA

respectively) are significantly higher than the state rate. In addition, the rate among Black residents in Allegheny County (46.6) is notably higher than the county rate. The rate in Fayette County (34.9) is significantly below the state rate.

The age-adjusted suicide rate in Pennsylvania is 12.2 per 100,000 people. In general, the suicide rate is higher among White residents than Black residents. The rates among all AHN counties, except Allegheny, closely match the state rate. The rate in Allegheny County (10.8) is significantly below the state rate.

Mortality due to Mental and Behavioral Disorders and Suicide per 100,000

	Mental and Behavioral Disorders	Suicide
Allegheny County	43.3	10.8
Armstrong County	37.9	13.5
Butler County	47.1	11.3
Fayette County	34.9	12.6
Washington County	42.0	13.7
Westmoreland County	41.3	11.6
Erie County	39.7	13.1
Chautauqua County, NY	51.1	N/A
Pennsylvania	40.3	12.2
United States	43.3	12.6

Substance Abuse

The percentage of residents who report smoking and excessive drinking is reported earlier in the health behaviors section. Armstrong, Fayette, Erie, and Chautauqua Counties all have a considerably larger percentage of residents who report smoking and Armstrong and Chautauqua Counties also have a notably larger percentage of residents who report heavy drinking. The County Health Rankings also measures the percentage of vehicular deaths that are a result of driving under the influence of alcohol. The PA average (34%) is slightly above the national average of 31%. Westmoreland County has a moderately higher percentage of driving deaths due to alcohol consumption (37%) compared to PA and the national average. Fayette County and Erie County have even higher percentages (45% and 38% respectively). While Armstrong County is similar to the PA average (35%), it is moderately higher than the national average. The other AHN counties have percentages equivalent to or lower than the PA and national averages.

The age-adjusted drug-induced death rate in Pennsylvania is 17.7 per 100,000 people. The counties of Allegheny, Fayette, and

Drug-induced mortality is significantly higher in Allegheny, Fayette, and Westmoreland Counties compared to PA

Westmoreland have significantly higher rates. In addition, the rates among White and Black residents in Allegheny County (21.9 and 20.9 respectively) are significantly higher than state rates for these racial groups.

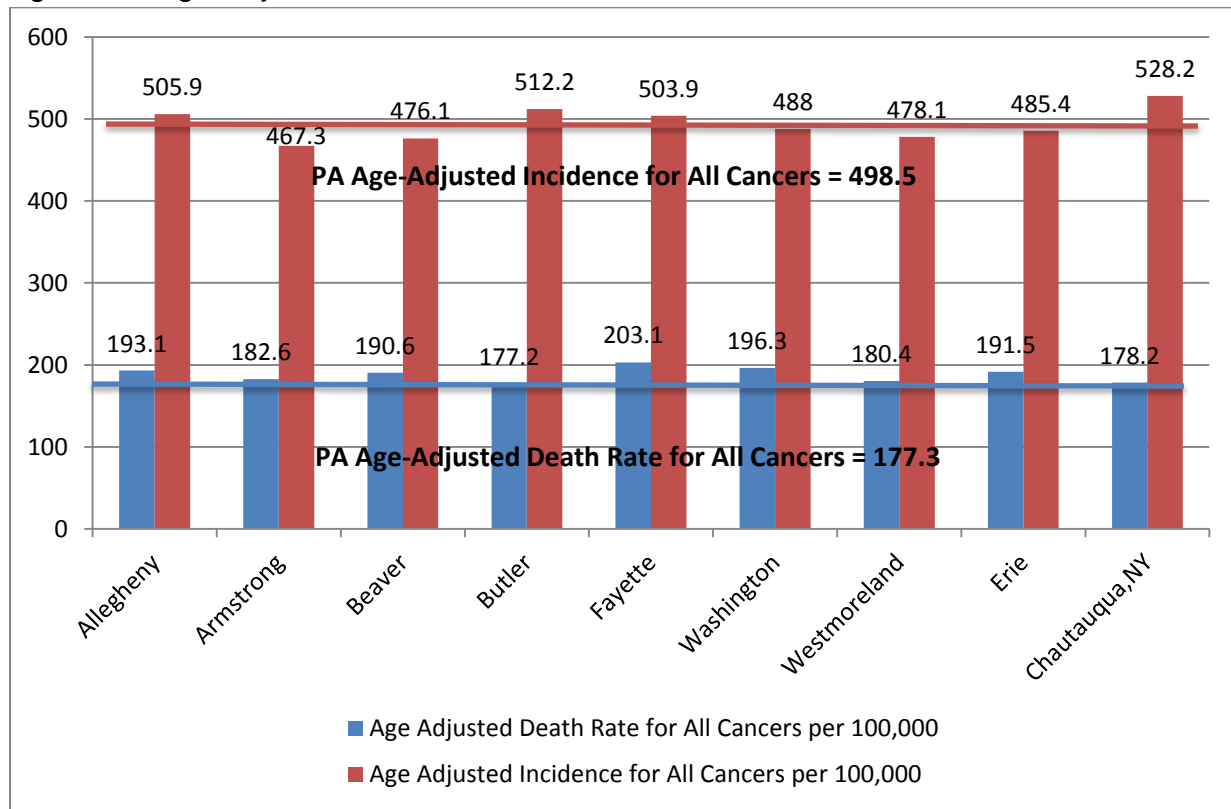
Drug-Induced Mortality per 100,000

	Drug-Induced Mortality
Allegheny County	20.6
Armstrong County	23.6
Butler County	14.3
Fayette County	22.3
Washington County	20.5
Westmoreland County	23.5
Erie County	15.9
Pennsylvania	17.7

Cancer

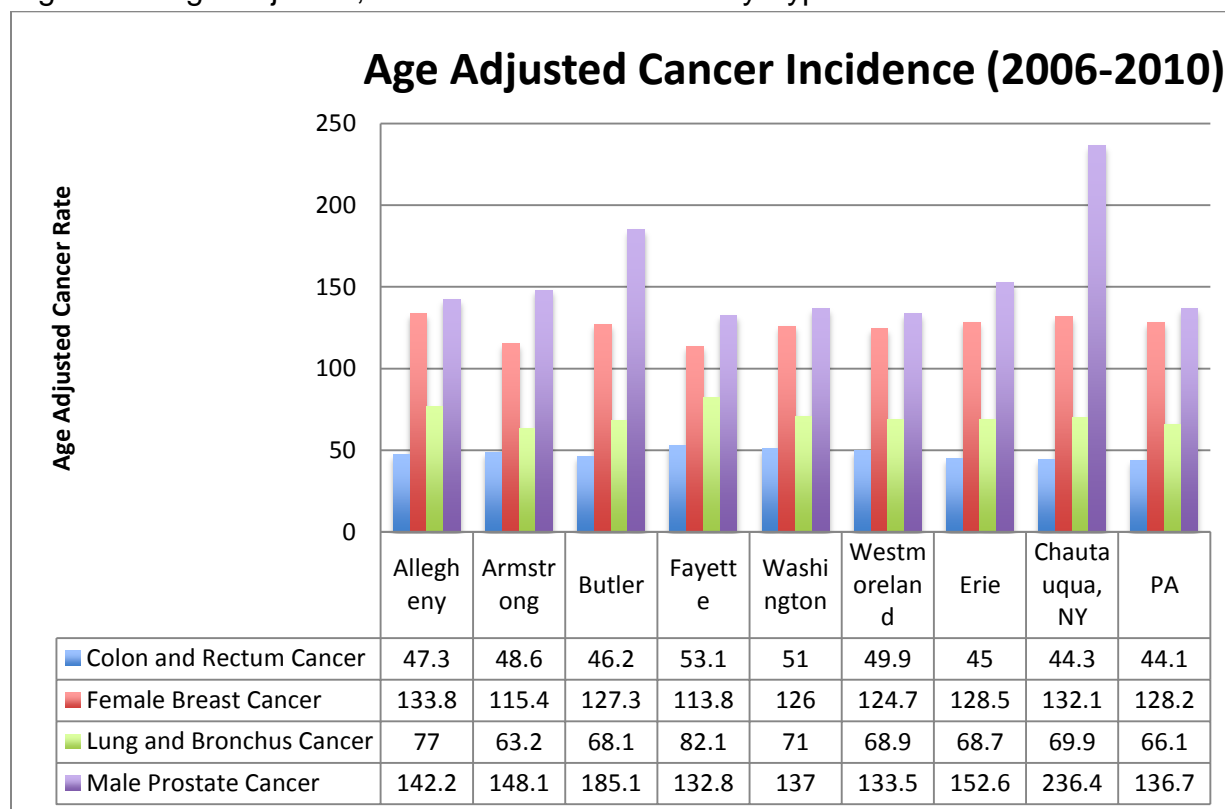
Cancer is among the top leading causes of death in the US. Presented below are the incidence and death rates provided by the CDC for all cancers as well as individual rates for breast, prostate, colon, and lung cancer.

Figure 11: Age-Adjusted, All Cancer Incidence and Death Rates



Source: CDC Community Health Status Indicators, 2005-2011

Figure 12: Age-Adjusted, Cancer Incidence Rates by Type



Source: CDC Community Health Status Indicators, 2006-2010

The incidence rate of all cancers in PA is 498.5 per 100,000 people, while the death rate for all cancers is 177.3 per 100,000 people. Butler County has a slightly higher incidence rate of cancer (512.2 per 100,000 people) than PA, however, the county's cancer death rate is similar to PA, indicating treatment and early detection screenings are similar to the state level.

Chautauqua County also has a higher incidence rate, but similar death when compared to PA overall. Allegheny and Erie Counties have similar incidence rates to the state (505.9 per 100,000 people and 503.9 per 100,000 people respectively), but higher death rates (193.2 per 100,000 people and 203.1 per 100,000 people respectively). Washington County has a lower incidence rate of cancer (488 per 100,000 people), but a higher death rate (196.3 per 100,000). Armstrong, Fayette, and Westmoreland Counties each have lower incidence rates and similar death rates compared to the state averages.

In comparison to PA, Butler and Chautauqua Counties have higher cancer incidence rates, but similar cancer death rates. Allegheny, Erie, and Washington Counties have similar or lower incidence rates, but higher death rates

The incidence rates for breast and prostate cancer are considerably higher than colon and lung cancer across the state and among all AHN counties. Allegheny County has a moderately higher incidence rate for both breast (133.8 per 100,000) and prostate cancer (142.2 per 100,000) compared to PA (breast cancer 128.2 per 100,000 and prostate cancer 136.7 per 100,000). Additionally, rates of prostate cancer are considerably higher in Armstrong County (148.1 per 100,000) and Butler County (185.1 per 100,000) than across PA. All counties except Erie County have a slightly higher incidence rate of colon cancer. Allegheny, Butler, Washington, and Westmoreland Counties all have a moderately higher incidence rate of lung cancer compared to PA.

Chronic Disease

Chronic disease prevalence is discussed in the utilization section of this report; however, the prevalence rates given are limited to hospital patients. The chronic disease measures listed below measure disease in the total population. Additionally, some conditions measured by CHR and the PA DOH are different than the conditions reported in the utilization section. This section aims to give an overview of chronic disease prevalence among all AHN county populations.

Asthma and Lung Disease

The PA DOH measures the age-adjusted death rate per 100,000 people with chronic lower respiratory disease (CLRD). The state rate for CLRD is 38.6 per 100,000 people. All of the Pennsylvania AHN counties with the exception of Allegheny and Westmoreland have significantly higher mortality rates due to CLRD when compared to the state. In particular, the rate in Armstrong County is 49.1 per 100,000 and the rate among White residents in Erie County is 46.8 per 100,000. The death rate due to CLRD is 59.8 per 100,000 in Chautauqua County, which is also higher than the PA rate and the national rate of 42.1 per 100,000.

Armstrong, Butler, Erie, Fayette, and Washington Counties have significantly higher age-adjusted death rates due to CLRD when compared to PA

Heart Disease

Heart disease can be measured by the age-adjusted coronary heart disease and stroke death rates per 100,000 people. The Pennsylvania rate for coronary heart disease deaths is 119.4 per 100,000 and the HealthyPeople 2020 goal is 103.4 per 100,000 people. The following two counties have a significantly higher death rate than the state: Allegheny County (134.6 per 100,000 people) and Fayette County (166.5 per 100,000 people). The death rate for coronary heart disease is higher

Allegheny and Fayette Counties experience significantly higher age-adjusted death rates due to coronary heart disease when compared to PA

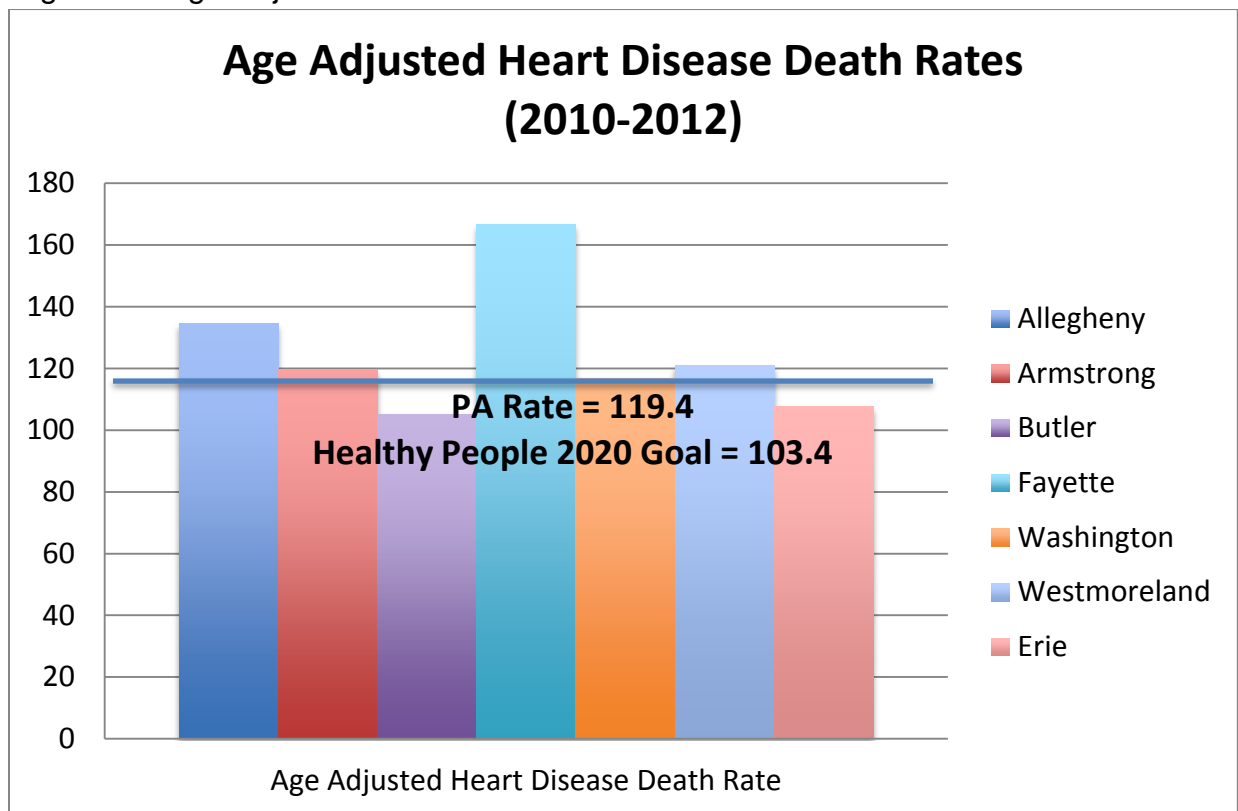
Butler and Erie Counties experience significantly lower age-adjusted death rates due to coronary heart disease when compared to PA

among both White and Black residents in Allegheny County when compared to the state averages for these racial groups. The following two counties have a significantly lower death rate than the state: Butler County (105.2 per 100,000 people) and Erie County (107.7 per 100,000 people). The death rate for coronary heart disease is lower among both

White and Black residents in Erie County when compared to the state averages for these racial groups. All Pennsylvania AHN counties have higher rates when compared to the HealthyPeople 2020 goal.

The state age-adjusted stroke death rate is 38.3 per 100,000 people and the HealthyPeople goal is 34.8 per 100,000 people. All AHN counties are similar to the state rate for this measure.

Figure 13: Age-Adjusted Heart Disease Death Rates



Source: Pennsylvania Department of Health, 2010-2012

Obesity

County Health Rankings data reports on obesity among adults. The percentage of adults affected by obesity in PA is 29%, which is slightly higher than the national average of 27%. Armstrong, Butler, and Fayette are the only counties with a higher percentage of obese adults when compared to the PA average. County Health Rankings data also reports the percentage of residents who have access to exercise opportunities. The current PA percentage and national average is 85%. The percentages in Armstrong (75%), Butler (79%), Fayette (73%), and Chautauqua (73%) Counties are all considerably lower than the PA and national averages. Westmoreland (82%) also has a slightly lower percent of residents with access to exercise opportunities. Additionally, Westmoreland has a slightly higher percentage of residents with limited access to healthy foods (7%) compared to PA (4%). All other counties are similar to the PA average.

Armstrong, Butler, and Fayette Counties have a higher percentage of obese adults when compared to PA

County Health Rankings Adult Obesity

	Adult Obesity
Allegheny County	27%
Armstrong County	34%
Butler County	30%
Fayette County	37%
Washington County	27%
Westmoreland County	28%
Erie County	29%
Chautauqua County, NY	26%
Pennsylvania	29%
United States	27%

The County Health Rankings classify childhood obesity as children with a BMI in the 95th percentile. The percentage of children in kindergarten through 6th grade affected by obesity is 16.9% nation-wide and the HealthyPeople goal is 14.5%. Only Armstrong County has a moderately higher percentage of children affected by obesity (20%) than the US average. However, the percentage of children in grades 7-12 who are obese is higher in Armstrong (22%), Butler (20%), Fayette (24%), and Westmoreland Counties (19%) when compared to the national average (16.9%).

Armstrong, Butler, Fayette, and Westmoreland Counties have a higher percentage of obese youth (grades 7-12) when compared to the nation

Diabetes

The County Health Rankings reports the percentage of adults over the age of 20 with diabetes is 10% in PA and 9% across the nation. The AHN counties have similar percentages with the exception of Fayette County (13%). In addition, the PA DOH reports the age-adjusted mortality rate due to diabetes across all of Pennsylvania is 20.8 per 100,000. The rates in Fayette and Washington Counties are significantly higher than the state (27.2 per 100,000 people and 28.9 per 100,000 people, respectively).

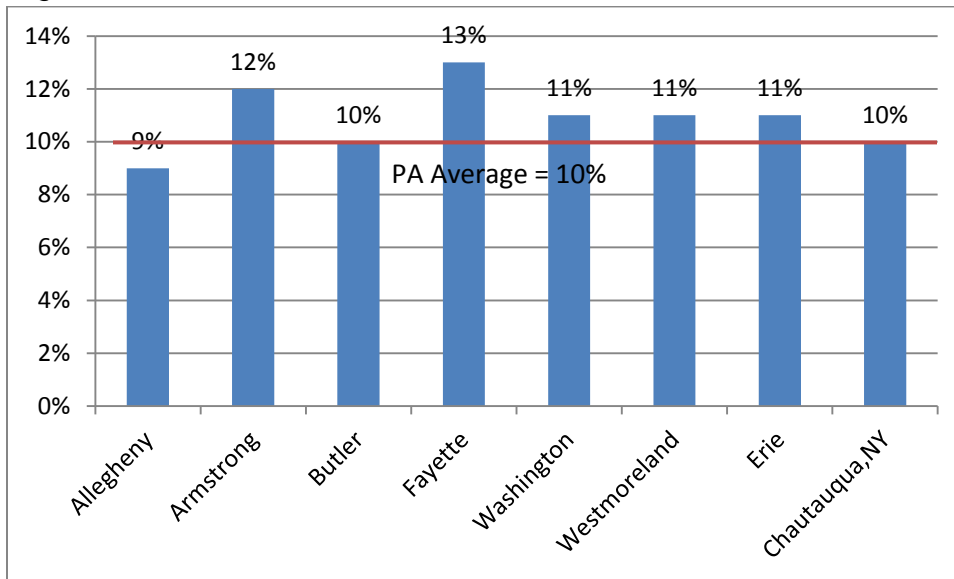
Fayette and Washington Counties have significantly higher rates of death due to diabetes when compared to the state.

The diabetes death rate for Black residents in Allegheny County is 57% higher than Whites

The rate in Allegheny County is significantly lower than the state (18.3 per 100,000). However, the rate among Black residents in Allegheny County is notably higher (31.8 per 100,000) than the county rate overall. The rate in Chautauqua County is 21.0 per 100,000.

rate overall. The rate in Chautauqua County is 21.0 per 100,000.

Figure 14: Diabetes Prevalence



Source: County Health Rankings, 2011

Maternal and Child Health

Maternal and child health is measured by a number of indicators, including teen births, low birth weight, prenatal care onset, smoking during pregnancy, breastfeeding and infant mortality. The following section analyzes all of these measures utilizing data from County Health Rankings and the Pennsylvania Department of Health. In addition, Appendix B, provided by the Allegheny County Health Department, references maternal and child health measures by municipality in Allegheny County.

The County Health Rankings classifies teen births as infants born to a mother age 15-19 years old. PA has a teen birth rate of 28 per 1,000 teen girls, which is similar to the national average. All AHN counties have rates similar to or below the PA average with the exception of Fayette County. Fayette County has a teen birth rate of 42 per 1,000 teens.

Fayette County has a teen birth rate of 42 per 1,000 compared to the PA rate of 28 per 1,000

Teen births can also be expressed as a percentage of total births. In Pennsylvania, 2.3% of all births are to teen mothers. However, certain racial disparities exist.

Teen Birth Racial Disparities:
PA Overall: 2.3%
Allegheny (Black): 5.6%
Erie (Black): 7.5%

Allegheny and Erie Counties have the most racially diverse populations of the seven AHN counties and report teen births by race. In Allegheny County, 5.6% of all births to Black mothers are teen births and 3% of all births to Hispanic mothers are teen births. The percent of teen births among White mothers is 0.9%. In Erie County, 7.5% of all births to Black mothers are teen births and 6.7% of all births to Hispanic mothers are teen births. The percent of teen births among White mothers is 2.3%.

Low birth weight is defined as a birth weight of less than 5 pounds, 8 ounces. It is often a result of premature birth, fetal growth restrictions, or birth defects. The average percent of infants born with low birth weight across PA is 8.2%. The counties of Allegheny and Butler have low birth weight percentages that are significantly below the state. In addition, these counties and Armstrong, Washington, and Westmoreland all meet the HealthyPeople 2020 goal of 7.8%. Fayette County has the highest low birth weight percentage at 9.5%. Both Fayette and Erie Counties do not meet the HealthyPeople 2020 goal. The low birth weight percentage in Chautauqua County is 8.2%. Low birth weight often affects babies of minority racial groups. The following table depicts low birth weight by race in select counties.

Low Birth Weight by Race

	Overall	Whites	Blacks	Hispanics
Allegheny County	7.8%	6.3%	13.2%	7.5%
Pittsburgh City	9.5%	6.9%	14.4%	7.6%
Erie County	8.4%	7.4%	13.4%	10.2%
Erie City	10.1%	8.6%	13.5%	10.6%
Fayette County	9.5%	9.0%	16.0%	N/A
Washington County	7.6%	7.1%	17.5%	N/A
Westmoreland County	7.9%	7.9%	11.4%	N/A
Pennsylvania	8.2%	7.1%	13.2%	8.6%

In Allegheny County, 7.8% of all infants and 13.2% of Black infants are born with low birth weight. However, in Pittsburgh, the percentages are 9.5% and 14.4% respectively. In Erie County, 8.4% of all infants are born with low birth weight, but in Erie City, 10.1% of all infants are born with low birth weight. The percentage of Black and Hispanic babies born with low birth weight in Erie City is consistent with the overall county.

Prenatal care is most effective at ensuring a healthy pregnancy when it is started in the first trimester. The average percent of mothers receiving prenatal care in the first trimester across Pennsylvania is 71.8%, which falls short of the HealthyPeople 2020 goal of 77.9%. However, all Pennsylvania AHN counties have percentages that are significantly above the state average and all but Armstrong County and Erie County meet the HealthyPeople 2020 goal. The percentage of mothers in Chautauqua County who receive first trimester prenatal care (64.0%) falls well short of the HealthyPeople 2020 goal. These percentages represent the overall population and do not account for disparities due to race. The following represents the percentage of mothers who receive prenatal care in the first trimester by race in counties where minority racial groups are disproportionately affected.

First Trimester Prenatal Care by Race

	Overall	Whites	Blacks	Hispanics
Allegheny County	89.0%	90.0%	86.0%	83.1%
Pittsburgh City	87.6%	89.5%	84.3%	80.5%
Butler County	81.5%	81.8%	70.0%	67.1%
Erie County	75.2%	78.4%	62.8%	68.7%
Erie City	70.9%	75.7%	62.8%	68.9%
Fayette County	82.3%	83.2%	71.3%	76.3%
Washington County	83.0%	83.8%	71.6%	65.9%
Pennsylvania	71.8%	77.0%	56.2%	57.4%

In Allegheny County, 86% of Black mothers receive prenatal care in the first trimester, which is higher than the state average for all races and slightly lower than the county

average for White mothers (90%). However, the percentage of Black mothers receiving prenatal care in the first trimester is lower in Pittsburgh (84.3%). In addition, 83.1% of Hispanic mothers in Allegheny County receive prenatal care in the first trimester, but only 80.5% of Hispanic mothers in Pittsburgh receive prenatal care in the first trimester.

In Erie County, 75.2% of all mothers receive prenatal care in the first trimester. However, in Erie City, only 70.9% of mothers receive prenatal care in the first trimester. In addition, only 62.8% of Black mothers, 58.2% of Asian mothers, and 68.9% of Hispanic mothers receive prenatal care in the first trimester in Erie City.

Smoking during pregnancy can cause premature birth, birth defects, and infant death. In Pennsylvania, 15.3% of women report smoking during pregnancy. The HealthyPeople 2020 goal is 1.4%. Five of the AHN counties (Armstrong, Erie, Fayette, Washington, and Westmoreland) report a significantly greater percentage of mothers who smoke during pregnancy. A significantly lower percentage of mothers in Allegheny County smoke during pregnancy, but the percentage still does not meet the HealthyPeople 2020 goal. Mothers of minority racial groups may be more likely to smoke during pregnancy. The following represents the percentage of mothers who smoked during pregnancy by race in counties where minority racial groups are disproportionately affected.

More mothers in Armstrong, Erie, Fayette, Washington, and Westmoreland Counties smoke during pregnancy compared to PA

Smoking during Pregnancy by Race

	Overall	Whites	Blacks	Hispanics
Allegheny County	14.4%	14.0%	18.9%	9.7%
Erie County	23.7%	24.5%	24.7%	20.9%
Fayette County	33.3%	33.0%	42.3%	26.3%
Washington County	21.5%	20.8%	40.8%	19.1%
Westmoreland County	20.8%	20.7%	29.2%	17.7%
Pennsylvania	15.3%	17.2%	13.7%	9.1%

Breastfeeding is recommended for at least the first six months of a baby's life to provide necessary nutrition and disease immunity. The HealthyPeople 2020 goal for breastfeeding is 81.9%. The average percent of mothers in Pennsylvania who breastfeed is 71.5%. Six of the Pennsylvania AHN counties have significantly lower breastfeeding percentages when compared to Pennsylvania. The percentage in Butler County is significantly above the Pennsylvania average,

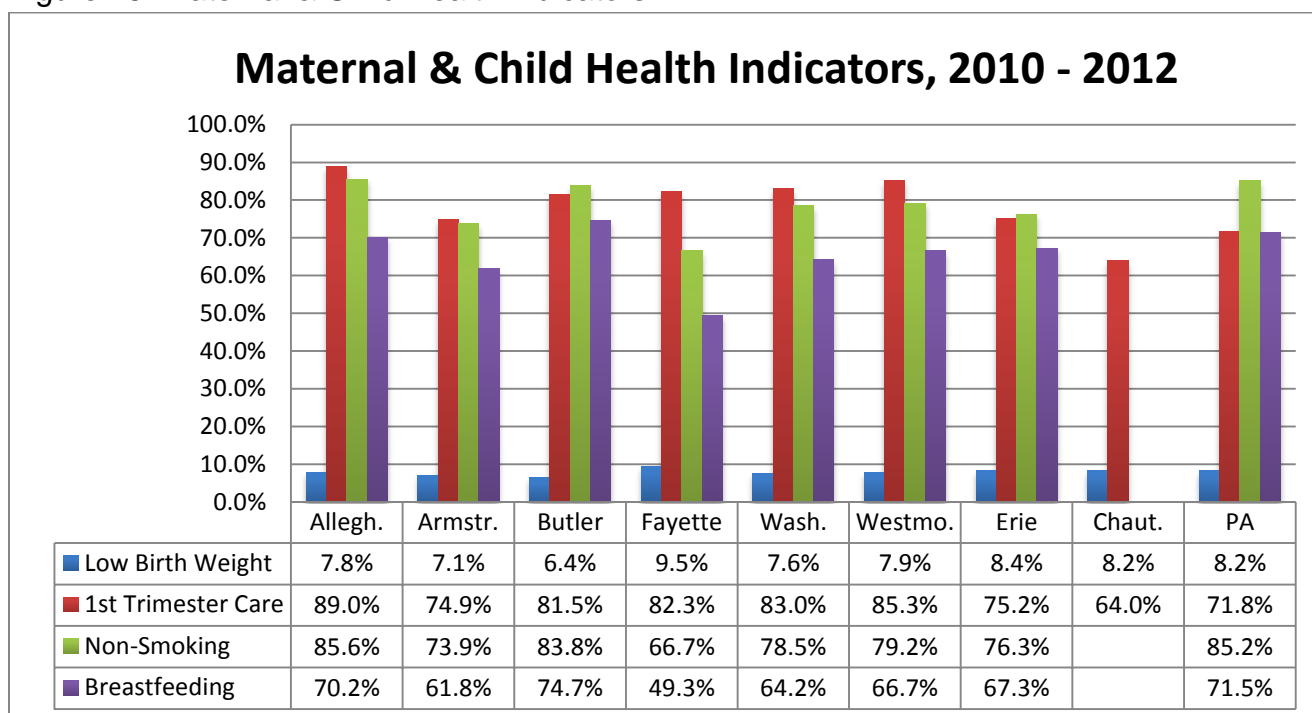
All AHN counties, except Butler, have fewer mothers who breastfeed compared to PA

but it still does not meet the HealthyPeople 2020 goal. Mothers of minority racial groups are often less likely to breastfeed. The following represents the percentage of mothers who breastfeed by race in counties where minority racial groups are disproportionately affected.

Breastfeeding by Race

	Overall	Whites	Blacks	Hispanics
Allegheny County	70.2%	73.3%	52.9%	79.9%
Butler County	74.7%	74.7%	64.2%	85.7%
Erie County	67.3%	70.7%	45.3%	60.1%
Fayette County	49.3%	49.6%	38.1%	84.2%
Washington County	64.2%	64.9%	43.8%	72.0%
Westmoreland County	66.7%	67.1%	48.6%	75.9%
Pennsylvania	71.5%	73.5%	59.8%	69.8%

Figure 15: Maternal & Child Health Indicators



Source: Pennsylvania Department of Health, 2010-2012

Infant mortality is defined as the death of a child before the age of one year. The infant mortality rate across Pennsylvania is 7.0 per 1,000 live births. Armstrong, Fayette, and Washington Counties experienced too few infant deaths to report an annual rate. Infant mortality rates for the remaining counties are similar to or less than the state rate. The following table depicts the infant mortality rate per 1,000 live births for each of the five available AHN counties.

Infant Mortality per 1,000 Live births

	Infant Mortality
Allegheny County	5.9
Blacks	10.3
Pittsburgh City	6.8
Butler County	7.5
Erie County	8.0
Erie City	9.6
Westmoreland County	4.2
Chautauqua County, NY	7.0
Pennsylvania	7.0
HealthyPeople 2020	6.0

Allegheny County overall has a lower infant mortality rate when compared to the state. However, the rate is slightly higher in the city of Pittsburgh, 6.8 per 1,000 live births. Allegheny County also reports infant mortality among Black infants. The infant mortality rate for this demographic group is 10.3 per 1,000 live births for the county overall and 10.5 per 1,000 live births in Pittsburgh.

The Black infant mortality rate in Allegheny County is 10.3% compared to 5.9% overall

Erie County overall has a higher infant mortality rate when compared to the state. The rate is even higher in Erie City, 9.6 per 1,000 live births.

Autism is the most severe form of autism spectrum disorder, a group of developmental disorders. These disorders can cause social and communication difficulties and restricted behaviors. The prevalence of autism increased by 181% across Pennsylvania from 2005 to 2011. The seven AHN counties in Pennsylvania experienced similar increases.

Autism Prevalence 2005 to 2011

	Percent Change from 2005-2011
Allegheny County	119%
Armstrong County	194%
Butler County	123%
Erie County	152%
Fayette County	117%
Washington County	147%
Westmoreland County	105%
Pennsylvania	181%

Senior Health

The CDC reports statistics on Alzheimer's disease deaths. The PA death rate from Alzheimer's disease (20 per 100,000 people) is moderately less than the national average (27 per 100,000). Four of the AHN counties have a moderately higher rate than the PA average: Armstrong (33 per 100,000), Butler (28 per 100,000), Erie (23 per 100,000), and Washington (26 per 100,000).

Data among Medicare beneficiaries is also available for chronic and mental health disease prevalence, including Alzheimer's disease and dementia, asthma, diabetes, and depression. The state average for Medicare beneficiaries with Alzheimer's disease/dementia is 12.2% and the national average is 11.4%. All of the AHN counties have similar percentages with the exception of Allegheny County (15.1%) and Chautauqua County (10.1%). The state and national averages for asthma are 4.2% and 4.3% respectively. All of the AHN counties have similar percentages with the exception of Chautauqua County (4.8%) and Erie County (2.9%). The state and national averages for depression are 13.4% and 12.7% respectively. All of the AHN counties have similar percentages with the exception of Allegheny County (14.7%) and Erie County (14.8%).

Lastly, the state and national averages for diabetes are 27.5% and 27.4% respectively. All of the AHN counties have similar percentages with the exception of Allegheny County (24.8%) and Fayette County (30.5%). The percentage of Medicare enrollees with diabetes who receive diabetic (HbA1c) monitoring is 86% in all of PA. The percentages in Armstrong (83%), Fayette (83%), and Westmoreland (82%) Counties are slightly lower. Additionally, the percentages in Allegheny (79%) and Washington (78%) Counties are considerably lower.

Medicare Beneficiary (65+) Chronic and Mental Health Disease Prevalence

	Alzheimer's Disease/Dementia	Asthma	Depression	Diabetes
Allegheny County	15.1%	4.2%	14.7%	24.8%
Armstrong County	13.2%	3.9%	13.9%	27.8%
Butler County	13.0%	3.8%	13.6%	26.4%
Erie County	13.3%	2.9%	14.8%	28.2%
Fayette County	12.2%	3.5%	12.5%	30.5%
Washington County	12.9%	3.6%	12.1%	27.4%
Westmoreland County	13.9%	3.8%	12.6%	26.4%
Chautauqua County, NY	10.1%	4.8%	12.2%	27.1%
Pennsylvania	12.2%	4.2%	13.4%	27.5%
United States	11.4%	4.3%	12.7%	27.4%

The PA DOH provides additional measures related to senior health. The following tables depict overall health status and chronic condition prevalence for adults age 65 years and over. Data are not available for all counties and/or counties of interest may be reported with other counties not primarily served by AHN. Seniors living in the region of Fayette/Greene/Washington have a number of health concerns related to their overall health status in comparison to the state and other AHN counties. In addition, the region has a considerably higher percentage of seniors with heart disease, stroke, diabetes, and COPD. The percentage of seniors who are overweight and/or smokers in Erie County is also concerning and may contribute to higher percentages of pre-diabetes and COPD.

Overall Health Status, Adults 65+

	Poor Physical Health	Poor Mental Health	Overweight	Need Special Equipment (e.g. cane)	Current Smoker
Allegheny County	41%	24%	67%	19%	10%
Butler/Beaver County	39%	21%	67%	15%	8%
Erie County	39%	23%	71%	17%	12%
Fayette/Greene/Washington County	47%	22%	73%	23%	15%
Westmoreland County	32%	25%	71%	15%	8%
Pennsylvania	40%	24%	69%	19%	9%

Chronic Condition Prevalence, Adults 65+

	Heart Disease	Stroke	Pre-Diabetes	Diabetes	COPD/Emphysema/Chronic Bronchitis
Allegheny County	13%	8%	10%	19%	12%
Butler/Beaver County	13%	7%	14%	20%	12%
Erie County	14%	9%	18%	19%	15%
Fayette/Greene/Washington County	18%	12%	12%	31%	21%
Westmoreland County	11%	4%	12%	22%	14%
Pennsylvania	14%	8%	11%	21%	13%

Utilization Analysis by Hospital

Allegheny General Hospital (AGH) Utilization

Top Principal Diagnoses (Inpatient, Outpatient & ER)

To assess the needs of AHN's service area and identify the most common conditions that are requiring medical attention in an inpatient, outpatient, and emergency room (ER) setting, an analysis of the top principal diagnoses among the six Pittsburgh hospitals was conducted. The charts below display the prevalence of these diagnoses at AGH.

Top 5 Inpatient Diagnoses	AGH Count	AGH	P-AHN
Mood Disorders	7	0%	4%
Septicemia (except in labor)	1760	4%	4%
Congestive heart failure; non-hypertensive	1533	4%	3%
Spondylosis; intervertebral disc disorders; other back problems	1878	4%	3%
Cardiac dysrhythmias	1316	3%	3%

AGH's percentage of inpatient mood disorder cases is lower than the corresponding P-AHN average. The other top four primary diagnoses are similar to the P-AHN average.

Top 5 Outpatient Diagnoses	AGH Count	AGH	P-AHN
Medical examination/evaluation	25,883	8%	6%
Other screening for suspected conditions	15,127	5%	5%
Cardiac dysrhythmias	17,705	5%	4%
Spondylosis; intervertebral disc disorders	12,555	4%	3%
Diabetes mellitus without complication	7,046	2%	3%

AGH has a similar percentage for all top five outpatient principal diagnoses compared to the corresponding P-AHN average.

Top 5 Emergency Room Diagnoses	AGH Count	AGH	P-AHN
Abdominal pain	2,569	5%	5%
Sprains and strains	1,879	4%	5%
Superficial injury; contusion	2,069	4%	4%
Nonspecific chest pain	1,995	4%	4%
Other injuries and conditions due to external causes	1,317	3%	4%

AGH has a similar percentage of total ER cases for each of the five top principal diagnoses compared to P-AHN.

Principal Diagnoses Associated with Death

To assess the needs of AHN's service area and identify the most common diagnoses that are associated with death, an analysis of the top primary diagnoses among patients who expired during a hospital inpatient stay was conducted. The chart below displays the prevalence of these diagnoses at AGH compared to P-AHN.

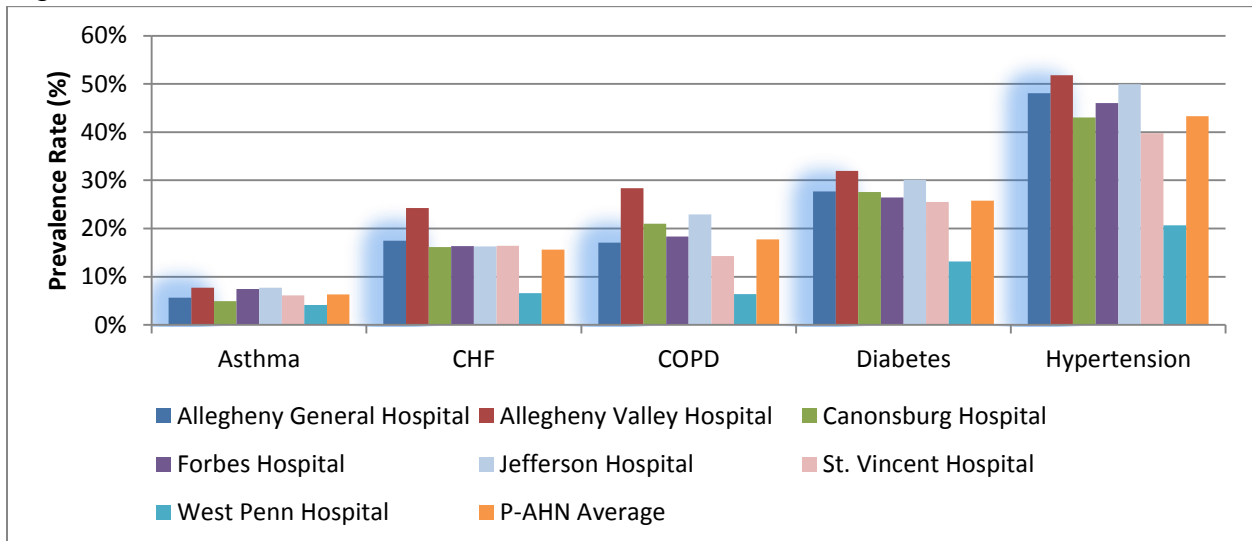
Top 5 Diagnoses Associated with Death	AGH Count	AGH	P-AHN
Septicemia (except in labor)	346	20%	20%
Acute cerebrovascular disease	256	15%	10%
Respiratory failure, insufficiency; arrest (adult)	116	7%	8%
Acute myocardial infarction	78	5%	5%
Congestive heart failure; non-hypertensive	67	4%	5%

The percentage of patients who died at AGH with a primary diagnosis of acute cerebrovascular disease is higher than the P-AHN average, suggesting there may be an opportunity to improve the protocol of care for patients with this diagnosis or the prevalence of this condition could be higher in the service area population. The prevalence rates of the other top four diagnoses associated with death are similar to the P-AHN average.

Chronic Disease Prevalence

The top five chronic conditions, determined by the Agency for Healthcare Research and Quality (AHRQ), are asthma, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), diabetes, and hypertension. The present chronic disease section and the ones that follow for each hospital examine the prevalence of the above chronic conditions among inpatient hospital admissions. AGH has a higher prevalence of hypertension (48%) compared to P-AHN (43%). The higher prevalence of hypertension is in line with the greater number of inpatient essential hypertension cases than P-AHN, indicating there could be a lack of resources in the community for this condition. The hospital's prevalence rates of asthma, CHF, COPD, and diabetes are all similar to the corresponding P-AHN average.

Figure16: Chronic Disease Prevalence



Behavioral Health and Medical Comorbidities

Managing chronic conditions can be more difficult if the patient concurrently has a behavioral health or substance abuse diagnosis. The following section examines the prevalence of the five chronic diseases discussed in the previous section (asthma, CHF, COPD, diabetes, and hypertension) among patients with behavioral health and substance abuse diagnoses. The prevalence of asthma among patients who have a behavioral health diagnosis is higher for Medicare patients (19% vs. 11% P-AHN), and similar to or below the P-AHN average for commercial and Medicaid patients. The prevalence of CHF among patients with a behavioral health diagnosis is higher across all three lines of business (commercial 4% vs. 1% P-AHN, Medicaid 9% vs. 3% P-AHN, Medicare 22% vs. 5% P-AHN). The prevalence of COPD is higher for Medicare patients (22% vs. 14% P-AHN), and considerably lower than the P-AHN average for commercial (0% vs. 7%) and Medicaid patients (6% vs. 10%). The prevalence of

diabetes among patients with a behavioral health diagnosis is slightly higher for commercial (13% vs. 10% P-AHN) and Medicaid patients (15% vs. 12% P-AHN), but substantially lower for Medicare patients (19% vs. 24% P-AHN). Lastly, the prevalence of hypertension is higher for Medicaid patients (47% vs. 31% P-AHN), and similar to or below the P-AHN average for commercial and Medicare patients. Populations with a behavioral health diagnosis and higher than average rates of comorbidities may benefit from increased care coordination efforts to ensure their conditions are being managed properly. All rates can be seen below in Figure 17.

Figure 17: Chronic Disease Prevalence Rates among Patients with a Behavioral Health Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	4%	8%	11%	14%	6%	12%
	CHF	4%	1%	2%	1%	1%	1%
	COPD	0%	11%	5%	8%	2%	7%
	Diabetes	13%	13%	8%	11%	9%	10%
	Hypertension	26%	35%	28%	29%	18%	30%
Medicaid	Asthma	9%	12%	12%	16%	13%	12%
	CHF	9%	5%	1%	0%	1%	3%
	COPD	6%	13%	7%	8%	5%	10%
	Diabetes	15%	14%	11%	4%	11%	12%
	Hypertension	47%	32%	31%	24%	25%	31%
Medicare	Asthma	19%	9%	11%	11%	12%	11%
	CHF	22%	8%	4%	2%	5%	5%
	COPD	22%	19%	9%	14%	11%	14%
	Diabetes	19%	25%	21%	27%	26%	24%
	Hypertension	50%	49%	49%	48%	45%	48%

Allegheny General Hospital's prevalence rate of asthma among patients with a substance abuse diagnosis is lower than the P-AHN average for commercial, Medicaid, and Medicare patients. The prevalence rate of CHF is higher than the P-AHN average for commercial patients (6% vs. 2% P-AHN) and similar to the P-AHN average for Medicaid and Medicare patients. The prevalence rate of COPD among patients with substance abuse diagnoses is similar across all three lines of business. AGH has a slightly higher diabetes prevalence rate for commercial (13% vs. 7% P-AHN) and Medicaid patients (13% vs. 10% P-AHN), but a moderately lower prevalence rate than the P-AHN average for Medicare patients (8% vs. 13%). Lastly, the hypertension prevalence rate is higher among Medicare patients (59% vs. 52% P-AHN), and at or below the P-AHN average for commercial and Medicaid patients. Similar to the population of patients with a behavioral health diagnosis, those with a substance abuse and chronic condition diagnosis could benefit from increased care coordination to manage their conditions and possibly prevent readmission to the hospital. All rates can be seen below in Figure 18.

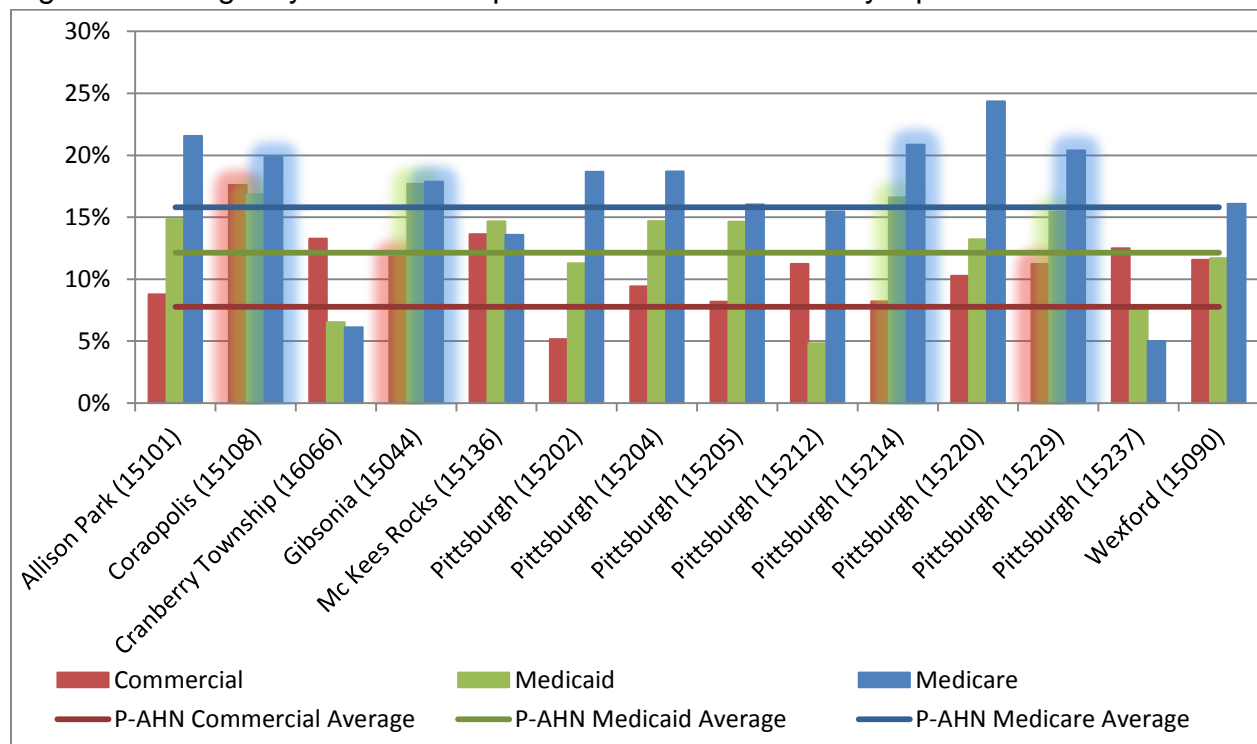
Figure 18: Chronic Disease Prevalence Rates among Patients with a Substance Abuse Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	0%	9%	6%	9%	0%	6%
	CHF	6%	0%	1%	0%	0%	2%
	COPD	3%	9%	4%	2%	11%	5%
	Diabetes	13%	18%	4%	7%	0%	7%
	Hypertension	47%	55%	44%	64%	56%	51%
Medicaid	Asthma	3%	0%	9%	10%	3%	6%
	CHF	2%	17%	1%	0%	4%	2%
	COPD	9%	17%	7%	18%	4%	11%
	Diabetes	13%	25%	5%	10%	7%	10%
	Hypertension	45%	42%	46%	45%	45%	44%
Medicare	Asthma	8%	0%	14%	9%	9%	9%
	CHF	3%	0%	2%	2%	4%	2%
	COPD	18%	23%	9%	19%	18%	17%
	Diabetes	8%	8%	11%	22%	22%	13%
	Hypertension	59%	54%	39%	61%	64%	52%

Readmissions

Readmission rates for each hospital were determined by calculating the percentage of patients who readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 19: Allegheny General Hospital Readmission Rates by Zip Code



Allegheny General Hospital's hospital wide 30-day readmission rate (14%) is similar to P-AHN (12%). The Medicaid and Medicare readmission rates are also similar to the P-AHN average. However, AGH has a slightly higher readmission rate for commercial patients (11%) compared to P-AHN (8%). With a higher rate for overall commercial patients it is unsurprising that there are eight zip codes with rates higher than the P-AHN average (8%). Figure 19 AGH Readmit Rate shows these zip codes in reference to the horizontal line representing the P-AHN average. There are four zip codes that have a higher Medicaid readmission rate than P-AHN and five zip codes with a higher Medicare rate. Zip codes 15108 Coraopolis, 15044 Gibsonia and 15229 Pittsburgh all have a higher readmission rate among commercial, Medicaid, and Medicare patients, and 15214 Pittsburgh has a higher readmission rate among Medicaid and Medicare patients. The figure above, which displays zip codes in Allegheny General Hospital's service area, highlights the four zip codes with higher readmission rates across multiple lines of business. The higher readmission rate across multiple lines of business in these specific areas demonstrates the need for improved care coordination.

To determine how well chronic conditions are being managed, readmission and prevalence rates for each condition were examined and compared to corresponding P-AHN averages. The prevalence of chronic disease described in this section is the prevalence among patients who readmit to the hospital within 30 days of discharge. AGH has a slightly lower prevalence of COPD (23% vs. 26% P-AHN), but the readmission rate for this condition (17%) matches the P-AHN average. If prevalence is employed as an indicator of how sick a population is, a lower prevalence should then lead to a lower readmission rate. Consequently, the modestly lower COPD prevalence rate and similar readmission rate indicates patients with COPD could benefit from increased community resources to manage their condition. AGH has similar prevalence and readmission rates for asthma, CHF, diabetes, and hypertension, indicating the management of these conditions is equivalent to the network average.

Emergency Room Visits

A sizeable majority (76%) of patients who visited AGH's emergency room (ER) in 2014 had only one ER visit in that year, which is consistent with the P-AHN average (74%). Additionally, the number of ER visits per person at AGH (1.5 visits per year) matches the P-AHN average. However, the number of patients who visit the ER three or more times a year (2,741 people) is notable. Yet, because AGH is a large hospital the number of patients visiting the ER three or more times a year as a percentage of total ER patients (10%) is similar to the P-AHN average (11%). A high number of ER visits per year can be an indicator that a patient lacks access to primary care. Compared to P-AHN, there does not appear to be an issue of access among the majority of AGH's ER patients. All lines of business (commercial, Medicaid, Medicare, and self-pay) have a

similar number of visits compared to the P-AHN average. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 20: Emergency Room Visits per Patient in 2014

Hospital	Patients with ≥ 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Premature Birth Rate

The total number of births at AGH from 2013 to 2014 was fairly low (19 births). The overall premature birth rate (11%) is consistent with the P-AHN average (10%). Due to the low number of births, premature rates for specific lines of business and zip codes were not practical to analyze.

Allegheny General Hospital Key Findings-Hospital Utilization Data

With the exception of a higher percentage of acute cerebrovascular disease among patients who expired during an inpatient stay, AGH has similar percentages to the P-AHN average for inpatient, outpatient, and emergency room principal diagnoses, as well as principal diagnoses associated with death. Further, the hospital has a lower percentage of mood disorder cases listed as the patient's principal diagnosis in the inpatient setting. AGH's percentages for the top five chronic diseases are mostly similar to or below the P-AHN average, with only a higher percentage of hypertension cases. However, an analysis of readmission rates by chronic disease prevalence indicates the case management of COPD could be slightly improved.

By increasing care coordination for populations with a behavioral health or substance abuse diagnosis and a chronic condition, hospitals could potentially improve patient outcomes and reduce readmission rates. The following populations with a behavioral health diagnosis also have higher rates of chronic disease than the P-AHN average: commercial patients have a higher prevalence rate of CHF and diabetes, Medicaid patients have a higher rate of CHF, diabetes, and hypertension, and Medicare patients have a higher rate of asthma, CHF, and COPD. The following populations with substance abuse diagnoses also have higher rates of chronic disease than the P-AHN average: commercial patients have a higher prevalence rate of CHF and diabetes, Medicaid patients have a higher rate of diabetes, and Medicaid patients have a higher rate of hypertension.

The hospital's overall readmission rate is similar to P-AHN; however the readmission rate among patients with commercial insurance is slightly higher. Four zip codes have higher readmission rates across multiple lines of business and could benefit from improved care coordination. Zip codes 15108 Coraopolis, 15044 Gibsonia, and 15229 Pittsburgh all have a higher readmission rate among commercial, Medicaid, and Medicare patients and 15214 Pittsburgh has a higher readmission rate among Medicaid and Medicare patients.

Allegheny Valley Hospital (AVH) Utilization

Top Diagnoses (Inpatient, Outpatient & ER)

The charts below display the prevalence of P-AHN's top principal diagnoses in the inpatient, outpatient, and ER setting as well as the respective percentage among AVH's service lines.

Top 5 Inpatient Diagnoses	AVH Count	AVH	P-AHN
Mood Disorders	1,414	12%	4%
Septicemia (except in labor)	499	4%	4%
Congestive heart failure; non-hypertensive	659	5%	3%
Spondylosis; intervertebral disc disorders; other back problems	199	2%	3%
Cardiac dysrhythmias	440	4%	3%

AVH has a substantially higher percentage of inpatient mood disorder cases than the P-AHN average. A higher percentage of total cases could indicate a lack of community resources to manage these conditions. The percentages of the four remaining top principal diagnoses are similar to the P-AHN average.

Top 5 Outpatient Diagnoses	AVH Count	AVH	P-AHN
Medical examination/evaluation	15,135	8%	6%
Other screening for suspected conditions	10,110	5%	5%
Cardiac dysrhythmias	7,038	4%	4%
Spondylosis; intervertebral disc disorders	4,070	2%	3%
Diabetes mellitus without complication	9,080	5%	3%

AVH has a similar percentage for each of the five top outpatient principal diagnoses compared to the P-AHN average.

Top 5 Emergency Room Diagnoses	AVH Count	AVH	P-AHN
Abdominal pain	2,085	5%	5%
Sprains and strains	2,515	7%	5%
Superficial injury; contusion	2,358	6%	4%
Nonspecific chest pain	1,266	3%	4%
Other injuries and conditions due to external causes	1,156	3%	4%

AVH has percentages similar to the P-AHN average for all five of the top ER principal diagnoses.

Principal Diagnoses Associated with Death

The chart below displays the prevalence of P-AHN's top five principal diagnoses associated with death as well as the respective percentage at AVH.

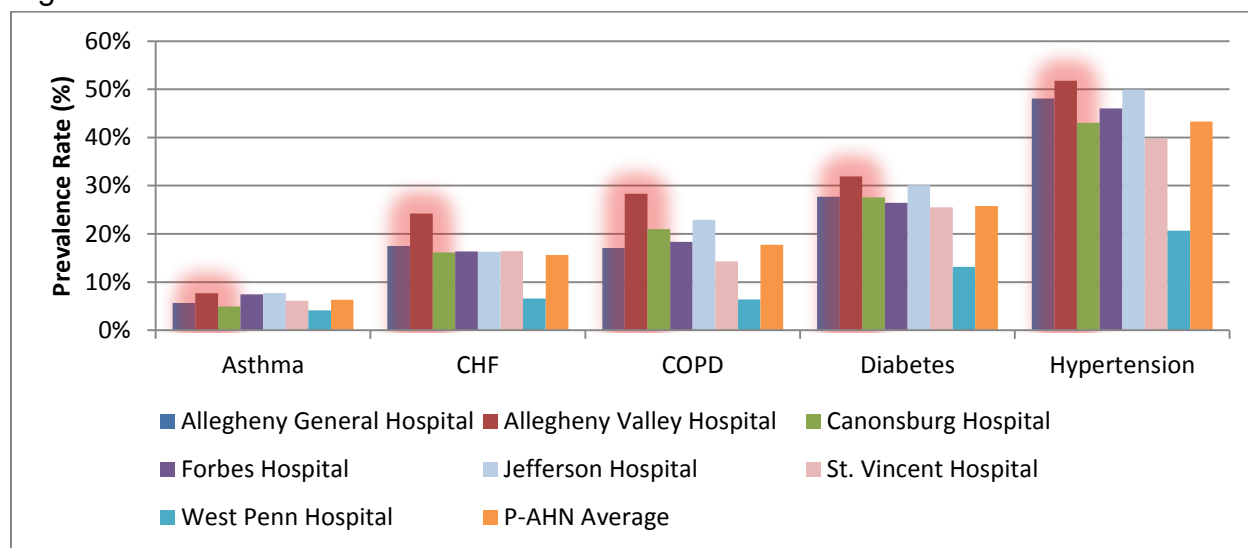
Top 5 Diagnoses Associated with Death	AVH Count	AVH	P-AHN
Septicemia (except in labor)	63	20%	20%
Acute cerebrovascular disease	9	3%	10%
Respiratory failure, insufficiency; arrest (adult)	37	12%	8%
Acute myocardial infarction	19	6%	5%
Congestive heart failure; non-hypertensive	25	4%	5%

AVH has a higher prevalence of respiratory failure/ insufficiency/arrest among adults than the P-AHN average. A higher rate could suggest there may be an opportunity to improve the protocol of care for patients with this diagnosis. Alternatively, the prevalence and/or severity of this condition may be higher in AVH's service area population. The prevalence of acute cerebrovascular disease at AVH is lower than the P-AHN average. Conversely from the observations made about respiratory failure cases, a lower percentage could indicate superior care protocols for patients with this condition or a lower prevalence rate in the service area population.

Chronic Disease Prevalence

The prevalence rates for CHF, COPD, diabetes, and hypertension at AVH are all substantially higher than the P-AHN average (CHF 24% vs. 16% P-AHN, COPD 28% vs. 18% P-AHN, diabetes 32% vs. 26% P-AHN and hypertension 52% vs. 43% P-AHN). As discussed in the demographic section of this report, AVH's service area has a larger percentage of residents 65 and older compared to P-AHN, which may contribute to the higher prevalence rates of chronic disease. However, community resources for these conditions should be examined to see if they are sufficient for the population. The prevalence of asthma among AVH's patients (8%) is similar to P-AHN (6%).

Figure 21: Chronic Disease Prevalence



Behavioral Health and Medical Comorbidities

As discussed in the AGH comorbidity section, the case management of patients who have a chronic disease as well as a behavioral health or substance abuse diagnosis could be more challenging. Therefore, identifying which populations among these patients have higher rates of chronic disease is essential to care management. The prevalence of asthma among patients with a behavioral health diagnosis is at or below the P-AHN average for commercial, Medicaid, and Medicare patients. The prevalence rate of CHF is slightly higher among Medicare patients (8% vs. 5% P-AHN) and similar to the P-AHN average for commercial and Medicaid patients. The COPD prevalence rate is higher across all three lines of business (commercial 11% vs. 7% P-AHN, Medicaid 13% vs. 10% P-AHN and Medicare 19% vs. 14% P-AHN). The diabetes prevalence rate is higher for commercial patients (13% vs. 10% P-AHN) and similar to the P-AHN average for Medicaid and Medicare patients. Lastly, the hypertension prevalence rate is higher for commercial patients (35% vs. 30% P-AHN) and similar to the P-AHN average for Medicaid and Medicare patients. The figure below shows chronic condition rates for all lines of business.

Figure 22: Chronic Disease Prevalence Rates among Patients with a Behavioral Health Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	4%	8%	11%	14%	6%	12%
	CHF	4%	1%	2%	1%	1%	1%
	COPD	0%	11%	5%	8%	2%	7%
	Diabetes	13%	13%	8%	11%	9%	10%
	Hypertension	26%	35%	28%	29%	18%	30%
Medicaid	Asthma	9%	12%	12%	16%	13%	12%
	CHF	9%	5%	1%	0%	1%	3%
	COPD	6%	13%	7%	8%	5%	10%
	Diabetes	15%	14%	11%	4%	11%	12%
	Hypertension	47%	32%	31%	24%	25%	31%
Medicare	Asthma	19%	9%	11%	11%	12%	11%
	CHF	22%	8%	4%	2%	5%	5%
	COPD	22%	19%	9%	14%	11%	14%
	Diabetes	19%	25%	21%	27%	26%	24%
	Hypertension	50%	49%	49%	48%	45%	48%

The following chronic disease prevalence rates are among patients with a substance abuse diagnosis. The prevalence of asthma is higher for commercial patients (9% vs. 6% P-AHN) and below the P-AHN average for Medicaid and Medicare patients. The CHF prevalence rate is higher among Medicaid patients (17% vs. 2% P-AHN), and similar to the P-AHN average for commercial and Medicare patients. Compared to P-AHN, the prevalence rate of COPD is higher across all three lines of business (commercial 9% vs. 5% P-AHN, Medicaid 17% vs. 11% P-AHN and Medicare 23% vs. 17% P-AHN). The diabetes prevalence rate is higher for commercial (18% vs. 7% P-AHN) and Medicaid patients (25% vs. 10% P-AHN), and lower than the P-AHN average for Medicare patients. Lastly, the hypertension prevalence rate is higher among commercial patients (55% vs. 51% P-AHN) and similar to the P-AHN average for Medicaid and Medicare patients. All rates can be seen below in Figure 23.

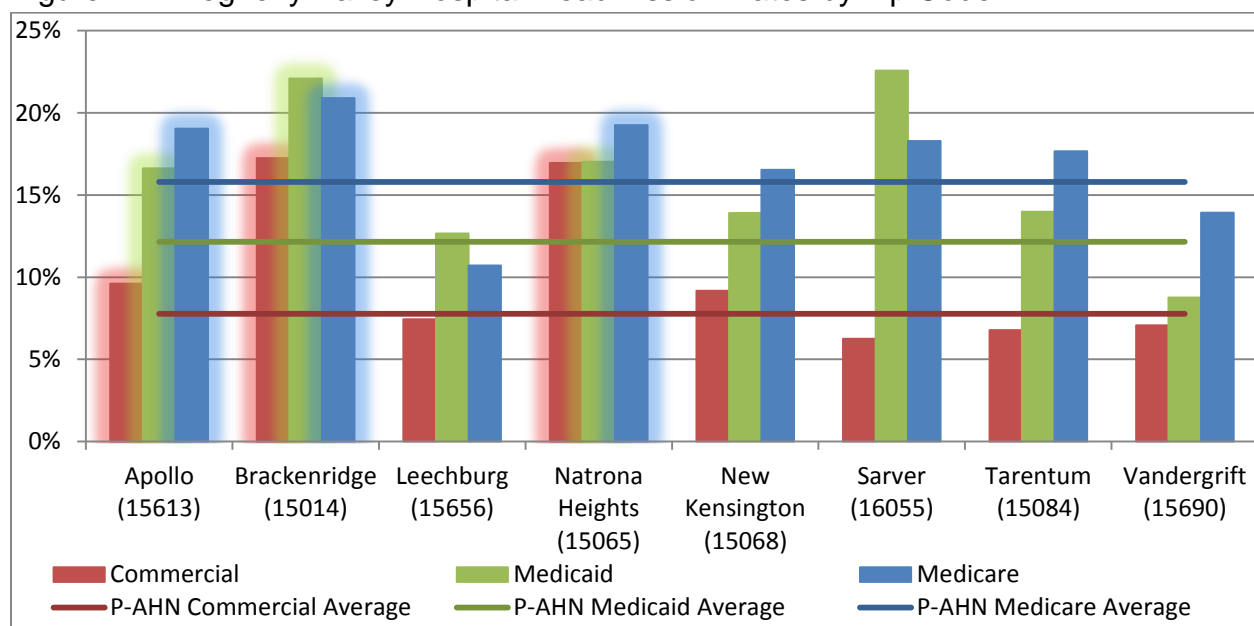
Figure 23: Chronic Disease Prevalence Rates among Patients with a Substance Abuse Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	0%	9%	6%	9%	0%	6%
	CHF	6%	0%	1%	0%	0%	2%
	COPD	3%	9%	4%	2%	11%	5%
	Diabetes	13%	18%	4%	7%	0%	7%
	Hypertension	47%	55%	44%	64%	56%	51%
Medicaid	Asthma	3%	0%	9%	10%	3%	6%
	CHF	2%	17%	1%	0%	4%	2%
	COPD	9%	17%	7%	18%	4%	11%
	Diabetes	13%	25%	5%	10%	7%	10%
	Hypertension	45%	42%	46%	45%	45%	44%
Medicare	Asthma	8%	0%	14%	9%	9%	9%
	CHF	3%	0%	2%	2%	4%	2%
	COPD	18%	23%	9%	19%	18%	17%
	Diabetes	8%	8%	11%	22%	22%	13%
	Hypertension	59%	54%	39%	61%	64%	52%

Readmissions

As mentioned in a previous section, readmission rates were calculated by assessing the percentage of patients who readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 24: Allegheny Valley Hospital Readmission Rates by Zip Code



Allegheny Valley Hospital's overall 30-day readmission rate (14%) is similar to P-AHN (12%). Additionally, readmission rates for commercial and Medicare patients are similar to the P-AHN average. However, the Medicaid readmission rate is slightly higher (15% vs. 12% P-AHN). Two zip codes, 15014 Brackenridge and 15065 Natrona Heights, have a commercial readmission rate (17%) much higher than the P-AHN average (8%). Additionally, the following zip codes have a higher readmission rate for Medicaid patients compared to the P-AHN average (12%): 15613 Apollo (17%), 15014 Brackenridge (22%), 15065 Natrona Heights (17%), and 16055 Sarver (23%). Lastly, three zip codes have a higher Medicare readmission rate than the P-AHN average (16%): 15613 Apollo (19%), 15014 Brackenridge (21%), and 15065 Natrona Heights (19%). While there are numerous zip codes that fall above the P-AHN average, there are three zip codes that have a higher readmission rate across multiple lines of business. The figure above, which displays AVH's readmission rates by zip code, highlights these three zip codes. Zip codes 15014 Brackenridge and 15065 Natrona Heights have a higher readmission rate for commercial, Medicare, and Medicaid patients. Zip code 15613 Apollo has higher a readmission rate for Medicare and Medicaid patients. Particular attention should be paid to these zip codes with regard to care coordination efforts.

Readmission and prevalence rates for the top five chronic conditions were examined to determine how well the conditions are being managed. Among patients who readmit to the hospital within 30 days of discharge, the prevalence rate of CHF (35% vs. 26% P-AHN), COPD (38% vs. 26% P-AHN), diabetes (37% vs. 34% P-AHN), and hypertension (50% vs. 46% P-AHN) are all higher than the P-AHN average. However, the readmission rates for these conditions match the P-AHN average. If prevalence is utilized as an indicator to determine how sick a population is, then readmission rates for these conditions would also be expected to be higher. Since readmission rates for these chronic diseases are similar to P-AHN, it would seem these conditions are being managed well. AVH's asthma prevalence (7% vs. 5% P-AHN) and readmission rates (10.6% vs. 9%) are similar to the P-AHN average, suggesting a comparable level of case management.

Emergency Room Visits

The majority of patients who visited AVH's emergency room (ER) in 2014 had only one ER visit in that year (66%), however, this percentage is lower than the P-AHN average (74%). The percentage of patients visiting AVH's ER three or more times a year (16%) is higher than the P-AHN average (11%) and represents a total of 2,987 patients. AVH's ER patients have 1.8 visits per year, which is higher than the P-AHN average (1.5 visits). Medicare patients at AVH have the highest ER use with 23% of patients (n= 838) visiting the ER three or more times. Medicaid and self-pay lines of business also had a

higher number of visits than the P-AHN average with 20% of Medicaid (n= 1,591) and 13% of self-pay patients (n= 369) having three or more visits to the ER. The high average number of visits per year indicates those patients may be using the emergency room for non-emergency reasons, possibly because they lack access to primary care. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 25: Emergency Room Visits per Patient in 2014

Hospital	Patients with >= 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Allegheny Valley Hospital Key Findings-Hospital Utilization Data

The first finding of note is that AVH has a higher number of residents visiting the emergency room three or more times a year compared to P-AHN, implying these patients may lack access to primary care. Next, AVH has similar percentages for most inpatient, outpatient, and ER principal diagnoses, with the exception of a higher percentage of inpatient mood disorder cases compared to the P-AHN average. The percentage of mood disorder cases may indicate a lack of resources in the community to manage this condition. AVH also has a higher prevalence rate of respiratory failure/insufficiency/arrest (among adults) and a lower prevalence rate of acute cerebrovascular disease among patients who died during an inpatient admission compared to the P-AHN average.

The prevalence of CHF, COPD, diabetes, and hypertension in the inpatient setting is higher than the P-AHN average. The high rates could be a result of the larger percentages of seniors that comprise AVH's service area. However, an analysis of readmission and prevalence rates indicates these conditions are being managed well. On the other hand, patients who have a chronic condition as well as a behavioral health or substance abuse diagnosis could be more challenging cases to manage and therefore should be given increased attention. The following populations with a behavioral health diagnosis have higher rates of chronic disease than the P-AHN average: commercial patients have higher rates of COPD, diabetes, and hypertension, Medicaid patients have a higher rate of COPD, and Medicare patients have higher rates of CHF and COPD. The following populations with a substance abuse diagnosis have

higher rates of chronic disease than the P-AHN average: commercial patients have higher rates of asthma, COPD, diabetes, and hypertension, Medicaid patients have higher rates of CHF, COPD, and diabetes, and Medicare patients have a higher rate of COPD.

AVH's overall readmission rate is similar to the P-AHN average. Medicaid is the only line of business that has a slightly higher readmission rate than P-AHN. Among all the zip codes with higher than average readmission rates, 15014 Brackenridge, 15065 Natrona Heights, and 15613 Apollo all have higher rates across multiple service lines. Therefore, these three zip codes could potentially benefit from improved care coordination.

West Penn Hospital (WPH) Utilization *Top Diagnoses (Inpatient, Outpatient & ER)*

The charts below display the prevalence of P-AHN's top five principal diagnoses in the inpatient, outpatient, and ER setting as well as the respective percentage among WPH's service lines.

Top 5 Inpatient Diagnoses	WPH Count	WPH	P-AHN
Mood Disorders	1	0%	4%
Septicemia (except in labor)	350	1%	4%
Congestive heart failure; non-hypertensive	228	1%	3%
Spondylosis; intervertebral disc disorders; other back problems	286	1%	3%
Cardiac dysrhythmias	189	1%	3%

WPH has a lower percentage of mood disorder and septicemia cases than the P-AHN average. The other three principal diagnoses have a similar prevalence compared to the P-AHN average.

Top 5 Outpatient Diagnoses	WPH Count	WPH	P-AHN
Medical examination/evaluation	5,449	4%	6%
Other screening for suspected conditions	6,303	5%	5%
Cardiac dysrhythmias	1,609	1%	4%
Spondylosis; intervertebral disc disorders	6,074	4%	3%
Diabetes mellitus without complication	4,856	4%	3%

WPH has a similar percentage for most of the five top outpatient principal diagnoses compared to P-AHN, with a lower percentage of cardiac dysrhythmias.

Top 5 Emergency Room Diagnoses	WPH Count	WPH	P-AHN
Abdominal pain	1,224	6%	5%
Sprains and strains	778	4%	5%
Superficial injury; contusion	817	4%	4%
Nonspecific chest pain	724	4%	4%
Other injuries and conditions due to external causes	344	2%	4%

WPH has a similar prevalence rate for each of the top five ER principal diagnoses compared the P-AHN average.

Principal Diagnoses Associated with Death

The chart below displays the prevalence of P-AHN's top five principal diagnoses associated with death as well as the respective percentage at WPH.

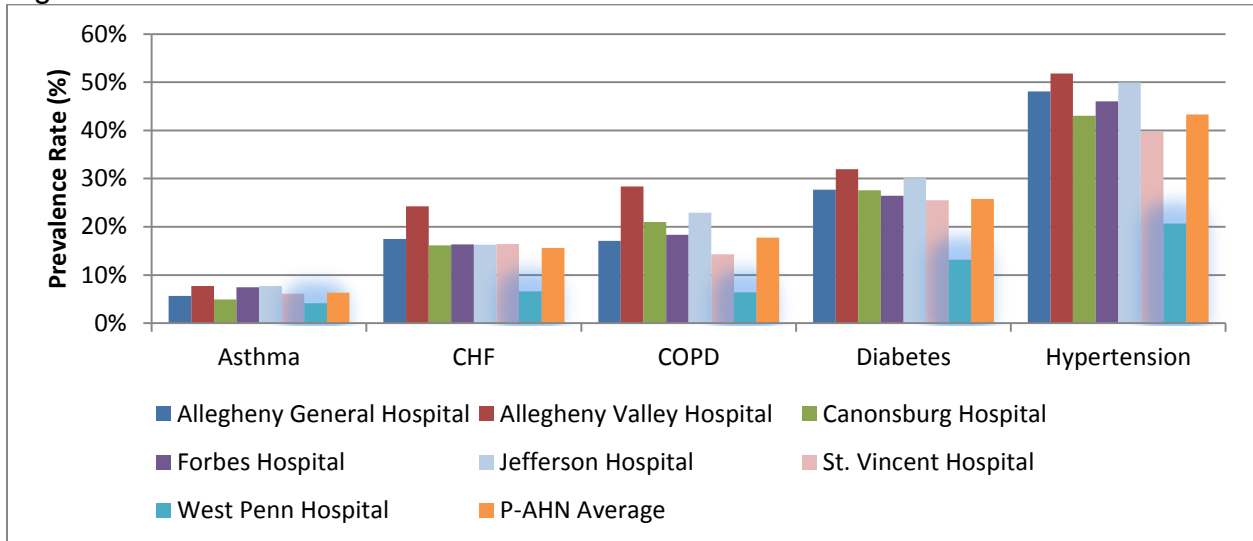
Top 5 Diagnoses Associated with Death	WPH Count	WPH	P-AHN
Septicemia (except in labor)	41	18%	20%
Acute cerebrovascular disease	2	1%	10%
Respiratory failure, insufficiency; arrest (adult)	15	7%	8%
Acute myocardial infarction	13	6%	5%
Congestive heart failure; non-hypertensive	3	1%	5%

The prevalence of acute cerebrovascular disease and congestive heart failure (non-hypertensive) as a principal diagnosis among patients who died in the hospital is lower than the P-AHN average. The other top three diagnoses have similar rates compared to the P-AHN average.

Chronic Disease Prevalence

WPH's prevalence rates are similar to or below the P-AHN average for all of the top five chronic diseases (asthma, CHF, COPD, diabetes, and hypertension). The hospital's service area, as discussed in the demographic section of this report, has a larger percentage of residents in the 18-24 year old category compared to P-AHN and houses the University of Pittsburgh. The younger age demographic may be contributing to the hospital's lower levels of chronic disease.

Figure 26: Chronic Disease Prevalence



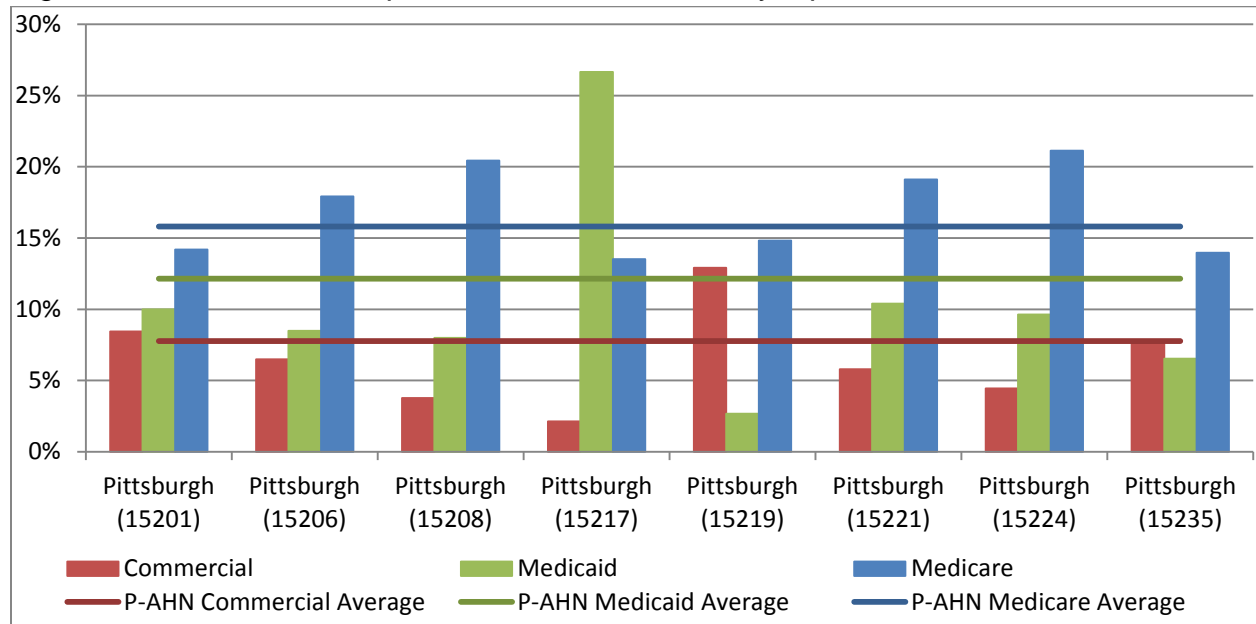
Behavioral Health and Medical Comorbidities

Due to a low volume of patients with behavioral health and substance abuse diagnoses, an analysis of chronic disease prevalence among these patients was not feasible.

Readmissions

Readmission rates were calculated by assessing the percentage of patients who readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 27: West Penn Hospital Readmission Rates by Zip Code



West Penn Hospital's overall 30-day readmission rate (7%) is lower than P-AHN (12%). The hospital's readmission rate is also at or below the P-AHN average for commercial, Medicaid, and Medicare patients. One zip code in WPH's service area, 15219 Pittsburgh (13%), fell outside the P-AHN average for commercial patients (8%). In addition, 15217 Pittsburgh has a considerably higher readmission rate for Medicaid patients (27%) compared to P-AHN (12%). Lastly, three zip codes have a higher readmission rate than the P-AHN average for Medicare patients: 15208 Pittsburgh (20%), 15221 Pittsburgh (19%), and 15224 Pittsburgh (21%). These areas with higher than average readmission rates could potentially benefit from improved care coordination.

Readmission and prevalence rates for the top five chronic conditions were examined to determine how well the conditions are being managed. Among patients who readmit to the hospital within 30 days of discharge, the prevalence rate of CHF (16% vs. 26% P-AHN), COPD (16% vs. 26% P-AHN), and hypertension (37% vs. 46% P-AHN) is lower than P-AHN. However, readmission rates for these conditions match the P-AHN average, indicating the need for increased community resources to assist patients with

these conditions. A readmission and prevalence analysis indicates the management of asthma and diabetes is comparable to P-AHN's level of case management.

Emergency Room Visits

The majority of patients who visit WPH's emergency room only have one visit a year (71%), which is similar to P-AHN (74%). While the average number of visits for emergency room patients at WPH (1.6 ER visits per year) is slightly higher than the P-AHN average (1.5 visits), the distribution of visits is similar to P-AHN. Additionally, all lines of business (commercial, Medicaid, Medicare, and self-pay) have a similar number of visits compared to the P-AHN average. However, the number of patients who visit the ER three or more times a year (1,288 people) is notable. Yet, the percentage of patients who visit the ER three or more times a year out of the total ER patient population (12%) is similar to the P-AHN average (11%). Therefore, compared to P-AHN, the majority of patients who visit the emergency room do not appear to have an issue with primary care access. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 28: Emergency Room Visits per Patient in 2014

Hospital	Patients with >= 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Premature Birth Rates

WPH had the largest number of births across the hospital system (6,868 births) from 2013 to 2014. The percentage of premature births (12%) is similar to P-AHN (10%). The vast majority of births were in the Medicaid and commercial lines of business and the premature rates for these specific lines of business were similar to the P-AHN average. The large volume of births allowed for an analysis of specific zip codes. The following zip codes had a substantially higher premature birth rate than the hospital's average (12%): 15010 Beaver Falls (26%), 15104 Braddock (17%), 15001 Aliquippa (28%), 16001 Butler (25%), 16101 New Castle (36%), 15301 Washington (27%), 16201 Kittanning (33%), 15401 Uniontown (39%), and 26062 Weirton (29%). As discussed in the demographic section of this report, 15104 Braddock has a substantially higher percentage of Black residents (62% vs. 8% P-AHN) and a higher percentage of

residents living below the poverty line (17% vs. 9% P-AHN). Additionally, Braddock, along with 15301 Washington and 16201 Kittanning, are all areas with a lower level of education compared to P-AHN.

West Penn Hospital Key Findings-Hospital Utilization Data

Overall, WPH has percentages at or below the P-AHN average for the top five inpatient, outpatient, and ER principal diagnoses as well as the top five principal diagnoses associated with death. The four instances where the WPH percentage falls below the P-AHN average include acute cerebrovascular disease and congestive heart failure (non-hypertensive) among patients who died in the hospital, inpatient mood disorder cases, and outpatient cardiac dysrhythmia cases.

WPH has a lower prevalence rate of asthma, CHF, COPD, diabetes, and hypertension compared to P-AHN, which may be due to the high population of residents in the 18-24 year old age group. While CHF and hypertension prevalence rates are lower than average, the readmission rates for these conditions are similar to the P-AHN average, indicating a need for community resources to assist patients in managing these chronic conditions.

WPH's overall readmission rate, as well as individual rates for each line of business (commercial, Medicaid, and Medicare), are lower than P-AHN averages. There are a few zip codes for each line of business that fall above P-AHN averages, but none of these zip codes are above average in multiple lines of business. However, 15217 Pittsburgh has a much higher readmission rate for Medicaid that is 15 percentage points above the P-AHN average.

Lastly, WPH has the largest number of yearly births across all P-AHN hospitals. There are multiple zip codes with premature birth rates higher than P-AHN's average, but three in particular had rates more than 20 percentage points above the average: 16101 New Castle, 16201 Kittanning, and 15401 Uniontown.

Forbes Hospital (FH) Utilization

Top Diagnoses (Inpatient, Outpatient & ER)

The charts below display the prevalence of P-AHN's top five principal diagnoses in the inpatient, outpatient and ER setting as well as the respective percentage among FH's service lines.

Top 5 Inpatient Diagnoses	FH Count	FH	P-AHN
Mood Disorders	1,380	5%	4%
Septicemia (except in labor)	959	4%	4%
Congestive heart failure; non-hypertensive	950	4%	3%
Spondylosis; intervertebral disc disorders; other back problems	588	2%	3%
Cardiac dysrhythmias	850	3%	3%

FH has a similar percentage for all top five inpatient principal diagnoses compared to P-AHN.

Top 5 Outpatient Diagnoses	FH Count	FH	P-AHN
Medical examination/evaluation	3,609	3%	6%
Other screening for suspected conditions	16,380	12%	5%
Cardiac dysrhythmias	2,246	2%	4%
Spondylosis; intervertebral disc disorders	3,843	3%	3%
Diabetes mellitus without complication	2,086	2%	3%

FH has a substantially higher percentage of "other screening for suspected conditions" compared to the P-AHN average. On the other hand, the hospital has a lower percentage of medical examinations and evaluations than the P-AHN average.

Top 5 Emergency Room Diagnoses	FH Count	FH	P-AHN
Abdominal pain	2,036	5%	5%
Sprains and strains	1,811	5%	5%
Superficial injury; contusion	1,547	4%	4%
Nonspecific chest pain	1,830	5%	4%
Other injuries and conditions due to external causes	2,024	5%	4%

FH has a similar percentage for all top five ER principal diagnoses compared to the corresponding P-AHN average.

Principal Diagnoses Associated with Death

The chart below displays the prevalence of P-AHN's top five principal diagnoses associated with death as well as the respective percentage at FH.

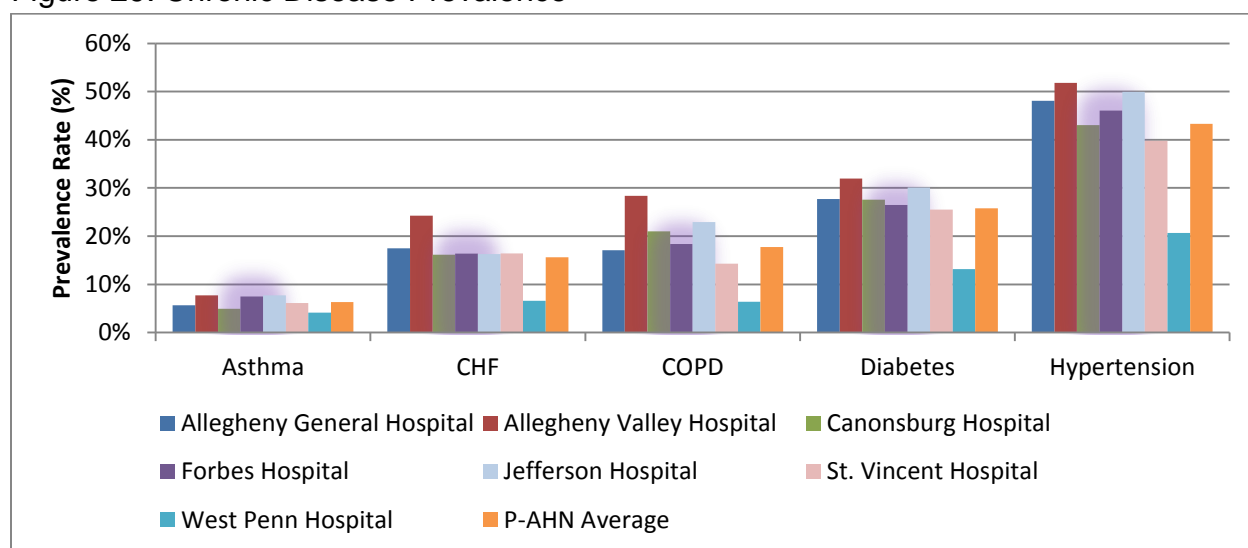
Top 5 Diagnoses Associated with Death	FH Count	FH	P-AHN
Septicemia (except in labor)	141	22%	20%
Acute cerebrovascular disease	59	9%	10%
Respiratory failure, insufficiency; arrest (adult)	51	8%	8%
Acute myocardial infarction	33	5%	5%
Congestive heart failure; non-hypertensive	31	5%	5%

FH has a similar percentage for all top five principal diagnoses associated with death compared to the corresponding P-AHN average.

Chronic Disease Prevalence

The prevalence rate of hypertension at FH is slightly higher (46%) compared to P-AHN (43%), indicating residents in the hospital's service area could use additional resources to manage this condition. The prevalence rates for asthma, CHF, COPD, and diabetes are all similar to the P-AHN average.

Figure 29: Chronic Disease Prevalence



Behavioral Health and Medical Comorbidities

FH has lower prevalence rates for the majority of chronic diseases. However, examining prevalence rates among patients with behavior health or substance abuse diagnoses is still important to improving care management for these patients. The prevalence of the top five chronic conditions discussed in the previous section among patients with a behavioral health or substance abuse diagnosis is mostly at or below the P-AHN average. The exception is a higher prevalence of asthma among Medicare patients with a substance abuse diagnosis (14% vs. 9% P-AHN). All rates can be seen below in Figures 30 and 31.

Figure 30: Chronic Disease Prevalence Rates among Patients with a Behavioral Health Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	4%	8%	11%	14%	6%	12%
	CHF	4%	1%	2%	1%	1%	1%
	COPD	0%	11%	5%	8%	2%	7%
	Diabetes	13%	13%	8%	11%	9%	10%
	Hypertension	26%	35%	28%	29%	18%	30%
Medicaid	Asthma	9%	12%	12%	16%	13%	12%
	CHF	9%	5%	1%	0%	1%	3%
	COPD	6%	13%	7%	8%	5%	10%
	Diabetes	15%	14%	11%	4%	11%	12%
	Hypertension	47%	32%	31%	24%	25%	31%
Medicare	Asthma	19%	9%	11%	11%	12%	11%
	CHF	22%	8%	4%	2%	5%	5%
	COPD	22%	19%	9%	14%	11%	14%
	Diabetes	19%	25%	21%	27%	26%	24%
	Hypertension	50%	49%	49%	48%	45%	48%

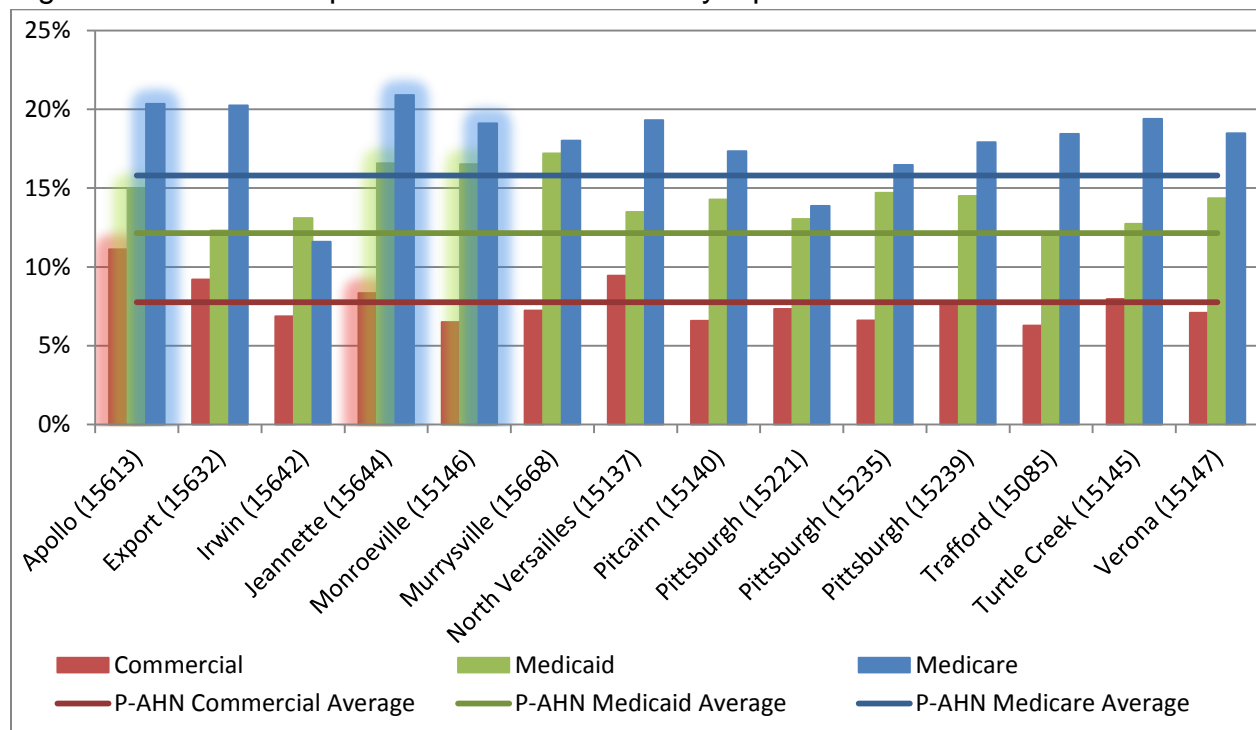
Figure 31: Chronic Disease Prevalence Rates among Patients with a Substance Abuse Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	0%	9%	6%	9%	0%	6%
	CHF	6%	0%	1%	0%	0%	2%
	COPD	3%	9%	4%	2%	11%	5%
	Diabetes	13%	18%	4%	7%	0%	7%
	Hypertension	47%	55%	44%	64%	56%	51%
Medicaid	Asthma	3%	0%	9%	10%	3%	6%
	CHF	2%	17%	1%	0%	4%	2%
	COPD	9%	17%	7%	18%	4%	11%
	Diabetes	13%	25%	5%	10%	7%	10%
	Hypertension	45%	42%	46%	45%	45%	44%
Medicare	Asthma	8%	0%	14%	9%	9%	9%
	CHF	3%	0%	2%	2%	4%	2%
	COPD	18%	23%	9%	19%	18%	17%
	Diabetes	8%	8%	11%	22%	22%	13%
	Hypertension	59%	54%	39%	61%	64%	52%

Readmissions

Readmission rates were calculated by assessing the percentage of patients who readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 32: Forbes Hospital Readmission Rates by Zip Code



Forbes Hospital's overall 30-day readmission rate (13%) is similar to P-AHN (12%). The hospital's readmission rate is also comparable to the P-AHN average for each of the three lines of business (commercial, Medicaid, and Medicare). While overall rates for each line of business are comparable to P-AHN, there are a few zip codes that fall above the network average. Zip code 15613 Apollo (11%) has a higher readmission rate for commercial patients than P-AHN (8%). Zip codes 15644 Jeannette (17%), 15146 Monroeville (17%), and 15668 Murrysville (17%) all have a higher readmission rate for patients covered by Medicaid compared to P-AHN (12%). Lastly, six zip codes have a higher readmission rate for Medicare patients than P-AHN (16%): 15613 Apollo (20%), 15632 Export (20%), 15146 Jeannette (21%), 15146 Monroeville (19%), 15137 North Versailles (19%), and 15145 Turtle Creek (19%). High readmission rates within these zip codes suggest that care coordination efforts after discharge could be improved, particularly in 15644 Jeannette, 15146 Monroeville, and 15613 Apollo, which have higher rates across multiple lines of businesses.

Among patients who readmit to the hospital within 30 days of discharge, the prevalence rate of CHF (29% vs. 26% P-AHN), COPD (30% vs. 26% P-AHN), diabetes (38% vs. 34% P-AHN), and hypertension (49% vs. 46% P-AHN) are higher than the P-AHN average. The readmission rate for CHF (21% vs. 19% P-AHN) is also higher, which is to be expected and suggests CHF is being managed at a comparable level to P-AHN. However, readmission rates for COPD (19%), diabetes (16%), and hypertension (11%) are similar to P-AHN, indicating these conditions are being managed well. Asthma prevalence (7% vs. 5% P-AHN) and readmission rates (9% vs. 9% P-AHN) are both similar to P-AHN, suggesting management of this condition is similar to the level provided by P-AHN.

Emergency Room Visits

The majority of emergency room patients at Forbes only have one visit per year (74%), which is equal to P-AHN (74%). Further, the average number of ER visits at Forbes (1.5 visits per year) matches the P-AHN average. Additionally, all lines of business (commercial, Medicaid, Medicare, and self-pay) have a similar number of visits compared to the P-AHN average. However, the number of patients who visit the ER three or more times a year (2,369 people) is notable. Yet, the percentage of patients who visit the ER three or more times a year out of the total ER patient population (10%) is similar to the P-AHN average (11%). An excessive number of visits to the ER can indicate the patient does not have access to a primary care physician. Therefore, compared to P-AHN, the majority of patients who visited the emergency room at Forbes do not appear to have an issue with primary care access. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 33: Emergency Room Visits per Patient in 2014

Hospital	Patients with >= 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Premature Birth Rates

Forbes had a total of 1,598 births between 2013 and 2014 and an overall premature rate (5%) below the P-AHN average (10%). The premature birth rate for commercial (4% vs. 9% P-AHN) and Medicaid patients (7% vs. 13% P-AHN) is also below the P-AHN average. Only 15037 Elizabeth (14%), with 20 births in 2014, has a premature birth rate that falls above P-AHN's average of 10%.

Forbes Hospital Key Findings-Hospital Utilization Data

Overall, Forbes has percentages similar to the P-AHN average for most of the top five inpatient, outpatient, and ER principal diagnoses, as well as the top five principal diagnoses associated with death. However, the hospital does have a higher percentage of outpatient “other screening for suspected conditions” cases and a lower percentage of outpatient medical examinations and evaluations. Forbes’ prevalence of chronic disease is at or below P-AHN averages for all but hypertension, which is only slightly higher than average. Additionally, the prevalence of chronic disease among patients with a behavioral health or substance abuse diagnosis is mostly similar to the P-AHN average, with the exception of a higher prevalence of asthma among Medicare patients with a substance abuse diagnosis.

Forbes Hospital’s overall readmission rate, as well as individual rates for each line of business (commercial, Medicaid, and Medicare), is lower than the P-AHN average. There are a few zip codes for each line of business that fall above the P-AHN average. Of particular note are 15644 Jeannette and 15146 Monroeville, which have higher rates among Medicaid and Medicare patients, and 15613 Apollo, which has a higher rate among commercial and Medicare patients. Zip codes with higher than average readmission rates should be examined to see if care coordination efforts could be improved.

Jefferson Hospital (JH) Utilization

Top Diagnoses (Inpatient, Outpatient & ER)

The charts below display the prevalence of P-AHN's top five principal diagnoses in the inpatient, outpatient, and ER setting as well as the respective percentage among JH's service lines.

Top 5 Inpatient Diagnoses	JH Count	JH	P-AHN
Mood Disorders	1,340	5%	4%
Septicemia (except in labor)	704	3%	4%
Congestive heart failure; non-hypertensive	1,175	4%	3%
Spondylosis; intervertebral disc disorders; other back problems	489	2%	3%
Cardiac dysrhythmias	1,133	4%	3%

JH has a similar percentage for all top five inpatient principal diagnoses compared to the P-AHN average.

Top 5 Outpatient Diagnoses	JH Count	JH	P-AHN
Medical examination evaluation	3,845	4%	6%
Other screening for suspected conditions	2,499	2%	5%
Cardiac dysrhythmias	92,59	8%	4%
Spondylosis; intervertebral disc disorders	1,618	1%	3%
Diabetes mellitus without complication	4,555	4%	3%

JH has a larger percentage of patients with a principal diagnosis of cardiac dysrhythmia compared to P-AHN. The hospital also has a lower percentage of "other screening for suspected conditions" than the P-AHN average.

Top 5 Emergency Room Diagnoses	JH Count	JH	P-AHN
Abdominal pain	1,354	6%	5%
Sprains and strains	436	2%	5%
Superficial injury; contusion	574	2%	4%
Nonspecific chest pain	1,293	6%	4%
Other injuries and conditions due to external causes	1,764	8%	4%

Of the top five emergency room principal diagnoses, JH has a higher percentage of “other injuries and conditions due to external causes” and a lower percentage of sprains and strains compared to the corresponding P-AHN average.

Principal Diagnoses Associated with Death

The chart below displays the prevalence of P-AHN’s top five principal diagnoses associated with death as well as the respective percentage at JH.

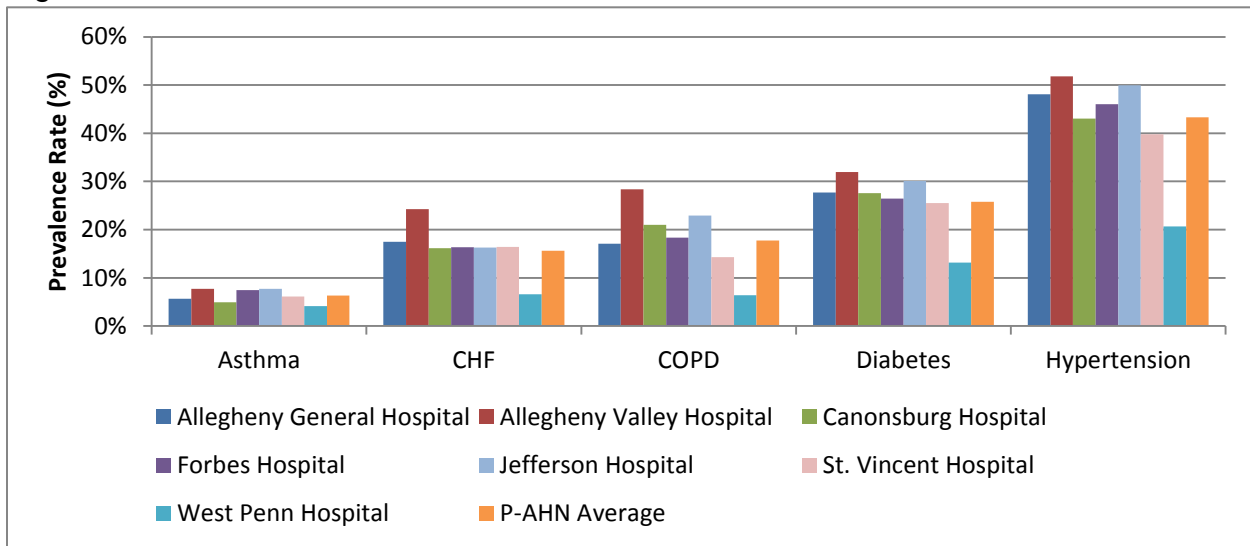
Top 5 Diagnoses Associated with Death	JH Count	JH	P-AHN
Septicemia (except in labor)	106	20%	20%
Acute cerebrovascular disease	16	3%	10%
Respiratory failure, insufficiency; arrest (adult)	33	6%	8%
Acute myocardial infarction	38	7%	5%
Congestive heart failure; non-hypertensive	29	5%	5%

Among the top five principal diagnoses associated with death, JH has a similar percentage for all but acute cerebrovascular disease. The hospital has a smaller percentage of acute cerebrovascular deaths than the P-AHN average.

Chronic Disease Prevalence

The prevalence rates for COPD (23% vs. 18% P-AHN), diabetes (30% vs. 26% P-AHN), and hypertension (50% vs. 43% P-AHN) are higher than the P-AHN average, suggesting a lack of resources to manage these conditions within the community. The prevalence of asthma and CHF at JH are similar to the network average.

Figure 34: Chronic Disease Prevalence



Behavioral Health and Medical Comorbidities

The case management of patients who have a chronic disease as well as a behavioral health or substance abuse diagnosis can be more challenging. Therefore, identifying which populations among these patients have higher rates of chronic disease is essential to manage care. Compared to P-AHN, JH’s asthma prevalence rate among patients with a behavioral health diagnosis is higher for Medicaid patients (16% vs. 12% P-AHN), but similar for commercial and Medicare patients. The prevalence rates of CHF, COPD, and hypertension among patients with a behavioral health diagnosis are at or below the P-AHN average for commercial, Medicaid, and Medicare patients. The diabetes prevalence rate is higher for Medicare patients (27% vs. 24% P-AHN), but similar to or below the P-AHN average for commercial and Medicaid patients with a behavioral health diagnosis. All rates can be seen below in Figure 35.

Figure 35: Chronic Disease Prevalence Rates among Patients with a Behavioral Health Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	4%	8%	11%	14%	6%	12%
	CHF	4%	1%	2%	1%	1%	1%
	COPD	0%	11%	5%	8%	2%	7%
	Diabetes	13%	13%	8%	11%	9%	10%
	Hypertension	26%	35%	28%	29%	18%	30%
Medicaid	Asthma	9%	12%	12%	16%	13%	12%
	CHF	9%	5%	1%	0%	1%	3%
	COPD	6%	13%	7%	8%	5%	10%
	Diabetes	15%	14%	11%	4%	11%	12%
	Hypertension	47%	32%	31%	24%	25%	31%
Medicare	Asthma	19%	9%	11%	11%	12%	11%
	CHF	22%	8%	4%	2%	5%	5%
	COPD	22%	19%	9%	14%	11%	14%
	Diabetes	19%	25%	21%	27%	26%	24%
	Hypertension	50%	49%	49%	48%	45%	48%

The following chronic disease prevalence rates are among patients with a substance abuse diagnosis. The prevalence of asthma is higher for commercial (9% vs. 6% P-AHN) and Medicaid patients (10% vs. 6% P-AHN), but similar to the P-AHN average for Medicare patients. The CHF prevalence rate is similar across all three lines of business (commercial, Medicaid, and Medicare). The prevalence of COPD is higher for Medicaid patients (18% vs. 11% P-AHN) and similar to or below the P-AHN average for commercial and Medicare patients. The prevalence of diabetes is higher among Medicare patients (22% vs. 13% P-AHN) and matches the P-AHN average for commercial and Medicaid patients. Lastly, the hypertension prevalence rate is higher for commercial (64% vs. 51% P-AHN) and Medicare patients (61% vs. 52% P-AHN) and similar to the P-AHN average for Medicaid patients. All rates can be seen below in Figure 36.

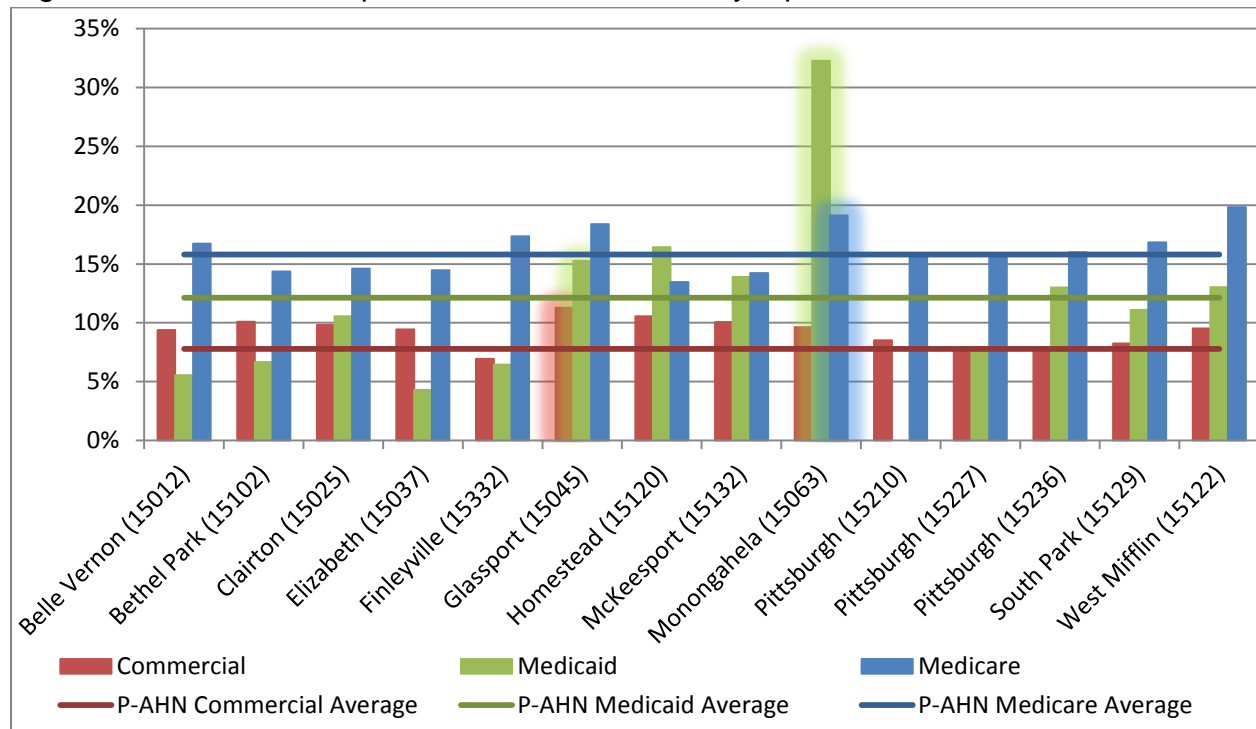
Figure 36: Chronic Disease Prevalence Rates among Patients with a Substance Abuse Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	0%	9%	6%	9%	0%	6%
	CHF	6%	0%	1%	0%	0%	2%
	COPD	3%	9%	4%	2%	11%	5%
	Diabetes	13%	18%	4%	7%	0%	7%
	Hypertension	47%	55%	44%	64%	56%	51%
Medicaid	Asthma	3%	0%	9%	10%	3%	6%
	CHF	2%	17%	1%	0%	4%	2%
	COPD	9%	17%	7%	18%	4%	11%
	Diabetes	13%	25%	5%	10%	7%	10%
	Hypertension	45%	42%	46%	45%	45%	44%
Medicare	Asthma	8%	0%	14%	9%	9%	9%
	CHF	3%	0%	2%	2%	4%	2%
	COPD	18%	23%	9%	19%	18%	17%
	Diabetes	8%	8%	11%	22%	22%	13%
	Hypertension	59%	54%	39%	61%	64%	52%

Readmissions

Readmission rates were calculated by assessing the percentage of patients who readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 37: Jefferson Hospital Readmission Rates by Zip Code



Jefferson Hospital's overall 30-day readmission rate (13%) is similar to P-AHN (12%). The hospital's readmission rate is also comparable to the P-AHN average for each of the three lines of business (commercial, Medicaid, and Medicare). However, there are a few zip codes that exceed the P-AHN average for each line of business. Zip code 15045 Glassport (11%) has a higher readmission rate for commercial patients than P-AHN (8%). Zip codes 15045 Glassport (15%), 15120 Homestead (16%), and 15063 Monongahela (32%) all have a higher readmission rate for Medicaid patients than the P-AHN average (12%). Lastly, 15063 Monongahela (19%) and 15122 West Mifflin (20%) have a higher readmission rate for Medicare patients than the P-AHN average (16%). Glassport and Monongahela both have a higher readmission rate across multiple lines of business. These two zip codes are highlighted in the figure above.

Among patients who readmit to the hospital within 30 days of discharge, the prevalence rate of COPD (33% vs. 26% P-AHN) is higher than the P-AHN average. However, the COPD readmission rate (18%) is similar to P-AHN (17%), indicating COPD cases are being managed well. The prevalence rates for asthma (7% vs. 5% P-AHN), CHF (26% vs. 26% P-AHN), diabetes (38% vs. 34% P-AHN), and hypertension (49% vs. 46% P-AHN) are all similar to the P-AHN average. Additionally, the readmission rate for these conditions match the P-AHN average, suggesting the management of asthma, CHF, diabetes, and hypertension is similar to P-AHN.

Emergency Room Visits

Eighty percent of patients who visited the ER at JH during 2014 only had one visit throughout the year, which is higher than the P-AHN average (74%). Further, the hospital's average number of visits per year (1.3 ER visits) is lower than the P-AHN average (1.5 visits). Additionally, all lines of business (commercial, Medicaid, Medicare, and self-pay) have a similar number of visits compared to the P-AHN average. However, the number of patients who visit the ER three or more times a year (978 people) is still fairly notable. Yet, the percentage of patients who visit the ER three or more times a year out of the total ER patient population (6%) is below the P-AHN average (11%). Using the number of emergency room visits as an indicator of access to primary care, it does not appear that the majority of JH's patients lack access. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 38: Emergency Room Visits per Patient in 2014

Hospital	Patients with >= 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Premature Birth Rate

JH had a total of 33 births between 2013 and 2014 and an overall premature rate of 9%, which is similar to the P-AHN average (10%). Due to the low number of births, rates for specific lines of business and zip codes were not practical to analyze.

Jefferson Hospital Key Findings-Hospital Utilization Data

Jefferson Hospital has a higher percentage of outpatient cardiac dysrhythmia and ER “other injuries and conditions due to external causes” compared to the P-AHN average. However, the hospital has a smaller percentage of outpatient “other screening for suspected conditions” and ER sprain and strain cases as well as a smaller percentage of acute cerebrovascular disease cases among patients who died during a hospital admission.

The hospital has a higher prevalence of COPD, diabetes, and hypertension. Further, Medicaid patients with a behavioral health diagnosis have a higher rate of asthma and a higher rate of diabetes than the P-AHN average. The following populations have higher rates of chronic disease than P-AHN for patients with a substance abuse diagnosis: commercial patients have a higher prevalence of asthma and hypertension, Medicaid patients have a higher rate of asthma, and Medicare patients have a higher rate of COPD, diabetes, and hypertension.

JH’s overall readmission rate, as well as individual rates for each line of business (commercial, Medicaid, and Medicare), are lower than the P-AHN average. However, there are a few zip codes for each line of business that fall above the P-AHN average. Of particular note are zip codes 15045 Glassport, which has a higher readmission rate for commercial and Medicare patients, and 15063 Monongahela, which has a higher readmission rate for Medicaid and Medicare patients.

Canonsburg Hospital (CH) Utilization

Top Diagnoses (Inpatient, Outpatient &ER)

The charts below display the prevalence of P-AHN's top five principal diagnoses in the inpatient, outpatient, and ER setting as well as the respective percentage among CH's service lines.

Top 5 Inpatient Diagnoses	CH Count	CH	P-AHN
Mood Disorders	0	0%	4%
Septicemia (except in labor)	248	4%	4%
Congestive heart failure; non-hypertensive	244	4%	3%
Spondylosis; intervertebral disc disorders; other back problems	88	2%	3%
Cardiac dysrhythmias	172	3%	3%

CH has a similar percentage for all top five inpatient principal diagnoses compared to the P-AHN average.

Top 5 Outpatient Diagnoses	CH Count	CH	P-AHN
Medical examination evaluation	2,674	4%	6%
Other screening for suspected conditions	2,288	4%	5%
Cardiac dysrhythmias	2,511	4%	4%
Spondylosis; intervertebral disc disorders	3,321	5%	3%
Diabetes mellitus without complication	1,942	3%	3%

CH has a similar percentage for all top five outpatient principal diagnoses compared to the P-AHN average.

Top 5 Emergency Room Diagnoses	CH Count	CH	P-AHN
Abdominal pain	770	4%	5%
Sprains and strains	1,424	8%	5%
Superficial injury; contusion	846	5%	4%
Nonspecific chest pain	582	3%	4%
Other injuries and conditions due to external causes	593	3%	4%

CH has a slightly higher percentage of outpatient sprains and strains listed as a primary diagnosis compared to the P-AHN average. Percentages for the other four top principal diagnoses are similar to the P-AHN average.

Principal Diagnoses Associated with Death

The chart below displays the prevalence of P-AHN's top five principal diagnoses associated with death as well as the respective percentage at CH.

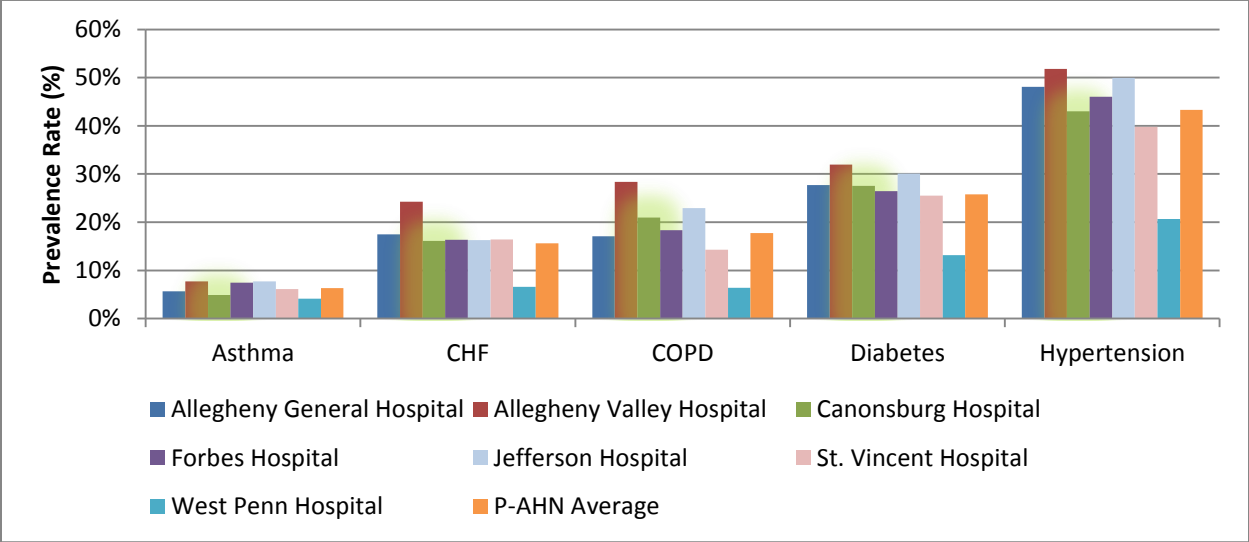
Top 5 Diagnoses Associated with Death	CH Count	CH	P-AHN
Septicemia (except in labor)	32	21%	20%
Acute cerebrovascular disease	3	2%	10%
Respiratory failure, insufficiency; arrest (adult)	12	8%	8%
Acute myocardial infarction	2	1%	5%
Congestive heart failure; non-hypertensive	7	5%	5%

The percentages for acute cerebrovascular disease and acute myocardial infarction at CH are lower than the P-AHN average. The other three top principal diagnoses are similar to the P-AHN average.

Chronic Disease Prevalence

CH’s prevalence of asthma, CHF, diabetes, and hypertension are all similar to the P-AHN averages. Only the prevalence rate for COPD (21%) is slightly higher than P-AHN (18%).

Figure 39: Chronic Disease Prevalence



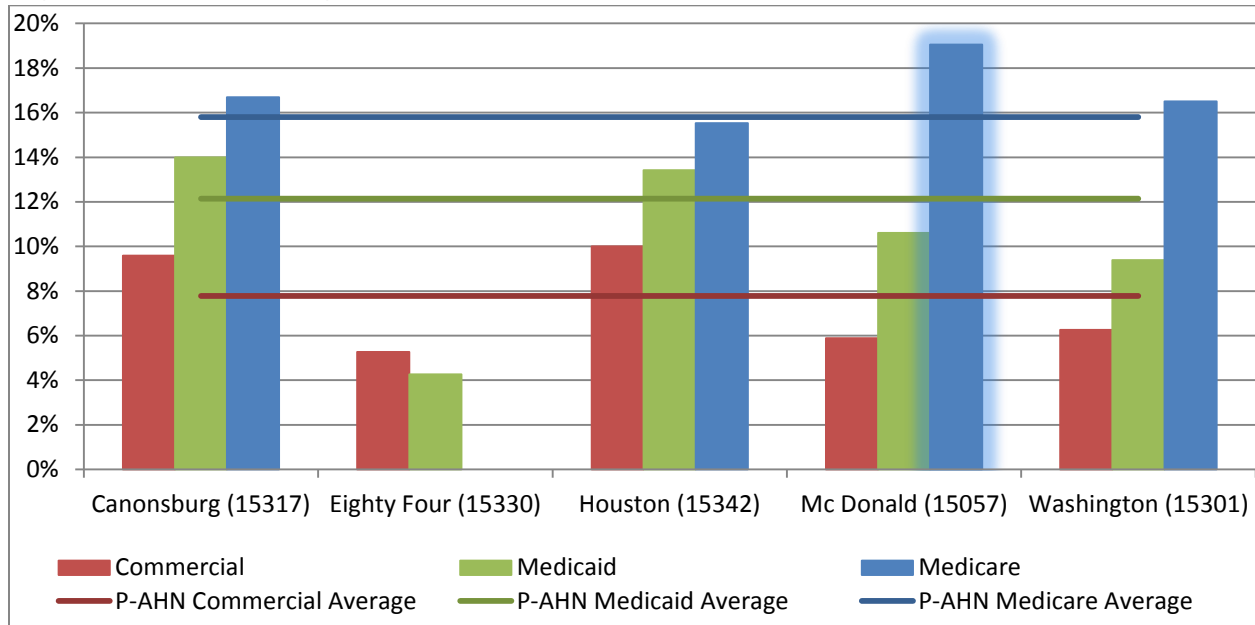
Behavioral Health and Medical Comorbidities

Due to a low volume of patients with behavioral health and substance abuse diagnoses, an analysis of chronic disease prevalence among these patients was not feasible.

Readmissions

Readmission rates were calculated by assessing the percentage of patients who readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 40: Canonsburg Hospital Readmission Rates by Zip Code



CH's overall 30-day readmission rate (12%) matches the P-AHN average. The hospital's readmission rate is also similar to the P-AHN average for commercial, Medicare, and Medicaid patients. As seen in Figure 40 CH Readmission, the only zip code to exceed the P-AHN average across all three lines of business is 15057 McDonald. McDonald has a Medicare readmission rate of 19%, which is higher than the P-AHN average of 16%.

Among patients who readmit to the hospital within 30 days of discharge, the prevalence rate of COPD (35% vs. 26% P-AHN) is higher than the P-AHN average. However, the COPD readmission rate is similar to P-AHN, indicating COPD cases are being managed well. A comparison of readmission and prevalence rates to the P-AHN average indicates that cases of hypertension, asthma, CHF, and diabetes are all being managed at an equivalent level to P-AHN.

Emergency Room Visits

The majority of patients who visited CH's ER during 2014 had only one visit throughout the year (75%), which is similar to the P-AHN average (74%). Further, the average number of ER visits per year (1.5 ER visits) matches the P-AHN average. Lastly, all lines of business (commercial, Medicaid, Medicare, and self-pay) had a similar number of visits compared to the P-AHN average. However, the number of patients who visit the ER three or more times a year (1,065 people) is notable. Yet, the percentage of patients who visit the ER three or more times a year out of the total ER patient population (10%) is similar to the P-AHN average (11%). Using the number of emergency room visits as an indicator of access to primary care, it does not appear that the majority of CH's patients lack access. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 41: Emergency Room Visits per Patient in 2014

Hospital	Patients with >= 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Canonsburg Hospital Key Findings-Hospital Utilization Data

Overall, the percentages at CH for most of the five top inpatient, outpatient, and emergency room diagnoses are similar to the P-AHN averages. The exception is a higher percentage of ER sprain and strain cases. Further, the hospital has a lower percentage of acute cerebrovascular disease and acute myocardial infarction among patients who died during a hospital stay compared to the P-AHN average. The prevalence of COPD is slightly higher than the P-AHN average, however, the prevalence rates for the other four chronic diseases are similar to the P-AHN average.

Canonsburg Hospital's overall readmission rate, as well as individual rates for each line of business (commercial, Medicaid, and Medicare), are lower than P-AHN averages. The only zip code with a higher readmission rate is 15057 McDonald, which has a slightly higher rate among Medicare patients.

Saint Vincent Hospital (SVH) and Westfield Memorial Hospital Utilization

Saint Vincent Hospital and Westfield Memorial Hospital, as discussed in the demographic section of this report, are close partners and serve the same service area. Therefore utilization data for the two hospitals will be reported together and be referred to below as SVH.

Top Diagnoses (Inpatient, Outpatient &ER)

The charts below display the prevalence of P-AHN's top five principal diagnoses in the inpatient, outpatient, and ER setting as well as the respective percentage among SVH's service lines.

Top 5 Inpatient Diagnoses	SVH Count	SVH	P-AHN
Mood Disorders	2,067	7%	4%
Septicemia (except in labor)	1,381	5%	4%
Congestive heart failure; non-hypertensive	974	3%	3%
Spondylosis; intervertebral disc disorders; other back problems	1,686	6%	3%
Cardiac dysrhythmias	1,071	4%	3%

Of the top five inpatient principal diagnoses for P-AHN, SVH has a higher percentage of mood disorder and spondylosis/intervertebral disc disorders/other back problems compared to the P-AHN average.

Top 5 Outpatient Diagnoses	SVH Count	SVH	P-AHN
Medical examination evaluation	7,903	5%	6%
Other screening for suspected conditions	11,633	7%	5%
Cardiac dysrhythmias	3,839	2%	4%
Spondylosis; intervertebral disc disorders	11,139	6%	3%
Diabetes mellitus without complication	1,334	1%	3%

SVH has a similar percentage for most of the five top outpatient principal diagnosis codes compared to the P-AHN average, with the exception of a slightly higher prevalence of spondylosis/intervertebral disc disorders/other back problems.

Top 5 Emergency Room Diagnoses	SVH Count	SVH	P-AHN
Abdominal pain	7,751	13%	5%
Sprains and strains	1,628	3%	5%
Superficial injury; contusion	2,158	4%	4%
Nonspecific chest pain	4,257	7%	4%
Other injuries and conditions due to external causes	5,354	9%	4%

SVH has a substantially higher percentage of abdominal pain and “other injuries and conditions due to external causes” compared to the P-AHN average. The hospital also has a slightly higher percentage of nonspecific chest pain cases as a primary diagnosis among its ER patients.

Principal Diagnoses Associated with Death

The charts below display the prevalence of P-AHN’s top five principal diagnoses associated with death as well as the respective percentage at SVH.

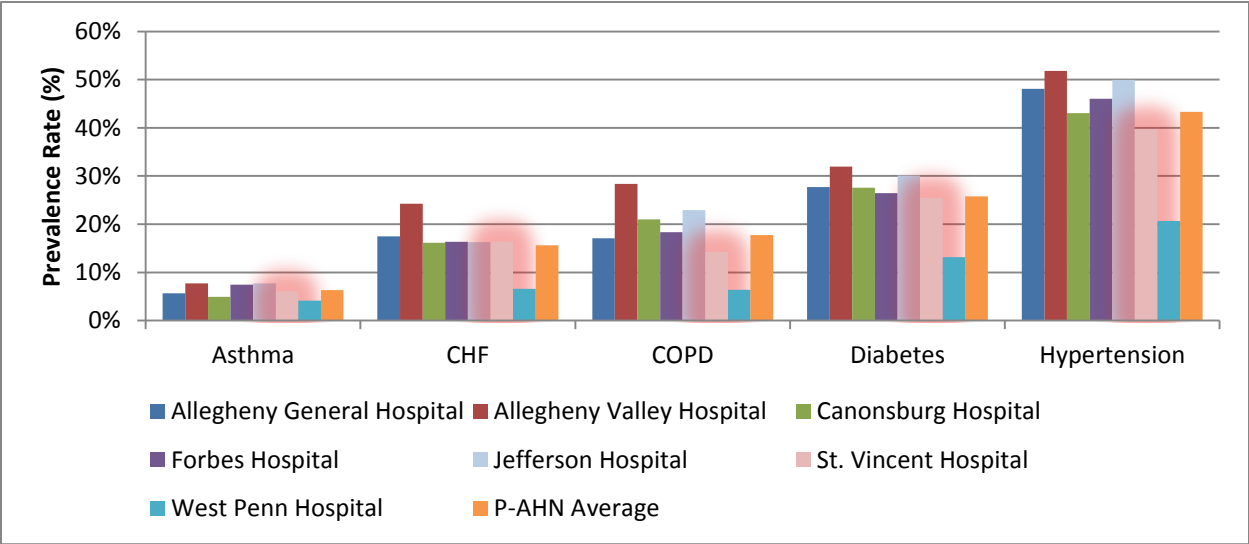
Top 5 Diagnoses Associated with Death	SVH Count	SVH	P-AHN
Septicemia (except in labor)	127	20%	20%
Acute cerebrovascular disease	55	9%	10%
Respiratory failure, insufficiency; arrest (adult)	89	14%	8%
Acute myocardial infarction	46	7%	5%
Congestive heart failure; non-hypertensive	59	9%	5%

SVH has a higher percentage of respiratory failure/insufficiency/arrest among adults and congestive heart failure/non-hypertensive cases compared to the P-AHN average.

Chronic Disease Prevalence

SVH’s prevalence of the top five chronic diseases are all at or below P-AHN averages: (asthma 6% vs. 6% P-AHN, CHF 16% vs. 16% P-AHN, diabetes 25% vs. 26% P-AHN, COPD 14% vs. 18% P-AHN, and hypertension 40% vs. 43% P-AHN).

Figure 42: Chronic Disease Prevalence



Behavioral Health and Medical Comorbidities

Compared to P-AHN, SVH's prevalence rates for the top five chronic diseases (asthma, CHF, COPD, diabetes, and hypertension) among patients with a behavioral health diagnosis are at or below P-AHN averages for all three lines of business (commercial, Medicaid, and Medicare). All rates can be seen below in Figure 43.

Figure 43: Chronic Disease Prevalence Rates among Patients with a Behavioral Health Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	4%	8%	11%	14%	6%	12%
	CHF	4%	1%	2%	1%	1%	1%
	COPD	0%	11%	5%	8%	2%	7%
	Diabetes	13%	13%	8%	11%	9%	10%
	Hypertension	26%	35%	28%	29%	18%	30%
Medicaid	Asthma	9%	12%	12%	16%	13%	12%
	CHF	9%	5%	1%	0%	1%	3%
	COPD	6%	13%	7%	8%	5%	10%
	Diabetes	15%	14%	11%	4%	11%	12%
	Hypertension	47%	32%	31%	24%	25%	31%
Medicare	Asthma	19%	9%	11%	11%	12%	11%
	CHF	22%	8%	4%	2%	5%	5%
	COPD	22%	19%	9%	14%	11%	14%
	Diabetes	19%	25%	21%	27%	26%	24%
	Hypertension	50%	49%	49%	48%	45%	48%

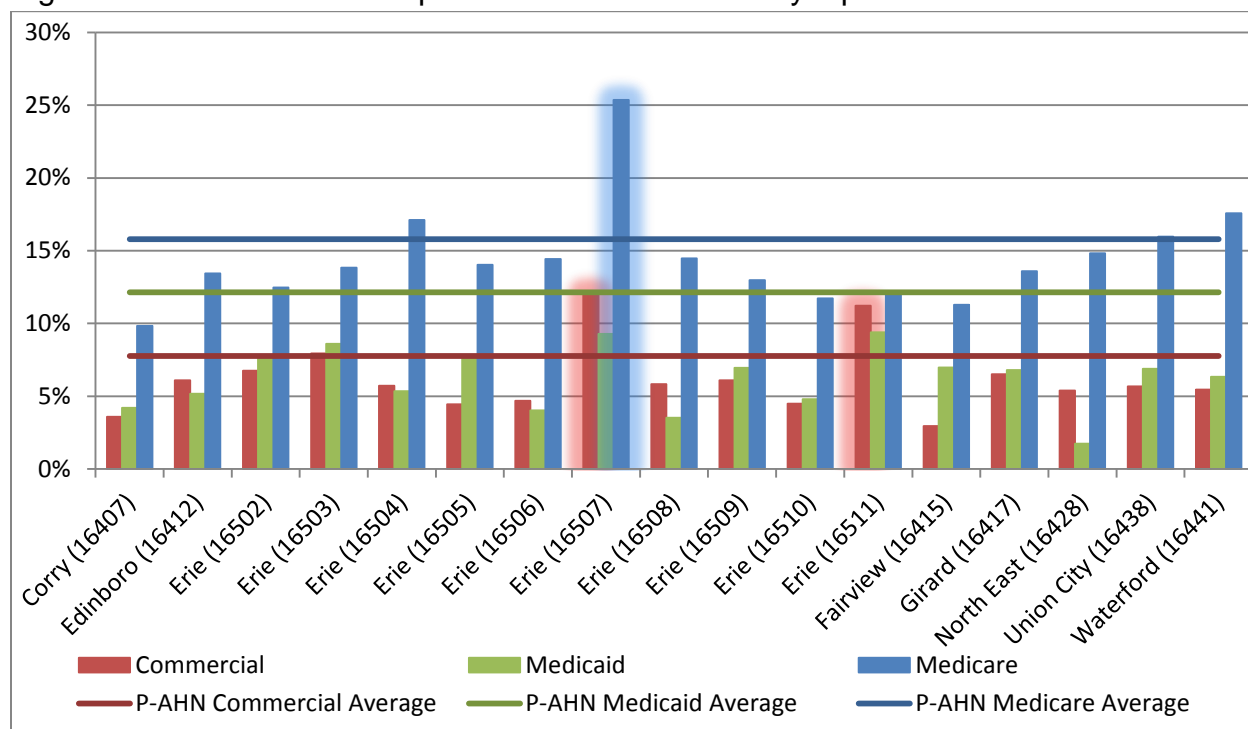
The prevalence of asthma and CHF among patients with a substance abuse diagnosis is at or below the P-AHN average for all three lines of business (commercial, Medicaid, and Medicare). Compared to P-AHN, the prevalence of COPD is higher for commercial patients (11% vs. 5% P-AHN), and at or below the P-AHN average for Medicaid and Medicare patients. The prevalence of diabetes is higher among Medicare patients (22% vs. 13% P-AHN) and below the P-AHN average for commercial and Medicaid patients. Lastly, the hypertension prevalence rate is higher for commercial (56% vs. 51% P-AHN) and Medicare patients (64% vs. 52% P-AHN) and similar for Medicaid patients. All rates can be seen below in Figure 44.

Figure 44: Chronic Disease Prevalence Rates among Patients with a Substance Abuse Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	0%	9%	6%	9%	0%	6%
	CHF	6%	0%	1%	0%	0%	2%
	COPD	3%	9%	4%	2%	11%	5%
	Diabetes	13%	18%	4%	7%	0%	7%
	Hypertension	47%	55%	44%	64%	56%	51%
Medicaid	Asthma	3%	0%	9%	10%	3%	6%
	CHF	2%	17%	1%	0%	4%	2%
	COPD	9%	17%	7%	18%	4%	11%
	Diabetes	13%	25%	5%	10%	7%	10%
	Hypertension	45%	42%	46%	45%	45%	44%
Medicare	Asthma	8%	0%	14%	9%	9%	9%
	CHF	3%	0%	2%	2%	4%	2%
	COPD	18%	23%	9%	19%	18%	17%
	Diabetes	8%	8%	11%	22%	22%	13%
	Hypertension	59%	54%	39%	61%	64%	52%

Readmission rates were calculated by assessing the percentage of patients who were readmitted to the hospital within 30 days of being discharged from an inpatient stay. Zip codes mentioned in the subsequent section are those with readmission rates three or more percentage points above the P-AHN average.

Figure 45: Saint Vincent Hospital Readmission Rates by Zip Code



Saint Vincent Hospital's overall 30-day readmission rate (10%) is similar to P-AHN (12%). The hospital's readmission rate is lower than the P-AHN average for commercial (5% vs. 8% P-AHN), Medicare patients (13% vs. 16% P-AHN), and Medicaid patients (7% vs. 12% P-AHN). However, there are two zip codes that exceed the P-AHN average. Zip code 16511 Erie has a higher readmission rate for commercial patients (11% vs. 8% P-AHN). Zip code 16507 Erie has a higher rate for commercial (12% vs. 8% P-AHN) and Medicare patients (25% vs. 16% P-AHN).

The relative effectiveness of case management can be determined by looking at readmission and prevalence rates for the top five chronic conditions compared to the P-AHN average. The diabetes prevalence rate (35% vs. 34% P-AHN) is similar to P-AHN, but the diabetes readmission rate is lower (13% vs. 15% P-AHN), indicating this condition is being managed effectively. An analysis of prevalence and readmission rates suggests the case management of asthma, hypertension, COPD, and CHF is similar to P-AHN.

Emergency Room Visits

The majority of ER patients at SVH had only one visit (68%) during 2014, however, the percentage is less than the P-AHN average (74%). SVH's ER patients have on average 1.7 ER visits per year, which is higher than the P-AHN average (1.5 visits). Overall, the number of patients who visit the ER three or more times a year (4,330 people) is sizable. The count equates to 14% of the total ER patient population and is above the P-AHN average (11%). When examined by lines of business, only Medicaid patients have a larger percentage of patients with three or more visits (19%, n=2,066) than the P-AHN average. The high average number of visits per year indicates these patients may be using the emergency room for non-emergency reasons, possibly because they lack access to primary care. The figure below displays the percent of patients with three or more visits and the average number of visits per patient for all AHN hospitals.

Figure 46: Emergency Room Visits per Patient in 2014

Hospital	Patients with >= 3 ER Visits in 2014				2014 ER Visits Per Patient
	Commercial	Medicaid	Medicare	Total	Total
Allegheny General Hospital	5%	13%	14%	10%	1.5
Allegheny Valley Hospital	8%	20%	23%	16%	1.8
Canonsburg Hospital	5%	15%	18%	10%	1.5
Forbes Hospital	5%	13%	16%	10%	1.5
Jefferson Hospital	3%	6%	10%	6%	1.3
St. Vincent Hospital	6%	19%	18%	14%	1.7
West Penn Hospital	7%	15%	17%	12%	1.6
AHN 6 Benchmark	5%	14%	15%	11%	1.5

Saint Vincent Hospital & Westfield Memorial Hospital Key Findings- Hospital Utilization Data

The majority of the top five principal diagnoses in the inpatient, outpatient, and ER setting as well as the top five principal diagnoses associated with death are similar to the P-AHN average. However, each service line has one or two diagnoses that exceed the P-AHN average. There is a larger percentage for inpatient mood disorder, inpatient and outpatient spondylosis/intervertebral disc disorders/other back problems, ER sprain and strains and respiratory failure/insufficiency/arrest in adults, and congestive heart failure (non-hypertensive) among patients who died during admission.

The hospital's prevalence rates for the top five chronic diseases are all at or below P-AHN averages. However, the COPD prevalence rate is higher among commercial patients with a substance abuse diagnosis. Additionally, the diabetes prevalence rate is higher among Medicare patients with a substance abuse diagnosis and the hypertension prevalence rate is higher among commercial and Medicare patients with a substance abuse diagnosis.

Readmission rates for the hospital are lower across all three lines of business (commercial, Medicare, and Medicaid). However, there are two zip codes in Erie (commercial and Medicare patients in 16507 and commercial patients in 16511) with a higher readmission rate than the P-AHN average. Lastly, the percentage of Medicaid patients who visit the ER three or more times is larger than the P-AHN average, indicating they may lack primary care resources in the community.

Highlands Hospital (HH) Utilization

Highlands Hospital is a 64 bed acute care hospital located in Fayette County. The hospital's service area reaches into Fayette County and Westmoreland County, but primarily serves Fayette County. The following utilization analysis was done with IPSAF and OPSAF data and is therefore not comparable to the P-AHN average used with the other AHN hospitals. HH will be compared to the respective PA average among IPSAF and OPSAF claims data.

Top Diagnoses (Inpatient, Outpatient & ER)

The charts below display the prevalence of P-AHN's top diagnoses in the inpatient, outpatient, and ER setting as well as the respective percentage among HH's service lines.

Top 5 Inpatient Diagnoses	HH Count	HH	PA
Essential hypertension	197	49%	49%
Disorders of lipid metabolism	165	41%	43%
Coronary atherosclerosis and other heart disease	129	32%	35%
Screening and history of mental health and substance abuse codes	123	30%	25%
Diabetes mellitus without complication	122	30%	25%

HH has a moderately higher percentage of inpatient screening and history of mental health and substance abuse and diabetes mellitus without complications. Percentages for the three other diagnoses are similar to or slightly below the PA average.

Top 5 Outpatient Diagnoses	HH Count	HH	PA
Disorders of lipid metabolism	1542	21%	12%
Essential hypertension	1325	18%	14%
Diabetes mellitus without complication	1261	17%	9%
Cardiac dysrhythmias	778	11%	8%
Thyroid disorders	663	9%	5%

HH has a considerably higher percentage of outpatient disorders for lipid metabolism cases and a moderately higher percentage for essential hypertension, diabetes mellitus without complication, cardiac dysrhythmia, and thyroid disorder cases compared to the PA average.

Top 5 Emergency Room Diagnoses	HH Count	HH	PA
Superficial injury; contusion	97	11%	8%
Essential hypertension	76	9%	31%
Nonspecific chest pain	55	7%	8%
Chronic obstructive pulmonary disease and bronchiectasis	49	6%	7%
Disorders of lipid metabolism	47	6%	14%

Highlands Hospital has a moderately higher percentage of ER superficial injury/contusion cases than the PA average but the other four top ER diagnoses are similar to or below the PA average. Specifically, the percentage of essential hypertension and disorders of lipid metabolism are considerably lower than the PA average.

Highlands Hospital Key Findings-Hospital Utilization Data

Overall, the hospital has a higher percentage for all of the top five outpatient diagnoses compared to PA. The ER only has a higher percentage of superficial injury/contusion and the inpatient setting only has a higher percentage of screening and history of mental health and substance abuse and diabetes mellitus without complications.

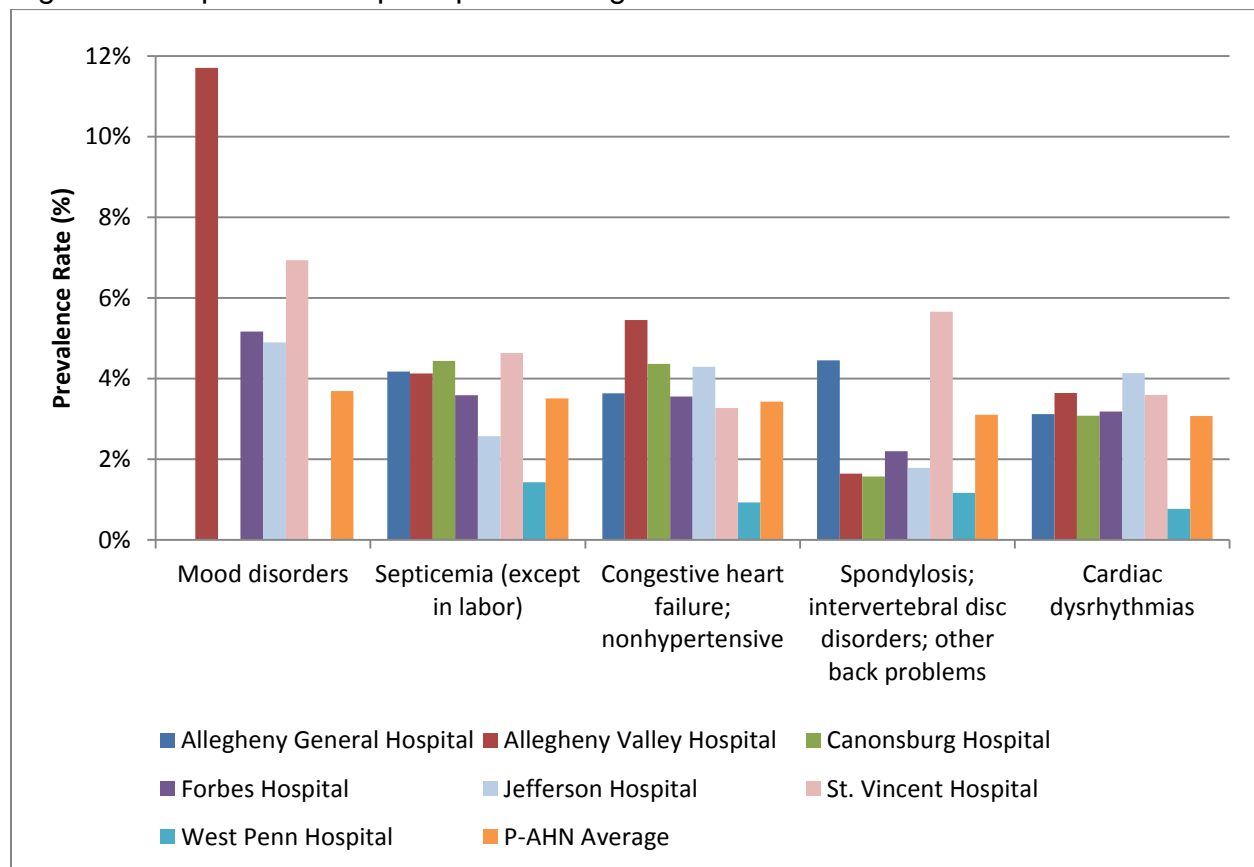
Allegheny Health Network Utilization

Since national all payer claims data are not publicly available, there is no true benchmark to compare to the network's utilization statistics. However, identifying hospitals that deviate from the system average can provide opportunities to improve the system as a whole. Additionally, a utilization analysis that incorporates demographic information can help illustrate a clearer picture of the health conditions affecting the network's service area and other factors such as education and income that need to be considered when creating a strategy to improve the community's health.

Top Diagnoses (Inpatient, Outpatient & ER)

The top five inpatient principal diagnoses across the hospital system and the respective percentage of total cases can be seen in the figure below.

Figure 47: Top Five Principal Inpatient Diagnoses

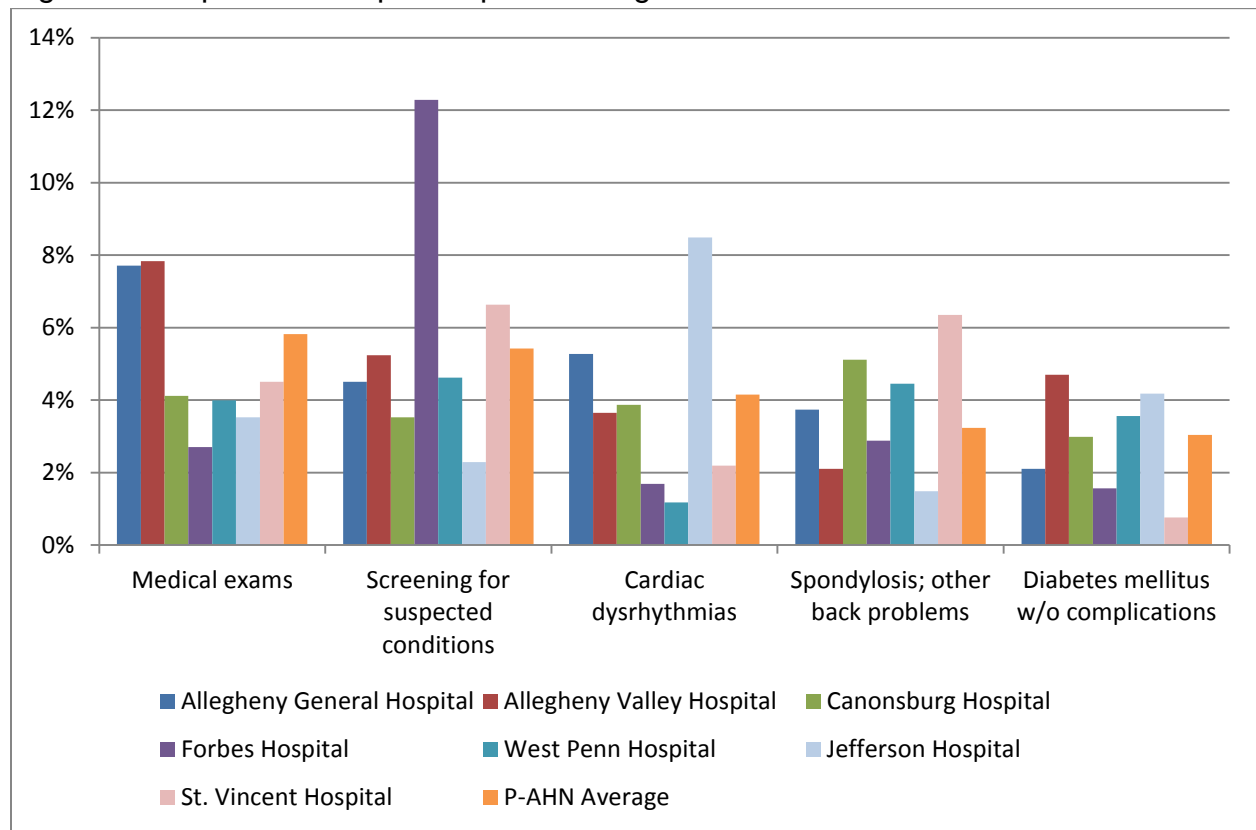


As expected with an average, the P-AHN hospitals that make up this average are mostly split with three above the average and three below. However, it is worth noting the hospitals that are substantially higher or lower than the average so that special attention can be paid to improvement or examining what is done differently in that area. AVH has the highest percentage of mood disorders among the six hospitals, with eight

percentage points between the AVH and P-AHN average. WPH has a substantially lower percentage for each of the top five inpatient diagnoses. The University of Pittsburgh is located within WPH's service area and as a result there is a large percentage of residents in the 18-24 year old age bracket, which is most likely contributing to the lower percentages of these common diagnoses.

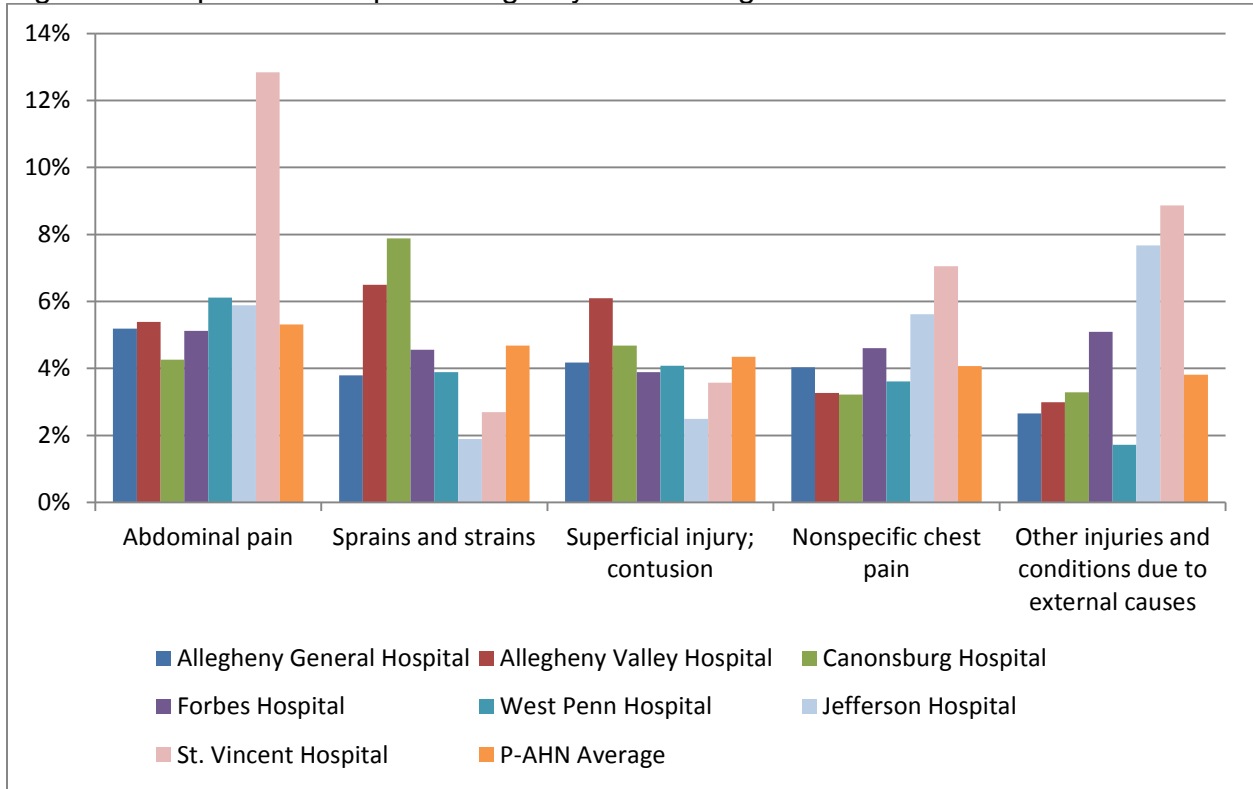
The top five outpatient principal diagnoses in 2014 for P-AHN and the corresponding percentage of total cases can be seen in the figure below.

Figure 48: Top Five Principal Outpatient Diagnoses



The top five principal emergency room diagnoses in 2014 for P-AHN and their corresponding percentages are displayed in the figure below.

Figure 49: Top Five Principal Emergency Room Diagnoses

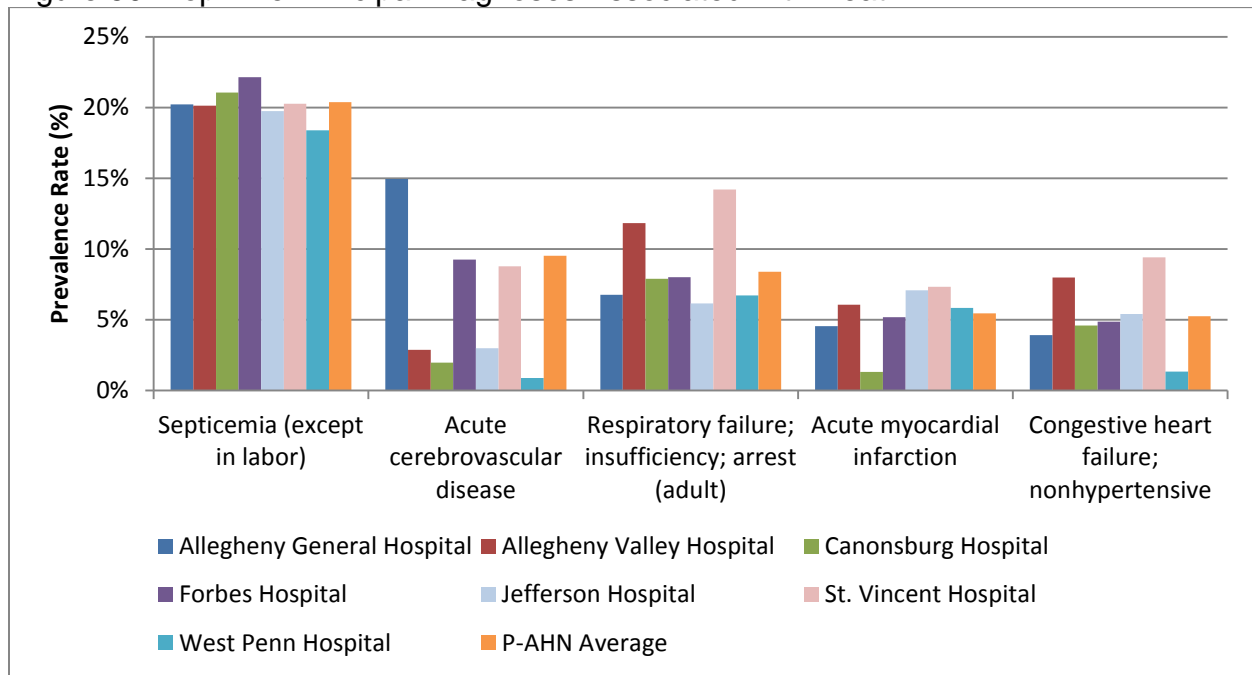


SVH has a substantially higher percentage of abdominal pain cases compared to P-AHN. Additionally, CH stands out with a higher percentage of sprain and strain cases.

Principal Diagnoses Associated with Death

The top five diagnoses associated with death for P-AHN and the corresponding percentage of total cases is displayed in the figure below.

Figure 50: Top Five Principal Diagnoses Associated with Death

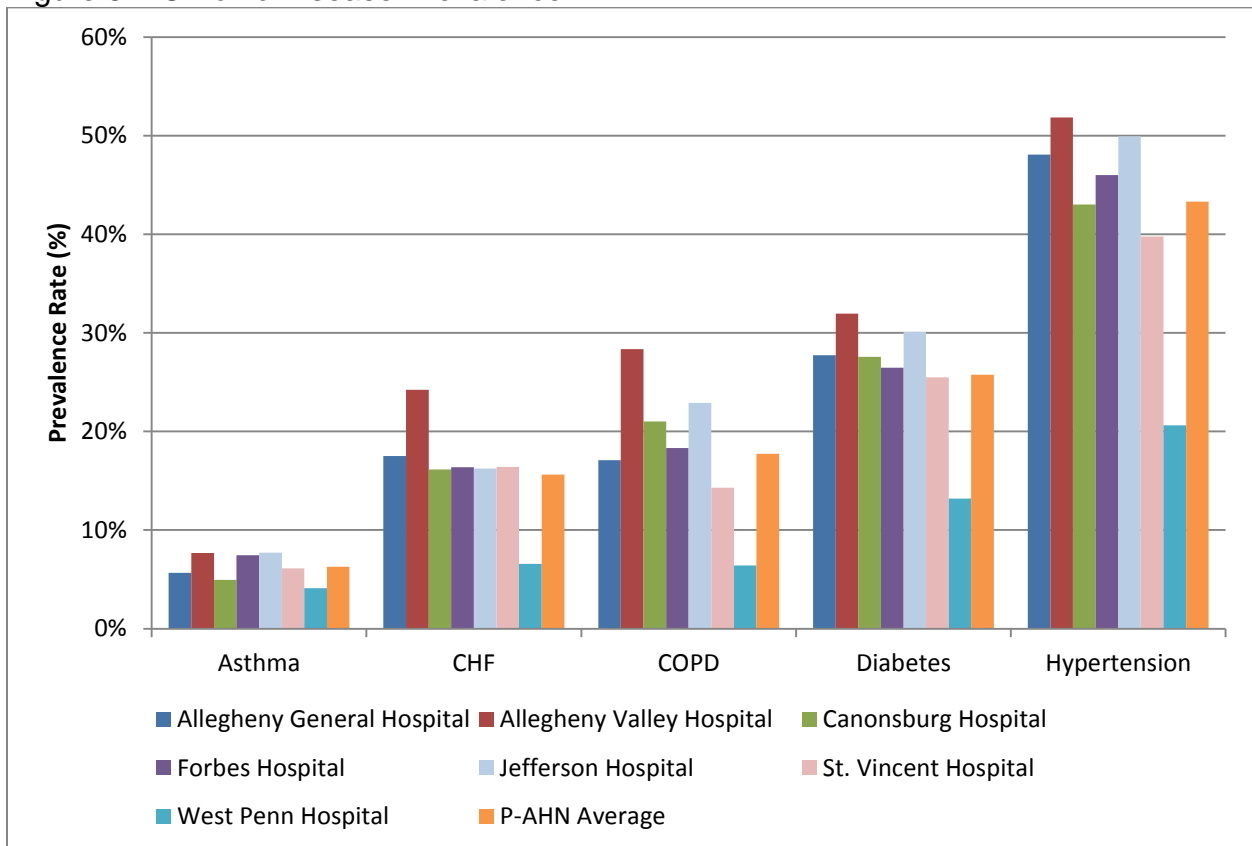


SVH has a larger percentage of respiratory failure cases, six percentage points above the P-AHN average. The hospital also stands out with a higher percentage of congestive heart failure cases. AGH has a noticeably higher percentage of acute cerebrovascular disease than the P-AHN average.

Chronic Disease Prevalence

The overall prevalence of chronic conditions among P-AHN inpatient admissions is 6% asthma, 16% CHF, 18% COPD, 26%, diabetes, and 43% hypertension. For each of the five conditions, AVH has the highest prevalence rates and WPH has the lowest rates. This consistent difference between these two service areas may be a result of the large percentage of seniors in AVH's service area and the large percentage of 18-24 year olds residing in WPH's service area.

Figure 51: Chronic Disease Prevalence



Behavioral Health and Medical Comorbidities

The prevalence of the top five chronic diseases as a comorbidity among patients with a behavioral health or substance abuse diagnosis is highest for Medicare patients. However, there are multiple hospitals with chronic disease prevalence rates considerably higher than the P-AHN average for all three lines of business. Among patients with a behavioral health diagnosis, AGH has a higher prevalence of hypertension in Medicaid patients and a higher prevalence of CHF and asthma in Medicare patients. AGH also has a higher prevalence of hypertension among Medicare patients with a substance abuse diagnosis. Among JH patients with a substance abuse diagnosis, there is a higher prevalence of hypertension among commercial patients,

COPD among Medicaid patients, and hypertension among Medicare patients. Lastly, AVH has a higher prevalence of diabetes and CHF among Medicaid patients with a substance abuse diagnosis. All rates can be seen below in Figures 52 and 53.

Figure 52: Chronic Disease Prevalence Rates among Patients with a Behavioral Health Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	4%	8%	11%	14%	6%	12%
	CHF	4%	1%	2%	1%	1%	1%
	COPD	0%	11%	5%	8%	2%	7%
	Diabetes	13%	13%	8%	11%	9%	10%
	Hypertension	26%	35%	28%	29%	18%	30%
Medicaid	Asthma	9%	12%	12%	16%	13%	12%
	CHF	9%	5%	1%	0%	1%	3%
	COPD	6%	13%	7%	8%	5%	10%
	Diabetes	15%	14%	11%	4%	11%	12%
	Hypertension	47%	32%	31%	24%	25%	31%
Medicare	Asthma	19%	9%	11%	11%	12%	11%
	CHF	22%	8%	4%	2%	5%	5%
	COPD	22%	19%	9%	14%	11%	14%
	Diabetes	19%	25%	21%	27%	26%	24%
	Hypertension	50%	49%	49%	48%	45%	48%

Figure 53: Chronic Disease Prevalence Rates among Patients with a Substance Abuse Diagnosis

Line Of Business	Chronic Conditions	Allegheny General Hospital	Allegheny Valley Hospital	Forbes Hospital	Jefferson Hospital	St. Vincent Hospital	Allegheny Health Network Average
Commercial	Asthma	0%	9%	6%	9%	0%	6%
	CHF	6%	0%	1%	0%	0%	2%
	COPD	3%	9%	4%	2%	11%	5%
	Diabetes	13%	18%	4%	7%	0%	7%
	Hypertension	47%	55%	44%	64%	56%	51%
Medicaid	Asthma	3%	0%	9%	10%	3%	6%
	CHF	2%	17%	1%	0%	4%	2%
	COPD	9%	17%	7%	18%	4%	11%
	Diabetes	13%	25%	5%	10%	7%	10%
	Hypertension	45%	42%	46%	45%	45%	44%
Medicare	Asthma	8%	0%	14%	9%	9%	9%
	CHF	3%	0%	2%	2%	4%	2%
	COPD	18%	23%	9%	19%	18%	17%
	Diabetes	8%	8%	11%	22%	22%	13%
	Hypertension	59%	54%	39%	61%	64%	52%

Readmissions

P-AHN's hospital wide 30-day readmission rate is 12%. The network has an 8% readmission rate for patients with commercial insurance, 12% readmission rate for Medicaid patients, and 16% readmission rate for Medicare patients. Most hospitals have a similar readmission rate to the P-AHN average for specific lines of business. Only WPH has a lower Medicaid and all payer readmission rate than the P-AHN average.

Of the five top chronic conditions, CHF accounts for the highest readmission rate (19%) with COPD close behind (17%). Hypertension ranks highest in hospital admissions (46%), but is on the lower end with regard to readmissions (11%). If prevalence rates are utilized as an indicator of disease severity, then lower than average prevalence rates should be accompanied by a lower readmission rate. However, the prevalence of COPD at AGH and the prevalence of CHF, COPD, and hypertension at WPH are lower than P-AHN averages, but readmission rates are higher, indicating a need for increased community resources to help patients manage these conditions.

Emergency Room Visits

The majority of patients who visited the emergency room in 2014 only had one visit in that year (74%). The average number of ER visits across P-AHN hospitals is 1.5 with 11% of patients having three or more visits a year. Allegheny Valley Hospital deviated consistently from the P-AHN average with 17% of patients having three or more ER visits in a year. Medicaid, Medicare, and self-pay lines of business for AVH all had a larger percentage of patients with three or more visits in a year compared to the corresponding P-AHN average. AVH also has a larger percentage of residents 65 and older making up the service area population and two zip codes with a substantially higher population of seniors. The elderly are much more likely to require emergency attention, which could explain why AVH has a higher percentage of patients visiting the ER three or more times. SVH also has a larger percentage of patients, particularly in the Medicaid line of business, visiting the ER three or more times in a year.

Premature Birth Rate

The overall premature birth rate for P-AHN is 10%. The rate for commercial patients (6%) is slightly less, and the rate for Medicaid patients (13%) is slightly more than the overall average. Most births in the network were at WPH and within the commercial and Medicaid lines of business.

Key Informant Survey Findings

Key Informant Survey Results of AHN Service Area

Information about health needs and disparities was solicited through surveys of community representatives and focus groups with health providers and consumers.

A Key Informant Survey was conducted with 107 community representatives. The geographic area(s) that these representatives serve is illustrated in the table below. Key Informants were permitted to select more than one county based on their total service area.

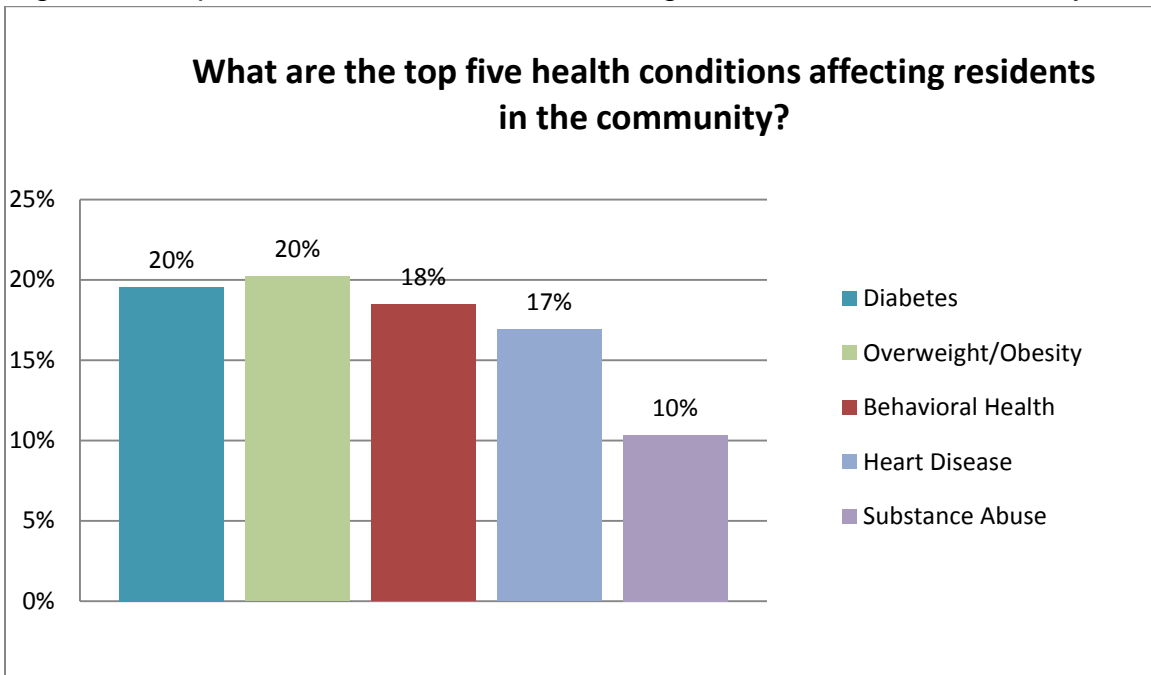
	Number of Respondents
Allegheny County, PA, including Pittsburgh	78
Armstrong County, PA	20
Beaver County, PA	15
Butler County, PA	20
Chautauqua County, NY	1
Erie County, PA	15
Fayette County, PA	28
Washington County, PA	23
Westmoreland County, PA	35

A list of the organizations represented is included in Appendix A. Populations served by the organization representatives, as identified by the survey participants included:

- > Adolescents
- > Asian/Pacific Islander
- > Black/African American
- > Children
- > Disabled
- > Hispanic/Latino
- > Homeless
- > Immigrant/refugee
- > Low income/poor
- > Men
- > Seniors/elderly
- > Uninsured/underinsured
- > Women, including single women and teen mothers

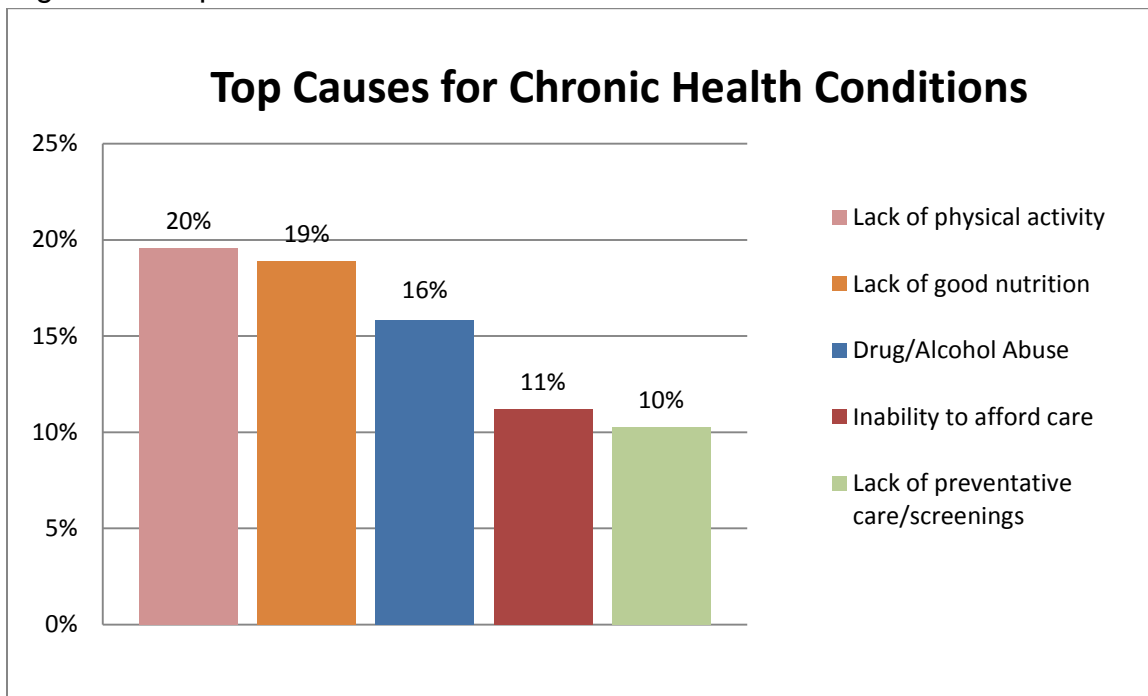
Survey participants were asked a series of questions to identify their perceptions on highest health needs in the community and underserved residents. Feedback from the study was used by AHN to prioritize the identified health needs and determine which needs it would address as part of its implementation plan. Figure 54 shows the top five health needs across the AHN service area as identified by the key informants.

Figure 54: Top Five Health Conditions Affecting Residents in the Community



Key informants were also asked what they saw as the top causes for the health conditions. Lack of physical activity (20%) and nutrition (19%) were named as the top causes in addition to drug and alcohol abuse (16%), inability to afford care (11%), and lack of preventative services (10%). Smoking and transportation were listed just outside of the top five causes at (9%) each.

Figure 55: Top Causes for Chronic Health Conditions



Travel time to primary and specialty care was assessed to gather perception on access to care within the AHN service area. Travel time to primary care is perceived to be less than travel time to specialty care. Sixty-six percent of respondents thought primary care was available within 20 minutes while 62% of respondents reported travel time to specialty care is greater than 21 minutes.

Figure 56: Time Residents Travel to Receive Primary Healthcare

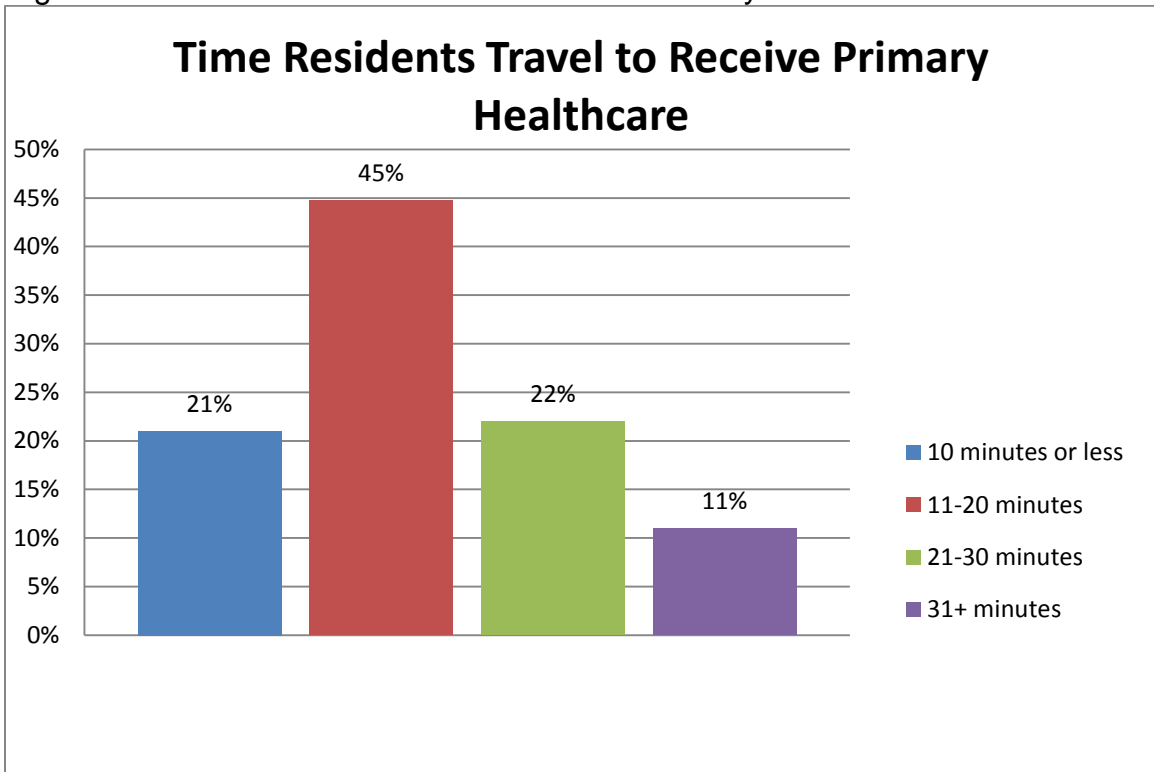
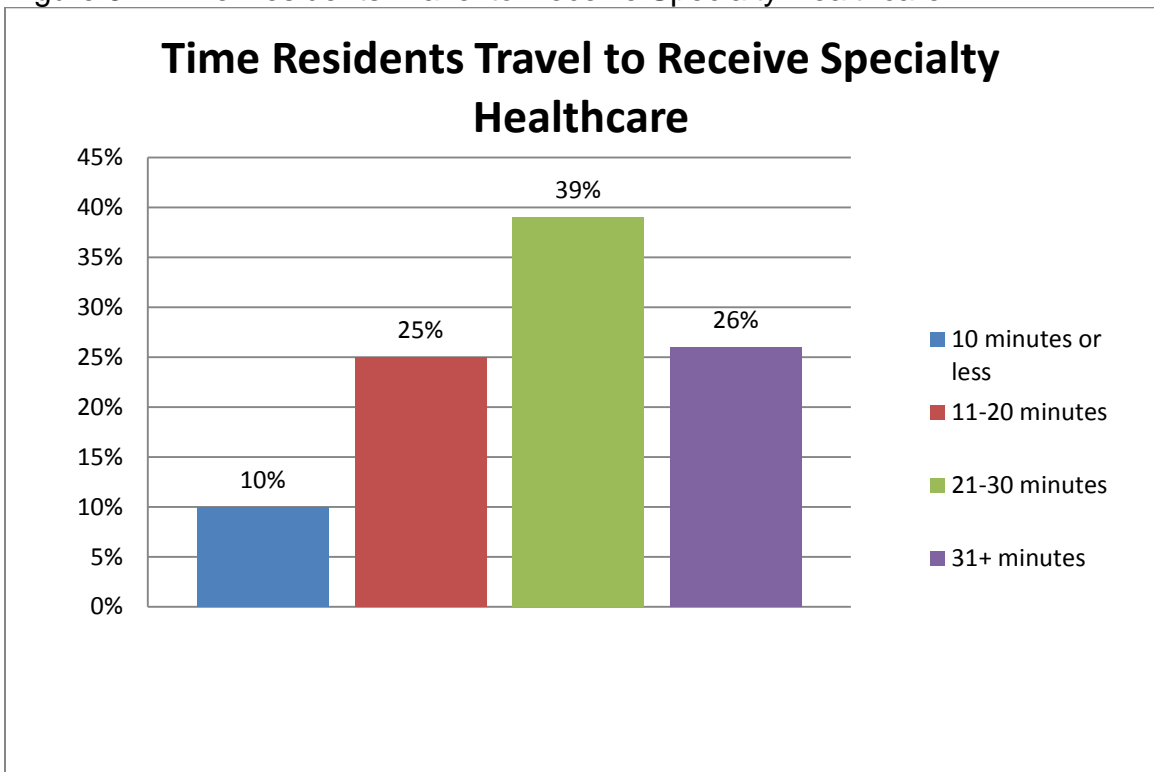
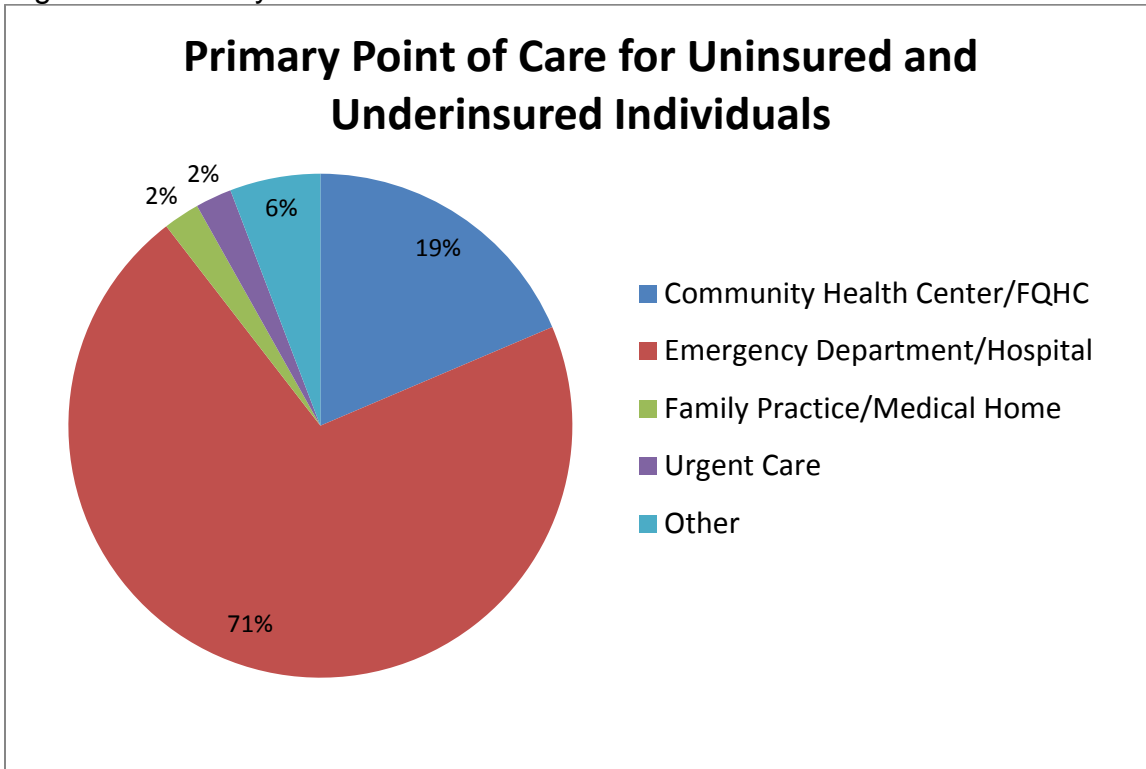


Figure 57: Time Residents Travel to Receive Specialty Healthcare



Key informant respondents saw the hospital emergency department as the primary point of care for uninsured and underinsured individuals (71%). Community health centers including Federally Qualified Health Centers (FQHC) (19%) were seen as the next most common point of care. Family practice or a medical home was recognized as a primary point of care by only 2% of respondents, as was urgent care.

Figure 58: Primary Point of Care for Uninsured and Underinsured



The survey assessed the participants' perception of AHN's responsiveness. Participants generally viewed AHN as "responsive" to the non-medical needs of consumers as indicated in Figure 59. "Treating health consumers with dignity" was the area where AHN was rated the most responsive. "Coordinating care for health consumers" was most rated as an area where AHN is "somewhat responsive" or "not responsive."

Survey participants were also asked to rate social determinants of health in the communities served by AHN. Results are illustrated in Figure 60. The majority of respondents rated the factors average to poor. Education was rated highest with 24.4% of respondents indicating good or excellent. Economic stability was rated the lowest with 21.98% of respondents rating it as "unacceptable."

Figure 59: Responsiveness of AHN in Addressing Non-Medical Needs

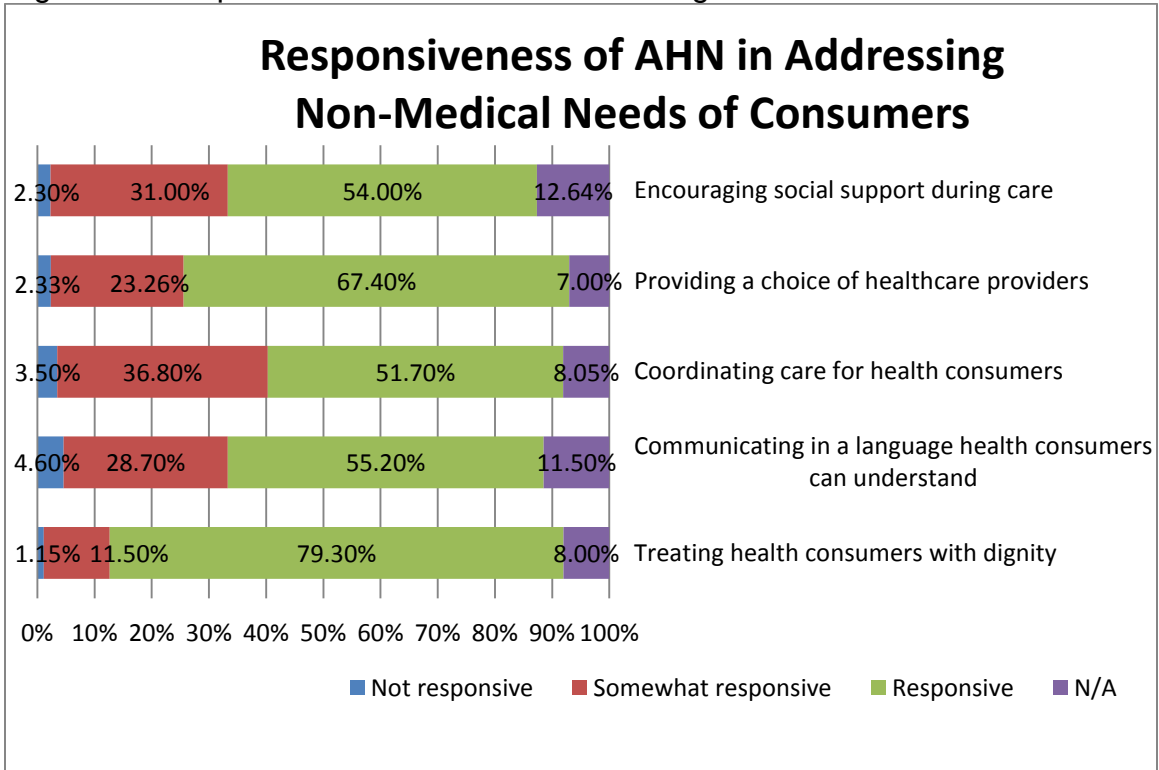
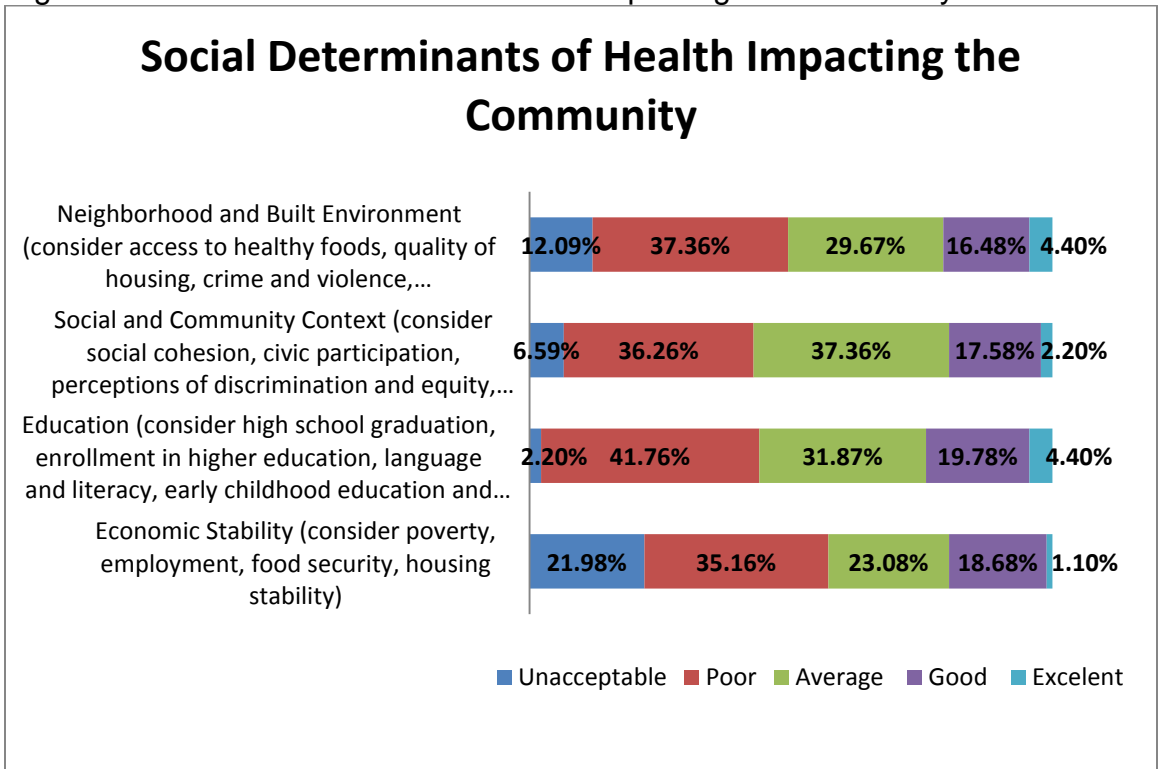


Figure 60: Social Determinants of Health Impacting the Community



Three open-ended questions were included in the survey to solicit feedback from the key informant survey participants.

To identify community initiatives and existing assets to address community health issues, key informants were asked to identify programs and initiatives that have been successful in helping residents optimize health. Specific programs and initiatives mentioned included:

Behavioral Health

- > Integration of a behavioral health team at the FQHC
- > Providing behavioral health support in housing projects
- > School based Student Assistance Program and counseling
- > Highlands Hospital Autism Center
- > Drug & Alcohol Task Force
- > Integration of behavioral health services in primary care
- > New mental health wing at hospital
- > Partnership with FSWP in providing behavioral health services to CHC's patients
- > Helping Families Raise Healthy Children (parental depression screening for parents of children involved in early intervention)

Women's Health/Maternal and Child Health

- > Women's health initiative
- > "Women's Domestic Violence of SWPA"
- > "Agency on Aging"
- > WIC, Nurse Family Partnership, Neighborhood Partnership Program, Breastfeeding Peer Counseling Program, Housing Program, Food Bank, Senior Center
- > Variety's "My Bike" Program
- > New Women's Health Program sponsored by AHN-Jefferson Hospital
- > Nurse Family Partnership
- > Children's hospital food insecurity screening at ED
- > Youth organizations in Clairton
- > Roll 'n stroll for mothers and babies
- > Magee Women's Hospital Breast Health Awareness
- > "Helmets for Kids" head injury prevention
- > Free summer food/ back pack program for youth

Chronic Disease

- > Utilizing tele-medicine and other enhanced communication for care coordination
- > "Know your numbers" health education program
- > PriorityCare health education and screenings
- > The Community Care Network program at Jefferson Hospital.
- > Employer wellness programs
- > Community walks/events
- > Highlands Hospital wellness center
- > Center for Inclusion Health
- > 5K runs/walks
- > Free health screenings
- > Mobile health vans/buses and physician in-home visits
- > The Health Expo at Pittsburgh Mills
- > Magee Clinic
- > CHIP partnership
- > Church-based health clinics
- > LifeSquare and LifeFlight
- > Wise walk program with the Allegheny Valley library
- > Health plan chronic disease care coordinators
- > Diabetes Camp for children
- > Kingsley Healthy Hearts and Souls diabetes education support group
- > The Healthy Black Family Project (2005-2010)
- > HUD-sponsored Choice Neighborhood Initiative that provides in home health assessments
- > Group Lifestyle Balance program
- > YMCA nutrition and exercise classes
- > Bloomfield Saturday Market with Allegheny Health Network
- > Transportation
- > Promotores/Promotoras - laypeople who serve as health peers in the Latino community
- > Citizens Family Health Clinic in New Kensington
- > Farmers market in Clairton
- > Jefferson Hospital transportation
- > Walking programs, Yoga, T'ai Chi, and Healthy Eating initiatives
- > Mon Valley Providers Council screenings and trainings
- > Interfaith partnership

Senior Health

- > Bringing clinical care to Skilled Nursing Facilities (SNF)
- > "Developing transitional care services at my hospitals"
- > Aging services
- > Healthcare fairs at churches, immunizations at church
- > Vintage Medicare program
- > Vials of life
- > Change of condition monitoring by the Meals on Wheels delivery staff
- > Fall Prevention in the elderly population
- > Serving Our Seniors

Numerous examples of successful education and wellness resources in the community were noted by survey respondents. Other recommendations for improved resources included:

Resource Needed	Number of mentions
Access to Care	17
Education	16
Transportation	13
Number of Health Providers	6
Behavioral Health Services	5

Key informants noted that affordable and comprehensive transportation options are needed to help residents travel to health services, particularly in suburban and rural areas. One key informant suggested if better transportation options are not viable, health providers should increase partnerships with social service organizations to provide "one-stop" service locations so clients do not have to make multiple trips.

Key informants were asked what local and regional healthcare providers can do to better optimize the health of residents in the community. Related to previous responses, respondents indicated that the top two actions local and regional healthcare providers could take to optimize resident health are to improve access to care and education.

Cost for care was a top concern among key informants. Recommendations included providing more free or reduced price screenings and medical services and increasing acceptance of insurance plans among providers. Respondents expressed concerns that the medical system is not adequately serving individuals and families living in poverty.

Prioritization & Planning

In a joint meeting of the Allegheny Health Network CHNA Steering Committee and Advisory Board on June 10, 2015, committee members reviewed findings from the AHN CHNA research, including public health data, socio-economic measures, responses from the Key Informant Survey, and hospital utilization trends. The AHN findings were compared to the identified priority areas from the Allegheny County Health Department and Erie County Health Department. The following health needs were determined as AHN system-wide priority issues:

- > Behavioral Health
- > Cancer
- > Chronic Disease
- > Maternal & Child Health

The rationale for this prioritization included:

- > Prevalence of disease and number of community members impacted
- > Health disparities among racial and ethnic minorities
- > Rate of disease in comparison to state and national benchmarks
- > Existing programs, resources, and expertise to address the issues
- > Input from representatives of underserved populations
- > Alignment with concurrent Public Health Department initiatives in Allegheny and Erie Counties

AHN developed a Community Health Improvement Plan (CHIP) to guide community benefit and population health improvement activities across the AHN Service Area. The CHIP aligns with the Allegheny County Health Department Plan for a Health Allegheny (PHA) and Erie County Health Department's Community Health Improvement Plan to ensure ongoing collaboration with public health and other community partners to address the region's most pressing community health needs.

Alignment with Public Health and Local Hospital Community Initiatives

AHN's 2015 CHNA aligned with consecutive public health and local community initiatives to identify and address community health issues. Specifically, the Allegheny County Health Department and Erie County Health Department conducted community health needs assessments for their respective counties. The AHN service area includes Allegheny and Erie County, but also extends beyond these boundaries, which required a broader look at health needs across the AHN Western PA service area.

Data and research from the Public Health Assessments were considered in developing priority areas and developing a system-wide Implementation Plan to address community health needs. AHN and its local hospitals were partners in the Public Health Assessments. Collaboration to address identified needs is paramount to have the highest impact on community health.

The table below shows the priority areas identified by each independent CHNA, as well as input from the AHN Key Informant Study, public health data trends, and AHN hospital utilization analysis findings. As illustrated below, the priority needs identified are closely aligned across each research initiative. Specifically, Chronic Diseases, Behavior/Mental Health, Cancer, and Maternal and Child Health are consistent findings.

Identified Priorities Across CHNA Research

2015 CHNA Priority Areas from Research Findings			Priority Areas from previous and related CHNAs		
AHN 2015 CHNA Key Informant Survey	AHN 2015 CHNA Hospital Data	AHN 2015 CHNA Public Health Data	AHN Hospitals 2013 CHNA Priorities	Allegheny Co. Health Dept 2015 CHNA Priorities	Erie Co. Health Dept 2015 CHNA Priorities
Behavioral Health	Asthma	Cancer	Cancer	Access to Care	Cancer Prevention and Early Detection
Diabetes	Chronic Heart Failure (CHF)	Diabetes	Chronic Diseases (Diabetes and Heart Disease)	Chronic Disease Health Risk Behaviors	Chronic Disease Prevention/ Control
Heart Disease	COPD	Heart Disease	Pneumonia	Environment	Lifestyle Behavior Change
Overweight/ Obesity	Diabetes	Maternal and Child Health	Maternal and Child Health	Maternal and Child Health	Mental Health
Substance Abuse	Hypertension	Obesity	Mental Health	Mental Health and Substance Abuse	

Development of Community Health Improvement Plan (CHIP)

Allegheny Health Network developed a Community Health Improvement Plan (CHIP) to guide community benefit and population health improvement activities across the AHN service area. The CHIP aligns with the Allegheny County Health Department's Plan for a Healthy Allegheny (PHA) and Erie County Health Department's Community Health Improvement Plan to ensure ongoing collaboration with public health and other community partners to address the region's most pressing community health needs.

Health Priority: Behavioral Health

Goal: Reduce mortality and morbidity related to mental and substance use disorders.

Objectives:

- 1) Increase utilization of outpatient behavioral health services, particularly for the most vulnerable populations.
- 2) Increase knowledge and skills of first responders and community members around behavioral health.
- 3) Increase the number of healthcare providers integrating behavioral health and physical health.

Target Populations:

- > Minority groups
- > Low income
- > Seniors

Allegheny General Hospital:

- > Drug-induced deaths among White and Black residents and mental and behavioral disorder deaths among Black residents
 - o Zip codes 15204, 15212, 15214, and 15233 (Pittsburgh): Larger Black population and population living in poverty
- > Alzheimer's disease diagnosis among Medicare seniors
 - o Zip code 15233 (Pittsburgh): Larger senior population
- > Depression among the Medicare senior population
 - o Zip code 15233 (Pittsburgh): Larger senior population

Allegheny Valley Hospital:

- > Populations with a behavioral health and chronic disease diagnosis
- > Alzheimer's disease mortality among seniors
 - o Zip code 15641 (Hyde Park): Larger senior population
- > Zip code 15641 (Hyde Park): Larger senior population

West Penn Hospital:

- > Alzheimer's disease diagnosis among Medicare seniors
 - Zip codes 15213 and 15232 (Pittsburgh): Larger senior population
- > Depression among the Medicare senior population
 - Zip codes 15213 and 15232 (Pittsburgh): Larger senior population
- > Zip codes 15208 and 15219 (Pittsburgh): Larger Black population and population living in poverty
- > Postpartum depression among mothers

Forbes Hospital:

- > Zip codes 15104 (Braddock), 15110 (Duquesne) and 15132 (McKeesport): Larger Black population and population living in poverty

Jefferson Hospital:

- > Depression among the Medicare senior population
- > Zip codes 15110 (Duquesne) and 15132 (McKeesport): Larger Black population and population living in poverty

Canonsburg Hospital:

- > Zip code 15078 (Slovan): Larger senior population

Saint Vincent Hospital:

- > Percentage of non-Whites, including Hispanics experiencing poor mental health days and a depressive disorder diagnosis
 - Erie zip codes 16503 and 16507: Larger minority populations (Hispanic and Black) and populations living in poverty

Westfield Memorial Hospital:

- > Zip code 14048 (Dunkirk): Larger Hispanic population and population living in poverty

Highlands Hospital:

- > Overall larger senior population
- > Zip code 15442 (Grindstone): Larger Black population

Health Priority: Cancer

Goal: Reduce the number of new cancer cases, as well as the illness, disability, and death caused by cancer.

Objectives:

- 1) Increase the percentage of adults who receive timely age-appropriate cancer screenings based on the most recent guidelines.
- 2) Reduce the incidence rate for the top four most commonly diagnosed cancers: prostate (male), lung and bronchus, colon and rectum, and breast (female) and the overall cancer mortality rate by promoting healthy lifestyle behaviors related to tobacco use and diet and exercise.
- 3) Provide health screenings and education to high-risk populations.

Target Populations:

- > Minority groups
- > Low income
- > Senior population

Allegheny General Hospital:

- > Zip codes 15204, 15212, 15214, and 15233 (Pittsburgh): Larger Black population and population living in poverty
- > Zip code 15233 (Pittsburgh): Larger senior population

Allegheny Valley Hospital:

- > Zip code 15641 (Hyde Park): Larger senior population

West Penn Hospital:

- > Zip codes 15208 and 15219 (Pittsburgh): Larger Black population and population living in poverty
- > Zip codes 15213 and 15232 (Pittsburgh): Larger senior population

Forbes Hospital:

- > Zip codes 15104 (Braddock), 15110 (Duquesne) and 15132 (McKeesport): Larger Black population and population living in poverty

Jefferson Hospital:

- > Zip codes 15110 (Duquesne) and 15132 (McKeesport): Larger Black population and population living in poverty

Canonsburg Hospital:

- > Zip code 15078 (Slovan): Larger senior population

Saint Vincent Hospital:

- > Erie zip codes 16503 and 16507: Larger minority populations (Hispanic and Black) and populations living in poverty

Westfield Memorial Hospital:

- > Zip code 14048 (Dunkirk): Larger Hispanic population and population living in poverty

Highlands Hospital:

- > Overall larger senior population
- > Zip code 15442 (Grindstone): Larger Black population

Health Priority: Chronic Disease

Goal 1: Decrease preventable chronic disease by ensuring access to resources, knowledge, and opportunities for residents to adopt healthy behaviors.

Objectives:

- 1) Increase primary care provider (PCP) recommendations for preventive screenings per risk and age guidelines.
- 2) Provide health screenings and education to high-risk populations.
- 3) Partner with community organizations to promote healthy lifestyles.

Goal 2: Improve management and outcomes for patients diagnosed with a chronic disease.

Objectives:

- 1) Reduce hospital 30-day readmissions rates for chronic disease.
- 2) Manage high risk populations through care coordination and partnership with social service partners.
- 3) Partner with community organizations to promote healthy lifestyles.

Target Populations:

- > Ethnic minority groups
- > Individuals with behavior health or substance abuse comorbidity
- > Low income individuals and families
- > Senior population

Allegheny General Hospital:

- > Diabetes mortality among Black residents
 - Zip codes 15204, 15212, 15214, and 15233 (Pittsburgh): Larger Black population and population living in poverty
- > Readmission rates in zip codes 15108 (Corapolis), 15044 (Gibsonia), 15229 and 15214(Pittsburgh)

Allegheny Valley Hospital:

- > Populations with a behavioral health and chronic disease diagnosis

West Penn Hospital:

- > Diabetes mortality among Black residents
 - Zip codes 15208 and 15219 (Pittsburgh): Larger Black population and population living in poverty

Forbes Hospital:

- > Zip codes 15104 (Braddock), 15110 (Duquesne) and 15132 (McKeesport): Larger Black population and population living in poverty
- > Readmission rates in zip codes 15644 (Jeannette), 15146 (Monroeville), and 15613 (Apollo)

Jefferson Hospital:

- > Diabetes mortality among Black residents
 - Zip codes 15110 (Duquesne) and 15132 (McKeesport): Larger Black population and population living in poverty
- > Readmission rates in zip codes 15045 (Glassport) and 150063 (Monongahela)

Canonsburg Hospital:

- > Zip code 15078 (Slovan): Larger senior population

Saint Vincent Hospital:

- > Erie zip codes 16503 and 16507: Larger minority populations (Hispanic and Black) and populations living in poverty
- > Readmission rates in Erie zip codes 16507 and 16511

Westfield Memorial Hospital:

- > Zip code 14048 (Dunkirk): Larger Hispanic population and population living in poverty

Highlands Hospital:

- > Diabetes diagnosis among Medicare senior population
 - Overall larger senior population
- > Zip code 15442 (Grindstone): Larger Black population

Health Priority: Maternal and Child Health

Goal: Reduce morbidity and mortality, by improving the health and quality of life of women, infants, children, caretakers, and their families, especially in vulnerable communities.

Objectives:

- 1) Reduce the proportion of preterm and low birth weight births and reduce the disparity between White, Black, and Hispanic populations.
- 2) Reduce the disparity between White, Black, and Hispanic mothers who receive prenatal care within the first trimester.
- 3) Reduce occurrence of Neonatal Abstinence Syndrome (NAS).
- 4) Increase the proportion of mothers who breastfeed for the first six months after birth and reduce the disparity between White, Black, and Hispanic populations.
- 5) Reduce the disparity between White, Black, and Hispanic births resulting in infant mortality.
- 6) Partner with community organizations to improve prenatal indicators (including not smoking during pregnancy, not drinking during pregnancy, prenatal care in first trimester, etc.).

Target Populations:

- > Minority racial groups, especially Black or Hispanic women
- > Low income families/single mothers
- > Women with behavioral health or substance abuse condition

Allegheny General Hospital:

- > Zip codes 15204, 15212, 15214, and 15233 (Pittsburgh) have a larger Black population and greater population living in poverty

Allegheny Valley Hospital:

- > Zip code 15641 has greater population living in poverty

West Penn Hospital:

- > Zip codes 15208 and 15219 (Pittsburgh) have a larger Black population and greater population living in poverty

Forbes Hospital:

- > Zip codes 15104 (Braddock), 15110 (Duquesne) and 15132 (McKeesport) have a larger Black population and greater population living in poverty

Jefferson Hospital:

- > Zip codes 15110 (Duquesne) and 15132 (McKeesport) have a larger Black population and greater population living in poverty

Canonsburg Hospital:

- > Zip code 15053 (East McKeesport) has the highest percentage of families living in poverty in the service area (7%)
- > Poor birth outcomes for Black mothers and babies related to prenatal care in first trimester, smoking during pregnancy, and breastfeeding
- > Lower percentage of Hispanic mothers receiving prenatal care in the first trimester

Saint Vincent Hospital:

- > Zip codes 16503 and 16507 (Erie) have a larger minority population (Hispanic and Black) and greater population living in poverty

Westfield Memorial Hospital:

- > Zip code 14048 (Dunkirk) has a larger Hispanic population and greater population living in poverty

Highlands Hospital:

- > Zip code 15442 (Grindstone) has a larger Black population

Board Approval

A Community Health Improvement Plan for AHN was developed to build upon past efforts and measure ongoing initiatives for community health improvement. Since a system-wide approach to AHN's CHNA was used, both the CHNA Final Report and Implementation Plan were reviewed and adopted by the AHN System Board, in addition to each AHN Hospital Board. The AHN system board adopted the CHNA Final Report and a system-wide Implementation Plan on December 9, 2015. Individual hospital boards adopted the CHNA Final Report on the following dates:

November 5, 2015: Jefferson Hospital

November 9, 2015: Saint Vincent Hospital and Westfield Memorial Hospital

November 19, 2015: Allegheny Valley Hospital, Canonsburg Hospital, and West Penn Allegheny Health System (for Allegheny General Hospital, Forbes Hospital, and West Penn Hospital)

Each AHN hospital will adopt a specific Implementation Plan that outlines community health improvement activities and resources by May 15, 2016. A copy of the CHNA Final Report is posted on each hospital's website.

Appendices

Appendix A: Key Informants

A Key Informant Survey was conducted with 107 community representatives. The organizations represented by Key Informants, and their respective title/role, included:

Key Informant Organization	Key Informant Title/Role
Adagio Health	President/ CEO
AHN Jefferson Hospital	Board Member
Allegheny County	Communications Director
Allegheny County Department of Human Services	Executive Deputy Director for Integrated Services
Allegheny county health department	Director
Allegheny Health Network	Manager
Allegheny Health Network	Supervisor
Allegheny Health Network	Psychologist
Allegheny Health Network	Director/Trustee
Allegheny Valley Hospital	Director, Community Services
Allegheny Valley Hospital	Chair
Allegheny Valley Hospital	Case Management
Allegheny Valley Hospital's Destination Wellness	Manager, Destination Wellness
Alle-Kiski Area HOPE Center, Inc.	Executive Director - Domestic Violence Services
American Diabetes Association	Executive Director
American Heart Association	Vice President/Executive Director
Baldwin Emergency Medical Service	Chief
Beulah Presbyterian Church	Senior Pastor and Head of Staff
Bhutanese Community Association of Pittsburgh	Project Director
Bloomfield Development Corporation	Interim Executive Director
Bloomfield Little Italy Days, Inc.	Producer
Bloomfield-Garfield Corporation	Deputy Director
Borough of Etna	Manager
Brentwood Baldwin Whitehall Chamber of Commerce	Board Member
Casa San Jose	Director
City of Pittsburgh	Councilwoman
Community Health Clinic, Inc.	Executive Director
Connellsville Police Department	Chief of Police
Crime Victim Center of Erie County	Executive Director
EAST ALLEGHENY COMMUNITY COUNCIL	Treasurer
EmergyCare	Director of Operations
Erie County Office of Drug & Alcohol Abuse	Supervisor
Family Services of Western PA	President and CEO
Fay Penn Economic Development Council	Retired Executive Director

Key Informant Organization	Key Informant Title/Role
Fayette County Community Action Agency Inc.	CEO
Fayette County Community Action Agency, Inc.	Project Manager for the WIC Program
Fayette County CYS	Administrator
Fayette County Emergency Management/ 9-1-1	9-1-1 Coordinator/Assistant EMA Director
Fayette EMS	ADMINISTRATIVE DIRECTOR
Forbes Hospital	Manager, Prehospital Services
Gateway school district	School board member
Go Time Ministries, Inc.	President
Greater Pittsburgh Community Food Bank	Director of Community Education
Hampton Township EMS INC	Chief Executive Officer
Highlands Hospital	Board Member
Highlands Hospital	Board of trustees
Highlands Hospital	Board Member
Highlands Hospital	Chairman
Highlands Hospital	Psychiatrist
Highmark	Director, Community Affairs
HSCC	Family Development Specialist
Human Services Center Corporation	Executive Director
Jefferson Hills Area EMS	Chief
Jefferson Hills Borough	Mayor
Jefferson Hospital, Jefferson Foundation	Various
Jefferson Regional Foundation	President & CEO
Lawrenceville United	Executive Director
LifeSpan, Inc.	CEO
Millcreek Paramedic Service	Executive Director
Mon Valley Initiative	Director of Workforce & Business Development Program
Monroeville municipality council	Council Member 7th ward
Municipality of Bethel Park	Mayor
Northwest EMS	Operations Division Chief
Observatory Hill Inc.	Board of Directors/Secretary
Our Lady Of Joy Catholic Church	Pastor
Penn Hills Chamber Of Commerce	Chamber of Commerce
Penn State New Kensington	Chancellor
Penn Township Ambulance Assoc.	Director
Perry Hilltop Citizens' Council	Board Secretary
Pittsburgh Regional Health Initiative	CEO
Premier Medical Associates	COO
Redevelopment Authority of Connellsville	Executive Director
Redevelopment Authority of Connellsville	Executive Director
Saxonburg VFC Ambulance	Ambulance Supervisor

Key Informant Organization	Key Informant Title/Role
Scottsdale Bank & Trust Co.	Treasurer
Self	Chief Medical Officer
Senior Center	Member
Sisters Place, Inc.	Executive Director
Small Seeds Development Inc.	CEO
South Hills Interfaith Ministries	Executive Director
Squirrel Hill Health Center	CEO
St. Bernadette Church	Deacon
St. John's Evangelical Lutheran Church – Girard, PA	Pastor
Susan G Komen Pittsburgh	Chief Executive Officer
The Kingsley Association	Director, Health & Wellness
TJ Arts	Founder & Chair
Township of Shaler	Manager
Turner Dairy Farms	President
Turtle Creek Valley MH/MR, Inc.	Executive Director
United Way of Allegheny County	Director of Volunteer Initiatives
UPMC EAST	Spiritual Ministry
Valley Points Family YMCA	CEO
Vandergrift/Oklahoma/C&S Ambulance Services	President
Variety the Children's Charity	Chief Executive Officer
Washington County Chapter DAR	Regent
West Jefferson Hills School District	Superintendent
Westmoreland County	Administrative Aide
Whitehall Public Library	Director
YMCA of Greater Pittsburgh	District Vice President
Zachary's Mission	Executive Director

Appendix B: Public Health Data References

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Appendix C: Birth Outcomes by Municipality, Allegheny County 2011

The following data tables were provided by the Allegheny County Health Department as part of their 2015 Community Health Assessment.

	Total Number of Births	Low Birth Weight	infant Mortality Rate (per 1,000 Live)
ALLEGHENY COUNTY	13,101	7.7%	6.1
ALEPPO TWP	8	12.5%	0.0
ASPINWALL BORO	35	2.9%	0.0
AVALON BORO	75	8.0%	0.0
BALDWIN BORO	213	4.7%	0.0
BALDWIN TWP	16	6.3%	0.0
BELL ACRES BORO	12	8.3%	0.0
BELLEVUE BORO	81	3.7%	12.3
BEN AVON BORO	22	0.0%	0.0
BEN AVON HEIGHTS BORO	2	0.0%	0.0
BETHEL PARK MUNI	272	7.0%	0.0
BLAWNOX BORO	14	0.0%	0.0
BRACKENRIDGE BORO	28	0.0%	0.0
BRADDOCK BORO	36	25.0%	55.6
BRADDOCK HILLS BORO	25	12.0%	0.0
BRADFORD WOODS BORO	12	0.0%	0.0
BRENTWOOD BORO	133	12.0%	7.5
BRIDGEVILLE BORO	42	4.8%	0.0
CARNEGIE BORO	87	6.9%	0.0
CASTLE SHANNON BORO	99	9.1%	10.1
CHALFANT BORO	8	37.5%	0.0
CHESWICK BORO	11	0.0%	0.0
CHURCHILL BORO	26	7.7%	0.0
CLAIRTON CITY	109	11.0%	0.0
COLLIER TWP	69	2.9%	0.0
CORAOPOLIS BORO	61	3.3%	0.0
CRAFTON BORO	62	4.8%	16.1
CRESCENT TWP	23	13.0%	0.0
DORMONT BORO	99	3.0%	0.0
DRAVOSBURG BORO	19	0.0%	0.0
DUQUESNE CITY	118	7.6%	0.0
EAST DEER TWP	20	5.0%	0.0
EAST McKEESPORT BORO	19	21.1%	0.0
EAST PITTSBURGH BORO	26	23.1%	0.0
EDGEWOOD BORO	32	3.1%	0.0
EDGEWORTH BORO	9	11.1%	0.0
ELIZABETH BORO	19	0.0%	0.0
ELIZABETH TWP	83	3.6%	0.0
EMSWORTH BORO	25	12.0%	0.0

	Total Number of Births	Low Birth Weight (%)*	infant Mortality Rate (per 1,000 Live Births)
ETNA BORO	48	10.4%	0.0
FAWN TWP	22	4.5%	0.0
FINDLAY TWP	54	5.6%	0.0
FOREST HILLS BORO	81	3.7%	0.0
FORWARD TWP	28	7.1%	0.0
FOX CHAPEL BORO	38	13.2%	0.0
FRANKLIN PARK BORO	115	6.1%	0.0
FRAZER TWP	5	20.0%	0.0
GLASSPORT BORO	51	3.9%	0.0
GLENFIELD BORO	1	0.0%	0.0
GREEN TREE BORO	35	5.7%	0.0
HAMPTON TWP	118	8.5%	16.9
HARMAR TWP	15	6.7%	0.0
HARRISON TWP	127	8.7%	0.0
HEIDELBERG BORO	15	6.7%	0.0
HOMESTEAD BORO	54	16.7%	0.0
INDIANA TWP	57	1.8%	0.0
INGRAM BORO	41	9.8%	0.0
JEFFERSON HILLS BORO	111	2.7%	0.0
KENNEDY TWP	73	5.5%	0.0
KILBUCK TWP	3	0.0%	0.0
LEET TWP	12	0.0%	0.0
LEETSDALE BORO	8	0.0%	0.0
LIBERTY BORO	23	4.3%	0.0
LINCOLN BORO	5	0.0%	0.0
MARSHALL TWP	74	1.4%	13.5
McCANDLESS TWP	270	5.9%	3.7
McDONALD BORO(part)	6	0.0%	0.0
McKEES ROCKS BORO	114	12.3%	43.9
McKEESPORT CITY	258	8.5%	3.9
MILLVALE BORO	41	14.6%	24.4
MONROEVILLE MUNI	256	6.3%	11.7
MOON TWP	266	6.0%	7.5
MT. LEBANON TWP	327	4.6%	0.0
MT. OLIVER BORO	51	5.9%	39.2
MUNHALL BORO	111	5.4%	9.0
NEVILLE TWP	11	0.0%	0.0
NORTH BRADDOCK BORO	51	9.8%	19.6

	Total Number of Births	Low Birth Weight (%)*	infant Mortality Rate (per 1,000 Live Births)
NORTH FAYETTE TWP	199	5.0%	10.1
NORTH VERSAILLES TWP	112	11.6%	8.9
OAKDALE BORO	8	0.0%	0.0
OAKMONT BORO	63	1.6%	0.0
O'HARA TWP	70	2.9%	0.0
OHIO TWP	86	3.5%	0.0
GLEN OSBORNE BORO	5	0.0%	0.0
PENN HILLS MUNI	441	7.0%	9.1
PENNSBURY VILLAGE BORO	6	0.0%	0.0
PINE TWP	98	2.0%	20.4
PITCAIRN BORO	45	15.6%	22.2
PITTSBURGH	3439	10.1%	7.9
PLEASANT HILLS BORO	79	1.3%	0.0
PLUM BORO	283	3.9%	0.0
PORT VUE BORO	30	20.0%	0.0
RANKIN BORO	35	5.7%	0.0
RESERVE TWP	45	6.7%	0.0
RICHLAND TWP	141	7.8%	28.4
ROBINSON TWP	110	5.5%	0.0
ROSS TWP	344	6.4%	0.0
ROSSLYN FARMS BORO	6	16.7%	0.0
SCOTT TWP	185	7.6%	10.8
SEWICKLEY BORO	30	6.7%	0.0
SEWICKLEY HEIGHTS BORO	10	20.0%	0.0
SEWICKLEY HILLS BORO	3	0.0%	0.0
SHALER TWP	324	7.1%	3.1
SHARPSBURG BORO	51	3.9%	0.0
SOUTH FAYETTE TWP	172	4.1%	0.0
SOUTH PARK TWP	122	5.7%	0.0
SOUTH VERSAILLES TWP	4	25.0%	0.0
SPRINGDALE BORO	28	7.1%	0.0
SPRINGDALE TWP	10	0.0%	0.0
STOWE TWP	106	11.3%	0.0
SWISSVALE BORO	103	13.6%	9.7
TARENTUM BORO	59	13.6%	16.9
THORNBURG BORO	3	33.3%	0.0
TRAFFORD BORO(PART)	1	0.0%	0.0
TURTLE CREEK BORO	61	16.4%	32.8

	Total Number of Births	Low Birth Weight (%)*	infant Mortality Rate (per 1,000 Live Births)
UPPER ST. CLAIR TWP	146	1.4%	0.0
VERONA BORO	34	14.7%	0.0
VERSAILLES BORO	16	6.3%	0.0
WALL BORO	5	0.0%	0.0
WEST DEER TWP	99	7.1%	0.0
WEST ELIZABETH BORO	6	0.0%	0.0
WEST HOMESTEAD BORO	25	8.0%	0.0
WEST MIFFLIN BORO	220	4.5%	0.0
WEST VIEW BORO	83	7.2%	0.0
WHITAKER BORO	13	15.4%	0.0
WHITE OAK BORO	70	12.9%	14.3
WHITEHALL BORO	157	7.6%	6.4
WILKINS TWP	60	13.3%	0.0
WILKINSBURG BORO	188	9.6%	16.0
WILMERDING BORO	29	6.9%	0.0