2015

Scottsdale Osborn Medical Center Community Health Needs Assessment

Approved by the Board Strategic Planning Committee
October 2015

HONORHEALTH™

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I. Executive Summary

Executive Summary

HonorHealth completed the 2015 Community Health Needs Assessment for the Scottsdale Osborn Medical Center to identify the unmet needs of the community served by the facility.

The 2015 Scottsdale Osborn Medical Center Community Health Needs Assessment identified the following needs to focus on for the next three years:

- Mental Health
- Substance Abuse
- Geriatric Health
- Chronic Disease Prevention and Management
- Social Determinants of Health

Key Findings

1. Residents living within the Scottsdale Osborn Medical Center service area were less likely to be White non-Hispanic and more likely to speak a language other than English:
    - About 57 percent of residents were white non-Hispanic compared to 63 percent for HonorHealth and 56 percent in Maricopa County.
    - A larger percentage of the population was American Indian (3.7 percent) within Scottsdale Osborn compared to HonorHealth (1.9 percent) and Maricopa County (1.7 percent).
    - Twenty-seven percent of residents spoke a language other than English compared to 24 percent within HonorHealth.
2. Scottsdale Osborn residents had poorer outcomes related to behavioral health and substance abuse:
    - Scottsdale Osborn residents had higher rates of hospital discharge related to mental health compared to Maricopa County, 387.4 discharges per 100,000 versus 309.7 discharges.
    - The suicide rate in the Scottsdale Osborn service area was higher than the suicide rate in Maricopa County, 16.6 deaths per 100,000 compared to 13.9 deaths per 100,000.
    - Scottsdale Osborn had a higher death rate due to unintentional poisonings* than Maricopa County, with 12.0 deaths per 100,000.
    - HonorHealth staff acknowledged a need to increase behavioral health services within the community.
3. Scottsdale Osborn seniors experienced poorer outcomes compared to Maricopa County seniors:
    - The death rate due to falls was higher in the Osborn service area compared to Maricopa County, 12.4 deaths per 100,000 versus 11.6 deaths per 100,000.
    - Osborn had a higher death rate for Alzheimer's disease (42.9 deaths per 100,000) compared to Maricopa County (38.5 deaths per 100,000).

4. Scottsdale Osborn residents experienced poor outcomes related to chronic diseases:
    - Scottsdale Osborn residents had a higher age-adjusted death rate for diabetes compared to HonorHealth and Maricopa County, at 29.4 deaths per 100,000.
    - Scottsdale Osborn had a higher death rate for heart attack (25.2 deaths per 100,000) compared to HonorHealth (21.7) and Maricopa County (21.4).
    - Residents had a higher hospital discharge rate for stroke compared to HonorHealth (216.9 discharges per 100,000 residents versus 209.2 discharges per 100,000).
5. Scottsdale Osborn residents experienced more barriers related to the social determinants of health compared to other residents:
    - Median income for Scottsdale Osborn was $40,521 which was less than the median income for HonorHealth, $48,801 and Maricopa County, $49,595.
    - More adults lived in poverty in Scottsdale Osborn (22.7 percent) compared to HonorHealth (17.1 percent) and Maricopa County (16.7 percent).
    - More than 50 percent of renters in the Scottsdale Osborn service area spent more than 30 percent of their household income on rent.
    - Fewer mothers within Scottsdale Osborn started prenatal care in the first trimester and received adequate prenatal care compared to mothers in HonorHealth and Maricopa County.
6. Discussions with community members and HonorHealth staff identified several gaps in services:
    - Focus groups participants talked about difficulty arranging transportation for both emergencies as well as for scheduled appointments.
    - Both HonorHealth staff and community members noted a need for transitional care after discharge to prevent readmissions.

The prioritized needs identified in this Community Health Needs Assessment align with Healthy People 2020 Goals from the Department of Health and Human Services.

*Unintentional poisoning deaths include deaths from legal (e.g., prescription) and illegal (e.g., heroin) substances where the intent was not intentional (e.g., suicide or homicide).

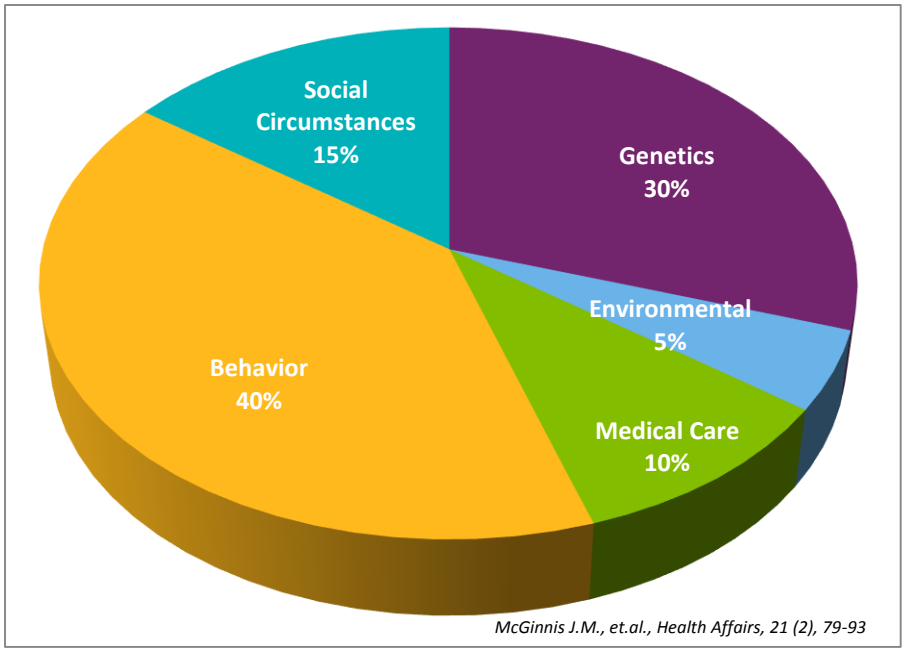
II. Introduction & Definition of Community

The mission of HonorHealth is *to improve the health and well-being of those we serve*. The 2015 Community Health Needs Assessment identified gaps in services and unmet needs where new strategies and programs can be developed to incorporate the mission into every aspect of HonorHealth.

A few years ago, the HonorHealth hospitals conducted a Community Health Needs Assessment to identify the priority health needs of the communities. At that time, HonorHealth existed as two separate health networks, John C. Lincoln Health Network and Scottsdale Healthcare. The Community Health Needs Assessments conducted by the two health networks had similarities but focused on different methods to achieve optimal health and wellness. For the 2015 Community Health Needs Assessment, HonorHealth had the opportunity to utilize the strengths of each legacy organization to develop the most detailed Community Health Needs Assessment for each individual hospital. The findings in this assessment will be utilized to identify and adopt strategies that will help us, working together with you, to create the healthiest lives possible for everyone.

This Community Health Needs Assessment includes a focus on the Determinants of Health, indicators that drive health inequities within a community. These determinants acknowledge that health goes beyond access to good health care to include where we live, work and learn. Our social and physical environments work together to influence behaviors and our ability to make healthy changes. Public health research has broken down how the different determinants of health influence well-being (McGinnis, Williams-Russo, & Knickman, 2002). While medical care receives a lot of attention, it is considered to only comprise 10 percent of what influences overall health. An estimated 30 percent of health is influenced by genetics, 15 percent by social circumstances, and 5 percent from environmental factors. Forty percent of health determination is under our own influence and is considered behavioral influence. This 40 percent includes diet, exercise, alcohol and tobacco consumption, and other choices we make as individuals.

Figure 2.1 Determinants of Health

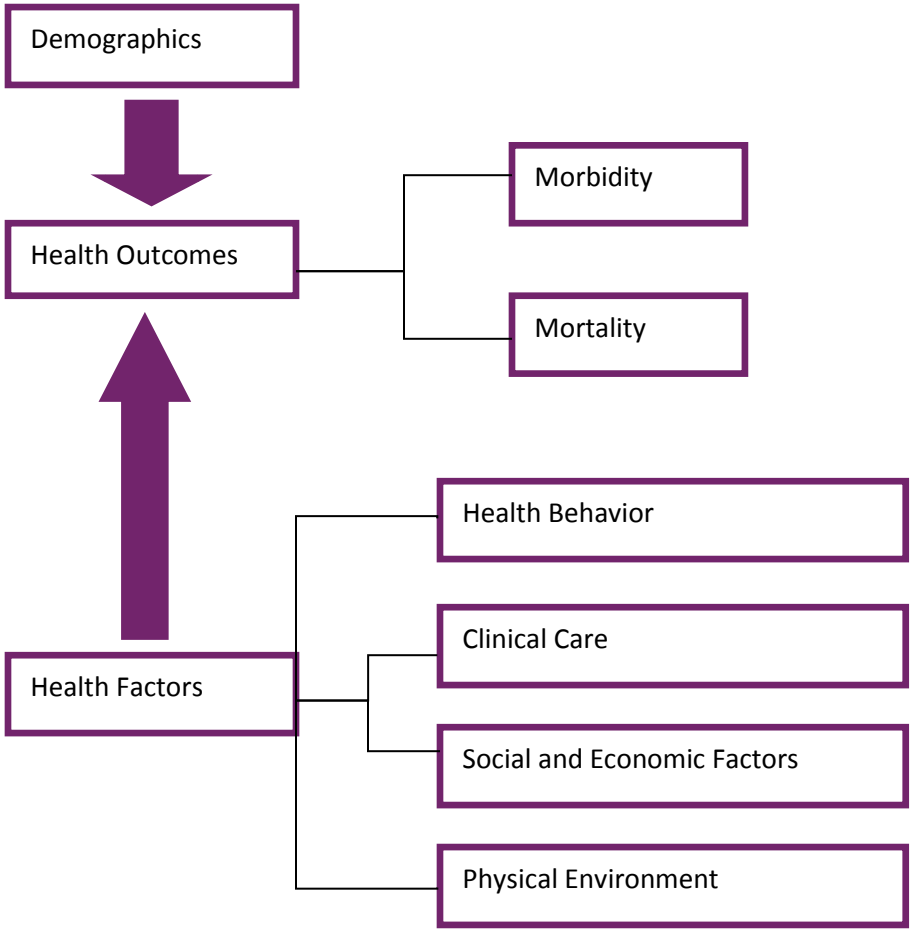


"Social circumstances" include an individual's income, education and poverty status. "Environmental" refers to the physical surroundings, such as crime and food security. These factors also affect each other. Social circumstances may limit an individual's ability to make healthy behavior decisions and may keep them from living in a safe

community. Modification of these determinants requires both changes from the individual and from the community.

Figure 2.2 is adopted from the County Health Rankings (2015 County Health Rankings, 2015). The figure demonstrates that health factors such as health behaviors, clinical care, socioeconomic status and physical environment impact health outcomes. Health outcomes include the conditions and illnesses that prevent an individual from living a long quality life. This Community Health Needs Assessment will look at key indicators for each health factor and identify health disparities related to morbidity and mortality.

Figure 2.2 Community Health Needs Assessment Methodology



Adopted from County Health Rankings

Who We Are

In 2015, John C. Lincoln Health Network and Scottsdale Healthcare merged, creating a five acute care hospital system that includes a specialty surgical center, a rehabilitation hospital, a free-standing emergency center and more than 40 primary care locations throughout the Phoenix metropolitan area. Covering a geographical area of over 1,370 square miles, including the Salt River Pima-Maricopa Indian

Community and the cities of Scottsdale, Carefree, Cave Creek, and north Phoenix, HonorHealth serves a population of 1.6 million residents. The five acute care hospitals include

- Deer Valley Medical Center
- John C. Lincoln Medical Center
- Scottsdale Osborn Medical Center
- Scottsdale Shea Medical Center
- Scottsdale Thompson Peak Medical Center

This Community Health Needs Assessment explores the needs of the residents and patients served by Scottsdale Osborn Medical Center.

Hospital Overview

Scottsdale Osborn Medical Center is a 338-bed acute care hospital located in South Scottsdale. Scottsdale Osborn Medical Center has been designated as a Level 1 Trauma Center by the Arizona Emergency Medical System and the American College of Surgeons. It is a recognized leader in the fields of orthopedics, neurosurgery, cardiovascular services and critical care.

Scottsdale Osborn Medical Center has achieved Magnet designation for excellence in nursing and has been certified as a Chest Pain Center and a Primary Stroke Center.

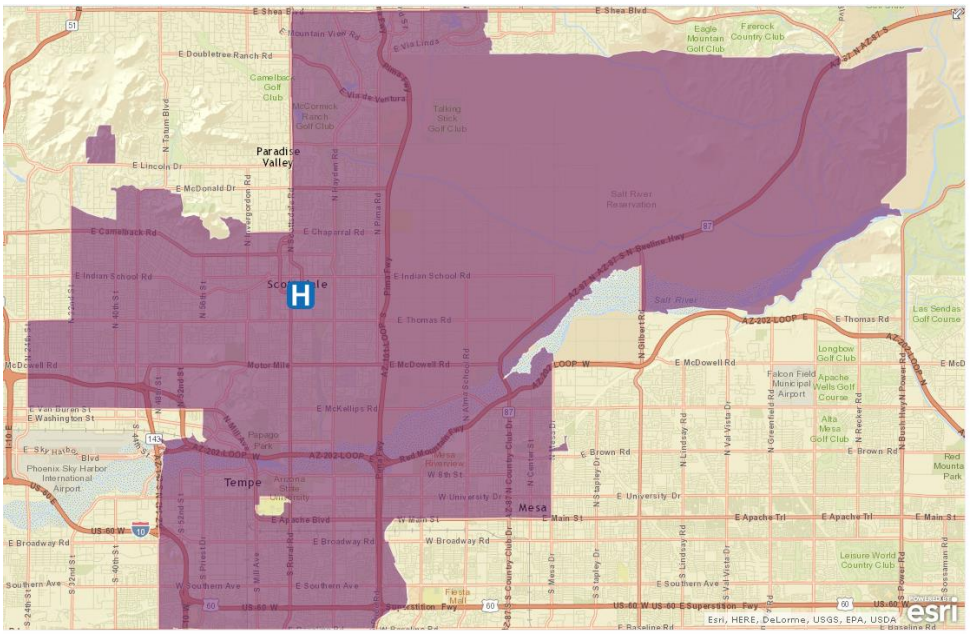
Scottsdale Osborn Medical Center is recognized for its military partnership, providing trauma and medical training to military medics and medical personnel. It is the first civilian hospital to offer a Critical Care and Emergency Trauma Fellowship through a partnership with the U.S. Air Force.

Definition of Community

HonorHealth has chosen to define each hospital's community based on ZIP codes. Other geographical definitions considered by HonorHealth included using either a city or county to define the service area. Potential cities in the community definition included Phoenix, Scottsdale and Tempe. Due to both the size of the cities and HonorHealth's presence in different neighborhoods within each city, it was determined that the city definition did not represent the community served by HonorHealth hospitals. The same reasons apply to why Maricopa County was not used for the community definition.

The Scottsdale Osborn Medical Center community encompassed the ZIP codes where 50 percent of hospital inpatient discharges reside. This resulted in a service area containing 10 ZIP codes with a population of more than 350,000 people. The HonorHealth service area included the ZIP codes where 70 percent of the discharges from all HonorHealth hospitals reside. This resulted in a service area of 47 ZIP codes with a population exceeding 1.6 million people. Figure 2.3 shows a map of the service area for Scottsdale Osborn Medical Center.

Figure 2.3 Scottsdale Osborn Medical Center Service Area



The Scottsdale Osborn Medical Center service area included an area that is diverse in age, race and ethnicity. In defining Scottsdale Osborn Medical Center's service area, HonorHealth avoided the exclusion of medically underserved, low income, or minorities. The following ZIP codes comprise the Scottsdale Osborn Medical Center service area.

Table 2.1 Scottsdale Osborn Medical Service Area ZIP Codes

85008	85018	85201	85250	85251
85256	85257	85258	85281	85282

Current Efforts

Scottsdale Osborn Medical Center completed its previous Community Health Needs Assessment in 2013, before the merger between the HonorHealth legacy organizations, John C. Lincoln Health Network and Scottsdale Healthcare. Due to this, the methodology, specifically related to identification of community needs, was different between the two legacy organizations.

Scottsdale Osborn Medical Center identified five community needs in the 2013 Community Health Needs Assessment.

- Heart Disease
- Congestive Heart Failure
- Diabetes
- Obesity
- Cancer

Scottsdale Osborn Medical Center developed an implementation plan to address each of the identified needs, however due to the affiliation and eventual merger beginning in fall 2013, modifications to the initial implementation plan were made.

Since the completion of the last Community Health Needs Assessment, Scottsdale Osborn Medical Center has made efforts to address the needs. The merger between John C. Lincoln Health Network and Scottsdale Healthcare expanded the network of providers, increased the number of programs and services available to patients and community members, and kept medical expense costs affordable. The merger also allowed the identification of best practices across the continuum of care to help patients and community members prevent chronic diseases, manage existing chronic diseases and, after a hospitalization, return to optimal health.

Before the merger, the legacy organization Scottsdale Healthcare decided to focus on increasing awareness and participation in the different programs offered to the community. This included programs focused on prevention and disease management and community screenings for the early detection of diseases. These efforts resulted in an increase in the number of participants in many of the programs. For example, the Virginia G. Piper Cancer Center saw an increase in the number of participants in the programs offered to cancer patients to help improve their quality of life.

One other area that Scottsdale Osborn Medical Center actively sought to improve was in the access to primary care. Increasing access to physicians and other medical professionals would help improve the detection and management of chronic disease. HonorHealth has actively expanded its medical group to reach a greater portion of the service area. In addition, the affiliation with Neighborhood Outreach Access to Health (NOAH) allows lower income residents to receive quality primary care. With five locations, NOAH is able to meet the primary care needs of residents throughout the HonorHealth service area.

III. Methodology

The Community Health Needs Assessment analyzed primary and secondary data to identify the health needs within Scottsdale Osborn Medical Center's community. Primary data included information collected specifically for the Community Health Needs Assessment, including focus groups and key informant interviews. Secondary data included information originally collected for a different purpose, such as health statistics analyzed and reported by the Maricopa County Department of Public Health for public health purposes.

Primary Data Sources

HonorHealth solicited assistance with the collection of qualitative data from Saguaro Evaluation Group (SEG). The decision to collect primary data using a third party was made to eliminate any potential bias that may occur during data collection and analysis on the part of HonorHealth staff as well as to protect the anonymity of participants.

1. Discussions with hospital executive staff:
   Community Benefit staff met with executive staff (CEO, CMO, CNO, etc.) from Scottsdale Osborn Medical Center to develop an understanding of the perceived strengths and weaknesses of the hospital as well as to learn what they perceive as needs within Scottsdale Osborn Medical Center's community. During these meetings, executive leaders identified key informants, existing programs and existing gaps.

2. Focus group interviews:
   Saguaro Evaluation Group conducted eleven focus groups throughout the HonorHealth network, including two specifically within the Scottsdale Osborn Medical Center service area. The duration of the focus groups was approximately one hour, and participants received incentives for participation. The goal of the focus groups was to understand the perceptions of the community regarding their needs as well as how well HonorHealth is helping to meet those needs.
   Recruitment of participants involved the distrubtion of flyers to patients at the hospitals, asking volunteers, case managers and social workers to hand out flyers to patients, and distributing flyers at schools, community centers and other locations.

   The original goal was to conduct a total of 15 focus groups, two at each acute care hospital and one at each of the clinic locations of the federally qualified health center, NOAH. Despite extensive efforts to recruit participants, the number of participants for four of the planned focus groups at the hospitals were too low to conduct the focus group. However, due to the same themes occurring in the completed focus groups, it was decided that any additional focus groups would not identify new themes, and the four remaining focus groups did not need to occur.

   See Appendices B and C for questions and demographics from the focus groups.

3. Key informant interviews:
   SEG conducted 31key informant interviews, with five interviews from staff from Scottsdale Osborn Medical Center. Key informants included HonorHealth staff, individuals from police/fire/EMS, public health and individuals from other local non-profits.

   Interviews were scheduled to last about 30 minutes, but interviewees were willing to speak longer. The interviews posed questions pertaining to the needs of the community and how Scottsdale Osborn Medical Center and HonorHealth are meeting or not meeting the needs. The goal was to interview at least 30 individuals both internally and externally of HonorHealth. Email invites were sent to 60 participants identified as potential key informants requesting a date and time for interviews. Several attempts were made through emails to arrange interviews for each participant. Phone calls also were placed to several potential participants in an attempt to arrange an interview.

   See Appendix D for a list of questions asked and organizations represented in the interviews.

Secondary Data Sources

Secondary data includes information that is collected by another person or organization. For the Community Health Needs Assessment, secondary data included emergency department utilization and inpatient hospitalizations, vital statistics (birth and death), communicable disease, cancer registry and behavioral health survey data. These data come from numerous sources, including HonorHealth, Maricopa County Department of Public Health, Arizona Department of Health Services, and federal agencies under the Department of Health and Human Services. See Appendix A for more information on the secondary data sources.

1. Demographics:
   Demographic data came from several locations. Population data, including demographic breakdowns by sex, age, race/ethnicity, and income came from MedAssets Inc. 2014. Additional demographic data came from the U.S. Census Bureau's American Community Service 2009-2013 5-Year Estimates and included information on poverty, employment, health insurance status, primary language and education. Data analysis was conducted at the levels of state, county, and service area for both HonorHealth and Scottsdale Osborn Medical Center.

2. Vital Statistics:
   Vital Statistics data included data collected from birth and death certificates analyzed at the hospital service level, HonorHealth service level, county level, and state level. Maricopa County Department of Public Health provided the service area data and the county-level data was pulled from the annual health status report. State-level data was collected from Arizona Department of Health Services annual health status report.

3. Communicable Disease:
   Communicable, or infectious, disease data includes cases of selected infectious disease that may indicate needs within a community. Maricopa County Department of Public Health provided the service area data for vaccine-preventable, foodborne and sexually transmitted diseases. County-level and state-level data were provided by Maricopa County Department of Public Health and Arizona Department of Health Services.

4. Cancer Registry:
   The Arizona Department of Health Services provided cancer incidence data at the HonorHealth and Scottsdale Osborn Medical Center service area. County and state-level cancer incidence was collected using the Cancer Registry Query Module. Only counts are reported to show which cancers are more common. Therefore, cancer incidence data cannot be compared.

5. Hospital Inpatient and Emergency Department Utilization:
   HonorHealth hospital data included inpatient and Emergency Department discharges from Scottsdale Osborn Medical Center. Inpatient data also included hospitalizations from non-HonorHealth hospitals where the patient lived within Scottsdale Osborn Medical Center's service area.

6. Behavioral Risk Factor Surveillance Survey:
   The Behavioral Risk Factor Surveillance Survey has collected data on different health-related questions for more than 30 years. Administered as a telephone-based survey, each state asks a random sample of residents a series of questions regarding health-related risk behaviors, chronic health conditions, and preventative services. Data is available at the national, state, county, and selected Metropolitan/Micropolitan statistical areas. The reports produced by the Centers for Disease Control and Prevention, Arizona Department of Health Services, and Maricopa County Department of Public Health provided information for the national-, state- and county-level respectively.

   Sources of Secondary Data
   - *Maricopa County Department of Public Health*
   - *Arizona Department of Health Services*
   - *Departments of Health and Human Services*
   - *Arizona Department of Criminal Justice*

7. Youth Risk Behavior Surveillance System:
   Similar to the Behavioral Risk Factor Surveillance Survey, this survey asks high school students about their behaviors that contribute to the leading causes of death and disability in youth. In Arizona, the survey is administered through the Arizona Department of Education, where it is then combined with national data at the Centers for Disease Control and Prevention. Data are only available at the state and national levels.

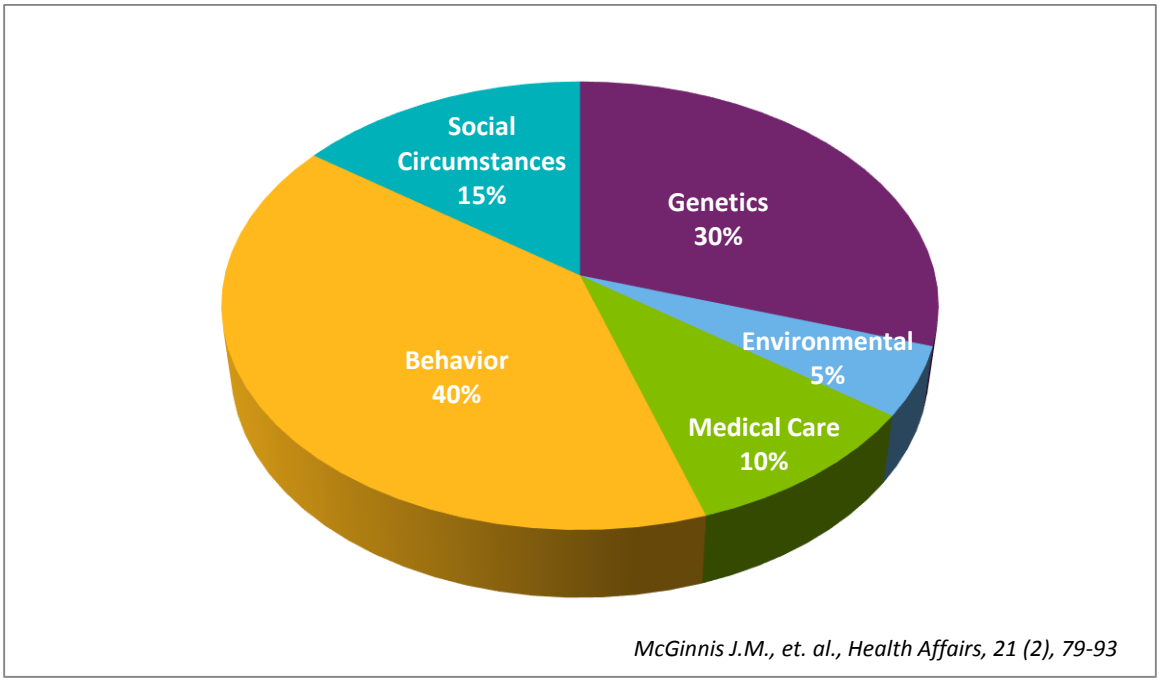
8. Other Data:
   The needs assessment utilized data collected by other sources related to substance use, criminal activity, and children's health. This included the Arizona Criminal Justice Commission, the Data Resource Center for Child and Adolescent Health, and the Substance Abuse and Mental Health Services Administration. Data were based on surveys, vital statistics, and criminal data.

IV. Demographics & Social Determinants of Health

The health of an individual is the result of more than medical care accessed and received. It includes the behavioral choices (e.g. smoking or not smoking), the physical environment (e.g. access to parks and incidence of crime), and the social issues (e.g. income and education) where the individual lives. To fully understand the health needs of the Scottsdale Osborn Medical Center community, this Community Health Needs Assessment will look at key indicators related to each contributor of health. As a leader in healthcare within the community, HonorHealth can play a role in improving the health in each of these areas.

Public health experts estimate about 30 percent of the population's health is related to genes and biology, while more than half is associated with behaviors and the social environment (McGinnis, Williams-Russo, & Knickman, 2002). Only 10 percent is believed to be related to medical care.

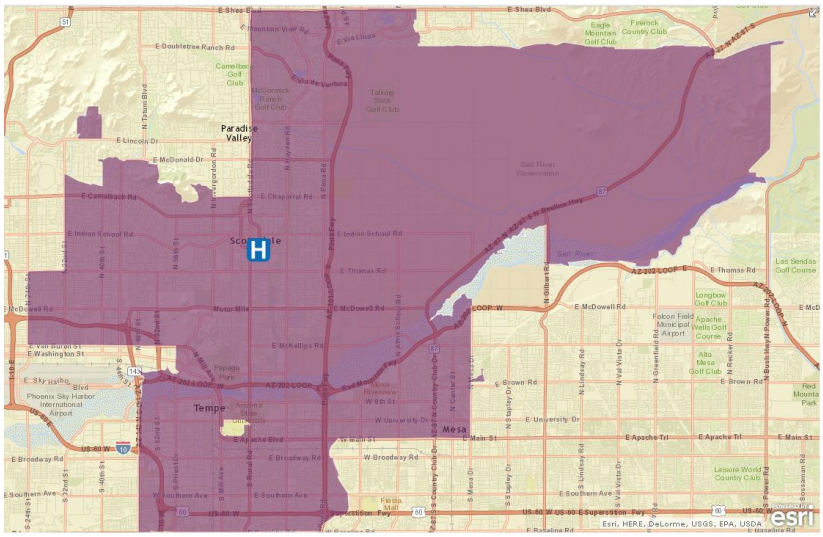
Figure 4.1 Determinants of Health



McGinnis J.M., et. al., Health Affairs, 21 (2), 79-93

Understanding the current status of key indicators related to health can help identify not just the medical needs of the population, but also basic needs that, when not met, result in poor health outcomes.

Figure 4.2 Scottsdale Osborn Medical Center Service Area



Demographics

The demographics of a population can indicate different needs based on the age, sex and race of the population. For example, older populations tend to use healthcare resources at a greater rate due to the multiple chronic health conditions that are often present. Females of childbearing age, 15 to 44 years of age, may require healthcare services related to reproductive health while a younger population may require services directed at pediatrics, such as immunizations and injury prevention. Finally, racial health disparities may exist in the community and understanding where minority populations live in the community can help target programs and interventions in the appropriate neighborhoods.

In 2014, Scottsdale Osborn Medical Center had a service area population of 354,945 people living within the 10 ZIP codes that define its primary service area based on 50 percent of inpatient discharges. As shown in Figure 4.2, the Scottsdale Osborn service area covers 153.98 square miles and has a population density of 2,305 people per square mile. In comparison, the HonorHealth primary service area had a population of 1,633,981, and Maricopa County had a population of 4,051,453. The five-year growth projection for Scottsdale Osborn Medical Center is 3.1 percent, which is less than HonorHealth's growth of 5 percent and the Maricopa County's growth of 6.9 percent. Scottsdale Osborn Medical Center service area encompasses an area of the Phoenix metropolitan area that is mostly developed.

Table 4.1 Scottsdale Osborn Medical Center, HonorHealth and Maricopa County Population and Growth Estimate, 2014 and 2019

	Total Population 2014	Population Estimate 2019	Percent Growth 2014-2019
Scottsdale Osborn	354,945	366,002	3.1%
HonorHealth	1,633,981	1,715,029	5.0%
Maricopa County	4,051,453	4,322,082	6.9%

MedAssets, 2014

Race

The racial breakdown in Scottsdale Osborn service area compares to HonorHealth and Maricopa County, with white non-Hispanics making up the majority of the population, followed by Hispanics, blacks, American Indians, Asian/Pacific Islanders, and individuals of two or more races. The service area had a larger percentage of American Indians compared to HonorHealth and Maricopa County. Figures 4.3, 4.4 and 4.5 show a more detailed breakdown of each by race/ethnicity.

Figure 4.3 Scottsdale Osborn Medical Center Service Area Population by Race/Ethnicity, 2014

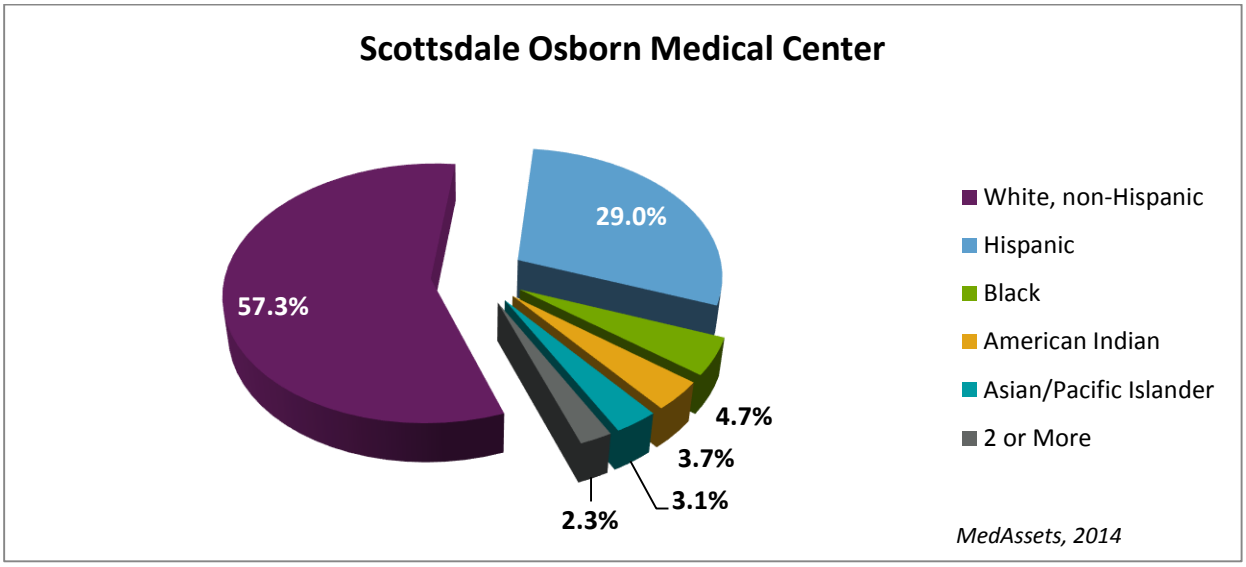


Figure 4.4 HonorHealth Service Area Population by Race/Ethnicity, 2014

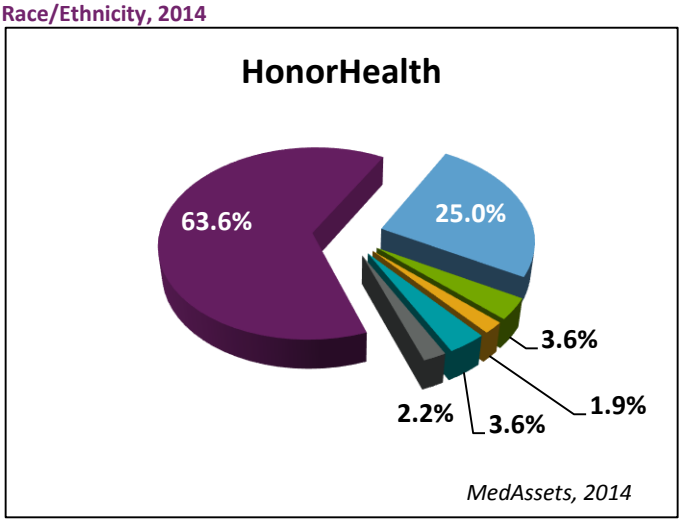
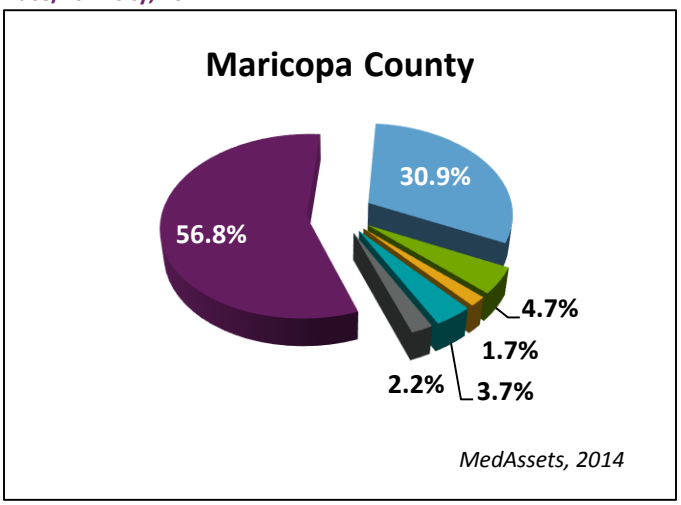


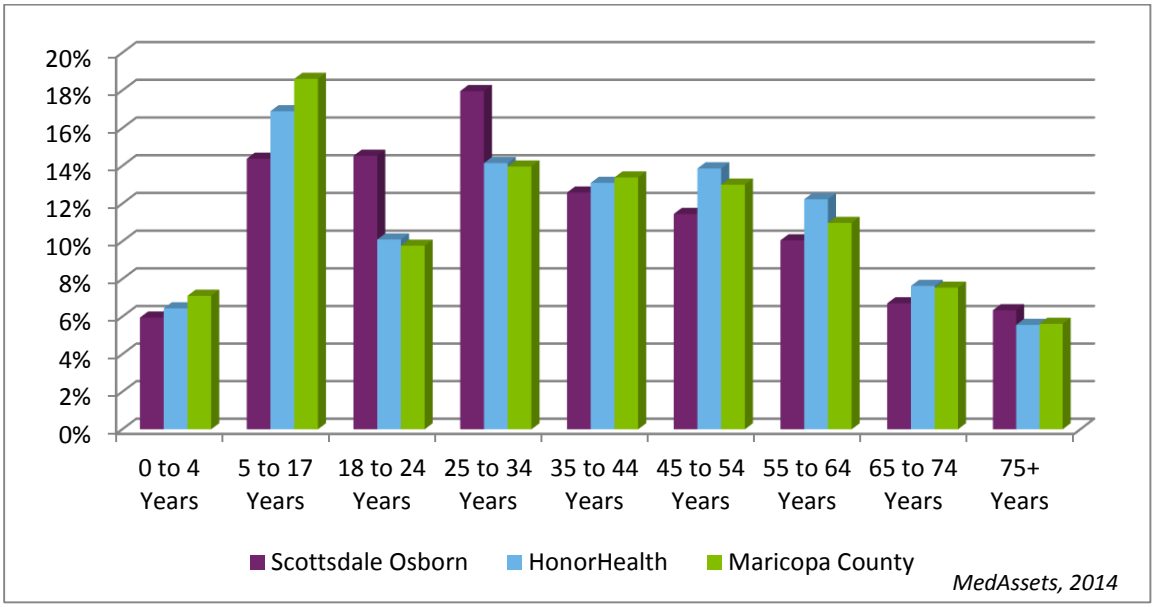
Figure 4.5 Maricopa County Population by Race/Ethnicity, 2014



Age

Figure 4.6 shows the breakdown by age group in the service areas for Scottsdale Osborn, HonorHealth, and Maricopa County. The hospital's service area has a lower dependency ratio compared to HonorHealth and Maricopa County. The dependency ratio compares the number of people outside of the workforce (children 0-14 and older adults 65 and over) to those in the working population (15-64 years old). A ratio closer to 1 may indicate that there is less economic support within the community to fund schools or provide medical care to an aging population. For this calculation, the population outside of the workforce included those younger than 18 and over 65. The dependency ratios were 0.50, 0.58 and 0.64 respectively.

Figure 4.6 Population by Age Group and Service Area, 2014



Sex

The population for Scottsdale Osborn's service area had a larger male population than female, unlike HonorHealth and Maricopa County which have a slightly more dominant female population, with about 50.4 percent being female. In addition, women of childbearing age, 15 to 44 years, make up 20 percent of the population. Table 4.2 shows the population for each service area by sex.

Table 4.2 Population by Sex and Service Area, 2014

	Male	Percent	Females	Percent	Childbearing Females (15 to 44 Years)	
Scottsdale Osborn Medical Center	180,035	50.7%	174,910	49.3%	81,223	22.9%
HonorHealth	810,435	49.6%	823,546	50.4%	332,657	20.4%
Maricopa County	2,005,610	49.5%	2,045,843	50.5%	838,625	20.7%

MedAssets, 2014

Social Determinants of Health

Social Determinants of Health indicators may portray areas of need based on social conditions that are seemingly unrelated to health. They include educational attainment, income, unemployment, insurance status, car and home ownership, food security, transportation, substance abuse, and social support and exclusion. These indicators all drive health outcomes and health disparities by preventing individuals from accessing health resources or from living a healthful life. The social determinants of health are recognized by the federal government as key indicators and contributors to health status.

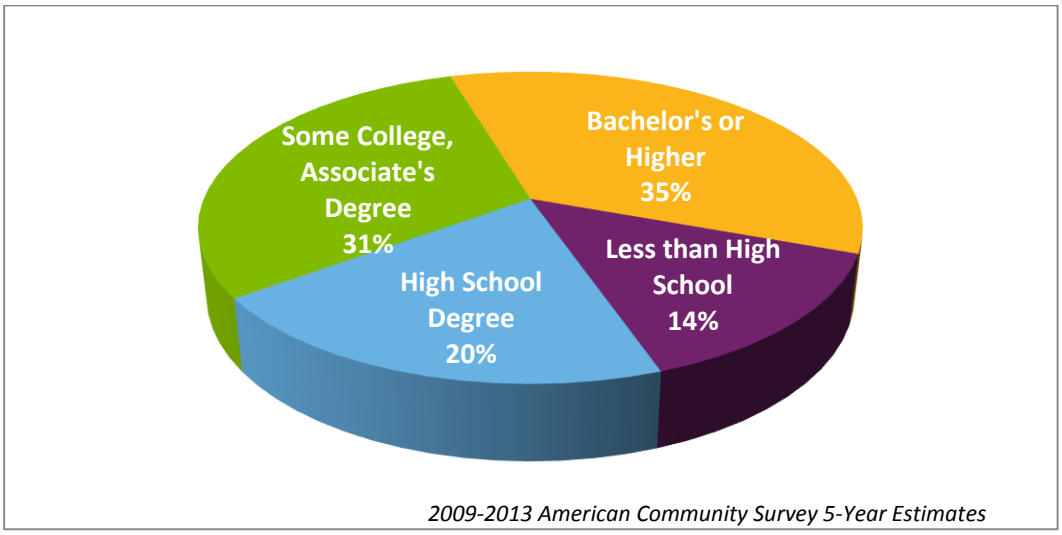
- *Education*
- *Country of Birth*
- *English Proficiency*
- *Income*
- *Poverty*
- *Health Insurance Status*
- *Housing*
- *Transportation*
- *Birth Outcomes*

Education

Educational attainment impacts many of the different factors related to health and social determinants. The more education achieved, the higher the income, the lower the risk for being uninsured, living in poverty, and being unemployed.

The majority of Scottsdale Osborn Medical Center service area adults 25 years and over attained at least some college education as seen in Figure 4.7 (U.S. Census Bureau, 2015). Males had a greater percentage of college graduates than females, 36.6 percent and 33.8 percent respectively.

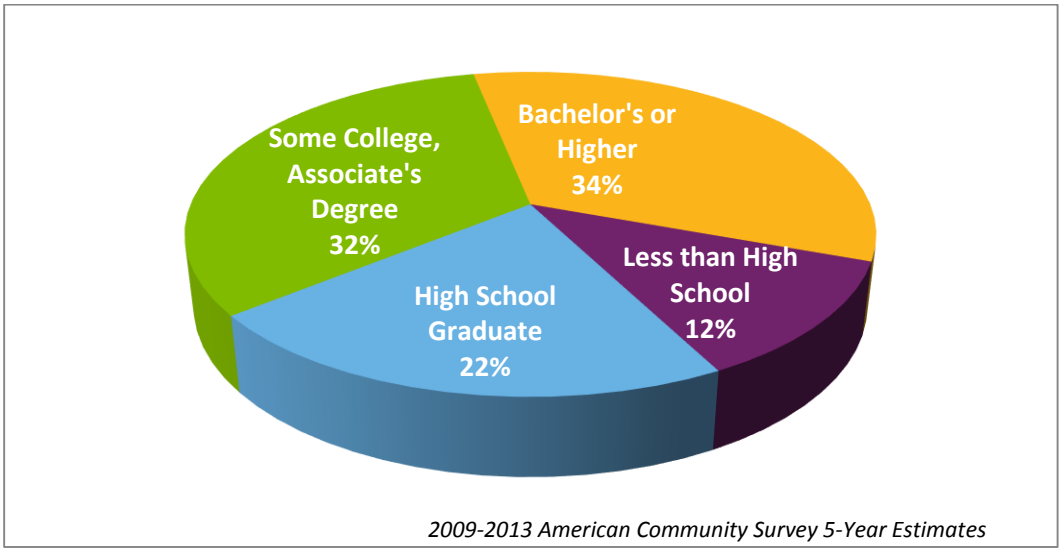
Figure 4.7 Scottsdale Osborn Medical Center Service Area by Educational Attainment



2009-2013 American Community Survey 5-Year Estimates

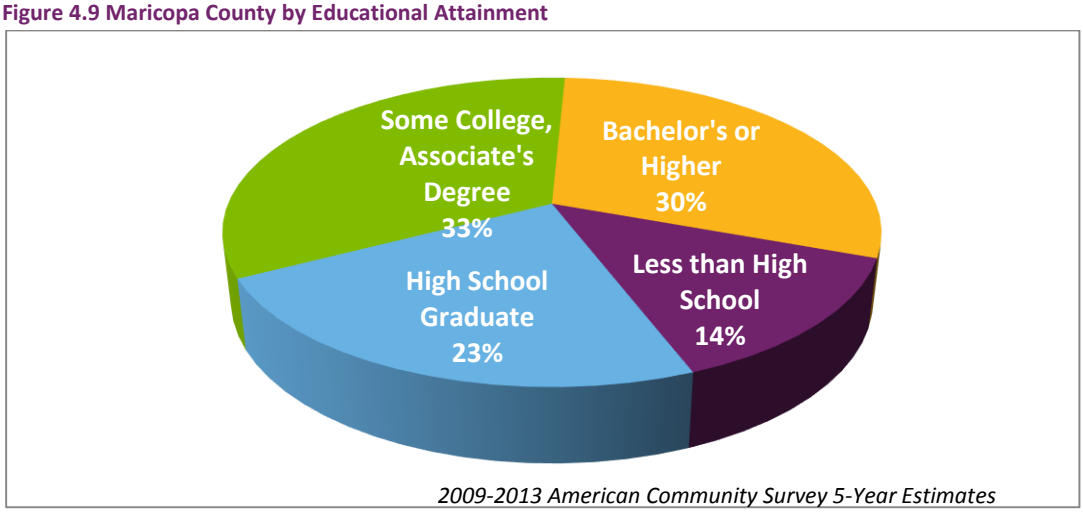
While a greater percentage of the Scottsdale Osborn population lacked a high school diploma compared to HonorHealth, Scottsdale Osborn also had a greater percentage of the population with a college degree. Males had a greater percentage of adults achieving a bachelor's degree or higher than women (34.6 percent versus 32.4 percent).

Figure 4.8 HonorHealth Service Area by Educational Attainment



Maricopa County had the same percentage of people with less than a high school education compared to Scottsdale Osborn service area, but had a lower percentage of people with a college degree. As seen in the hospital's and HonorHealth service areas, males had a greater percentage of adults achieving a bachelor's degree or higher than compared to females, 31.2 percent and 28.5 percent respectively.

Figure 4.9 Maricopa County by Educational Attainment



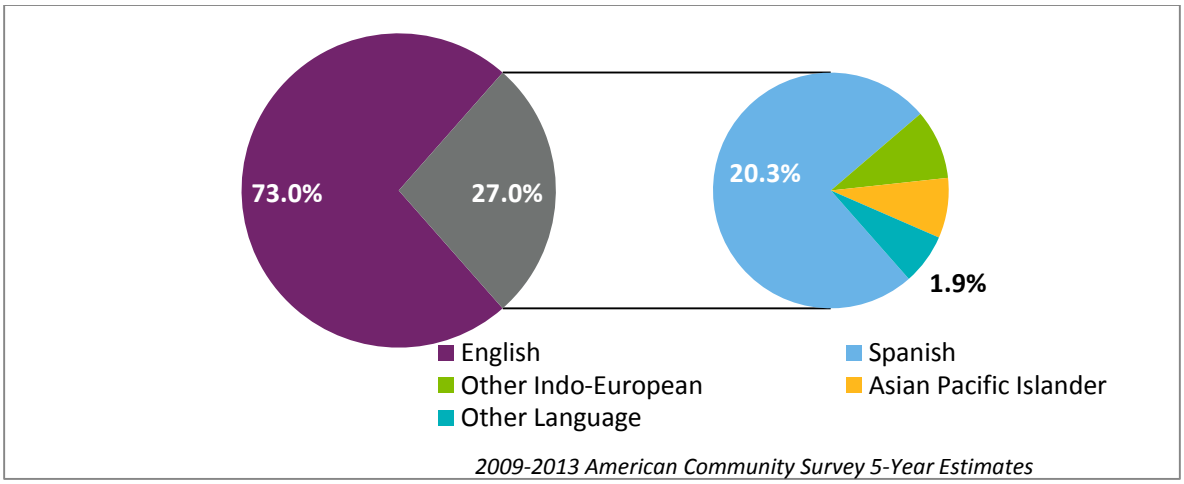
Country of Birth and English Proficiency

Scottsdale Osborn Medical Center service area had about 15 percent of the population born in a foreign country, more than the percent of the populations in HonorHealth (14.5 percent) and Maricopa County (14.9 percent) (U.S. Census Bureau, 2015).

The ability to communicate effectively can impact an individual's ability to access resources and obtain a quality education. In the Scottsdale Osborn service area, about 27 percent of the population five years and over spoke a language other than English, and 11 percent of the population spoke English "less than well." About 20 percent of the Scottsdale Osborn Medical Center population spoke Spanish, making it

the most common non-English language. Of the Spanish speakers, about 9 percent spoke English "less than well." Figure 4.10 shows the languages spoken in the service area, regardless of English proficiency.

Figure 4.10 Scottsdale Osborn Medical Center Service Area English Proficiency



The HonorHealth and Maricopa County populations had a greater percentage of the population speaking a language other than English. About 24 percent of the HonorHealth and 26 percent of Maricopa County spoke a language other than English. About 10 percent in both populations spoke English "less than well." As seen in Scottsdale Osborn Medical Center, the most common language spoken was Spanish.

Income

In 2014, the Scottsdale Osborn Medical Center service area had a lower median income compared to the HonorHealth service area and Maricopa County at $40,521, $48,801, and $49,595 respectively.

Figure 4.11 Scottsdale Osborn Medical Center Service Area Income Distribution, 2014

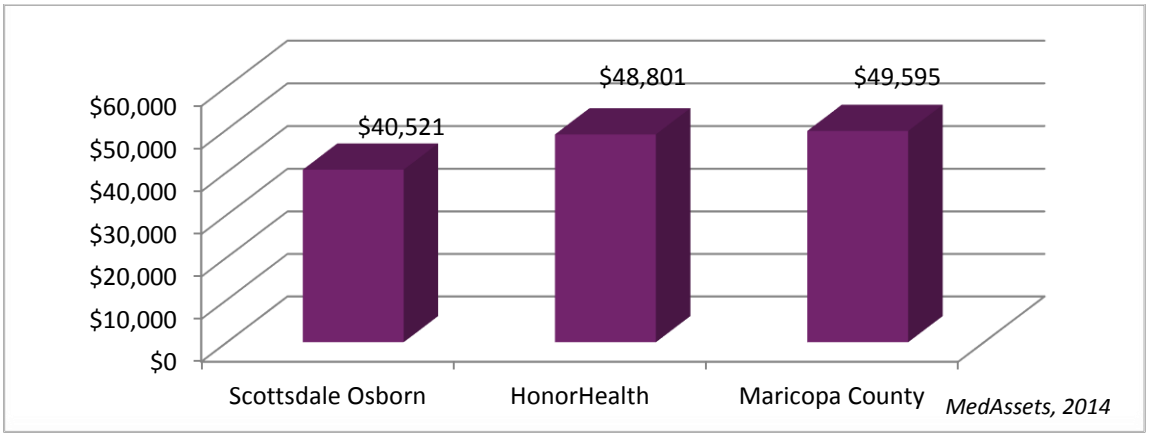


Table 4.3 shows the household income distribution in the service areas for Scottsdale Osborn Medical Center, HonorHealth, and Maricopa County. Scottsdale Osborn had the greatest percentage of residents

earning less than $25,000 while HonorHealth and Maricopa County had the largest percentage of households has an income between $25,000 and $49,999 for all areas.

Table 4.3 Scottsdale Osborn Medical Center, HonorHealth and Maricopa County Household Income Distribution, 2014

	<$25,000	$25,000-$49,999	$50,000-$74,999	$75,000-$99,999	$100,000-$149,999	Over $150,000
Scottsdale Osborn Medical Center	32.5%	28.1%	16.2%	9.2%	8.2%	5.8%
HonorHealth	25.6%	25.6%	17.5%	11.1%	11.3%	8.9%
Maricopa County	24.0%	26.4%	18.4%	11.9%	11.7%	7.5%

MedAssets, 2014

About 2.6 percent of households in the Scottsdale Osborn Medical Center service area receive public assistance as a source of income (U.S. Census Bureau, 2015). In addition, about 10.5 percent of households receive Supplemental Nutrition Assistance Program, or SNAP (food stamps). In comparison, HonorHealth and Maricopa County both had 2.3 percent of household receiving public assistance income and 11.3 and 11.7 percent receiving SNAP respectively.

The Scottsdale Osborn Medical Center service area had an unemployment rate of 9.4 percent in 2013, lower than the 9.5 percent unemployment rate for both HonorHealth and Maricopa County.

Poverty

In 2013, the poverty threshold for a family of four was $23,834 or $11,888 for an individual (U.S. Census Bureau). Based on that definition, an estimated 22.7 percent of the Scottsdale Osborn service area population lived in poverty in 2013, more than both HonorHealth and Maricopa County, with poverty rates of 17.1 and 16.7 percent respectively (U.S. Census Bureau, 2015). Poverty rates by age, sex, and race were higher in the hospital's service area compared to HonorHealth and Maricopa County. Table 4.4 shows the poverty rates for selected age groups and races. Table 4.4 also includes the percent of the population living at 200 percent of the Federal Poverty Level.

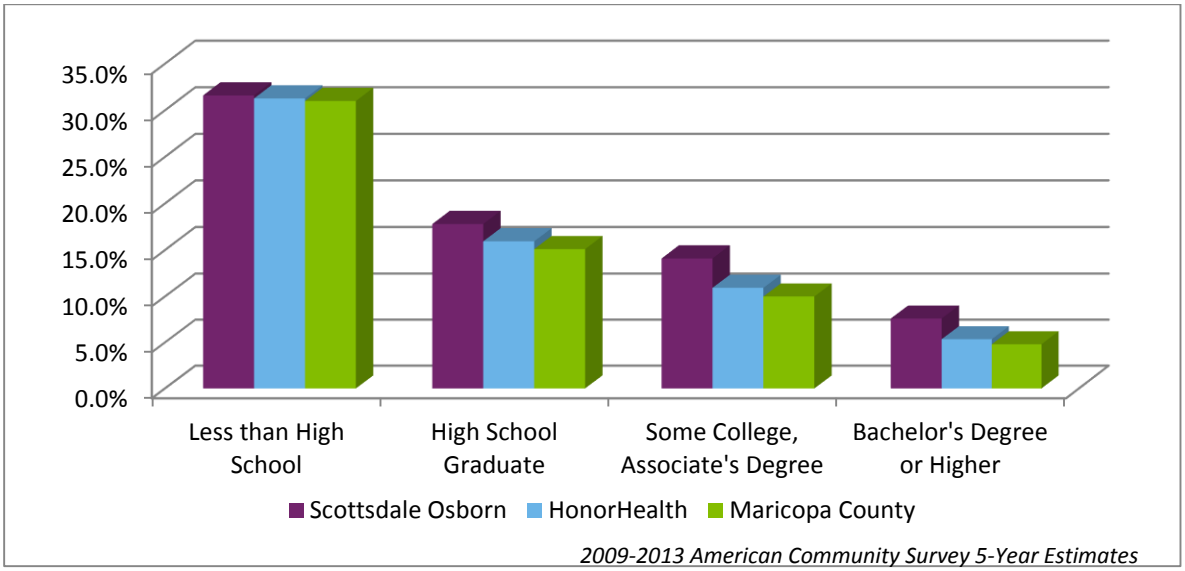
Table 4.4 Poverty Rate by Age, Sex, and Selected Race/Ethnicities by Service Area, 2013

	Scottsdale Osborn Medical Center	HonorHealth	Maricopa County
Total	22.7%	17.1%	16.7%
Under 18 Years	34.1%	24.8%	23.9%
Adults 18-64 Years	22.1%	16.1%	15.4%
Adults 65 Years and Older	8.2%	7.2%	7.6%
Male	21.5%	16.3%	15.8%
Female	23.9%	17.8%	17.5%
White, non-Hispanic	14.9%	10.6%	9.6%
Hispanic	33.0%	30.9%	29.1%
200% Federal Poverty Level	44.5%	35.7%	35.9%

2009-2013 American Community Survey5-Year Estimates

Educational attainment impacts the poverty rate, as more education is attained, the lower the poverty rate. In the Scottsdale Osborn Service Area, 31.6 percent of adults with less than a high school degree lived in poverty compared to only 7.6 percent of adults with a bachelor's degree. Figure 4.12 shows the poverty rate based on education in the service areas for Scottsdale Osborn Medical Center, HonorHealth, and Maricopa County.

Figure 4.12 Poverty Rate by Educational Attainment by Service Area, 2013



Health Insurance

The lack of health insurance can have a detrimental impact on the health of an individual. It reduces a person's ability to seek care in a timely manner and can bankrupt an individual when expensive emergency care is necessary. The Affordable Care Act requires that everyone maintain health insurance. It also offers subsidized plans for lower income populations to assist with the payment of premiums.

The most recently available health insurance data includes data collected before the requirements of the Affordable Care Act were instituted, meaning that the reported uninsured rate is most likely higher than the current rate.

The 2009-2013 5-Year Estimates from the American Community Survey estimated that 25.5 percent of adults 18 to 64 years of age in Scottsdale Osborn Medical Center's service area were uninsured (U.S. Census Bureau, 2015). Males had a higher uninsured rate compared to females, 22.4 versus 17.5 percent. White non-Hispanic had the lowest rate by race with an uninsured rate of 13 percent. Asian/Pacific Islanders had a rate of 18.5 percent, Blacks 19.7 percent, American Indians 37 percent, and Hispanics 33.6 percent. A health disparity existed based on the location of birth. Native-born individuals had an uninsured rate of 15.6 percent versus a rate of 44.1 percent for foreign-born. Foreign-born individuals who became naturalized citizens fared better compared to the non-citizens with rates of 14.9 percent and 53.8 percent respectively.

Within the HonorHealth service area, 22.2 percent of adults 18 to 64 years of age were uninsured. Males had a higher uninsured rate compared to females, 19 versus 15 percent. White non-Hispanic had the lowest rate by race with an uninsured rate of 11.1 percent. Asian/Pacific Islanders had a rate of 14.9 percent, Blacks 21.7 percent, American Indians 35.7 percent, and Hispanics 31.5 percent. A health disparity existed between the location of birth. Native-born individuals had an uninsured rate of 13.3 percent versus a rate of 38.6 percent for foreign-born. Foreign-born individuals who became naturalized citizens fared better compared to the non-citizens with rates of 15.8 percent and 51.2 percent respectively.

In Maricopa County, 22.6 percent of adults reported being uninsured. Males had a higher uninsured rate compared to females, 19 percent versus 15.4 percent. Disparities also existed between races. White non-Hispanics had the lowest rate of 10.5 percent, Blacks 16.9 percent, and Asians/Pacific Islanders 15.3 percent. American Indians had the highest uninsured rate at 32.7 percent uninsured. Hispanics also had a higher uninsured rate at 30.1 percent. As seen in Scottsdale Osborn Medical Center and HonorHealth, native-born individuals had a much lower uninsured rate compared to foreign-born, 13.1 percent and 40.5 percent respectively. Being a naturalized citizen also had a lower uninsured rate compared to non-citizen residents, 17.8 percent versus 52.8 percent.

The most recent Gallup poll reported that the uninsured rate for Arizona was 17.5 percent in 2014. This was only a slight decrease from 20.4 percent in 2013 (Witters, 2015).

Housing

Housing has the potential to have an impact on the health of the individual. Healthier lives exist with stable and affordable housing.

In the Scottsdale Osborn Medical Center service area, 53.1 percent of residents lived in rented property, more than HonorHealth (40.2 percent) and Maricopa County (37.4 percent) (U.S. Census Bureau, 2015).

The Department of Housing and Urban Development recommends that no more than 30 percent of household income be spent on housing. Households that spend more may experience difficulties affording other necessities such as food, clothing, transportation and medical care. In the service area for Scottsdale Osborn Medical Center, 31.6 percent of property-owned households spent more than 30 percent of their income, with 25 percent spending more than 35 percent of their household income. If the owned property had an existing mortgage, the percent was greater, 39.2 percent of households spending more than 30 percent of their income on housing, and 31.1 percent spending more than 35 percent. More than 50 percent (53.3) of renters in the Scottsdale Osborn Medical Center area spent more than 30 percent of their income on housing, with 44.7 percent spending more than 35 percent.

Transportation

Transportation, or the lack of it, can contribute to an individual's inability to access resources such as healthy food, employment, and healthcare. Individuals who do not own a personal vehicle often must rely on public transportation or friends and family for transportation to and from medical appointments

as well as every day trips like the grocery store and work. ValleyMetro, the public transportation provider for Maricopa County, offers public transportation options in the Scottsdale Osborn Medical Center service area. Several bus lines run throughout the area on the main streets, about every 20 minutes. The Scottsdale Osborn Medical Center service area that includes Phoenix and Tempe also have access to the Lightrail. The Salt River Pima-Maricopa Indian Community does not have access to ValleyMetro services. Finally, the city of Scottsdale operates a free trolley throughout the city, accessing neighborhoods and Old Town Scottsdale.

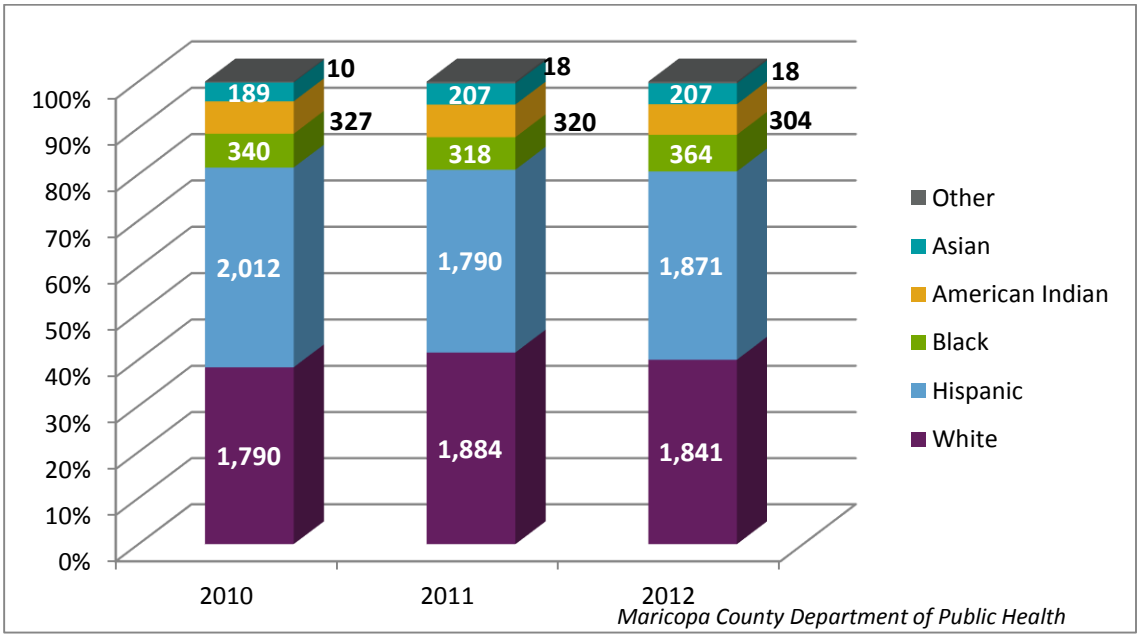
Of the estimated 146,284 households within the Scottsdale Osborn Medical Center service area, 10.6 percent reported no vehicle ownership in 2013, more than the HonorHealth service area and Maricopa County which reported no vehicles in 8 percent and 6.8 percent of households respectively (U.S. Census Bureau, 2015).

Birth Outcomes

Birth outcomes, like inadequate prenatal care, low birth weight, preterm births and infant mortality are social determinants. A lack or delay in prenatal care may indicate barriers to appropriate care, and can result in poor birth outcomes. Healthy People 2020 goals exist related to birth outcomes, including goals related to infant mortality, birth weight, and prenatal care.

The number of births in Scottsdale Osborn Medical Center service area residents has remained constant between 2010 and 2012, with around 4,600 births each year (Maricopa County Department of Public Health, 2015). The majority of births occur in white, non-Hispanic or Hispanic mothers. Figure 4.13 shows the number of births by race of the mother for 2010, 2011 and 2012.

Figure 4.13 Scottsdale Osborn Medical Center Service Area Births by Mother's Race/Ethnicity, 2010-2012

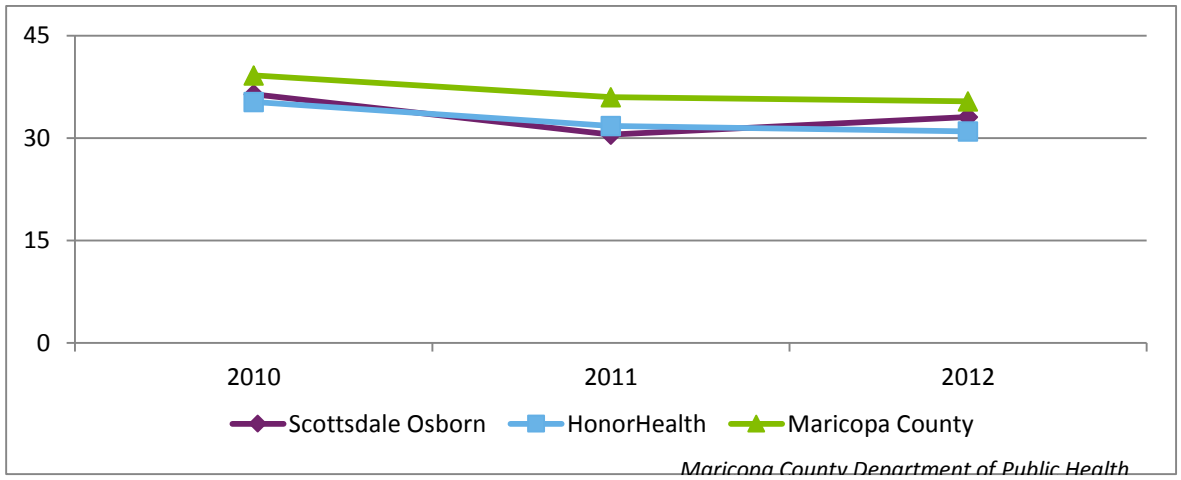


Maricopa County Department of Public Health

The service area for Scottsdale Osborn experienced higher teen birth rates compared to the HonorHealth service area but lower rates compared Maricopa County. Figure 4.14 shows the teen birth

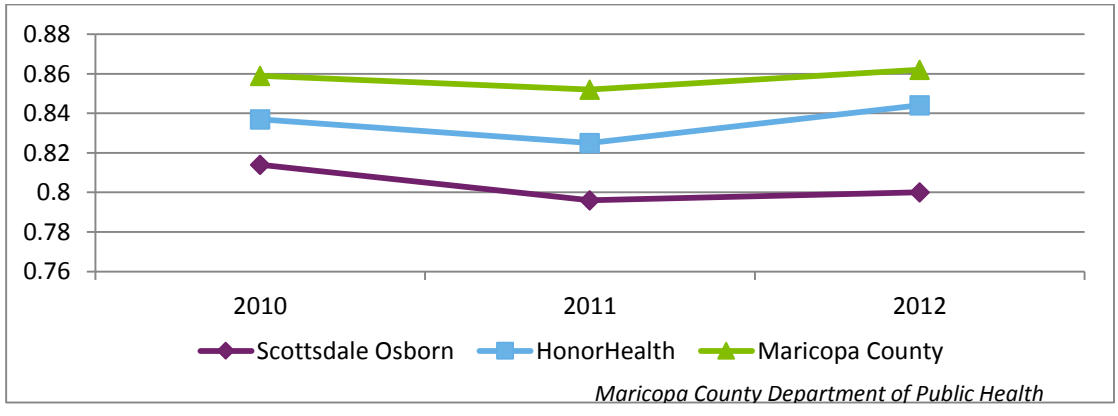
rates for each year in the service areas for Scottsdale Osborn Medical Center, HonorHealth, and Maricopa County. The teen pregnancy decreased for all locations between 2010 and 2012. In the hospital's service area, 485 females 15-19 gave birth in 2010 for a birth rate of 36.4 births per 1,000. In 2012, the rate had decreased to 441 births or 33.1 births per 1,000.

Figure 4.14 Teen Birth Rate by Service Area, 2010-2012



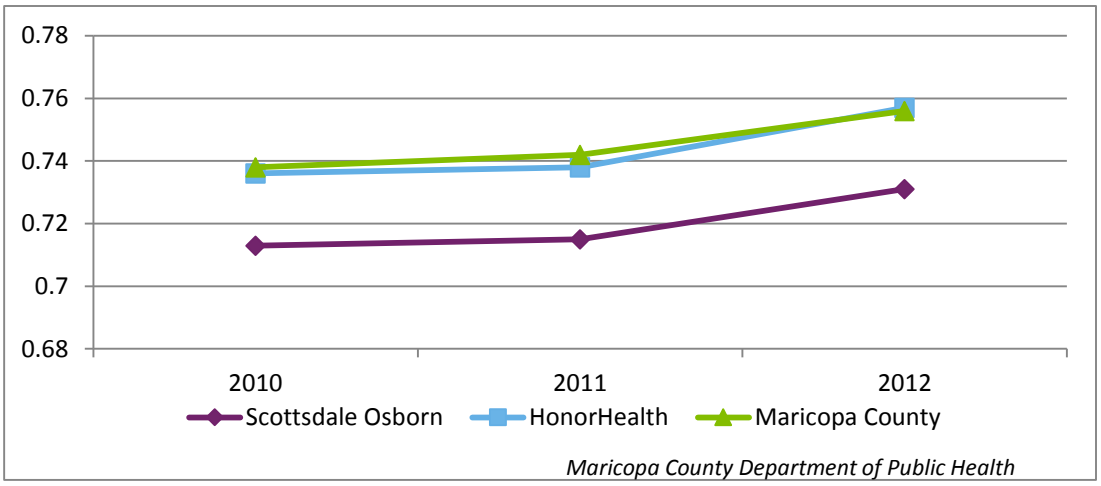
Early prenatal care can prevent negative birth outcomes by ensuring the mother is living a healthy lifestyle, not smoking or drinking and eating a healthy diet. Current recommendations encourage the first prenatal care visit in the first trimester (months 1-3). The Healthy People 2020 goals seeks to have 77.9 percent of pregnancies start prenatal care in the first trimester. Mothers in the Scottsdale Osborn Medical Center service area had over 80 percent of mothers starting prenatal care in the first trimester for all three years of analysis (Maricopa County Department of Public Health, 2015). The only racial groups that did not achieve the Healthy People 2020 goal by 2012 were Hispanic and American Indian mothers. Mothers living in the Scottsdale Osborn Medical Center service area had lower rates of first trimester prenatal compared to mothers in the HonorHealth service area or Maricopa County, see Figure 4.15.

Figure 4.15 Prenatal Care in First Trimester by Service Area, 2010-2012



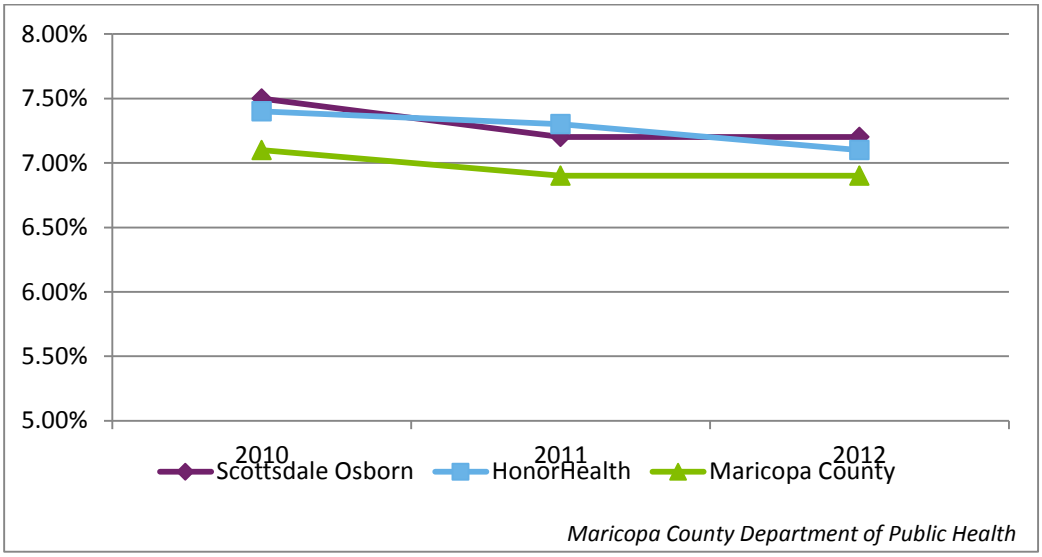
In addition to when prenatal care begins, the adequacy of the care also is considered when looking at risk factors for poor birth outcomes. Adequate prenatal cares means that the mother saw a provider early and frequently to ensure poor outcomes related to the mother and infant are avoided. Healthy People 2020 set a goal that 77.6 percent of pregnancies received adequate or better care. The percent of mothers receiving adequate prenatal care in Scottsdale Osborn Medical Center has increased each year, from 71.3 percent in 2010 to 73.1percent in 2012, however the Healthy People 2020 Goal was not achieved (Maricopa County Department of Public Health, 2015). A lower percentage of mothers received adequate prenatal care in the service area for Scottsdale Osborn Medical Center than in the HonorHealth service area and Maricopa County. Figure 4.16 shows the percent of mothers receiving early and adequate prenatal care.

Figure 4.16 Adequacy of Prenatal Care by Service Area, 2010-2012



Infant with low birth weights have a greater risk of poor outcomes compared to infants born at a healthy weight. A healthy weight infant has a birth weight between 2,500 grams and 4,249 grams or between 5 pounds 8 ounces and 9 pounds 4 ounces. Healthy People 2020 set a goal of no more than 7.8 percent of births having a low birth weight. The percent of births resulting in a low birth weight decreased between 2010 and 2012 in the service areas for Scottsdale Osborn, HonorHealth, and Maricopa County and all have met the Healthy People 2020 goal (Maricopa County Department of Public Health, 2015).

Figure 4.17 Low Birth Weight Births by Service Area, 2010-2012



Maricopa County Department of Public Health

The desired length for pregnancy is 40 weeks. Any delivery before 37 weeks is classified as preterm and may result in early childhood development problems for the infant. Recent campaigns have encouraged mothers and providers to deliver infants after 39 weeks when fetal development is complete. Healthy People 2020 set a goal to decrease the percent of preterm births to 11.4 percent, and Scottsdale Osborn Medical Center, HonorHealth and Maricopa County have met this goal. In 2012, the percent of births occurring before 37 weeks decreased for all locations, 9.1 percent in Scottsdale Osborn, 9.2 percent in HonorHealth and 9.4 percent in Maricopa County.

Over the last decades, the infant mortality, the number of infant deaths per 1,000 live births, has decreased drastically. Most infant deaths occur within the first 28 days of life and are normally related to preterm birth or complications related to pregnancy. Infant deaths occurring after 28 days are typically related to non-pregnancy related events such as infectious disease or unintentional injuries.

Healthy People 2020 set a goal of no more than 6.0 infant deaths per 1,000 live births. While the Scottsdale Osborn Medical Center service area did not meet the goal in 2012, HonorHealth and Maricopa County both had infant mortality rates below the Healthy People 2020 goal in 2012 with rates of 8.3, 5.9 and 5.9 respectively (Maricopa County Department of Public Health, 2015).

Table 4.5 Infant Mortality Rate by Service Area, 2010-2012

	Scottsdale Osborn Medical Center	HonorHealth	Maricopa County
2010	4.9	5.7	6.1
2011	5.7	5.8	5.8
2012	8.3	5.9	5.9

Maricopa County Department of Public Health

Behavioral Indicators

An individual's behaviors can impact his or her overall health. Some behaviors, such as smoking, have been identified as risk factors for cancer and other diseases, while other behaviors are risk factors for injuries, heart disease, and diabetes. Data to identify behaviors are normally collected through surveys coordinated at the federal level. Surveys used in this Community Health Needs Assessment include the Behavioral Risk Factors Surveillance System (adults), the Youth Risk Behavior Surveillance (14-18 year old), and National Survey of Children's Health (10-17 year old).

The Behavioral Risk Factors Surveillance System surveys the adult population annually to identify risk factors for chronic and infectious diseases for the adult population. The survey occurs in all 50 states, and is administered by each state. Data are analyzed at the national-, state- and county-levels.

- *Obesity*
- *Tobacco*
- *Alcohol*
- *Substance Abuse*
- *Mental Health*

The Youth Risk Behavior Surveillance analyzes risk factors in high school students. The survey reports data at the national and state level and is conducted every other year.

The National Survey of Children's Health collected data on the physical and mental health status of children under the age of 17. Data analysis occurs at the national and state level. The third iteration occurred in 2011/2012.

The Arizona Youth Survey surveys youths in Arizona to measure the prevalence of substance abuse in youth. The Arizona Criminal Justice Commission administered the survey at public and charter schools to students in 8th, 10th and 12th grade and is analyzed down to the county level.

Nutrition

Adequate nutrition includes eating enough servings of fruits and vegetables. In 2012, 19 percent of Maricopa County adults reported eating five or more servings a day of fruits and vegetables, slightly more than the 18.1 percent reported in Arizona (Maricopa County Department of Public Health, Office of Epidemiology, 2014). An estimated 22 percent of females ate five or more fruits and vegetables daily compared to 15.6 percent of males.

The Youth Risk Behavior Survey for Arizona asked several questions related to nutrition in 2013. One question asked if the student had eaten any fruit or drank 100 percent fruit juice in the last seven days. About 13.9 percent reported that they had not had any fruit or fruit juice, and 19.4 percent reported having fruit or fruit juice one to two times per day (Arizona Department of Education, 2013). Males failed to consume fruit or fruit juice more often than females, with 15.7 percent of males reporting no fruit compared to 12.3 percent of females. Females also had a greater percentage reporting one to two servings per days compared to males, with 21.5 percent of females getting one to two servings of fruit compared to 17.7 percent of males.

Another nutritional question asked on the Youth Risk Behavior Survey concerned drinking soda or pop. About 27.8 percent of Arizona youths did not have soda or pop in the past seven days, while 19.6 percent had at least one soda or pop per day. Females were less likely to have consumed soda or pop in the last seven days compared to males, with 31.7 percent reporting no consumption compared to 24.2 percent of males.

Obesity

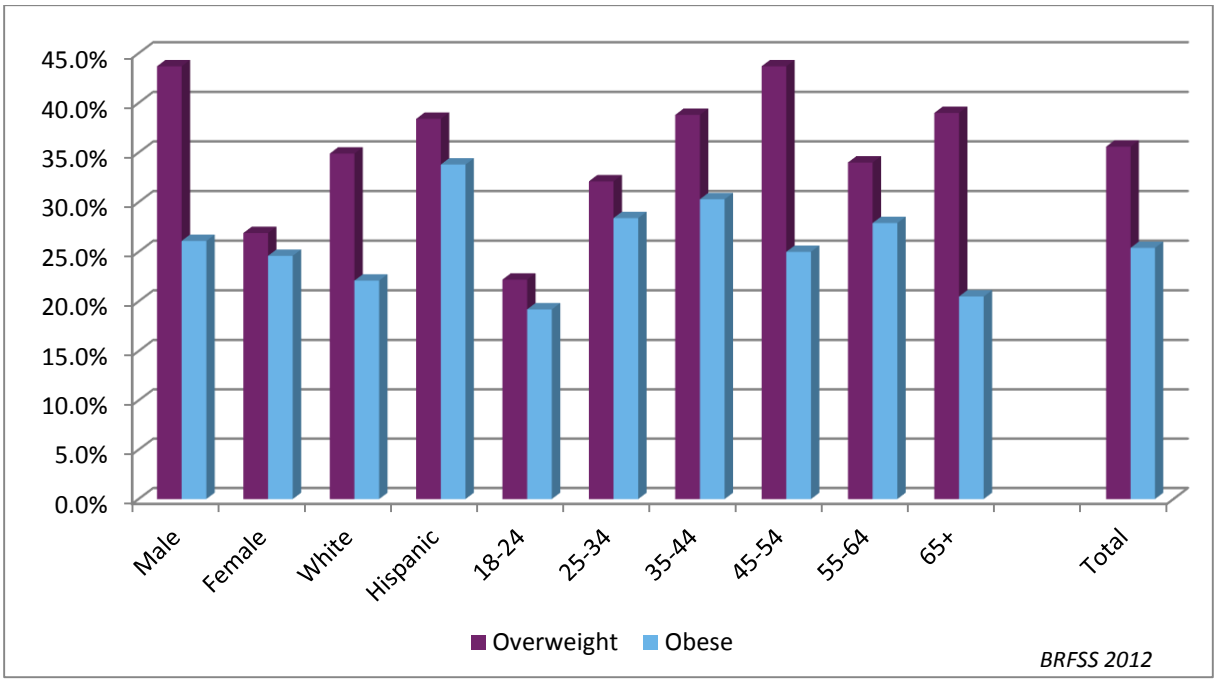
Obesity has become one of the most important indicators to determine the health of a community. Obesity can lead to chronic conditions such as Type II diabetes and heart disease. Research also has linked obesity to certain types of cancer.

Although genetics may contribute to some instances of obesity, behaviors such as physical activity and diet are drivers of obesity.

In 2012, 35.6 percent and 25.4 percent of the adult Maricopa County population were considered to be either overweight or obese (Maricopa County Department of Public Health, Office of Epidemiology, 2014). An individual is overweight if they have a body mass index between 25.0 and 29.9. An obese individual has a body mass index over 30.0.

Hispanics had a greater likelihood of being overweight or obese compared to White non-Hispanics, and males were more likely to be either overweight or obese compared to females.

Figure 4.18 Maricopa County Weight Status by Sex, Race and Age



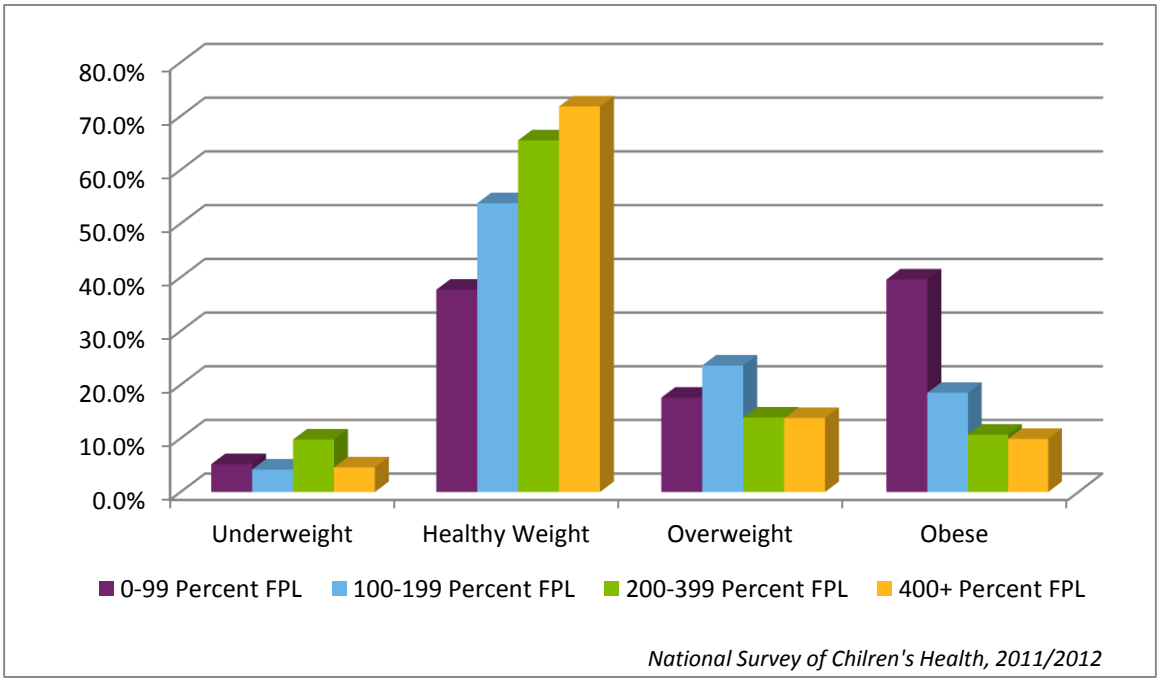
Arizona reported 36 percent and 26 percent as overweight and obese respectively.

Compared to the United States, Arizona had higher rates of obesity in youths age 10 to 17. The 2011/2012 National Survey of Children's Health estimated that obesity in Arizona was 19.8 percent compared to 15.7 percent for the nation (National Survey of Children's Health. NSCH, 2011/2012). Arizona also had higher rates of youth being overweight, 16.9 percent compared to 15.6 percent.

In Arizona, males had higher rates of obesity (24.7 percent) compared to females (14.6 percent), but more females were overweight, 18.1 percent versus 15.7 percent. The survey found 7.4 percent of White, non-Hispanic youths as obese and an additional 16.3 percent as overweight. Hispanic youths had 31.3 percent obese and 19 percent overweight. The difference between the races suggests that health disparities exist between races in areas that influence weight, attributable to genetics, culture, access to healthy food and other factors.

Besides potential health disparities existing between the races, the National Survey of Children's Health also indicate health disparities based on insurance status and poverty. Uninsured youths had a much higher obesity rate compared to insured youths, 30.7 percent versus 18.1 percent. Youths living at less than 100 percent of the federal poverty level had the highest rate of obesity. The obesity rate decreased at each level of poverty as shown in Figure 4.19.

Figure 4.19 Arizona Youth Weight Status by Federal Poverty Level (FPL), 2011/2012



Physical Activity

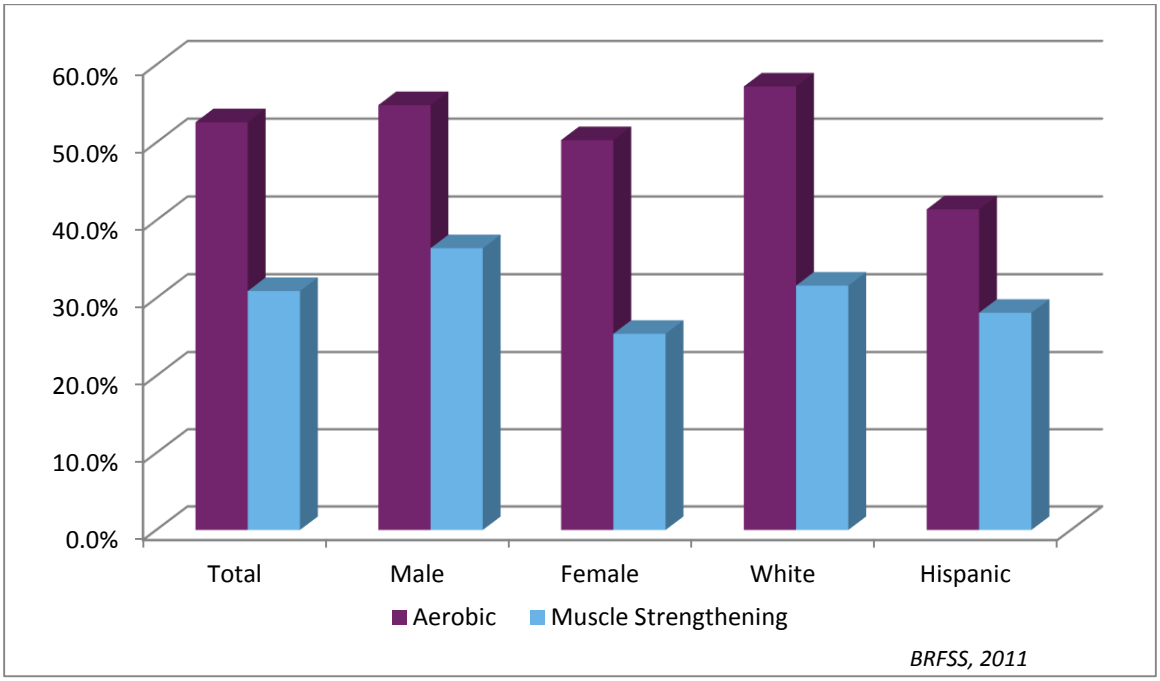
Physical activity can help individuals remain healthy by decreasing the risk for obesity, diabetes, heart disease and stroke. The CDC recommends that children or youth receive 60 minutes of physical activity

every day and adults receive 150 minutes of moderate aerobic activity and two or more days of muscle strengthening activity every week.

According to the 2013 Youth Risk Behavior Survey, 58.1 percent of Arizona high school students were not physically active for at least 60 minutes for five or more days (Arizona Department of Education, 2013). Females were more likely to be inactive compared to males, 66.8 percent vs. 49.6 percent). Arizona youth also were less active compared to the national rate of 52.7 percent of youths failing to be active for at least 60 minutes five days a week. Physical activity rates were similar for whites and Hispanics, with 58.4 percent of white non-Hispanic youths not being physically activity and 57.4 percent of Hispanic youths. About 17.3 percent of Arizona youths failed to participate in any physical activity.

In 2011, 52.6 percent of adults met the recommendation for aerobic exercise and 30.9 percent met the recommendation for muscle strengthening based on the Behavioral Risk Factor Surveillance System (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Figure 4.20 shows the percent of adults meeting the recommendations for aerobic and strength conditioning for selected populations.

Figure 4.20 Adult Physical Activity for Maricopa County by Selected Population, 2011



Tobacco Use

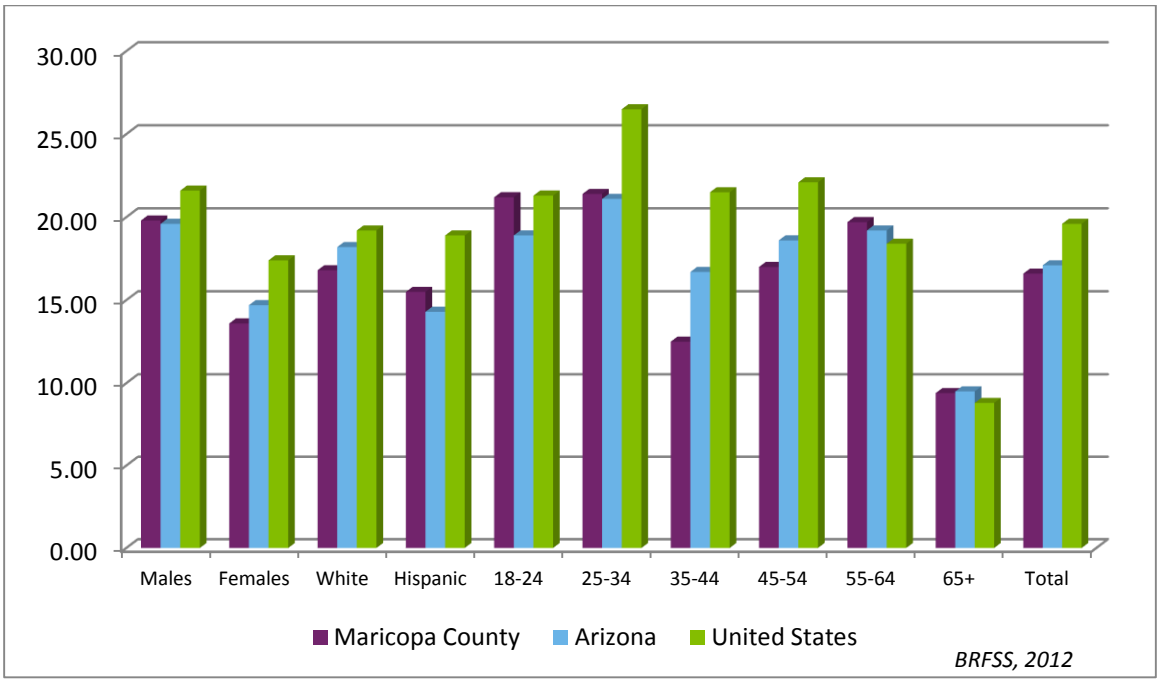
Smoking has been attributed to many different causes of death including cancer, heart disease and lower respiratory disease. Policy changes have resulted in a significant decrease in the number of individuals reporting current smoking. In 2012, 16.6 percent of Maricopa County residents reported they were current smokers and an additional 25.9 percent reported formerly smoking (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Males reported being a current or a former

smoker more often than females, 19.8 percent and 30.4 percent versus 13.6 percent and 21.6 percent. White non-Hispanics had a higher smoking rate than Hispanics, 16.8 percent versus 15.5 percent. Young adults, 18 to 24 and 25 to 34, reported the highest rates of smoking, 21.2 percent and 21.4 percent respectively. Retirees had the lowest current smoking rate at 9.4 percent.

Arizona had a higher smoking rate compared to Maricopa County at 17.1 percent. As seen in Maricopa County, males (19.6 percent) smoked more than females (14.7 percent) and White non-Hispanics (18.2 percent) more than Hispanic (14.3 percent).

Overall, residents of Maricopa County had lower smoking rates when compared to the rest of the United States. An estimated 19.6 percent of the adult population currently smokes. In addition, a greater percentage of Hispanic adults smoked in the United States compared to Maricopa County. See Figure 4.21 for current smoking comparisons between Maricopa County, Arizona, and the United States.

Figure 4.21 Current Smoking Rates in Maricopa County, Arizona, and United States by Sex, Race and Age



An estimated 14.1 percent of high school students in Arizona currently smoked cigarettes based on the 2013 Youth Risk Behavior Survey, which was less than the national rate of 15.7 percent (Arizona Department of Education, 2013). Males in Arizona (16.4 percent) were more likely to smoke than females (11.6 percent.)

In Arizona, 43.9 percent of high school students reported ever smoking, which was more than the national estimate of 41.1 percent. As see with current smokers, males (47.9 percent) were more likely to have tried smoking compared to females (39.9 percent.)

Alcohol Abuse

Alcohol abuse may have negative impacts on both the health of the individual and the individual's relationships at home and work. Two behavioral indicators that may suggest alcohol abuse are heavy drinking and binge drinking. Heavy drinking means a person had two drinks per day if male and one drink per day if female. Binge drinking means that a person had five or more drinks if male, or four or more drinks if female, on a single occasion.

In 2012, 5 percent of Maricopa County residents reported heavy drinking and 15.3 percent reported binge drinking (Maricopa County Department of Public Health, Office of Epidemiology, 2014). In Arizona, residents reported a heavy drinking rate of 5.1 percent and binge drinking rate of 15.3 percent, which was similar to the county rates. At the national level, 6.1 percent of adults reported heavy drinking and 16.9 percent reported binge drinking.

The percent of youths who reported ever using alcohol has decreased in Maricopa County, from 60.6 percent in 2004 down to 44.6 percent in 2014 (Arizona Criminal Justice Commission, 2014). Hispanic youths had a greater percentage of ever drinking compared to non-Hispanic youths, 47.8 percent compared to 43.1 percent. Females (46.6 percent) were more likely to have ever used alcohol than males (42.4 percent.)

Substance Abuse

Substance abuse, such as prescription drug use, has become an important public health issue. Unintentional poisonings, from either licit or illicit drugs, has surpassed motor vehicle accidents as the leading cause of unintentional injury deaths in the nation. In addition, heroin has recently made a comeback as a drug of choice due to its inexpensive cost compared to similar drugs like opioids pain killers.

The Substance Abuse and Mental Health Services Administration collects and analyzes data related to substance abuse and mental health disorders. In its most recent report, looking at data collected between 2005 and 2010, 16 percent of the population 12 years or older in the Phoenix-Mesa-Glendale Metropolitan Statistical Area had reported using any type of illicit drug within the last year (Substance Abuse and Mental Health Services Administration, SAMHSA, 2014). While less than the percentage reported for Arizona (16.9 percent), it was greater than the percentage for the United States (14.7 percent). The percentage of the population who reported marijuana use in the last year was the same for Phoenix, Arizona, and the nation at 10.7 percent. The Phoenix metropolitan area had a statistically significant difference in the percent of the population reporting prescription drug abuse compared to the United States, 6.1 percent versus 4.9 percent.

The Arizona Youth Survey asked about drug use, including both licit and illicit drugs. Both at the county and state levels, the percent of youths reporting past substance abuse had decreased in the 2014 survey (Arizona Criminal Justice Commission, 2014).

Prescription drug abuse, which includes pain killers (opioids), sedatives, and stimulants, was reported by 12.7 percent of youths in Maricopa County in 2014. About 9.8 percent abused pain killers, 5.3 percent abused sedatives and 4.5 percent abused stimulants.

About 2.9 percent of youths in Maricopa County reported ever using cocaine, 0.8 percent using heroin, 0.8 percent using methamphetamine and 25.7 percent using marijuana.

Physical Environment

Food Insecurity

Food insecurity exists when an individual is unable to access a sufficient quantity of affordable and nutritious food. It can result in malnutrition from lack of food or obesity from lack of healthy and nutritious food. People living with food insecurity may receive meals at food kitchens, receive groceries through food banks, or use government programs such as SNAP or free school lunches for children.

In 2013, 15.9 percent of Maricopa County residents lived with food insecurity, 617,971 people (Feeding America, 2013). Of children in Maricopa County, 25.4 percent, or 255,880 children lived with food insecurity. Arizona has a food insecurity rate of 17.5 percent overall and 28 percent for children. The United States rates are 15.9 percent and 21.6 percent respectively.

According to the Arizona Department of Education, about 26.7 percent of students enrolled in the Scottsdale Unified School District received a free or reduced price lunch in the 2014-2015 school year (Arizona Department of Education, 2015). Schools located within the Scottsdale Osborn Medical Center service area had 44 percent of students receiving a free or reduce price lunch. Statewide, about 55 percent of students receive a free or reduced-price lunch.

Parks and Recreation

According to the Centers for Disease Control and Prevention, parks can impact health by

- Increasing physical activity
- Improving mental health
- Increasing community engagement
- Reducing injuries (Centers for Disease Control and Prevention, 2013)

The 2015 City Park Facts from The Trust for Public Land reports information on the parkland for the 100 most populous cities in the United States, which includes six cities within Maricopa County: Phoenix, Mesa, Chandler, Glendale, Gilbert and Scottsdale (The Trust for Public Land, 2015). According to the report, the percent of parkland for each city ranged from 24.6 percent in Scottsdale to 2.8 percent in Mesa. Phoenix had the second highest percent of parkland, at 15 percent. The report also included the percent of the city population within 0.5 miles of a park for Mesa and Phoenix. Mesa had 60 percent of the population living within 0.5 miles while Phoenix had 45.2 percent of the population.

Air Quality

Phoenix was once a place where people suffering from tuberculosis came to heal in the clean, dry air. The history of HonorHealth began as a place to provide services to the families that travelled across the United States to Phoenix for tuberculosis treatment, arriving with nothing left to rebuild.

Today, Phoenix no longer has clean of air. In the most recent American Lung Association report on air quality, Phoenix ranked as the 12th worst city for 24-hour particle pollution and 10th worst city for ozone pollution (American Lung Association, 2015). Maricopa County received an F-grade for ozone and 24-hour particle pollution, putting people with asthma, COPD, cardiovascular disease and diabetes at risk for negative health outcomes such as increased emergency room visits in the days immediately following a poor air quality day. Other people at risk during poor air quality days include children, elderly and the poor who tend to live in areas near the source of the pollution.

According to Maricopa County Air Quality Department, part of the low scores for particle pollution is due to the dust storms that occasionally sweep across the county (D'Angelo, 2015). Efforts from the county are currently in place to decrease the impact of dust storms in the future.

Healthcare Resources

HonorHealth hospitals provide acute care throughout the northeast portion of the Phoenix metropolitan area. However, as healthcare evolves from the acute setting towards population health management, it is important that HonorHealth works with ambulatory facilities and other community partners to keep the community healthy. A review of existing healthcare resources within the community can identify gaps and new partnership opportunities.

- *Health Professional Shortage Areas*
- *Medically Underserved*
- *FQHC*
- *Other Hospitals*

Health Professional Shortage Areas

The Health Resources and Services Administration determines whether or not a geographic area, population group or facility is a Health Professional Shortage Area. If an area receives a shortage area designation, there are not enough health professionals practicing to meet the health needs of the population. Facility-based shortage areas include public and non-profit facilities, such as prisons, tribal health centers and federally qualified health centers (FQHC).

As of 2015, the Health Resources and Services Administration has identified 16 Health Professional Shortage Areas for primary care based on geography within Maricopa County. Of these, six occur within the HonorHealth primary service area, and one overlaps with part of the Scottsdale Osborn Medical Center service area. Table 4.6 shows the health professional shortage areas by location.

Table 4.6. Primary Care Health Professional Shortage Areas for Geographical Areas and Populations, 2015 HRSA

Health Professional Shortage Area	Scottsdale Osborn Medical Center	HonorHealth	Maricopa County
Ahwatukee			❖
Ajo			❖
Apache Junction			❖
Avondale/Tolleson			❖
Buckeye			❖
El Mirage			❖
Gila Bend			❖
Glendale		❖	❖
Guadalupe			❖
Low Income-Phoenix Central	❖	❖	❖
Low Income-Phoenix-South Central	❖	❖	❖
Low Income-Tempe	❖	❖	❖
Phoenix Sunnyslope		❖	❖
Phoenix-South Mountain			❖
Queen Creek			❖
Wickenburg		❖	❖

An additional 16 facility-based health professional shortage areas exist in Maricopa County, including HonorHealth partner Neighborhood Outreach Access to Health, or NOAH. Other health centers located within the HonorHealth service area include locations for Mountain Park, Adelante Healthcare and Valle Del Sol. Mountain Park has two locations, Adelante has one location and Valle Del Sol has one location within the Scottsdale Osborn Medical Center service area

The six health professional shortage areas in HonorHealth identified for primary care also have been identified for dental care. In addition to these six, the Salt River Pima-Maricopa Indian Community dental shortage area lies within the Scottsdale Osborn Medical Center and HonorHealth service areas.

The Health Resources and Services Administration has designated all of Maricopa County as a Health Professional Shortage Area for mental health.

Medically Underserved Areas and Populations

The Health Resources and Service Administration also classifies areas as Medically Underserved Areas/Populations when there are too few primary care providers, high infant mortality, high poverty or a high elderly population. Currently, 15 areas/populations have been identified as medically underserved areas within Maricopa County. Of the 15, eight occurred within the HonorHealth service area, and three overlapped with the Scottsdale Osborn service area. Table 4.7 lists the identified medically underserved areas in Scottsdale Osborn, HonorHealth and Maricopa County.

Table 4.7 Medically Underserved Areas and Population by Service Area, 2015 HRSA

Medically Underserved Area	Scottsdale Osborn Medical Center	HonorHealth	Maricopa County
Chandler Primary Care			❖
El Mirage			❖
Gila Bend			❖
Glendale		❖	❖
Guadalupe			❖
Low Income-I-Avondale/Tolleson			❖
Low Income-I-17 Corridor		❖	❖
Low Income-South Central Phoenix	❖	❖	❖
North Tempe	❖	❖	❖
Paradise Valley		❖	❖
Phoenix-South Mountain			❖
Rio Salado	❖	❖	❖
Sunnyslope		❖	❖
West Phoenix			❖
Wickenburg		❖	❖

Federally Qualified Health Centers

Currently, seven health centers have been designated as federally qualified health centers in Maricopa County. They include Adelante Healthcare, Maricopa County Health Care for Homeless, Maricopa Integrated Health Systems Clinics, Mountain Park Health Center, Native Health, Neighborhood Outreach Action for Health (NOAH) and Wesley Community Center. HonorHealth has a partnership with NOAH, which currently operates clinics in five locations within the cities of Scottsdale and Phoenix.

Other Acute Care Hospitals

Within the HonorHealth primary service area, most inpatient discharges occur in one of the five HonorHealth medical centers. Other hospitals utilized by patients living within the HonorHealth service area include Banner-University Medical Center Phoenix (formerly Banner Good Samaritan), Banner Desert Medical Center, St. Joseph's Hospital & Medical Center, Maricopa Medical Center, Mayo Hospital, Phoenix Children's Hospital and Abrazo Scottsdale Campus (formerly Paradise Valley Hospital). During the 12 months ending September 30, 2013, 36.5 percent of discharges of residents living within the HonorHealth primary service area occurred at a HonorHealth hospital.

Level 1 Trauma Centers include two HonorHealth hospitals: John C. Lincoln Medical Center and Scottsdale Osborn Medical Center as well as Banner-University Medical Center Phoenix, Maricopa Medical Center, Phoenix Children's Hospital, St. Joseph's Hospital & Medical Center, Chandler Regional Medical Center and Abrazo West Campus (formerly West Valley Hospital).

V. Morbidity & Mortality

Analyzing morbidity and mortality data can identify diseases that have a large burden on the community. A large burden could mean that many people die from a particular disease or many people experience a decrease in their quality of life from living with a disease. Morbidity and mortality result from a combination of health factors/risk factors and genetics. When possible, modifying the risk factors can reduce and eliminate morbidity and mortality. Genetic risk factors cannot always be modified; instead, the goal is to reduce complications and eliminate mortality through disease management.

Cancer

The most common cancers identified in Scottsdale Osborn Medical Center service area residents from 2005 to 2011 were breast cancer for women and prostate cancer for men. Table 5.1 shows the top 10 cancers by primary site for males and females for 2005-2011 (Arizona Department of Health Services, Cancer Registry, 2015).

Table 5.1 Scottsdale Osborn Medical Center Service Area Cancer Primary Sites by Sex, 2005-2011

Females	Males
Breast-1,537	Prostate-1,243
Lung-710	Lung-616
Colorectal-460	Coloreactal-464
Lymphoma-267	Bladder-315
Uterus-256	Lymphoma-259
Thyroid-254	Melanoma-255
Melanoma-174	Kidney-206
Ovary-151	Oral-164
Pancras-131	Leukemia-152
Bladder-118	Pancreas-123

Arizona Department of Health Services, Cancer Registry

In addition to the number of cases reported for breast cancer and melanoma, an additional 352 in situ breast cancer and 316 in situ melanoma cases were reported between 2005 and 2011. In situ cancer has not metastasized from the original site and is typically treated with only surgery to remove the cancerous cells.

Table 5.2 HonorHealth Service Area Cancer Primary Sites by Sex, 2005-2011

Females	Males
Breast-7,036	Prostate-6,348
Lung-3,075	Lung-2,914
Colorectal-1,890	Colorectal-2,000
Thyroid-1,292	Bladder-1,631
Uterus-1,136	Melanoma-1,270
Lymphoma-1,007	Lymphoma-1,137
Melanoma-863	Kidney-980
Ovary-693	Oral-743
Kidney-598	Leukemias-648
Pancreas-584	Pancreas-560

Arizona Department of Health Services, Cancer Registry

The top 10 primary sites by sex were similar in the HonorHealth service area.

Historically, the number of melanoma cases reported to the Arizona Department of Health Services Cancer Registry has been lower than expected (Newton, 2015). Review work by cancer registry staff identified that many physicians were removing cancerous cells in the office and not reporting the results to the cancer registry. Recent efforts have been undertaken by the cancer registry to inform physicians of the importance of reporting these cases. It is expected that the number of melanoma cases will increase in the future.

Cancer has been the leading cause of death in Maricopa County since 2009 and, in 2012, was the leading cause of death for all races/ethnicities. In the United States, cancer causes more deaths than all other causes except for heart disease. Some cancers occur due to behaviors that increase the risk for an individual, such as smoking and obesity. Smoking has been associated with cancer for several decades, being a leading cause for lung cancer and oral cancers. Recently, infectious diseases such as HPV have been connected to cancers.

Between 2010 and 2012, the age-adjusted death rate for cancer in the Scottsdale Osborn Medical Center service area decreased from 156.3 deaths per 100,000 residents to 151.9 deaths (Maricopa County Department of Public Health, 2015). Lung cancer had an age-adjusted death rate of 38.6 deaths per 100,000, making it the most common cancer causing death. Other common cancers included female breast cancer, colon cancer, male prostate cancer and pancreatic cancer.

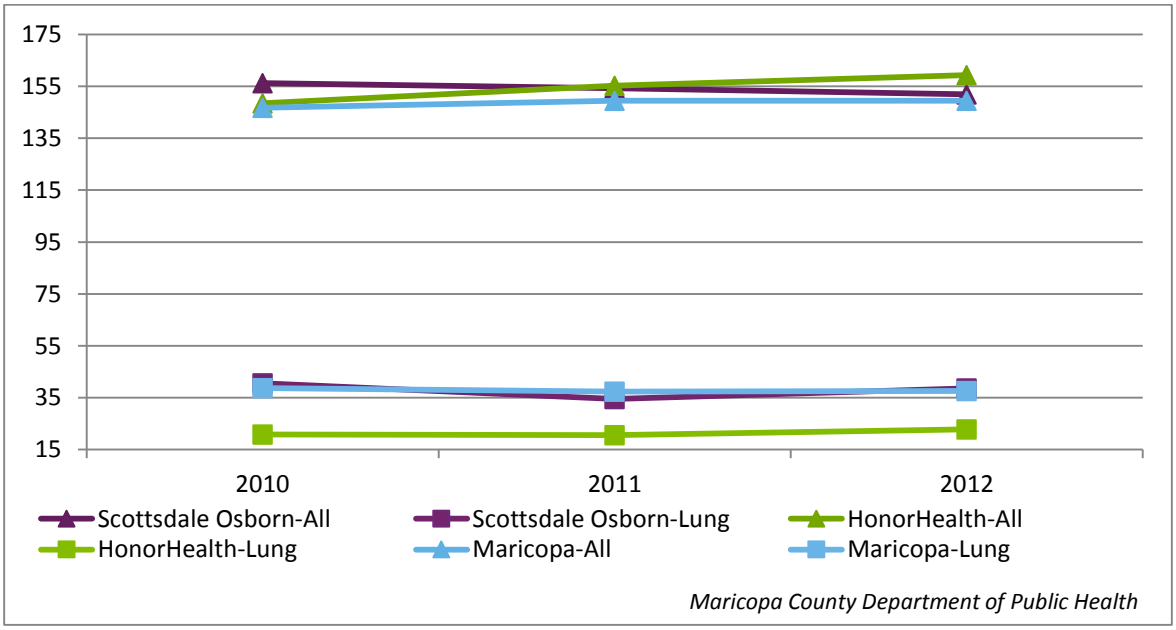
Table 5.3 Scottsdale Osborn Medical Center Service Area Age-Adjusted Death Rates for Selected Cancer Sites, 2010-2012

	2010	2011	2012
All Cancer	156.3	154.3	151.9
Lung Cancer	40.5	34.5	38.6
Breast, Female	30.5	19.4	25.8
Prostate	17.5	16.9	22.1
Colon	15.8	15.9	14.8
Leukemia	6.2	4.6	5.8
Pancreatic	9.1	12.3	12.2
Ovarian	8.3	8.3	6.9
Skin	2.7	3.4	3.4

Maricopa County Department of Public Health

The Scottsdale Osborn Medical Center service area had lower cancer age-adjusted death rates compared to the HonorHealth area but similar rates compared to Maricopa County.

Figure 5.1 Age-Adjusted Death Rates for Cancer and Lung Cancer by Service Area, 2010-2012



Besides modifiable behaviors, the most efficient method to decrease death from cancer is to identify it early through screenings. Screenings for breast cancer, colon cancer and prostate cancer exist that can detect cancer early and hopefully prevent death from cancer. Women over 40 should have regular mammograms to detect abnormalities in their breast. According to the 2012 BRFSS, 89.6 percent of females over 40 years of age reported receiving a mammogram, which met the Healthy People 2020 goal of 81.1 percent of the female population (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Only 62.7 percent of adults 50 years of age and older reported receiving screening for colon cancer through either a colonoscopy or sigmoidoscopy. Healthy People 2020 set a goal of 70.5 percent of the population older than 50 to have a colorectal cancer screening.

Heart Disease and Stroke

Heart disease is the leading cause of death in the United States and the second leading cause in Maricopa County. In 2012, it was the second leading cause of death for all races/ethnicities except for American Indians. Between 2010 and 2012, the age-adjusted death rate for heart disease decreased from 124.5 to 115.2 deaths per 100,000 residents (Maricopa County Department of Public Health, 2015). The Scottsdale Osborn Medical Center service area had a lower age-adjusted rate compared to the HonorHealth service area and Maricopa County.

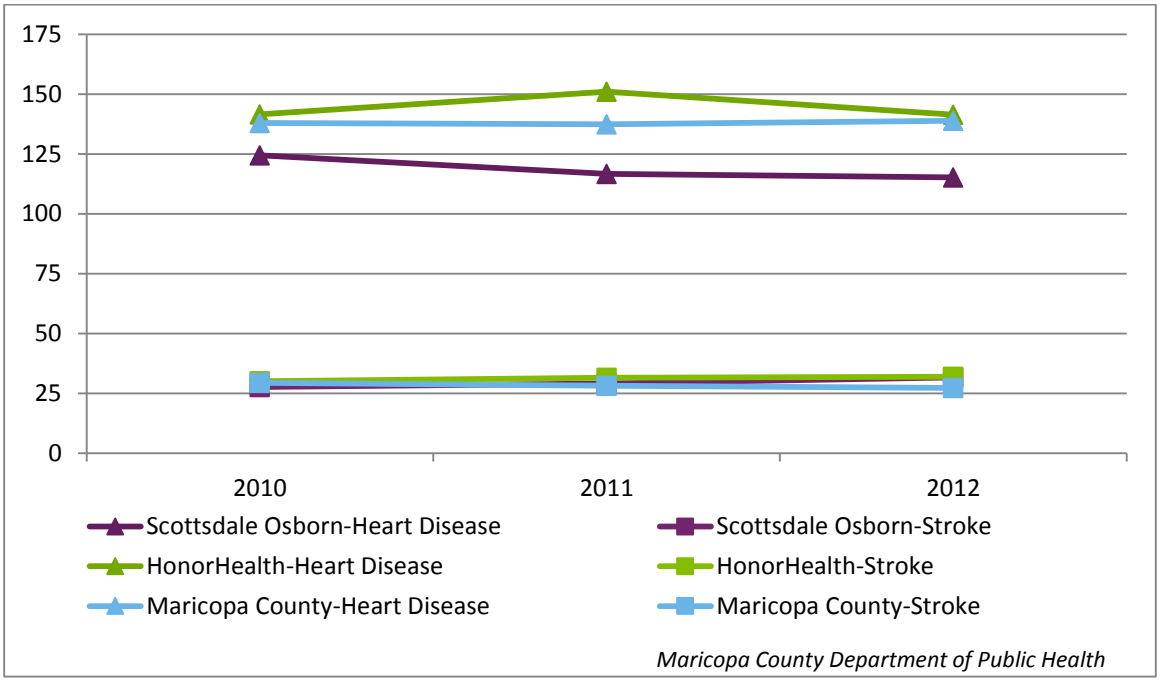
Scottsdale Osborn service area had a higher age-adjusted death rate for heart attack compared to HonorHealth and Maricopa County. The hospital service area death rate per 100,000 residents in 2012 was 25.2, HonorHealth was 21.7 and Maricopa County was 21.4 deaths. In 2013, 434 discharges within the Scottsdale Osborn service area occurred for heart attacks (HonorHealth, 2013). This resulted in a rate of 122.3 discharges per 100,000 residents, a lower rate than the 125.0 discharges per 100,000 observed for the HonorHealth service area and the 133.7 per 100,000 in Maricopa County.

Stroke, or cerebrovascular disease, is the sixth leading cause of death in Maricopa County. It was the fifth leading cause of death for Hispanics and Blacks and the fourth leading cause of death for Asians. Nationally, deaths due to stroke have decreased, but it remains the fifth leading cause of death.

In 2013, 770 individuals within the hospital service area required hospitalizations for a stroke, a discharge rate of 216.9 per 100,000 (HonorHealth, 2013). The discharge rate for the HonorHealth service area was 209.2 discharges per 100,000 in 2013 and the Maricopa County discharge rate was 228.4 per 100,000.

Scottsdale Osborn service area had a similar age-adjusted death rate for stroke as HonorHealth and Maricopa County (Maricopa County Department of Public Health, 2015). In 2012, the age-adjusted death rates per 100,000 residents were 31.7 for the hospital, 31.9 for HonorHealth and 27.2 for Maricopa County.

Figure 5.2 Age-Adjusted Death Rate for Heart Disease and Stroke by Service Area, 2010-2012



Information on prevalence of stroke, coronary heart disease and heart attack was reported at the county level. According to the 2012 Behavioral Risk Factors Survey Surveillance, about 3.7 percent of the adult population had been told they had coronary heart disease, 4.7 percent had a heart attack and 2.6 percent had a stroke (Maricopa County Department of Public Health, Office of Epidemiology, 2014). A greater percentage of men reported a heart attack compared to women, at 5.6 percent and 3.8 percent respectively and coronary heart disease, 3.9 percent versus 3.5 percent. A greater percentage of women reported stroke than men, 2.8 percent versus 2.5 percent. The percent of the population experiencing any of these three conditions increased with age, and white non-Hispanics reported the conditions more often compared to Hispanics.

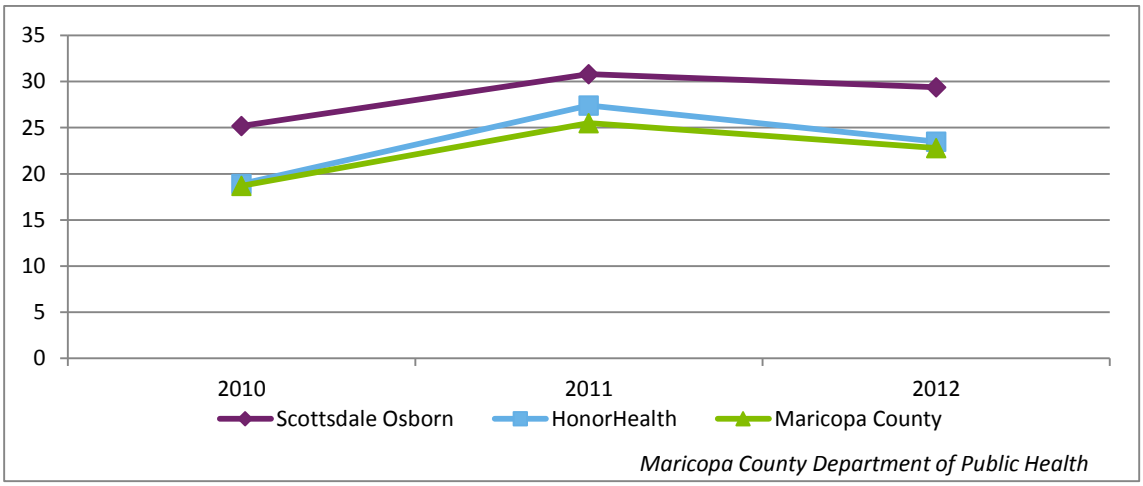
Diabetes

Diabetes affects one in 10 adults in the United States, with an expected increase to one in three by 2050 (Boyle, Thompson, Gregg, Barker, & Williamson, 2010). In 2012, 9.4 percent of adults in Maricopa County reported a diagnosis of diabetes (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Females had a slightly higher percent of adults reporting a diagnosis of diabetes compared to males, 9.6 percent and 9.2 percent respectively. The percent of adults reporting diabetes increased with age, with about one in six adults over the age of 65 reporting a diagnosis. Hispanics had a greater percentage of adults compared to white non-Hispanic adults, 11.2 percent versus 8.7 percent.

Diabetes resulted in 939 deaths, making it the seventh leading cause of death in 2012. It was the third leading cause of death for Blacks and Asians and the fourth leading cause of death for Hispanics and American Indians (Maricopa County Department of Public Health, Office of Epidemiology, 2014). In the Scottsdale Osborn Medical Center service area, the age-adjusted death rate for diabetes was higher

than the age-adjusted rates observed for HonorHealth and Maricopa County each year between 2010 and 2012 (Maricopa County Department of Public Health, 2015). The Healthy People 2020 Goal cannot be compared to the age-adjusted death rates because the goal includes deaths where diabetes was reported on the death certificate but may not have been the actual cause of death.

Figure 5.3 Age-Adjusted Death Rates for Diabetes by Service Area, 2010-2012



The hospital service area reported a hospital discharge rate for diabetes of 172.1 discharges per 100,000, a higher rate than the observed rates of 152.8 in HonorHealth and 155.8 discharges per 100,000 seen in Maricopa County (HonorHealth, 2013).

In 2014, 1,827 emergency department discharges occurred at Scottsdale Osborn Medical Center related to diabetes (HonorHealth, 2014). These discharges accounted for 5 percent of all emergency department visits.

Respiratory-related Diseases

Respiratory-related diseases include any condition that impairs breathing, such as asthma or chronic obstructive pulmonary disease (COPD). Although some respiratory diseases have a genetic component, many of the diseases develop from environmental conditions and behavioral habits, such as pollution and smoking.

In 2012, about 13.9 percent of the adult population reported a history of asthma (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Younger adults had a greater percent of their population reporting a history of asthma compared to older adults, with 19.2 percent of 18 to 24 year olds reporting asthma. COPD occurred in 5.4 percent of the adult population, with the greatest percentage reported in the adult population 65 and older, with 11.5 percent of the population experiencing the disease.

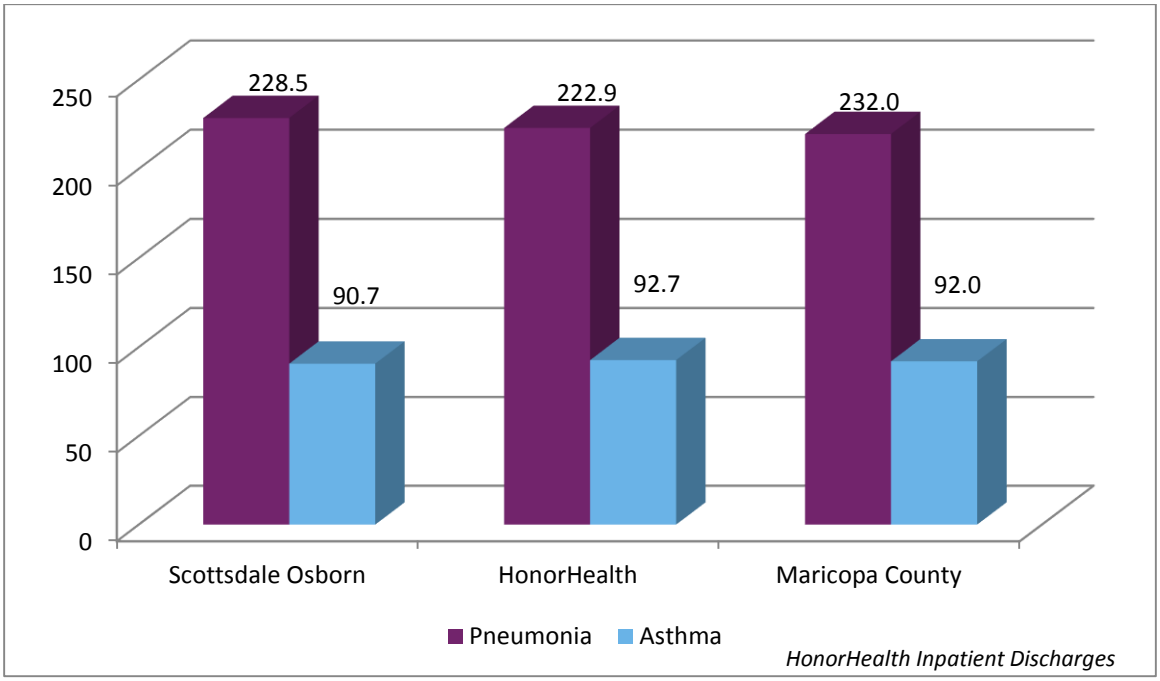
Only about 31.1 percent of the adult population reported receiving an influenza vaccination in 2012. Those 65 years old and older were the most likely to get the vaccination, with 53.8 percent of the

population. Hispanics were less likely to be vaccinated, with only about 21.7 percent of the population receiving the flu vaccine compared to 34.4 percent of the white non-Hispanic population.

In 2014, 1.8 percent of emergency department discharges at Scottsdale Osborn Medical Center occurred from complications related to asthma. An additional 0.9 percent of discharges occurring at Scottsdale Osborn Medical Center were related to pneumonia.

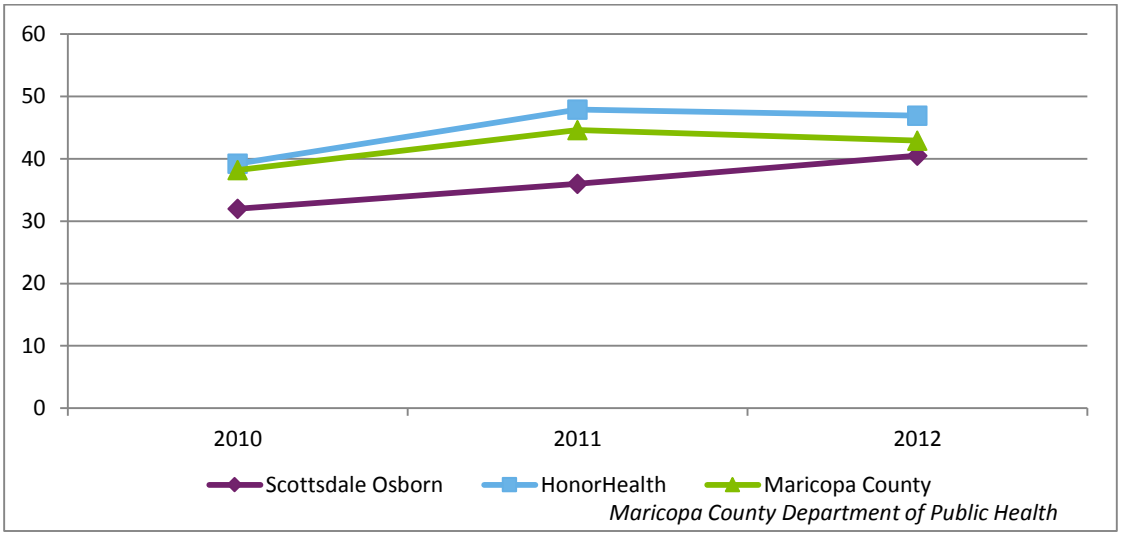
Inpatient discharges in 2013 for pneumonia in the Scottsdale Medical Center service area were similar to the HonorHealth service area and Maricopa County, while asthma discharge rates were lower (HonorHealth, 2013). Figure 5.4 shows the discharge rates for each condition by location.

Figure 2.4 Inpatient Discharge Rates for Pneumonia and Asthma by Service Area, 2013



Chronic lower respiratory disease was the third leading cause of death for 2012 in Maricopa County (Maricopa County Department of Public Health, Office of Epidemiology, 2014). In the Scottsdale Osborn service area, chronic lower respiratory disease caused the third most deaths in 2012, with an age-adjusted death rate of 40.5 deaths per 100,000 (Maricopa County Department of Public Health, 2015). Chronic lower respiratory disease includes deaths related to chronic bronchitis, asthma and COPD.

Figure 5.5 Age-Adjusted Death Rates for Chronic Lower Respiratory Disease by Service Area, 2010-2012



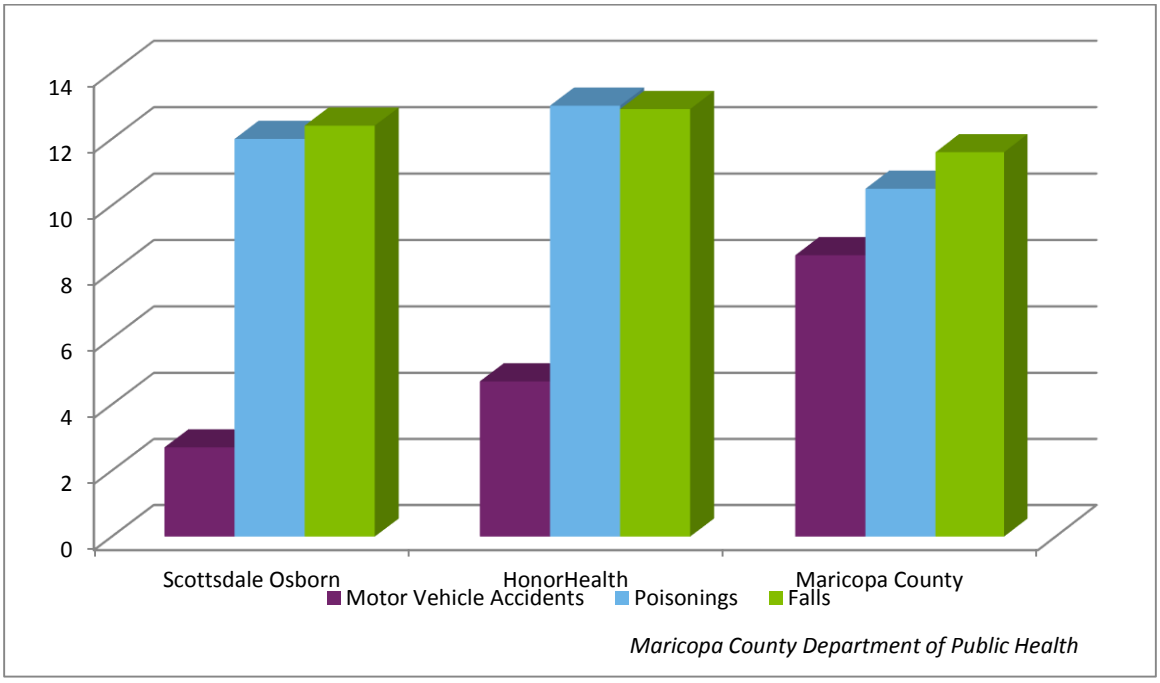
Deaths due to asthma are uncommon, with the death rate in the Scottsdale Osborn Medical Center service area ranging from 0.9 deaths to 2.4 deaths per 100,000 between 2010 and 2012. Pediatric asthma deaths occurred in 2011. HonorHealth also experienced low asthma death rates, ranging from 0.9 to 1.4 during the same time period. HonorHealth did have pediatric asthma deaths in 2010 and 2011. The age-adjusted death rate for Maricopa County compared to the age-adjusted death rates in Scottsdale Osborn, ranging between 0.8 deaths and 1.4 deaths per 100,000.

Unintentional Injuries

According the Centers for Disease Control and Prevention, unintentional injuries cause the most deaths for individuals 1 to 44 years old. Overall, unintentional injuries were the fifth leading cause of death in Maricopa County for 2012 (Maricopa County Department of Public Health, Office of Epidemiology, 2014). By race/ethnicity, unintentional injuries killed more American Indians than any other cause of death except for cancer, making it the second leading cause of death for that population. Unintentional injury was the third leading cause of death for Hispanics and the fourth leading cause of death for Blacks. Unintentional injuries include deaths from motor vehicle accidents, falls, unintentional poisonings and other unnatural causes of death.

Although motor vehicle accidents have historically caused the most unintentional deaths in the United States, unintentional poisonings and falls have recently surpassed car accidents for leading causes of unintentional injury deaths. In the Scottsdale Osborn Medical Center service area and Maricopa County, falls resulted in the most unintentional deaths (Maricopa County Department of Public Health, 2015). In the HonorHealth service area, the most deaths resulted from unintentional poisonings.

Figure 5.6 Age-Adjusted Unintentional Injury Death Rate by Mechanism and Service Area, 2012



The discharge rate for poisoning-related discharges in the Scottsdale Osborn Medical Center service area was higher than the discharge rate for HonorHealth and Maricopa County, 131.9 discharges per 100,000, 123.7 discharges per 100,000 and 105.6 discharges per 100,000 respectively (HonorHealth, 2013). These discharges included both unintentional and intentional poisonings. The hospital discharge data ICD-9 codes did not distinguish intent.

Hospital discharge ICD-9 data also cannot distinguish the mechanism of an injury. ICD-9 data could report a fracture but not if the fracture occurred from a fall, a motor vehicle accident or some other mechanism. Hospital discharge data has additional information for injuries. This data was only analyzed at the facility-level and not by where the patient lived. Therefore, only total encounters are reported.

Scottsdale Osborn Medical Center had the second most number of encounters related to falls and the third most encounters related to poisoning for all HonorHealth hospitals in 2014 with 491 poisoning encounters and 3,551 falls (HonorHealth, 2014).

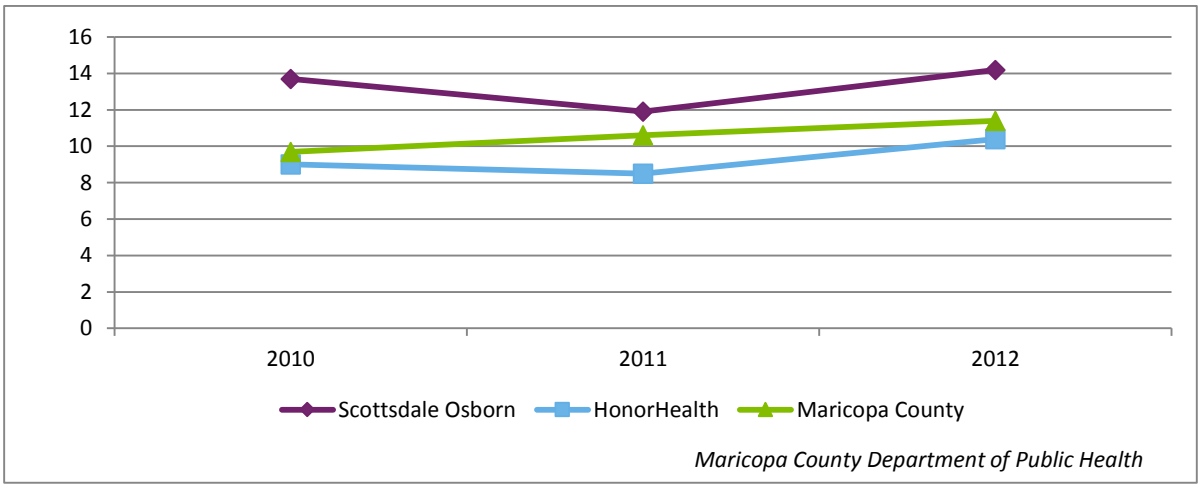
Liver Disease

Liver disease is a complex disease that has multiple potential causes. Causes of liver disease include genetics, alcohol use, and infectious disease such as Hepatitis. Liver disease was the ninth leading cause of death in Maricopa County for 2012, but was not a leading cause of death for the United States (Maricopa County Department of Public Health, Office of Epidemiology, 2014).

In Maricopa County, most deaths from liver disease involved alcohol abuse. American Indians also experienced the highest death rate from liver disease. About 8 percent of liver disease deaths in Maricopa County occurred in American Indians; however, American Indians only made up 1.6 percent of

the population. The Scottsdale Osborn Medical Center service area had higher age-adjusted death rates for liver disease compared to HonorHealth and Maricopa County (Maricopa County Department of Public Health, 2015). And, as seen for Maricopa County, American Indians experienced a greater burden from liver disease than other race/ethnicity groups.

Figure 5.7 Age-Adjusted Liver Disease Death Rates by Service Area, 2010-2012



Mental Health

Residents living in the Phoenix-Mesa-Glendale metropolitan statistical area had a greater percentage of adults reporting a major depressive episode in the last year compared to the state and nation, 7.4 percent, 7 percent and 6.6 percent respectively (Substance Abuse and Mental Health Services Administration, SAMHSA, 2014). In 2012, 18.1 percent of Maricopa County residents reported being diagnosed with a depressive disorder (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Females had a greater percentage reporting a depressive disorder compared to males, 19.9 percent versus 16.1 percent. White non-Hispanic adults also reported a greater percentage compared to Hispanics, 19 percent versus 17 percent. Looking at depressive disorder by age, retirees, 65 years old and older, reported the lowest percentage at 13.3 percent. Individuals just entering the workforce, 18 to 24 years old, and those nearing retirement age, 55 to 64 years old, had the highest percentage at 22.4 percent and 24.3 percent respectively.

When comparing depression rates in Maricopa County to the rates in Arizona and for the United States, Maricopa County rates are lower than the state but tend to be higher than the rates for the United States. Arizona had an overall rate of depressive disorder of 18.8 percent and the United States had a rate of 18 percent

The discharge rate for psychoses in 2013 for the Scottsdale Osborn Medical Center service area was 344.8 discharges per 100,000, a rate that was higher than the discharge rate of 256.4 in Maricopa County (HonorHealth, 2013). This rate only included discharges from acute hospitals settings and did not include discharges from behavioral health and rehabilitation hospitals. Psychoses discharges refer to abnormal condition of the mind, or having a loss with reality. This included discharges related to

dementia, alcohol and/or drug use, schizophrenia, and mood disorders such as depression and bipolar disorder. In the emergency department, 2 percent of discharges from Scottsdale Osborn were related to psychoses (HonorHealth, 2014).

For all mental health disorders, the discharge rate was 410.8 per 100,000 residents in 2013. This rate was also higher than the rate for Maricopa County, 314.0 discharges per 100,000 residents.

In 2012, 553 individuals committed suicide in Maricopa County for an age-adjusted death rate of 13.9 deaths per 100,000 residents, making suicide the eighth leading cause of death (Maricopa County Department of Public Health, Office of Epidemiology, 2014). In 2012, 60 individuals living within the Scottsdale Osborn Medical Center service area committed suicide, resulting in a higher death rate for suicide, 16.6 deaths per 100,000, than Maricopa County (Maricopa County Department of Public Health, 2015). The death rate for HonorHealth also was lower than the Scottsdale Osborn rate at 15.4 deaths per 100,000.

In the hospital service area, white non-Hispanics committed suicide at a higher rate than all other races. Individuals aged 45 to 54 had the highest unadjusted rate for suicide followed by 55 to 64 and 65 to 74. Males had a unadjusted death rate for suicide that was 2.5 times the rate for females, 24.7 and 9.7 deaths per 100,000 respectively.

Alzheimer's Disease

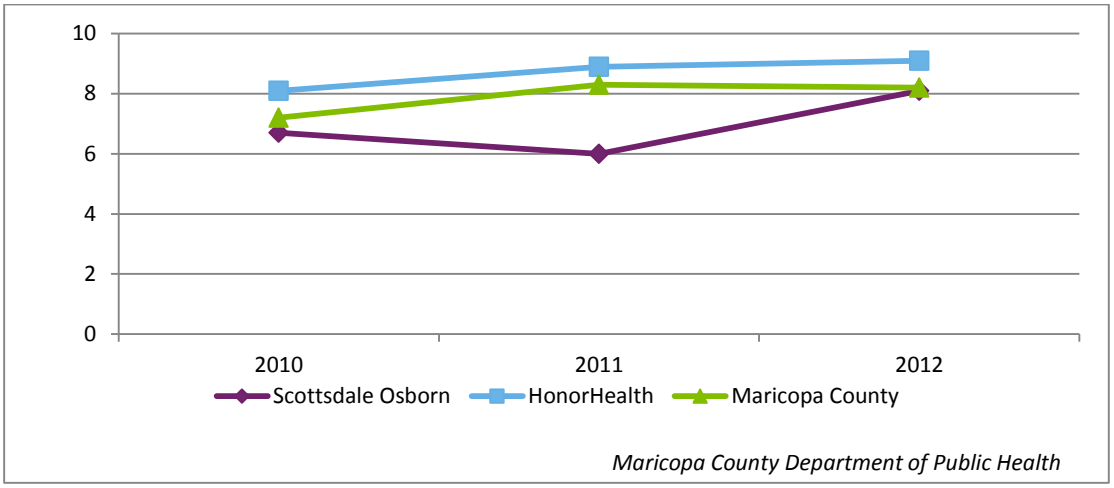
Alzheimer's disease has become a major public health concern in recent years. It was the fourth leading cause of death in Maricopa County in 2012 with 1,518 deaths. Alzheimer's disease typically affects those over 65 but can affect younger individuals with early-onset Alzheimer's disease. A recent report from the Alzheimer's Association estimates that 120,000 Arizonans lived with Alzheimer's disease in 2014 (Alzheimer's Association, 2015). The report estimated that Arizona will have the second largest percent increase in cases by 2025, with 200,000 Arizonans living with Alzheimer's.

The Scottsdale Osborn Medical Center service area had a unadjusted death rate of 42.9 deaths per 100,000 in 2012 (Maricopa County Department of Public Health, 2015). This rate was higher than the Maricopa County death rate of 38.5 deaths per 100,000 but lower than the HonorHealth service area rate of 45.5 deaths per 100,000.

Parkinson's Disease

Parkinson's disease is a neurological disease that causes motor symptoms such as tremors. In recent years, Parkinson's disease has become a leading cause of death in Maricopa County, surpassing deaths due to influenza and pneumonia. Scottsdale Osborn service area reported lower deaths rates from Parkinson's disease compared to HonorHealth and Maricopa County (Maricopa County Department of Public Health, 2015). Figure 5.8 shows the death rates from 2010 to 2012.

Figure 5.8 Age-Adjusted Death Rate for Parkinson's Disease by Service Area, 2010-2012

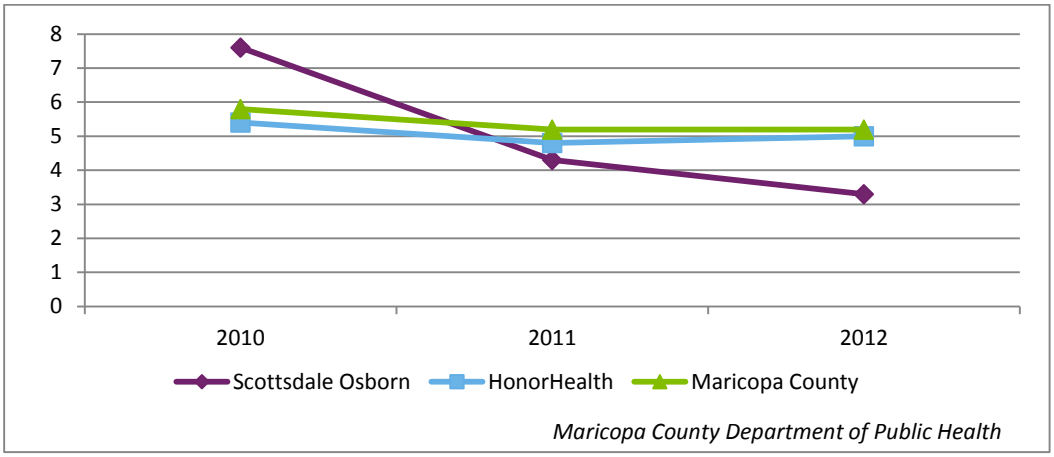


Violence

The death rate for homicide in Maricopa County has decreased over the last few years. In 2012, the age-adjusted death rate in Maricopa County was 5.2 deaths per 100,000 residents (Maricopa County Department of Public Health, 2015). This rate met the Healthy People 2020 Goal of 5.5 deaths per 100,000.

Figure 5.9 shows that the age-adjusted death rate for homicide in the Scottsdale Osborn service area was lower than the age-adjusted death rates observed in the HonorHealth service area and Maricopa County in 2011 after being higher in 2010.

Figure 5.9 Age-Adjusted Death Rate for Homicide by Service Area, 2010-2012



Males experienced higher death rates from homicide compared to females at all three analysis levels. Due to the small number of homicides observed in the Scottsdale Osborn service area and the small populations for non-white populations, no conclusions can be drawn when looking at race/ethnicity.

A report from the Children's Action Alliance had 26,066 reports of child abuse and neglect in 2013 for Maricopa County children (Children's Action Alliance). The most recent Child Welfare Report had 14,680 reports of child abuse or neglect in Maricopa County between April 1, 2014 and September 30, 2014 (Arizona Department of Child Safety). Forty percent of the reports suggested that the child(ren) were in immediate or impending danger of harm.

According to the Arizona Department of Health Services, one in four women will experience domestic violence in her lifetime (Arizona Department of Health Services). Domestic violence results in 18.5 million health care visits every year, putting a preventable burden on hospitals and the emergency department. Arizona Department of Health Services collaborates with partners across the state to assist women and their children in domestic violence situations. The National Domestic Violence Hotline reported 1,985 calls from Arizona in the first half of 2013 (The National Domestic Violence Hotline, 2013). More than half of the calls were from Maricopa County. The survivors of domestic violence were most often supported by making arrangements for the victim to seek immediate services at a shelter.

Oral Health

Poor oral health can contribute to poor overall health. Oral infections can easily spread to the rest of the body, causing sepsis and even death. Only about 63.3 percent of adults reported visiting a dentist in the past year in 2012 (Maricopa County Department of Public Health, Office of Epidemiology, 2014). Often times, when individuals lack a dental home, they seek care in the emergency department for treatment of tooth aches and other oral problems. In 2014, 1.9 percent of emergency department discharges occurred for oral health issues (HonorHealth, 2014).

The majority of cases related to oral health issues were not admitted as an inpatient. Therefore, the number of inpatient discharges cannot be reported due to the small sample size.

Tooth decay is the most common childhood health condition, impacting more children than diseases like asthma and diabetes. About 52 percent of 4 year olds and 75 percent of third graders have tooth decay in Arizona (Arizona Department of Health Services, 2009). Tooth decay occurred more often in children who did not have dental insurance and were from a minority population, specifically Hispanic or American Indian.

Infectious Disease

Infectious diseases are classified based on their route of infection, the organ systems they infect, or whether or not they can be prevented through vaccination. Infectious disease data is not available below the county level.

Vaccinations prevent common childhood diseases such as measles, mumps, and pertussis. When too many individuals forgo vaccination, these diseases can return. In 2012, a pertussis (whopping cough) outbreak continued in Maricopa County, resulting in 867 cases throughout the county. The majority of cases occurred in infants and school-age children 5-19 years of age. These age groups accounted for 44

percent of all cases. No cases of measles were reported in 2012 and only three cases of mumps occurred.

During the 2014-2015 school year, 47 schools offering kindergarten within the Scottsdale Osborn Medical Center service area reported immunization rates to the Arizona Department of Health Services (Arizona Department of Health Services, 2014-2015). The vast majority schools reported 90 percent immunization coverage for DTap, Polio, MMR, and Hepatitis B, but there were some schools that did not report the 90 percent that is considered necessary for herd immunity. There were some schools that reported less than 80 percent, with the lowest percentage reporting only 57.1 percent coverage for DTap, 76.2 percent for Polio, 54.8 percent for MMR and 82.1 percent for Hepatitis B. Most schools had less than 5 percent of parents signing a personal belief exemption for at least one immunization, but several schools also reported over 15 percent of students having a personal exemption, with the highest being 17.9 percent.

During the 2014-2015 school year, 35 schools reported sixth-grade immunization data (Arizona Department of Health Services, 2014-2015). As seen with the kindergarten data, the majority of schools reported 90 percent immunization coverage for Tdap, meningococcal, and MMR. Most schools reported less than 5 percent of parents signing a personal belief exemption, with the highest being 25 percent (majority of exemption was for meningococcal immunization).

Some of the most common infectious diseases occur through the consumption of food. These diseases, referred to as foodborne, infect millions of people each year. Researchers estimate that one in six Americans get sick each year from a foodborne illness, or an individual will experience 0.6 cases of illness per year (Scallan, Hoeskstra, & Angulo, 2011). The most common foodborne diseases in 2012 were Campylobacter, Salmonella and Shigella.

Sexually transmitted diseases occurred most often in young adults (15-34 years of age). The most common sexually transmitted disease was Chlamydia, which infected 19,132 individuals in Maricopa County in 2012 (Maricopa County Department of Public Health, Office of Epidemiology, 2014). The majority of these cases occurred in females, although this tends to be related to females receiving well woman exams that detect the disease rather than an actual higher incidence of disease in the population. In 2012, 395 new cases of HIV were reported and 215 cases of AIDS. HIV and AIDS cases occurred most often in males compared to females and Blacks compared to other races.

VI. Focus Groups and Key Informants

Qualitative data collection focused on the strengths of HonorHealth to identify service gaps and areas of improvement. Focus groups and key informant interviews took place to identify the perceived strengths, weaknesses and service gaps from within the community and the HonorHealth network. After analysis of the data, the themes identified in the focus groups were found to align with the themes identified in the key informant interviews. Specific strengths, challenges and gaps were identified specifically for Scottsdale Osborn Medical Center as well as for HonorHealth as a whole. Special focus was given on the social determinants of health and health disparities to better understand where HonorHealth and Scottsdale Osborn Medical Center can help address these needs.

Strengths

Both the focus group participants and the key informants stated that the quality of care received at HonorHealth hospitals was excellent. Participants recognized that staff were knowledgeable and courteous and the facilities provided a comfortable atmosphere with multiple services and specialties. Both focus groups and key informants noted the personalized care received at HonorHealth hospitals.

Key informants noted the growing physician network as a strength. The physician network expanded services to a greater part of the network, providing more people access to primary care physicians. They also noted HonorHealth's commitment to serving the community with the numerous programs offered throughout the system, such as educational lectures and screenings.

Weakness

Both focus group participants and internal key informants noted room for improvement in post-discharge disease management. Some focus group participants stated that after being discharged from the hospital that post-discharge information was not communicated sufficiently. Key informants noted that the addition of more social workers and case managers and the expansion of the transition specialist program could help patients with post-discharge transition and prevent readmissions.

Another area for improvement related to discharge was communication. Focus group participants expressed frustration that communication varied amongst the staff, leading to confusion about the patient's care. Both focus group participants and key informants noted a need for better communication and advertisement of the different programs and services that are offered to the community.

Gaps

Discussions with focus group participants and key informants identified a single common need or gap within the community that is not being met with current services offered through HonorHealth and specifically Scottsdale Osborn Medical Center: mental health services. Focus group participants mentioned that mental illness created a barrier between them as a patient and the provider. One

participant at a non-Scottsdale Osborn Medical Center focus group stated that when providers became aware of her husband's mental illness diagnosis he was treated differently. Key informants noted both inpatient and outpatient behavioral health services were needed.

A second gap, indirectly related to health, was transportation. Within the HonorHealth service area, many residents lacked reliable transportation, often relying on public transportation to attend doctor appointments or other services. Focus group participants noted that while many payers offer reimbursement for using taxis or dial-a-ride, it was not always feasible when the length of the appointment was unknown or if the service was needed immediately. Internal key informants noted that the lack of transportation was a barrier for many residents to utilize the different programs and services offered by the network.

Besides these gaps, internal key informants also noted gaps in services related to geriatric care, substance abuse services, heart disease, community education, and resources to help community members meet basic needs related to food, housing and transportation. External key informants noted that gaps in services existed specifically for behavioral health, oral health and services for children with special health care needs.

Finally, all participants agreed that a gap still exists regarding health insurance. Focus group participants noted a need for navigators to understand what is included with a particular insurance plan. Frustration existed for many participants when changes in their plan resulted in the need to find a new primary care physician or changes in coverage and costs. Focus group participants also did not seem aware of the Financial Assistance Policy that HonorHealth maintains to assist patients with payment of their medical bills.

VII. Prioritization of Community Needs

2015-2017 Scottsdale Osborn Medical Center Needs

After reviewing the data, HonorHealth staff identified five needs within the Osborn service area to address:

- Mental Health
- Substance Abuse
- Geriatric Health
- Chronic Disease Prevention and Management
- Social Determinants of Health

Although there are other needs within the community, these five were identified as being priority needs based on the magnitude of the problem, the severity, health disparities, community feedback, feasibility of HonorHealth to address and the consequences of inaction. The five identified needs are not prioritized further because each need have different levels of importance based on the different criteria used to identify the five priority needs.

Each prioritized need has at least one corresponding Healthy People 2020 Goal Topic. HonorHealth can contribute to the overall health improvement by identifying ways physicians, nurses and other hospital staff can work together to make a healthier HonorHealth.

Mental Health

Mental health includes the emotional, psychological and social well-being of an individual. A person may experience mental health problems throughout his or her life and different factors, such as genetics and life experiences, may contribute. It is estimated that one in five Americans experience a mental health issue, with one in 10 experiencing major depression and one in 20 living with a serious mental illness such as schizophrenia, bipolar disorder or major depression (U.S. Department of Health & Human Services).

Individuals living within the Scottsdale Osborn service area had higher rates of hospitalization for mental health diagnoses compared to the Maricopa County. The death rate for suicide was also higher in the service area residents compared to Maricopa County.

Focus group and key informants both identified mental health as a priority need within Scottsdale Osborn and HonorHealth. In addition, the Health Resources and Services Administration has classified all of Maricopa County as a Health Professional Shortage Area for mental health.

The high rates of hospitalization and suicides, the concerns expressed by community members and HonorHealth staff, and the designation by the federal government, all demonstrate a need for mental health services within the community.

The Healthy People 2020 has identified *Mental Health and Mental Disorders* as a health topic. Healthy People 2020 also identified *Health-Related Quality of Life and Well-Being* as a health topic. The goals

and objectives for these topics will be reviewed for alignment for the Community Health Needs Assessment Implementation Plan as appropriate.

Substance Abuse

Substance abuse, particularly prescription drug abuse, has been an acknowledged national problem in recent years. The number of deaths associated with opioids has increased dramatically and, recently, deaths associated with heroin also have increased.

Tobacco and illegal drug use were higher in Maricopa County compared to the United States and Arizona youth also reported higher rates of smoking compared to the United States. Deaths due to unintentional poisoning and liver disease were higher in both the Scottsdale Osborn and the HonorHealth service areas compared to Maricopa County.

Key informants noted the revolving door atmosphere that seems to exist within the emergency department in regards to patients with substance addictions. Focus group participants also noted a lack of substance abuse services in Maricopa County.

The Healthy People 2020 has identified *Substance Abuse* as a health topic. In addition, Healthy People 2020 has also identified *Tobacco Use* as a health topic. The goals and objectives for these topics will be reviewed for alignment for the Community Health Needs Assessment Implementation Plan as appropriate.

Geriatric Services

Scottsdale Osborn has a growing elderly population, with more than one in 10 being 65 years of age or older. This growing population segment has unique healthcare needs, such as Alzheimer's disease, trauma due to falls and infectious diseases like pneumonia.

Scottsdale Osborn had higher death rates for Alzheimer's disease compared to Maricopa County. Although rates were lower for chronic lower respiratory and Parkinson's disease, they were higher for HonorHealth compared to Maricopa County.

Several HonorHealth staff noted a need to develop a geriatrics program within the hospitals. Focus group participants expressed concerns for their elderly parents, specifically in regards to their parents not always understanding the medical information they receive.

The Healthy People 2020 has identified *Older Adults* as a health topic. In addition, Healthy People 2020 has also identified *Dementias, Including Alzheimer's Disease* as a health topic. The goals and objectives for these topics will be reviewed for alignment for the Community Health Needs Assessment Implementation Plan as appropriate.

Chronic Disease Prevention and Management

Chronic diseases include diseases like cancer, heart disease and diabetes, and are the leading cause of death in the Osborn service area, as well as in the United States. The number of people living with a chronic disease has increased, and many people now live with multiple chronic diseases.

Prevention and early detection are key to ensure complications do not result from chronic disease. For example, although most people are receiving the appropriate screenings for cancer, there are still many people who are not and health disparities exist.

Key informants noted a need for more prevention and education program within HonorHealth. Focus group participants suggested expanding transition care and other services to improve disease management as well as to help community members learn about classes and screenings.

Healthy People 2020 has identified several health topics related to chronic disease. Topics that may be aligned with the Community Health Needs Assessment Implementation Plan include *Cancer, Diabetes* and *Heart Disease and Stroke*.

Social Determinants of Health

The community surrounding the Scottsdale Osborn Medical Center has several areas of need that go beyond medical care. Social determinants of health can result in disparities in health outcomes because they can prevent an individual from accessing needed resources.

Scottsdale Osborn has a large Hispanic population and about one in 10 speaks English "less than well." Almost 50 percent lives below 200 percent of the federal poverty level and 25 percent lack health insurance.

HonorHealth staff noted a need to address the barriers, such as transportation, housing, employment, cost of healthcare, and health literacy. Focus group participants mentioned utilizing services at Desert Mission to receive healthcare and food.

Healthy People 2020 has a health topic specifically for *Social Determinants of Health*. Other health topics that may align with the prioritized need include *Access to Health Services, Maternal, Infant and Child Health, and Oral Health*.

Other Needs

HonorHealth acknowledges that there are other needs within the community that are not being addressed in this Community Health Needs Assessment. These include communicable disease prevention, women's and children health, prenatal care, unintentional injury prevention, and violence. HonorHealth will continue to provide programs and services that address these needs as part of normal operations but will focus specifically on developing and identify strategies and services to address the five priority needs.

Conclusion

HonorHealth will work with its partners to identify strategies and evidence-based practices. Using Healthy People 2020 as a guide, specific goals will be developed to help us achieve the goal of a healthier community. This work will help HonorHealth live out its mission *to improve the health and well-being of those we serve*.

VIII. Appendices

Appendix A: Key Terms and Data Sources

Crude Death Rate- A rate calculated by taking the number of deaths within a population and dividing it by the total population. The rate is then expressed as a unit of the population, such as per 100,000 population.

Age-Adjusted Death Rate- A technique used to allow populations to be compared despite differences in the age of the populations. Due to deaths occurring more often in older populations, a population with a larger proportion of older persons would have a higher mortality rate. This calculation removes the effect of the age difference between the populations. A standard age distribution, based on the 2000 U.S. Decennial Census is used to weight the age-specific rates.

Infant Mortality Rate- The infant mortality rate is the number of infant deaths per 1,000 live births. Infants are classified as being under 1 year of age.

Adequate Prenatal Care- Based on the Adequacy of Prenatal Care Utilization Index, it considers both the timing of when prenatal care began and the number of visits after care was started and compares the number of visits to the number of visits recommended by the American College of Obstetricians and Gynecologists.

American Community Survey- A survey administered by the United State Census Bureau to collect detailed demographical information on the United States population annually. Due to the sample size, areas with a population greater than 65,000 have annual population updates based on a single year of data, areas with a population greater than 20,000 have annual population updates based on three years of data, and areas less than 20,000 have annual population updates based on five years of data.

Arizona Cancer Registry- A population-based surveillance system that collects, manages, and analyzes information on the incidence, survival, and mortality of persons having been diagnosed with cancer. (Arizona Department of Health Services, 2005-2011)

Behavioral Risk Factor Surveillance System- A health-related telephone survey that collects state data about U.S. residents regarding health-related risk behaviors, chronic health conditions, and use of preventative services.

Youth Risk Behavior Surveillance System- A survey that monitors six types of health-risk behaviors that contribute to the leading cause of death and disability among youth and adults.

Arizona Youth Survey- A county-based survey designed to gather school- and community-level data for substance abuse prevention that is administered by the Arizona Criminal Justice Commission.

National Survey of Children's Health- A survey that collects data on physical and mental health status, access to quality health care, and information on the child's family, neighborhood, and social context.

Appendix B: Focus Group Questions

1. Currently or in the past, what [healthcare] programs or services do you/have you utilized?
    a. Where have you accessed these services?
    b. How have these services been helpful?
    c. What could be improved upon with these services?
2. When thinking about the larger healthcare services (e.g. physician offices, rehabilitation centers, hospitals) in your community, are there any issues preventing you or other community members from accessing these healthcare services?
    a. How can Scottsdale Lincoln Health Network help make these services more accessible to you and your community?
3. When thinking about the larger healthcare services (e.g. physician offices, rehabilitation centers, hospitals) in your community, are there any issues preventing you or other community members from fully utilizing these healthcare services?
    a. How can Scottsdale Lincoln Health Network help make these services easier to utilize by you and your community?
4. What are the strengths of the (SLHN facility) you visit? (or what do you like best about the facility/services offered?)
5. What services are not provided at [specific] facility?
6. During the past 12 months, have you had to make a choice between affording healthcare and meeting other basic needs (e.g. housing, transportation, food, etc.)?
7. What other basic needs exist in your community?

Appendix C: Focus Group Demographic Questions

1. What is your gender? ☐ Male ☐ Female ☐ Transgender

2. What is your race? (Check all that apply)

☐ White/Caucasian ☐ Black/African American ☐ Asian or Pacific Islander

☐ American Indian or Alaska Native ☐ Other: _____

3. How do you describe yourself?

☐ Hispanic/Latino ☐ Non-Hispanic

4. What is your age? _____

5. What is the primary language spoken in your home?

☐ English ☐ Spanish ☐ Other: _____

6. Are you currently serving or have you ever served in U.S. Armed Forces,

Reserves, or National Guard?

☐ Yes

☐ No

7. Do you currently have healthcare insurance?

☐ Yes

If yes, check all that apply:

☐ Private (e.g. Aetna, Blue Cross Blue Shield, Cigna, COBRA, etc.)

☐ Medicaid (e.g. AHCCCS, ALTCS)

☐ Medicare

☐ Medicare Advantage Plan

☐ Other:_____

☐ No

8. Do you have a primary care physician?

☐ Yes ☐ No

9. In the past 12 months, have you been seen at an emergency room?

☐ Yes If yes, please provide hospital name:_____

☐ No, I have not been seen at an emergency room in the last 12 months.

10. In the past 12 months, have you stayed overnight at an inpatient facility (e.g. hospital, rehabilitation center, etc.)?

☐ Yes If yes, please provide the name of the facility: _____

☐ No

11. Do you need public transportation to access your healthcare services?

☐ Yes ☐ No

12. During the past 12 months, how often have you had to make a choice between affording healthcare and meeting other basic needs (e.g. housing, transportation, food, etc.)?

☐ Often ☐ Sometimes ☐ Rarely ☐ Never

13. Have you ever been diagnosed with any of the following: *(check all that apply)*

☐ High blood pressure

☐ Mental Health Condition (e.g. depression, anxiety, bipolar, etc.)

☐ Diabetes

☐ Respiratory conditions (e.g. Asthma, COPD, Emphysema, etc.)

☐ Weight management issues

☐ Cancer

☐ Cardiovascular conditions (e.g. heart disease, CHF, high blood pressure, etc.)

☐ Other: _____

14. Please check if any of the following are health concerns for you or your community. (Check all that apply).

	For Me	For my community
Access to Preventative Services	☐	☐
Mental Health Services	☐	☐
Cancer	☐	☐
Chronic Lower Respiratory Disease/Asthma	☐	☐
Diabetes	☐	☐
Health Insurance Coverage	☐	☐
Healthcare Associated Infections	☐	☐
Unintentional Injuries/Accidents	☐	☐
Obesity	☐	☐
Oral Health	☐	☐
Substance Abuse	☐	☐
Suicide	☐	☐
Teen Pregnancy	☐	☐
Tobacco Use	☐	☐
Heart Disease	☐	☐

15. How many people (adults and children) live in your house including you?

_____

16. How much do you think your household's total earnings were for 2014?

(Please include in your total income money from all sources for all persons living in your household.)

☐ Less than $15,000 ☐ $50,000 to $74,999

☐ $15,001 to $24,999 ☐ $75,000 to $99,999

☐ $25,000 to $49,999 ☐ $100,000 or more

Appendix D: Key Informant Interview Questions

Internal Interviews

1. What are the strengths of the (facility name)?

2. As you know, the needs of patients may be different from the (facility name) geographic service area, Could you identify what are the unmet needs of residents in the service area?

3. Could you identify some broad areas of social determinants of health that need to be address within the (facility name) service area that impact the community health and ability to access care?

4. Could you share your thoughts about (facility name) in terms of:

    a. Clinical, office and administrative staff engagement with patients

    b. Level of community engagement

    c. Available services, and gaps in services

    d. Patient's satisfaction with services and with interactions with clinical and office staff

5. What are some areas of improvement that you can identify for your facility/services provided/staff/equipment?

6. What types of barriers do patients of (facility name) encounter when seeking services? (e.g. not enough translators, lack of social workers)

7. What is (facility name) doing to address health disparities in its service area?

a. Medical/clinical services

b. Non-clinical

c. Social determinants of health (e.g. food, housing, stress, addiction, social support, etc)

8. How would the new merger enable the network to better identify and meet community needs?

External Interviews

1. What are the strengths of the (facility name)?

2. Could you identify what are the unmet health needs of residents in the (facility name) service area?

3. Could you identify some social determinants of health that need to be address within the (facility name) service area that impact the community health and ability to access care? (e.g. housing, transportation, unemployment, stress, etc)

4. What is your perception/opinion of (facility name) in terms of:

a. Clinical, office and administrative staff engagement with patients

b. Available services, and gaps in services

c. Patient's satisfaction with services and with interactions with clinical and office staff

6. What types of barriers do patients of (facility name) encounter when seeking services? (e.g. not enough translators, lack of social workers)

7. Describe the level and quality of engagement of (facility name) with the community

Appendix E: ICD-9 and ICD-10 Codes

ICD-9 Codes used for Hospitalization Data

Heart Attack	410
Stroke	430-438
Diabetes	250
Pneumonia	480-486
Asthma	493
Mental Health	290-319
Psychoses	290-299
Poisonings	960-989
Oral Health	520-529

E-Codes for Injury Data

Poisoning	E850-E869, E950-E952, E962, E972, E979.6, E979.7, E980-E982
Falls	E880-E886, E888, E911-E913, E953, E957, E963, E968.1, E983, E987
Motor Vehicle Accidents	E810-E819, E989.5, E968.5, E988.5

ICD-10 Codes for Causes of Death

Cancer	C00-C97
Lung Cancer	C33 and C34
Breast Cancer	C50
Prostate Cancer	C61
Colon Cancer	C18-C21
Leukemia	C91-C95
Ovarian Cancer	C56
Skin Cancer	C43
Pancreatic Cancer	C25
Heart Disease	I00-I09, I11, I13, I20-I51
Heart Attack	I21-I22
Stroke	I60-I69
Diabetes	E10-E14
Chronic Lower Respiratory	J40-J47
Asthma	J45-J46
Motor Vehicle Accidents	V02-V04, V09.0, V09.2, V12-V14. V19.0-V19.2, V19.4-V19.6, V20-V79, V80.3-V80.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2
Falls	W00-W19
Accidental Poisoning	X40-X49
Liver Disease	K70, K73-K74
Suicide	U03, X60-X84, Y87.0
Alzheimer's Disease	G30
Parkinson's Disease	G20-G21
Homicide	U01-U02, X85-Y09, Y87.1

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