

Community Health Assessment for Pima County: Fall 2016

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Introduction

The purpose of a community health assessment is to determine the health status of a population. This serves to measure the gaps between a community's health outcomes and needs, and the health services and care being provided to the community (Parker, 2016). This community health assessment will evaluate the health status and health gaps within Pima County, Arizona. To achieve this, the assessment will examine both the components directly related to health, such as health statistics and health resources from Pima County, but also many factors that impact the health of individuals and the community. The related factors that will be covered include the geography, demographic information, socioeconomic stratification, cultural factors, political and governmental organizations, housing, food supply, education, school health and nutrition programs, social welfare programs, transportation, occupational data, and other community factors within Pima County. The examination of these factors will aid in the process of drawing conclusions about the overall health status of Pima County, which populations are most vulnerable or lacking health services, and what health infrastructure is already in place to address these needs. This will help identify future priorities in developing health education and programming. The overall goal of the community health assessment is to lay the foundation for the creation of a program implementation and evaluation plan that specifically addresses the health needs of a population/group in Pima County.

1. Geography and Environment of Pima County

The Pima County physical geography is a diverse landscape that includes flowering deserts, many rolling hills, a plethora of dry riverbeds, treacherous canyons, and many

mountainsides that include the Santa Rita Mountains and the most well-known: Mt. Lemmon, a large tourist destination for people to drive up to. The entire terrain covers nearly 500 square miles ranging from the city of Tucson to Sonoita to Santa Cruz. The Valley of Pima County (elevation of 2,388 feet) consists mainly of the desert landscape with occasional hills, while the outskirts of the county are known to be more mountainous with desert landscape and in some places full forests consisting of pine trees primarily (Lemmon, n.d.). In the desert regions of the county, much of scenery consists of dry dirt, saguaro cactus, barrel cactus, jumping chollas, prickly pear cactus, and mesquite trees. While this terrain can seem unfriendly, there are many hiking trails through the desert that are popular for locals or tourists to enjoy. One of these trails includes one of the most famous trails in all of Arizona, known as The Arizona Trail which begins in Pima County (Tucson area) and works its way up to the northern border of Arizona. Transitioning into the mountainous regions, it includes five mountain ranges [Rincon Mountains (Eastside), Tucson Mountains (Westside), Santa Catalina Mountains (Northern), Santa Rita Mountains (Southern), and the Tortolita Mountains (Northwestern)], and these areas consist of elevations all the way up to 9,157 feet (peak of Mt. Lemmon) with similar cacti as the valley does (Lemmon, n.d.). Also, in the higher elevations of the mountains, pine trees and mesquite trees become more dominant as the weather is suitable for these species of plants to thrive.

The weather of Pima County averages a high of 83.7 degrees Fahrenheit while the low averages at 58.1 degrees Fahrenheit. The highs of Pima County reach their peaks through the months of May through September (highs reaching 105 degrees Fahrenheit and lows reaching 80 degrees Fahrenheit) and the cooler months of October through April reaching highs of 65-70 degrees Fahrenheit and lows dropping to 42 degrees Fahrenheit (U.S. Climate Data, n.d.). The

county sees a majority of days with clear skies and sunshine throughout the calendar year with the exception of monsoon season which occurs from late June to late August. Monsoon season the county will see many cloudy days with constant days of flash flooding, strong wind speeds, and dust storms known to many locals as “haboobs”. Monsoon season can pose a major threat to the landscape and people inhabiting the county as the flash floods and powerful winds cause mudslides, flooded streets, trees being uprooted, and house damage.

Pima County has a diverse population with many races/ethnicities inhabiting it. Ranging all the way from Caucasian, African American, American Indian, Alaska Native, Asian, and Pacific Islander (McKinley, n.d.). Yet with the Pima County the geography and environment affect each ethnicity similarly as the biggest effects environmentally in Pima County are from monsoon season. When monsoon season strikes it encompasses all regions of the county and it affects all parts of it. Having a higher socioeconomic status would help as this could potentially mean having a sturdier, better built home that will not be affected as much by the monsoons as compared to someone who is homeless. Homeless people are the main demographic in Pima County that will see the greatest impact by the environment. The county recognizes 1,762 people are homeless which accounts for 16% of the total 18% of all homeless people in Arizona (McKinley, n.d.). These people face the effects of the environment the most as they do not have many options for shelter when monsoon season strikes, the summer's reach temperatures of 105 degrees Fahrenheit, or when the winter comes and temperatures drop to 42 degrees Fahrenheit and sometimes even into the 30's. This has become a major concern for public health professionals in the county as a solution is trying to be found. Actual statistics have

not been found on how many homeless people are directly affected by the environment of Pima County, yet it is a growing concern that public health professionals have witnessed.

Continuing with the issue of the impact homeless people see due to the environment, it is evident solutions need to be discovered in order to prevent more harm/injury. Fortunately, public health professionals and local volunteers have found some temporary means to help bring the homeless people out of the harsh conditions that the county can face. An organization called Primavera is a nonprofit that works to help people of homeless status find a home that the organization sponsors in order to help these people get off the streets and out of the open environment. Primavera provides many of the other needs that this demographic desires, as well, as they provide financial education, asset-building services, and incentive-based savings plans that will help get these people back on their feet and in the direction of never being stranded in the environment again (Primavera, n.d.). Primavera works with 776 diners, 8 restaurants, and countless volunteers that raise over \$175,000 each year to help provide food, homes, and financial stability to the homeless population of Pima County (Primavera, n.d.). If it weren't for organizations like Primavera and countless others, this demographic would be stranded in the heat, the cold, or severe storms that pose serious health risks. With the heat comes dehydration or potentially skin cancer from being in the sun constantly. In the winter, health risks like frostbite, pneumonia, or hypothermia become common if out in the cold for too long. Finally, monsoon season can bring on unintentional injuries, drowning (if caught in a major flash flood), struck by lightning, and poor breathing conditions with the mass amounts of dust blown into the air (Zanes Law, 2016). This is where resources like Primavera (with many locations throughout the county) are vital in helping the homeless population in staying safe and avoiding harm.

2. Demographic Information

In the state of Arizona there are approximately 6.4 million people who reside here (U.S. Census, Arizona, 2015). There are about 15 different counties alone within the state of Arizona. Pima County contains the second largest population in Arizona at about 980,000 people, Maricopa County is the largest at about 3.8 million people (U.S. States Census, 2015). With a population this large there are several demographic categories that each person can fall into. These categories being race, gender, and even age divides the population in order to get a more accurate and personal description of the occupants in Pima County as opposed to counting everyone as just numbers in a population.

Pima County's population is nearly one million people, by separating the entire population by three age groups, one is able to break down and get more in depth when calculating the entire population (U.S. Census, Pima, 2015). Breaking down the age group of the entire population, one can find out that the median age group, which means the average age among the population, is about 37 years old (U.S. Census, American Fact Finder, 2010). In Pima County there are approximately 226,000 people ages 18 and under, they make up for 26.3% of the population (U.S. Census, American Fact Finder, 2010). As for adults ages 19-64, there are about 559,000 which make up the bulk of the population at 58.3% in Pima County (U.S. Census, American Fact Finder, 2010). As for the elderly people, ages 65 and up, there are about 151,000 people in Pima County, turning out to be about 15.4% of people (U.S. Census, American Fact Finder, 2010). Residents and visitors may perceive southern Arizona to have a much more substantial elderly population.

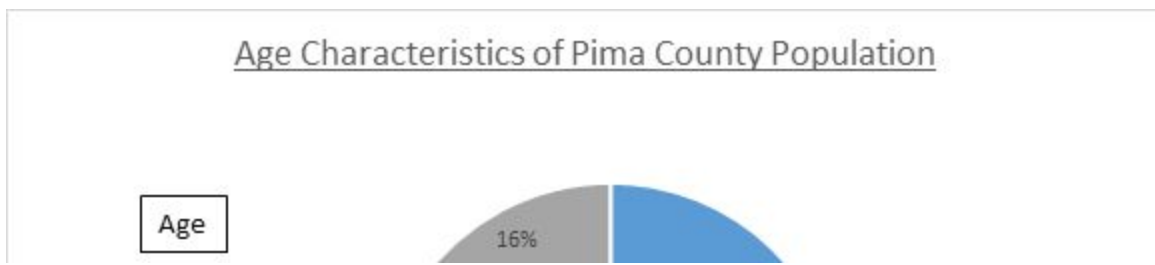
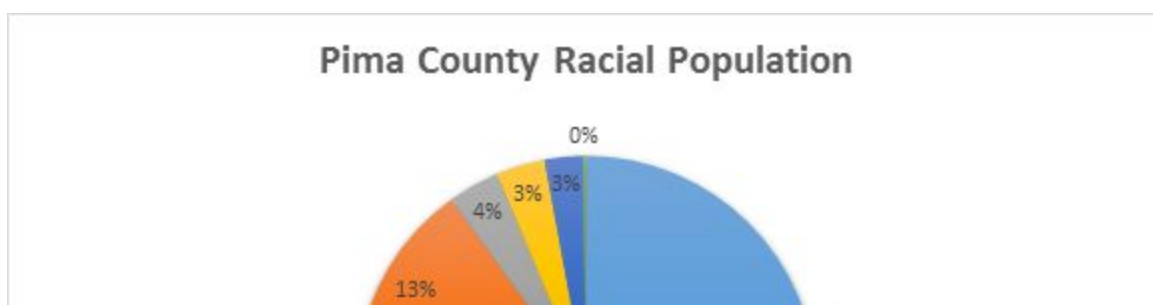


Figure 1. Age Characteristics of Pima County Population (U.S. Census, American Fact Finder, 2010)

With the population of Pima County being 980,000, the amount of males and females in the County is extremely close (U.S. Census, Pima, 2015). With there being 499,000 women in Pima County, they make up 50.9% of the inhabitants (U.S. Census, American Fact Finder, 2010). As for males there are about 481,000 in the Pima County community, making up 49.1% (U.S. Census, American Fact Finder, 2010). With there being about 18 thousand more women than men in Pima County, they also have a higher median age at 39 years old as opposed to the men's 36 years old (U.S. Census, American Fact Finder, 2010).

The United States is one of the, if not the most ethnically diverse country in the world. There are endless cultures, ethnicities, religions and races within our borders. With Arizona being a state so close to the border, and with Pima County itself being as far south as our boundaries allow, we are bound to be heavily populated with other ethnic groups. There are several different races within our population in Pima County, with the majority of the population being White. There are about 729,000 white people in Pima County, making up 74.3% of our total population (U.S. Census, American Fact Finder, 2010). Of this race there are about 78,000 white males ages 0-18, 154,000 white males ages 19-64, and 223,000 white males ages 65 and over (U.S. Census, American Fact Finder, 2010). As for white females in Pima County, 73,000 are ages 0-18, 154,000 are ages 19-64, and 149,000 are ages 65 and over (U.S. Census, American Fact Finder, 2010). Following in descending order would be African American people at a much lesser amount of 34,000 people in our county (U.S. Census, American Fact Finder, 2010). The African American population makes up only 3.5% in Pima County. Following the African American population comes the American Indian population at 32,000 (U.S. Census,

American Fact Finder, 2010). Of the American Indian male population, there are 3,000 that are between ages 0-18, there are 8,400 that are age 19-64, and there are 2,500 that are ages 65 and over (U.S. Census, American Fact Finder, 2010). As for the female population, there are 5,000 people that are ages 0-18, 10,500 that are ages 19-64, and there are 3,200 women that are ages 65 and over (U.S. Census, American Fact Finder, 2010). Now this is far lower than the amount of white people in Pima County but it is also very similar to the African American race we have. American Indian's make up about 3.3% of people in Pima County. Asian people make up only 2.6% with their population of 25,000 people (U.S. Census, American Fact Finder, 2010). Of the Asian American male population, there are 3,000 that are ages 0-18, there are 8,500 that are ages 19-64, and there are 2,500 that are ages 65 and over (U.S. Census, American Fact Finder, 2010). As for the female population there are 2,500 that are ages 0-18, 8,700 that are ages 19-64, and there are 4,000 that are ages 65 and over (U.S. Census, American Fact Finder, 2010). There are very few Native Hawaiian people than any other race, according to the data, at 0.2%, making up a bit more than 1,600 people in Pima County (U.S. Census, American Fact Finder, 2010). The "other race" category consists of the second highest race population at 12.3% (U.S. Census, American Fact Finder, 2010). The males of the other category, there are 9,200 people that make up the 0-18 age group, 8,400 people make up the 19-64 age group, and there are 2,500 people that make up the 65 and over population (U.S. Census, American Fact Finder, 2010). As for the females of the "other" category, 8,500 are made up of 0-18 year olds, 7,100 people are ages 19-64, while 2,500 people are ages 65 and over. There are nearly 120,000 that associate



themselves as “other” on a census survey in Pima County (U.S. Census, American Fact Finder, 2010).

Figure 2. Pima County Racial Population (United States Census, American Fact Finder, 2010)

3. Socioeconomic Stratification

Socioeconomic status indicates an individual's position in society based on social and economic factors such as income, educational attainment, health insurance coverage, and poverty status (Galobardes et al., 2006). All of these factors can affect the health of individuals and communities based on the resources they have to access healthy behaviors and health services. In 2014, the per capita income for Pima County was \$25,524 and 12.5% of the population aged 25 and older had not obtained a high school degree (U.S. Census Bureau, 2015). People living without health insurance coverage represented 14.5% of the county's population and 19% of the population was living below the poverty level (American FactFinder, 2014). The poverty threshold is defined as an income at or below \$11,880 for one person and \$20,160 for a family of 3 (about the average family size in Pima County); the threshold increases by roughly \$4,140 per additional person (Office Of The Assistant Secretary For Planning And Evaluation, 2016). Additionally, 3.1% of households received public cash assistance income (Arizona Health Matters, 2014). Pima County had an income inequality level of 0.469 which was above the state level (Arizona Health Matters, 2014).

Income

In Pima County, the general median household income was \$46,233; the median family income was \$58,113 and the median non-family income was \$147,664 (American FactFinder, 2014). The median income was higher for males at \$30,221 compared to \$22,209 for females

(American FactFinder, 2015). In 2015, the household median income by the age of the householder was \$22,463 for people aged 15-24 years, \$50,252 for people aged 25 to 44 years, \$56,683 for people aged 45 to 64 years, and \$41,940 for people aged 65 years and older (American FactFinder, 2015). This indicates that income may rise with age increases until the age of retirement when it goes down. As shown in Table 1, white individuals had the highest median income, while American Indians had the lowest median income (American FactFinder, 2015).

Subject	Black or African American	American Indian/ Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Hispanic/ Latino	White
Median Individual Income	20,793	18,729	26,002	24,063	21,391	31,008
Median Family Income	50,659	28,782	71,153	23,788	41,987	69,599
Note: Incomes measured in 2015 inflation-adjusted dollars Data Source: American FactFinder						

Table 1. Median Income by Racial/ Ethnic Groups

Health Insurance Coverage

In 2014, 82.2% of adults in Pima County had health insurance coverage which was an increase from its previous value and above the Arizona value, but below the national value of 13.7% (Arizona Health Matters, 2014). Health insurance coverage was higher for females (84.4%) than for males (79.9%)(Arizona Health Matters, 2014). Adults aged 55-64 had the highest coverage at 88.8% and adults aged 25-34 had the lowest at 77.5%(Arizona Health

Matters, 2014). Coverage also varied by race with White individuals having the most coverage (88.3%) and American Indians having the lowest (70.5%) (Arizona Health Matters, 2014). Hispanic/Latino individuals also had low insurance levels (73.5%) while Asians (83.2%) and African Americans (85.3%) fell in the middle (Arizona Health Matters, 2014).

Poverty

In 2015, there were 87,108 males and 98,403 females living with an income under the poverty level (American FactFinder, 2015). People under 18 years experienced the most poverty at a level of 26.7% (American FactFinder, 2014). In comparison, 19.2% of adults between the ages of 18 and 64 and 8.3% of adults aged 65 years and over lived with incomes below the poverty level (American FactFinder, 2014). In 2015, there were 35,454 Black or African American individuals; 35,876 American Indian and Alaska Native individuals; 27,940 Asians; 359,133 Hispanic or Latino individuals; and 517,856 White individuals living with incomes below the poverty level (American Fact Finder, 2015). It is important to note that these numbers do not indicate if certain racial or ethnic groups face more poverty than others because they do not account for the proportion of individuals living under the poverty level within each racial/ethnic group.

Family Size, Composition, and Socioeconomic Characteristics

According to the U.S. Census of 2015, Pima County had a total of 395,992 households with 168,493 led by married couples, 21,603 led by males, and 52,048 led by females (American FactFinder, 2015). There were also 154,848 nonfamily households (American FactFinder, 2015). There were 241,144 families with an average size of 3.13 people (American FactFinder, 2015). The most common household composition was that with one or more people over the age of 60

years at 42.2% of the Pima County households (American FactFinder, 2015). Other compositions include households consisting of one person living alone (30.9%) and households with one or more people under 18 years (27.1%) (American FactFinder, 2015). Of the 94,965 families with children under the 18 years old, 22.6% had children under 6 years only, 55.5% had children between 6 and 17 years old, and 21.9% had both children under 6 and children between 6 and 17 years old (American FactFinder, 2015). From 2010 to 2014, 4.6% of children in Pima County were being raised by their grandparents (Kids Count Data Center, 2014). The percentage of children being raised by their grandparents also varied depending on the child's race or ethnicity. From 2007-2011, 54.6% of Hispanic or Latino children and 32.1% of White alone children were being raised by their grandparent(s), representing the groups with the highest percentages (Kids Count Data Center, 2014). In contrast, 0.0% of Native Hawaiian or Pacific Islander children and 0.2% of Asian children were being raised by their grandparent(s) (Kids Count Data Center, 2014).

Socio-economic characteristics varied with the different family compositions. The median income was highest for married couples who earned an average of \$71,048 if they had children and \$69,801 if they did not (Kids Count Data Center, 2014). Female householders had the lowest median income levels at \$24,015 with children and \$38,049 without children (Kids Count Data Center, 2014). If the household pertained to a grandparent and no parents were present, the median income was \$33,536 with children and \$40,734 without children (Kids Count Data Center, 2014).

The percentage of all families living below the poverty level in Pima County was 13.2% in 2014 which was lower than the percentage for all people in Pima County at 19% (American

FactFinder, 2014). However, this varied depending on the composition of the families, for instance more families lived below the poverty level if they had children under the age of 18 (21.5%) or children under 5 years old (20.3%) (American FactFinder, 2014). Families headed by a married couple had a lower rate (6.8%) of living below the poverty level (American FactFinder, 2014). Families with only a female householder experienced the highest levels of poverty; 32.9% in general, 41.4% if they had children under 18 years, and 42.7% if they had children un 5 years (American FactFinder, 2014).

4. Health Statistics

One of the strongest indicators of a community’s health is infant mortality. Recent data from 2014 shows Pima County has an infant mortality rate of 5.5 per 1,000 live births (Arizona Department of Health Statistics [ADHS], 2014), but assuming similar rates between Pima County and the state of Arizona, there is a discrepancy between different racial/ethnic backgrounds and infant mortality.

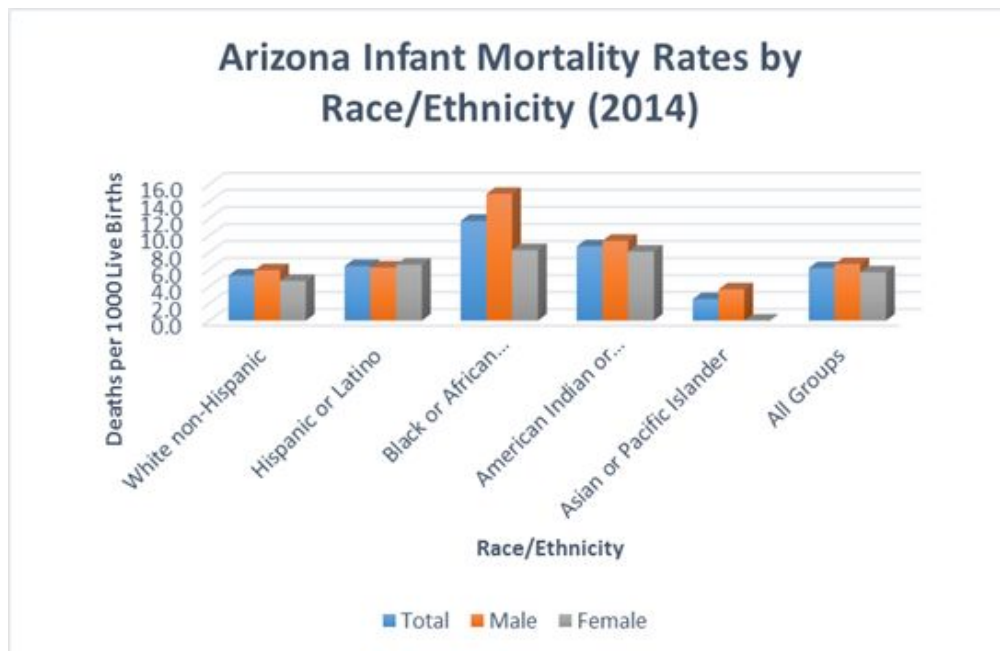


Figure 3. Infant Mortality by Race/Ethnicity and Gender in Arizona (ADHS, 2014)

Black/African American and American Indian/Native Alaskan have significantly higher infant mortality rates than the other races/ethnicities. White non-Hispanic and Hispanic/Latino had similar rates and were closest to the average of all groups. Asian/Pacific Islanders had the lowest rates. Male infants had a higher likelihood of dying than female infants. Research shows that male infants are 60% more likely to be born prematurely, and are more likely to be larger, causing more complications at birth (News Medical Life Sciences, 2008). The differences between race/ethnicity may be due to socioeconomic status, access to prenatal care, medical insurance enrollment or other lifestyle factors. What can be drawn from this data is inequality in health between different racial/ethnic backgrounds. Using infant mortality rates as a standard, Black/African Americans and American Indian/Native Alaskans have poorer health in Pima County. Looking at adult mortality rates, similar conclusions can be drawn (Figure 4).

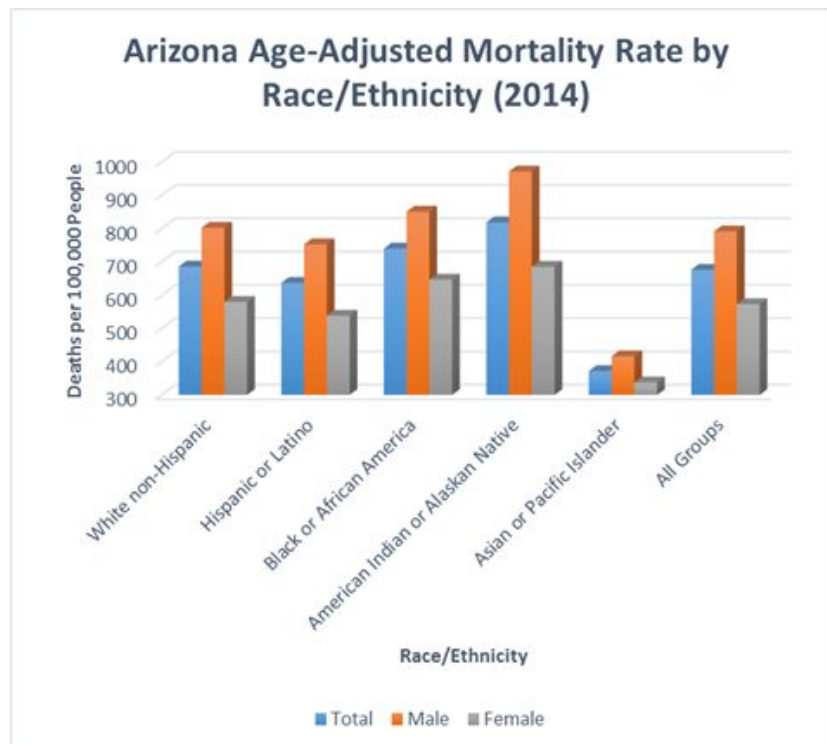


Figure 4. Age-Adjusted Mortality Rate By Race/Ethnicity And Gender in Arizona (ADHS,2014)

Adults showed a similar discrepancy in mortality rates but whereas Black/African American had the highest infant mortality rate, American Indian/Alaska Native have the highest age-adjusted mortality. Pima County's mortality rate is 866.3 per 100,000 people, which is above Arizona's 766.0 per 100,000 rate, but assuming similar distribution for reasons of death, American Indian/Alaska Natives, men in particular, had much higher mortality rates (ADHS, 2014). Men had higher mortality in each racial category than woman, but looking further at the data showed different reasons for why men and women were dying. Women had significantly lower rates of dying from cardiovascular related causes, Black/African American and White non-Hispanic were the most impacted, 256.3 and 210.4 per 100,00 respectively, compared to the 172.6 per 100,000 total average (ADHS, 2014). This could be because of the higher likelihood that men are to smoke over woman, meaning they would be at a higher risk of cardiovascular disease (World Health Organization, 2010). Heart disease showed a similar relationship but there were smaller numbers over all with the total average at 129.9 per 100,000 deaths (ADHS, 2014). Malignant Neoplasms was the second highest killer, ranking between cardiovascular related disease and heart disease. American Indians/Alaska Natives and Asian/Pacific Islanders had the lowest rates, 97.1 and 83.2 per 100,000 deaths respectively but the breakdown in gender was very different. (ADHS, 2014). Asian/Pacific Islander showed men and woman having very similar rates with men at 82.1 per 100,000 and woman at 83.5 per 100,000, one of the few diseases where women had a higher likelihood of death (ADHS, 2014). There was a much higher difference between men and women in American Indian/Alaska Native category, men having a mortality rate of 126.8 per 100,000, closer to the total average of 136.3, woman having a

mortality rate of 77.3 per 100,000, the smallest reported rate for malignant neoplasm (ADHS, 2014). Malignant neoplasm would include skin cancer, so people most likely to have jobs working outside, men, and fairer skin complexions, White non-Hispanic would be more at risk for that, potentially inflating the data, but Black/African Americans had the highest rate over all with 145.0, though it was not much above the total average (ADHS, 2014).

Other common diseases are lung cancer and diabetes. Lung cancer saw the lowest rates in American Indian/Alaska Native people with a mere rate of 10.2 per 100,000 to the total of 32.2 per 100,000 (ADHS, 2014). The next lowest rate was Hispanic/Latino with 21.6 per 100,000, double American Indian/Alaska Native mortality rate for lung cancer (ADHS, 2014). Diabetes related mortality had White non-Hispanic with similar rates, 18.8 and 18.3 per 100,000 respectively, and Hispanic/Latino and Black/African American had similar rates, 39.1 and 39.7 per 100,000 respectively, but American Indian/Alaska Natives had the highest rates at 63.2 per 100,000 (ADHS, 2014). Caitlin Peel (2008) discusses the impact straying from Native Food has had on Tohono O'odham diets since the 1940s. The introduced Western diet and its negative impact can be assumed for other Native peoples living in Pima County as well.

Looking at gender specific diseases, there are still major differences between racial/ethnic categories. For female breast cancer, the total average was 17.9 per 100,000, but Black/African American woman had a rate of 29.4 per 100,000, genetic predisposition might be a viable reason for the discrepancy, as the next highest rate was held by White non-Hispanic at 18.5 per 100,000 (ADHS, 2014). Prostate cancer showed highest in Black/African American and American Indian/Alaska Native men with respective rates of 24.0 per 100,000 and 23.0 per 100,000 compared to the total average of 17.0 per 100,000 (ADHS, 2014).

Non-disease related accidents still had disproportionate rates by gender and racial makeup. Accidental death showed American Indian/Alaska Natives with highest rates, but with a large margin between them. The total average was 43.3 per 100,000, but White non-Hispanic had a rate of 43.7 per 100,000 and American Indian/Alaska Native had a rate of 85.4 per 10,000 (ADHS, 2014). Native woman had a rate closer to the average at 47.4 per 100,000 but Native men had a rate of 128.2 per 100,000 (ADHS, 2014). For accidental deaths to be that high, there could be an issue with safety programs and procedures from reaching the reservations, leading to a much higher accidental death rate. This idea is supported by the American Indian/Alaska Natives death by motor vehicle accident rate, raising the 10.3 per 100,000 average with a rate of 35.6 per 100,000 compared to the second highest rate being Hispanic/Latino with 10.3 per 100,000 (ADHS, 2014). Assault/homicide rates showed Black/African American, Hispanic/Latino, and American Indian/Alaska Native with the highest rates, Black/African American leading with an 11.1 per 100,000 mortality rate (ADHS, 2014). Suicide had a large difference between men and woman. The average rate for a man was 25.6 per 100,000 versus the female rate of 7.7 per 100,000 (ADHS, 2014). This could partially influenced by the female likelihood to seek help when depressed instead of self-medicate, as is more common in males (American Psychology Association, 2005). White non-Hispanic and American Indian/Alaska Native had highest rates of suicide, White non-Hispanic with a rate of 21.0 per 100,000 and American Indian/Alaska Native with a rate of 13.9 per 100,000 (ADHS, 2014). Men had higher rates in both categories as well, white men with 31.9 per 100,000 versus the white female rate of 10.4 per 100,000, Native men with a rate of 24.3 per 100,000 versus the Native female 3.7 per 100,000 (ADHS, 2014). The American Indian/Alaska Native female mortality rate was

surprising low compared to the male rate. It was the second lowest suicide rate by gender and race, making their male suicide rate more unusual. There may be a higher proportion of self-medication amongst American Indian/Alaska Native males.

Though morbidity rates cannot be assumed from mortality rates, mortality rates give an insight into the racial/ethnic and genders that manage their diseases better. Pima County (2015) did a community needs assessment and identified the four areas it needed the most health in: anxiety and depression spectrum, substance abuse and dependency, injuries and accidents, and diabetes. Since people in a lower socioeconomic bracket are “less likely to see a doctor when sick or in routine visits [or] take prescribed medication due to cost” there would be a lower morbidity rate for certain disease because they would go under reported for certain races/ethnicities (Pima County, 2015). Though morbidity might be high because of under reporting, mortality would be higher for those racial/ethnic groups because they would not be receiving proper treatment or diagnosis for those diseases.

Pima County (2015) has identified the four main areas of concern and has linked them with socioeconomic status, meaning morbidity rates for certain diseases will be linked to poverty levels and which races/ethnicities tend to be at those levels. Using diabetes as an example, there are disproportionately large diabetes related deaths in American Indian/Alaska Native populations (ADHS, 2014), which as shown in Section 3, tend to be of a lower socioeconomic class. Racial/ethnic groups in lower socioeconomic statuses will have higher morbidity rates in all four main issues Pima County identified because they do not have the resources or health education to prevent them (Pima County, 2015). Other than falling being the leading cause of unintentional injury for Pima county residents age 65+, the largest current health issues are

largely linked to race and ethnicity and, by default, socioeconomic factors, but other factors, such as housing, food access, and community can affect health or perceived health status.

A recent community assessment done by the Pima County included the top health issues focus groups thought needed the most help in Pima County. Looking at that data can show what issues Pima County residents perceive as their most pressing issues, or feel they need more support in. The top four health issues Pima County residents identified as being the largest issues were anxiety and depression disorders, substance abuse and addiction, injuries and accidents, and diabetes (Pima County, 2015). Though those are self identified points of improvement, hospital outpatient data can give us an idea of morbidity and what disease and health issues are issues in the community. Hospital out patient data for Pima County shows that the largest issues had to do with circulatory diseases with a rate of 120.3 per 10,000 hospital discharge patients (AGHS, 2014). Diseases of the digestive system and injury related reasons had discharge rates of 97.1 and 89.2 per 10,000 respectively, while diseases of the respiratory system and musculoskeletal system were tied at 76.5 per 10,000 (ADHS, 2014). Assuming similar distribution of gender and race for Pima County versus the state, discharge data also shows the discrepancies in diseases. Women had higher discharge rates, averaging 1,098.3 per 10,000 compared to 811.1 per 10,000 men (ADHS, 2014). Comparing this to earlier discussion, women appear to have higher morbidity but lower mortality, though men had higher rates for all diseases of the circulatory system, injury, and most types of neoplasms (ADHS, 2014). Looking at racial breakdown of discharge data, White non-Hispanic and Black or African American people had the highest rate over all discharge rates, and also led circulatory and respiratory related diseases certain diseases showed differences between disease and race (ADHS, 2014). White non-Hispanic and

Asian/Pacific Islander had highest overall rate of neoplasms, but white and American Indian/Alaska Native people lead injury (ADHS, 2014). It is also important to note that mental disorders were led by Black/African American and American Indian/Alaska Natives (ADHS, 2014). They also had the highest rates of endocrine related issues, such as diabetes, though White non-Hispanic replaced American Indian/Alaska Native for higher rates of morbid obesity (ADHS, 2014). Hospital discharge data can give a better sense of morbidity for Pima County than the reasons for death, but there are still shortcomings to hospital records. Though these are diagnosed diseases, there would be skew that might have to do with discrepancies between genders to seek medical help, how available hospitals may be to rural communities, health insurance status, and other factors.

5. Local Health Resources

There are many health care services offered in Pima County by government agencies, community organizations, and faith-based organizations. The Pima County Health Department (PCHD) is the primary provider of government health care. Specifically, they have initiatives for awareness and prevention of presently problematic diseases (e.g. measles, syphilis, ebola, Zika). These resources educate people about pathology and connect them with resources for consultation and treatment. PCHD also has clinics that offer immunizations, STD testing, and family planning services. Patients pay on a sliding scale based off their income, which allows lower socioeconomic status people and people without health insurance more affordable care. Other health care services they offer include tobacco and chronic disease prevention, public health nurses who make home visits, and crisis and behavioral support services. (“Pima County Health Department,” n.d.).

In addition to government services, there are a variety of community organizations that also provide health services. Southern Arizona AIDS Foundation (SAAF) provides STD counseling and testing and professional and peer support services. Their main department divisions are Prevention, Care Services, and Outreach and Volunteering. (“Southern Arizona AIDS Foundation,” n.d.) Another community organization is the El Rio Community Health Center, which is a community clinic that offers family medicine, internal medicine, pediatrics, clinical pharmacy, and behavioral health services. El Rio is designated as a Federally Qualified Health Center, which stipulates that they provide services at a reduced fee for lower socioeconomic patients via a sliding scale and special payment rates. (“El Rio Community Health Center,” n.d.; “What are Federally,” n.d.). COPE is a nonprofit, private health care organization that aims to address patients’ behavioral health, substance abuse issues, and mental health problems. (“COPE,” n.d.) Similar to COPE, CODAC is another community organization in Pima County that provides health care services. Compared to COPE, CODAC offers a more extensive and tailored range of health care services. That is, CODAC has more specialized services. For example, it offers Living Out Loud LGBTQI Health and Wellness Center, which is a center tailored to the health of people who identify as LGBTQI. Both are nonprofit organizations. (“CODAC,” n.d.) Furthermore, Planned Parenthood is another community organization, which provides family planning services for men and women, such as contraceptive medications, abortions, STD testing, and counseling. (“Planned Parenthood,” 2016)

Faith based health care organizations are also located in Pima County. One example is the nonprofit Carondelet Health Network, which is in charge of St. Mary’s Hospital and St.

Joseph's Hospital in Pima County (also Holy Cross Hospital in Nogales, Arizona). ("Hospitals," 2016) Carondelet hospitals provide services similar to non-faith based hospitals, except that Carondelet holds strongly the belief that healthcare is "a personal witness of Christian faith" and that the whole body and spirit must be embraced to correctly provide health care. ("Mission, Vision, & Values," 2016) Another faith based community organization is St. Elizabeth's Health Center, which serves uninsured and lower socioeconomic status clients. They provide similar services to other health centers, including dental care, behavioral services, family planning, immunizations, basic lab services. ("St. Elizabeth's," 2016) Additionally, the Tucson Interfaith HIV/AIDS Network (TIHAN) is another community health care provider. Their focus is providing personal health and mental health services. TIHAN offers support groups, advocates, and educates others for the community affected by HIV/AIDS. ("Tucson Interfaith HIV/AIDS Network," 2016)

Importantly, Pima County also has a variety of health care services available to patients with unique or outstanding problems. For example, the government-ran Southern Arizona Veterans Affairs Health Care System provides health care to veterans, with services, prices, and facilities specialized to the need of veterans. ("Southern Arizona VA," 2016) Examples of more specialized offerings include PTSD counseling, services for veterans returning to duty, and nursing home assistance. ("A to Z List," 2016) Another specialized health care organization is Therapeutic Riding of Tucson (TROT), which uses guided horse riding as a method for cognitive and/or physical therapy to children, adults, and veterans. They are a nonprofit organization. ("Therapeutic Riding," 2014) Additionally, Casa de los Ninos is a nonprofit organization that provides child abuse prevention, intervention, and therapy to the victims and families of child

abuse. (“Casa de los,” 2016) Pima County also has two needle exchanges. Needle exchanges are harm-reduction programs whose purpose is to exchange clients’ used needles for unused needles, educate the clients about the risks of needle injection behaviors, and connect clients with STD testing, treatment, and rehabilitation resources. Both PCHD and SAAF have a needle exchange. (“Prevention Program,” n.d.) The PCHD also has services that specifically target the elderly or teen population. Seniors are offered free blood pressure screening and case management, and teens are offered reduced-cost STD and pregnancy testing and birth control methods through Project CONTACT. (“Senior Wellness,” 2016; “Teen Health,” 2016) Regarding HIV and AIDS, the Peterson Clinic at the University of Arizona focuses on providing HIV and AIDS treatment and care. Notably, the clinic can prescribe pre-exposure prophylaxis (PrEP) for HIV prevention (“PrEP,” 2016).

6. Cultural Factors

Pima County is full of rich cultural history that dates back before even the United States declared their independence from the British. The region of the county was inhabited by the Hohokam Indians for 4,000 years before Spanish missionaries arrived in the 1600’s and was used primarily as farming land for the tribe (Visit Tucson, 2016). Once the Spanish arrived, they took over the land for themselves and created many iconic structures that still stand today. Some of these structures include the Presidio San Augustin del Tucson (presently known as “The Old Pueblo”) and the Mission San Xavier del Blanc (Visit Tucson, 2016). The Spanish continued to inhabit the land that is now Pima County until the mid-1800’s when the region became a part of the United States in 1854. At this point the region saw a shift in culture as it became part of the “Old West” and many cowboys, cattle ranchers, settlers, Apache Indians, and Hispanics from

Mexico inhabited the land. With this shift it made Pima County the oldest included land in all of Arizona (Visit Tucson, 2016). As the region grew and developed with the rest of the country through the Industrial Era in the early 1900's, the Land of Pima County started to develop more cities and structures made of brick, steel, iron, and concrete as opposed to the previous building materials of mud, stucco, and wood. Even with this shift in modernization, the county still holds much of its historical, cultural influences with much of the region still being inhabited by ranchers, Apache Indians, and Hispanics. Each of these of cultures lived and still live a lifestyle of living in open land, farming, and enjoying an appetite of Hispanic based foods.

Today, Pima County includes all of these previous cultures with new ones like a bigger White population (primarily due to the establishing of the University of Arizona in 1885) and a military culture with the Davis-Monthan Air Force Base being created (Visit Tucson, 2016). Also, a larger African American population became relevant in the county as slavery ended and the ethnic group received many more opportunities to expand their demographic with their new liberation and constitutional rights. Numerous other cultures have made their way to Pima County as well, with an Asian population consisting of 3.2% of Pima County's current population, and Pacific Islanders making up 0.2% of the total population (U.S. Census Bureau, 2016). With a predominant cultural influence of "Old West" lifestyle and Hispanic influences making up most of the ethnic groups, the Pima County presents a vast and diverse group of ethnicities.

While the county is predominantly White and Hispanic, there is still a strong influence of Native Americans that provide a big contribution in agriculture to the community. Back when Native Americans controlled the land before the Spanish over 4,000 years ago, their agricultural

influences of farming different crops like alfalfa, cotton, corn, squash and lettuce remain strong today. The Native Americans still control much of the farm lands in Pima County through their reservations which provide a lot of the food sources for the county (Santa Cruz Valley Heritage Alliance, 2016). The Native Americans and the Hispanics of the county both started many of the wineries in Pima County as well which provide another key contribution to the community. It provides a plethora of the red and white wines that the local community and all of Arizona receive. This in turn brings a big economical return for the community that helps keep the community thriving (Santa Cruz Valley Heritage Alliance, 2016). The agricultural influence of the Native Americans, Hispanics, and now White ranchers continues with the harvesting of other crops that are unique to Pima County like prickly pears, a variety of chiles, and oregano, as well.

Ranchers present another major aspect of agriculture to the county, too: beef. Ranchers in Pima County provide a mass majority of the Angus beef the restaurants and farmer's markets in the county receive through the many feedlots and ranches that are operated within Pima County (Santa Cruz Valley Heritage Alliance, 2016). The ranchers and cattlemen of Pima County who first came to the region during the "Old West" period also established many historic Western towns like Tombstone (famous for the O.K. Corral gunfight, along with the *Tombstone* film, too) which has been maintained, inhabited, and preserved by current ranchers and cowboys who have a passion for the history of the town and want to share it with the community. The men and women who live in Tombstone provide an experience for the outer community that make it as realistic as it would have been during the late 1800's by essentially living as they did back then (dressing, speaking, and working similarly) (Tombstone Chamber of Commerce, 2016).

The military influence in Pima County has been heavily ingrained in the culture dating all the way back to when the region was acquired from Mexico in 1856. Originally, military posts were created to protect ranches and mines from Apache Indian attacks and then to protect the border from the French who were trying to invade through Mexico (Santa Cruz Valley Heritage Alliance, 2016). In the early 1900's more military posts were created and had shifted their focus to protecting the border from the Mexican Revolution which was threatening to tip over onto United States soil. A part of these military posts at the time were to send teams out into the county and even into parts of Mexico in search of Pancho Villa who was responsible for many attacks on southern Arizona and New Mexico towns (Santa Cruz Valley Heritage Alliance, 2016). Currently, many of these military posts are retired and are used as tourist sites where people of the community can visit and educate themselves on the history of the United States military influence in the Pima County. In place of these posts, more current military facilities have been created that are used for training purposes, units to be stationed at, and in case of a coastal attack. The biggest base is Davis-Monthan Air Force Base which provides most of the previously stated tasks along with other job opportunities for the community and also a location the community can go to learn about more military history (Santa Cruz Valley Heritage Alliance, 2016).

The military culture is a well economically-provided culture through the government and provides the necessities for a healthy lifestyle. This culture does not face many health issues within the Pima County. A culture that does face altering health statuses are the ranchers, cattlemen, and Native Americans, though. While the ranchers and cattlemen of the county provide a great service to the community in providing a lot of the meat the community uses, they

often do not see a lot of this in return (Santa Cruz Valley Heritage Alliance, 2016). Through government taxes and the fluctuating price of beef, many of these men and women do not get a great financial benefit out of it as they are taxed a lot and sell meat for low prices since it is often sold in bulk and is common throughout the county. This essentially means they do not have the financial stability that other cultures and populations in the county do have; which in turn means less money to spend on healthcare. Also, being a rancher requires a lot of open land to operate and maintain their livestock, which means they often have to live on the way outskirts of the county where it isn't as populated (they are a part of about a 10,000 population group of Pima County that does not live in the metro area) (Brandeis University, 2016). Their location of living provides a multitude of potential health issues, including: poor access to health facilities, poor to minimal access to grocery stores (a food desert), and poor housing/living conditions due to low income and choice of lifestyle.

This lifestyle and potential health risks are similar for the Native American culture in Pima County as most of them live out on the Indian reservations that have been zoned off and agreed upon between the United States government and the local tribes. Often times, these reservations are off the grid and are far away from any metropolitan area where health facilities, food locations, and sources of work are available. This lack of access to anything presents an equation for an outcome of poor living conditions and poor health statuses. Another issue is that since the reservations are out of town and are not industrially-developed, businesses and organizations do not want to invest money in placing their locations on the reservations (Pima County, 2016). The issue with this is that it does not provide any source of income for the Native Americans living there, because there are no jobs available locally and then no businesses to

generate revenue. It is unfortunate because most of the Indian reservations in Pima County are desolate, desert landscapes with poorly built homes or trailers scattered throughout them. It is sad to see a culture that provides so much culture and history to the community to live in shambles, yet this is the reality.

7. Community Political/Governmental Organizations

Pima County is split into five districts and run by an elected Board of Supervisors that “ensure safe communities, nurture economic development, sustainably manage natural resources and protect public health” (Pima County, 2016). The five elected officials for Pima County are Amy Miller, Ramon Valdez, Sharon Bronson, Ray Carroll, and Richard Elias (Pima County, 2016). Though the Board of Supervisors are the highest ranking officials in the county and make any public health decisions, there are other groups responsible for health in the county. Pima County Health Department is also a major staple for public health in the community providing services across the county (Pima County, 2016). Though the county provides a multitude of health and wellness programs, there are also non-governmental organizations that contribute to the health of the community.

One important organization in the county is the Pima Council on Aging. They collect data across Pima County on the elderly to pinpoint what programs are in place that are effective and help as well as what areas of health among the elderly community are still lacking and require improvement, putting an Aging Community Needs Assessment every three years and is the “only assessment of its kind” in Pima County (Pima Council on Aging [PCOA], 2013). They worked with 13 different organizations in help with gathering their data, from municipal governments to community foundations (PCOA, 2013). The PCOA is responsible for planning

services for the elderly in Pima County through collaboration with policy makers, community planners, and stakeholders (PCOA, 2013). They are a vital organization to the aging community in Pima County through the support and data they provide.

One of the organizations that work with the PCOA is the Community Foundation of Southern Arizona. Though they help other counties in Southern Arizona in addition to Pima County, they are a foundation that helps donors with grant making as well as developing partnerships with organizations that give grants to better community (Community Foundation of Southern Arizona [CFSA], 2016). Their interactions are directly with businesses, government, and nonprofit organizations to best impact the communities in Southern Arizona to reach long lasting solutions (CFSA, 2016).

Another organization that contributes to health and leadership in Pima County is the Women's Foundation of Southern Arizona. Similar to the CFSA, this organization also functions primarily through grant writing, but they have an exclusive focus on the woman and children of Southern Arizona (Women's Foundation of Southern Arizona [WFSA], 2014). Some of the programs that received grants from the WFSA in 2014 were Planned Parenthood Arizona, Nogales Community Development, Emerge! Center Against Domestic Violence, and many others programs that help to better the community in Southern Arizona (WFSA, 2014). WFSA contributions have a positive effect on women in Southern Arizona by supporting programs that support their health and wellness and bolster equality, positively affecting the workforce (2014).

Southeastern Arizona Health Education Center is a subset of the Arizona Health Education Center that includes Pima County in its jurisdiction (Southeastern Arizona Health Education Center [SEAHEC], n.d.). The SEAHEC has focus in improving health services in

areas of southeastern Arizona that have limited access to health care (SEAHEC, n.d.). They do this by focusing on education by encouraging people in these underserved communities to pursue health care positions, recruitment of health care professionals to the community, encouraging existing health professionals in the area to continue their educations, and collaborating with other organizations with an investment with the health of southeastern Arizona (SEAHEC, n.d.). The organization wants to bring a more culturally diverse medical field into existence in rural and underserved areas for a better spectrum of health (SEAHEC, n.d.).

Though all of these organizations are examples of leadership in Pima County by seeing to the betterment and development of health and community programs, Pima County ultimately has health oversight. The Pima County Health Department believes in taking a holistic approach to the policy it develops by looking at current scientific knowledge, community assessments, and strives to service all of its communities equally (Pima County, 2016). Through collaboration and proper education the Pima County Health Department's goal is to provide proper health and wellness to all of its community members of all backgrounds and areas (Pima County, 2016). They offer a wide range of services to Pima County citizens including but not limited to help with registering for the Affordable Care Act, resources for health professionals, overseeing some degree of consumer health through food and other services, preventative measures, behavioral health, and sexual health (Pima County, 2016). They are responsible for much of the county's health and safety and run many of the clinics across Pima County.

Pima County provides medical oversight to the county in a variety of ways. Arizona provides health insurance marketplaces to help people search for insurance companies that suit their needs (Pima County, 2016). There is also a company called Health-e-Arizona that aids

people of lower socioeconomic status in search affordable coverage and helping with signing up for the Affordable Care Act (Health-e-Arizona, 2016). Other oversight is handles by the Health Care Benefits Trust Board [HCBTB] (Pima County, 2016). The HCBTB controls the funds and oversees the Pima County Health Care Benefits Trust and advises the Pima County Board of Supervisors on health related issues in the county (Pima County, 2016).

8. Housing

With Pima County being the second largest county in Arizona, one would think that there is more than enough housing to accommodate all of the occupants. Pima County has just over 1 million people that reside within the boundaries, and they have approximately 2.5 people living in each household (U.S. Census, American Fact Finder, 2015). This means that there needs to be a minimum of 400,000 housing units, assuming that there are approximately 2.5 people per household, in order for everyone that lives in Pima County to have a roof over their head (U.S. Census, American Fact Finder, 2015). Luckily, Pima County has approximately 452,000 housing units around the area which means that about 1.13 million people are able to reside here, assuming that there are 2.5 people on average living in each household (U.S. Census, American Fact Finder, 2015). However, this is in a perfect scenario, which unfortunately is almost never the case. According to the Pima County U.S. Census data, there are only 61.8% of people in Pima County that are said to reside in the housing units provided in this area (U.S. Census, American Fact Finder, 2015). This means that the other 38.2% of people are either living in places such as apartments where they pay rent, halfway houses, or worst case scenario, they are homeless.

Over the past couple of decades homelessness in Pima County has turned into something out of the norm as opposed to a problem that needed to be solved right away. There are about 15 homeless shelters in Pima County, 8 of which reside in Tucson, Arizona (2-1-1 Arizona, 2016). These shelters include typically showers, a hot meal, a place to sleep, and most of them have/require you to attend a chapel service in order to stay there (2-1-1 Arizona, 2016). A couple rules in order to be admitted into the halfway house is to have an ID on you, to be sober from drugs or alcohol, as well as to be off of psychiatric medication or be a sex offender.

The average cost of a house in Pima County is \$161,700, which is divided into about \$1,300 in bills, including mortgage, every month. (U.S. Census, American Fact Finder, 2015) In order for one to be able to afford housing such as this the household must make at least \$15,600 a year, which does not seem like much, but the amount of people that are without a job or working paycheck to paycheck, this can be a difficult task for one. (Affordable Housing Development, Pima County, 2015) There is also the option to rent a home or an apartment, this is a cheaper option but the way I see it is that you are putting money into something that is not yours, nor will it ever be. The average cost for renting a home or an apartment in Pima County is around \$800 a month, which is only \$9,600 a year. (U.S. Census, American Fact Finder, 2015) This is a much cheaper option for people who cannot afford a house in Pima County, and making only \$15,600 a year would be a much more comfortable option for them. There are also plenty of low-income housing options in Pima County, which make it easier for people to get by. Low-income housing is different than a base rent or mortgage every month. What places like this typically do is charge about 30% of your monthly income for rent. (Affordable Housing Development, Pima County, 2015) To put this in retrospect, someone who is making minimum

wage, \$8.05, and working 40 hours a week in Arizona is going to make about \$15,456 a year. (Affordable Housing Development, Pima County, 2015) Breaking this down, they will make \$1,288 a month, and 30% of their monthly income will only be about \$385, a much cheaper option than owning a house or even renting an apartment in Pima County. (Affordable Housing Development, Pima County, 2015) Reviewing all of the housing data in Pima County there is a clear understanding that the amount of housing is adequate for the amount of people in this county, it is the lack of income that allows people to have a roof over their head.

9. Food Supply

As shown in Figure 5, retail grocery stores in Pima County are heavily concentrated in the Tucson metropolitan area, with only a few grocery stores in other areas such as Ajo, Sells, and Sahuarita (Policy Map, 2010). According to the Consumer Health and Food Safety report, examples of licensed retail grocery stores in Pima County include Albertson's, Basha's, Costco Wholesale, Fry's Food Store, Food City, Safeway, Sprouts Farmers Market, Target, and Walmart (Pima County Health Department, 2016). There are fewer farmers markets within Pima County. These are also located mostly in the Tucson metropolitan area (Policy Map, 2010) and include markets such as the Community Food Bank Farm Stand, El Pueblo Farmers' Market, El Presidio Mercado, the Food In Root markets, the Heirloom markets, and the Santa Cruz River Farmers Market (U.S. Department of Agriculture, 2016). Examples of farmers markets in areas outside of Tucson include the Authentically Ajo Farmers Market and the Green Valley Farmers Market. According to the US Department of Agriculture, there were 855 farms within Pima County in 2012. The majority of these farms were small in size with land varying from 1 to 49 acres (U.S. Department of Agriculture, 2012). The top food crops by value of sales were vegetables, melons,

potatoes, and sweet potatoes (U.S. Department of Agriculture, 2012). Some examples of local farms, as listed by the Pima Food Alliance, include the San Xavier co-op farm, Sleeping Frog farms, Arivaca Community Gardens, Ajo Regional Food Partnership, Avalon Farms, Walker Farms, and Double Check Ranch.

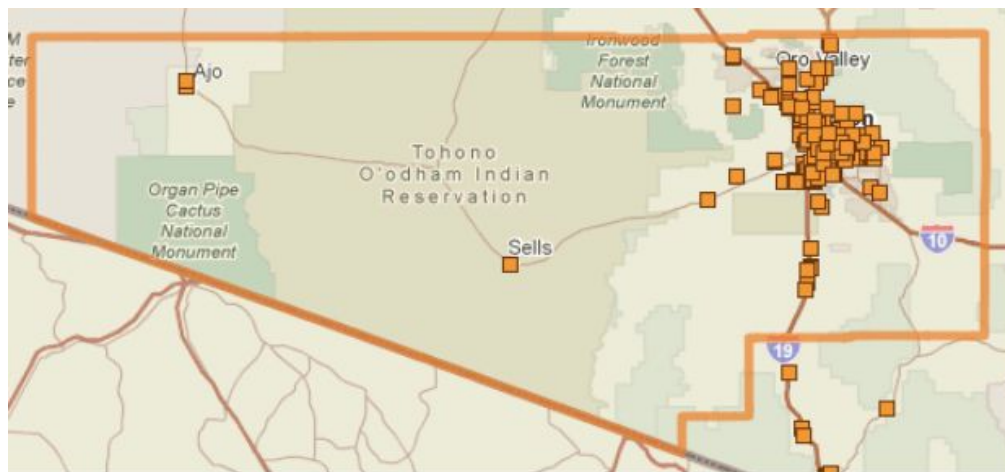


Figure 5. Grocery Retail Locations (Policy Map, 2010)

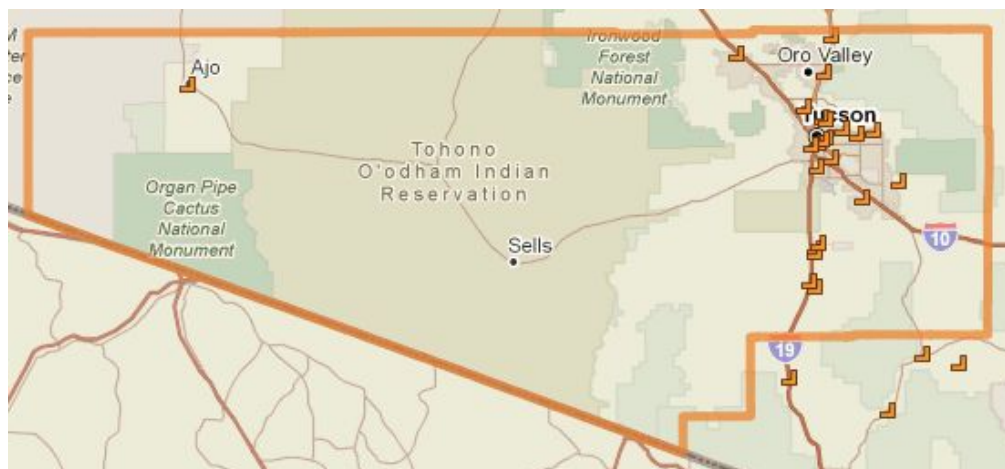


Figure 6. Farmers' Markets (Policy Map, 2010)

The Arizona Supplemental Nutrition Program for Women, Infants, and Children (WIC) is an important food source program within Pima County. Among other services, WIC provides

supplemental nutritious foods and many of the grocery retail locations in Pima County are WIC-approved. This helps improve access to healthy food for women and children in Pima County. The government of Pima County also offers the Food Plus and AZ Farmer's Market Nutrition programs. Food Plus provides qualifying seniors aged 60+ years with food packages that are rich in protein, calcium, iron, and Vitamins A & C (Pima County, 2016). The AZ Farmer's Market Nutrition Program grants coupons for the purchase of fresh fruits and vegetables at approved farmers' markets (Pima County, 2016). The Pima County government also offers educational nutritional programs to assist residents in making healthy food choices.

Pima County is also a provider of the Supplemental Nutrition Assistance Program (SNAP), which "offers nutrition assistance to millions of eligible, low-income individuals and families and provides economic benefits to communities" (U.S. Department of Agriculture, 2016). In order to qualify for SNAP assistance, households must have resources and/or monthly incomes below a certain level depending on the number of persons in the household, the assistance they already receive, or and elderly/disability status they may have. For example, a household with 4 individuals qualifies for benefits if they have a net monthly income below \$2,025 and countable resources of or below \$2,250 (U.S. Department of Agriculture, 2016). As shown in Figure 7, the SNAP retail locations in Pima County are also mainly distributed throughout the Tucson Metropolitan Area. However, there were more SNAP locations in the Tohono O'odham reservation compared to other retail food sources.

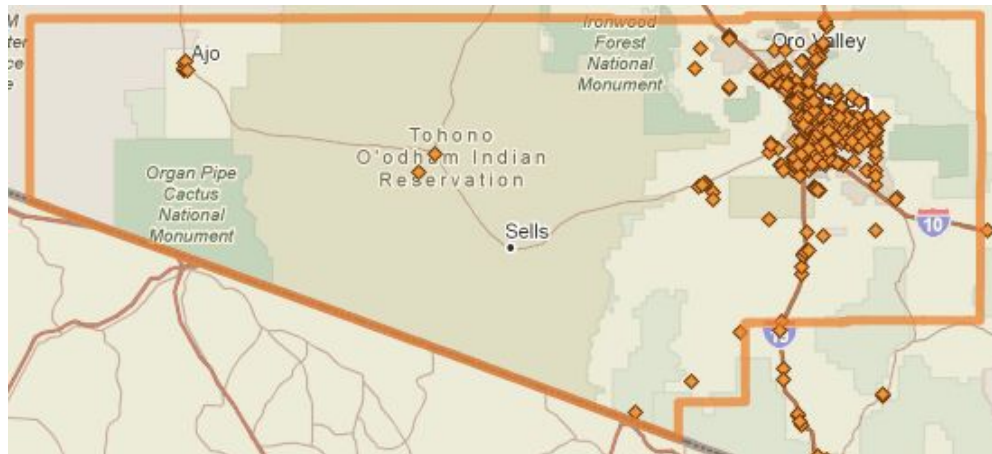


Figure 7. SNAP Retail Locations (Policy Map, 2010)

Food supply in Pima County is also contributed to by many non-profit organizations. The Community Food Bank of Southern Arizona works to provide school children with meals throughout the week, after school, and during summer depending on their individual needs. They also host emergency food assistance programs, a community kitchen with culinary training for unemployed individuals, and several farm/garden programs to supply the community with food (Community Food Bank of Southern Arizona, 2015). The Interfaith Community Services organization also works to provide the community with food by hosting a food bank that supplies families, seniors, and individuals with holiday food bags and emergency food boxes. In 2015, the ICS food bank provided food to over 21,883 individuals in Pima County (Interfaith Community Services, 2016). The Casa Maria Catholic Worker Community also contributes to food supply through their soup kitchen and community garden. The Iskashitaa Refugee Network works to prevent food waste and food insecurity by harvesting locally grown produce and distributing it among refugee populations in Tucson (Iskashitaa Refugee Network, 2016). These are just a few

examples of non-profit organizations that work to decrease food insecurity in the Tucson and Pima County communities.

Another important contributor to the Pima County food supply is the network of community gardens. According to the CDC, Pima County has at least 9 school gardens and 12 community gardens in low-income neighborhoods that have contributed over 12,000 pounds of produce and benefited over 800 residents (2013). After the passing of House Bill 2518, schools in Pima County will now be able to use any produce grown in school gardens in the cafeteria, directly providing this food to school children (HB. 2518, 2016).

Despite the food supply resources and efforts, there is not adequate food supply for all residents of Pima County. In 2014, the food insecurity rate was 15.4% with an estimated 153,150 individuals facing food insecurity (Feeding America, 2016). Food insecurity is defined as “experiencing limited or uncertain availability of nutritionally adequate and safe foods or uncertain economic and physical ability to acquire acceptable foods in socially acceptable ways” (Community Food Bank of Southern Arizona, 2015). Additionally, in 2011, 14% of the Pima County population lived in a food desert (García, 2014) which is an area with low access to fresh fruit, vegetables, and other healthy foods. The U.S. Department of Agriculture maps food desert areas determined by low income, low access, and vehicle availability. The common marker of low access is no grocery stores within 1 mile for an urban area or 10 miles for a rural area (U.S. Department of Agriculture, 2015). Figure 8 depicts the areas, marked in purple, within Pima County with low food access, as defined by the U.S. Department of Agriculture. Feeding America reports that an additional \$77,182,000 would be needed to meet the current unmet food needs in Pima County (Feeding America, 2016).



Figure 8. Low Food Access (Policy Map, 2010)

10. Education

Pima County offers diverse educational resources for all age groups. There are 18 school districts in Pima County, all which offer free education. Most districts have school offerings for multiple age groups (e.g. elementary school, middle school), although others are small and only offer to one age group (e.g. Redington Elementary District). (“District Schools,” 2014) There are numerous charter schools available for grades K-12 in Pima County. Furthermore, there are private school offerings available for K-12. The large majority of private schooling in Pima County is also faith-based. For example, there are Catholic schools (Salpointe High, Saints Peter and Paul Elementary), Christian schools (First Southern, Carden Academy), Islamic schools (Al Huda), and Jewish schools (Tucson Hebrew Academy) to name a few. Indeed, there are private non-faith-based schooling options too, such as Gregory (grades 5-12) and the International School of Tucson (preschool through middle school), but these are not as plentiful. Furthermore, there are online educational resources in Pima County, predominantly for middle and high school students. This includes the Marana Distance Learning Program (grades 7-12), the Tucson United

School District Distance Learning High School (9-12), and the Vail Distance Learning Program (7-12). There are also support groups and paid services for parents available in Pima County regarding assistance with home schooling or online schooling. (“Arizona Department of Education,” 2016)

In terms of higher education, many options exist in Pima County. The University of Arizona and Pima Community College are the major university and community college of Pima County, respectively. There is also the Tohono O’odham Community College, which is located on the Tohono O’odham reservation and primarily serves residents there. More specialized higher education institutions also exist in Pima County, including Empire Beauty School, Arizona School of Acupuncture and Oriental Medicine, Southwest University of Visual Arts, and Pima Medical Institute.

Pima County also has unique educational offerings. The campuses of national schools BASIS K-12 and University High School are both known for their accelerated and rigorous education track. There is also a campus of the Arizona State Schools for the Deaf and the Blind in Pima County, which offers a tailored education for K-12 students. Furthermore, this institution offers both day classes and residential living for students and their families. (“Arizona State Schools,” n.d.) Another special school is Miles K-8, which offers a rigorous, mixed-age, and interdisciplinary education. (“Miles Exploratory Learning Center,” 2016) Montessori education is also offered by multiple schools in Pima County, such as Khalsa Montessori School public charter K-8 and the Mis Manos Montessori School private preschool and kindergarten. (“Arizona Department of Education,” 2016)

As of October 1, 2014, there are 151,731 students enrolled in the preschool through 12th grade system in Pima County. Those students account for 13.59% of the preschool-12th grade students in Arizona. Of those students, 8.91% are enrolled in preschool or kindergarten, 38.13% in elementary school, 22.44% in middle school, and 30.52% in high school). (“Arizona Department of Education,” 2014) According to 2015 data, there is a 4.2% dropout rate for students in preschool-12th grade. Females have a 3.5% dropout rate and males have 4.9% dropout rate. Overall, 4.2% of students drop out, with White students at a 3% rate, Native Hawaiian or Pacific Islander students at 5.1%, Hispanic or Latino students at 4.9%, Black students at 4.9%, Asian students at 1.4%, and American Indian or Alaska Native students at 6.6%. (“Arizona Department of Education,” 2015)

In 2015, 74% of high school students enrolled in Pima County public high schools graduated in four years. There were 10,826 students in that cohort. Males had a 70% four-year graduation rate, whereas females had a 79% four-year graduation rate. The 2015 cohort had a 1.03:1 male-to-female student ratio. Furthermore, Asian students had the highest four-year graduation rate at 90%, followed by White students at 80%, Native Hawaiian or Pacific Islander students at 75%, Black students at 74%, and American Indian or Alaska Native students at 64%. Hispanic or Latino students had a 71% four-year graduation rate. (“Arizona Department of Education,” 2015)

The educational attainment of adults in Pima County is varied. In 2015, 14.6% of people aged 18-24 years old had less than a high school graduate education. More males (16.7%) are at this educational level than females (12.5%). In the same age group, 26.5% of people have a high school graduate level of education, 51.0% with some college or associate’s degree, and 7.9%

with a Bachelor's degree or higher. For males (females), 26.9% (26.0%) are a high school graduate, 50.3% (51.7%) have some college or associates, and 6.2% (9.8%) have at least a Bachelor's degree.

Overall, 87.3% of Pima County residents have at least a high school education (87.2% of males, 87.5% of females), and 31.1% have at least a Bachelor's degree or higher (31.0% males, 31.2% females). In the 25-34 year old age group, 86.4% of males have at least a high school education (89.4% females), and 24.1% of males have at least a Bachelor's degree (31.9% females). Additionally, in the 35-44 year old age group, 86.2% of males have attained education at the high school level or higher (87.3% females), and 30.1% regarding a Bachelor's or higher (32.7% females). Furthermore, 87.0% of males (87.9% females) and 29.9% of males (31.5% females) have a high school or higher education or a Bachelor's or higher education, respectively. As far as residents aged over 65 years old, 88.8% of males and 85.9% of females have are at least high school graduates. Plus, 38.5% of males and 29.5% of females have at least a Bachelor's degree in this age group. ("U.S. Census Bureau," 2015).

11. School Health and Nutrition Programs

When it comes to Health and Nutrition programs in Pima County, the guidelines that they follow are those of the state of Arizona's Department of Education. This means that the schools of Pima County follow the same guidelines as all of the other schools in the other 14 counties in Arizona. The schools in Pima County are run the same as the other 2,000 schools in Arizona, because they are all run by the Arizona Department of Education ("Local Wellness Policy," n.d.). The services that are offered in schools in Pima County today include free and reduced lunch, physical education courses, as well as sexual education courses.

Pima County follows the National School Lunch Program guidelines when it comes to what children eat at school. Students who eat school lunch in Pima County will have a minimum of 5 cups of fruit, 5 cups of vegetables, and 5 cups of milk (“Meal Pattern Requirements,” n.d.). As well as 10-12 ounces of grains and 10-12 ounces of protein per week (“Meal Pattern Requirements,” n.d.). These are Pima Counties nutrition guidelines when it comes to school lunch, which are enforced by the National School Lunch Program. The average school lunch cost about \$2.70 a meal for regular pricing in Pima County (“The Arizona Nutrition Standards and Competitive Foods,” n.d.). This price is for the kids whose families do not meet the financial aid requirements. For families who cannot afford these lunch prices every day, there are options for reduced price lunch, and even free lunch. In order to receive reduced price lunch, the family's income must be 185% below the poverty line, which will reduce the cost of lunch from \$2.70 to \$0.40 a day (“The Arizona Nutrition Standards and Competitive Foods,” n.d.). In order to receive free lunch, the family’s income must be 130% below the poverty line (“The Arizona Nutrition Standards and Competitive Foods,” n.d.). 58% of students in Pima County are apart of either the reduced lunch program or the free lunch program (“The Arizona Nutrition Standards and Competitive Foods,” n.d.).

The National Association of Sports and Physical Education require that school children participate in a minimum of 150 minutes of physical activity a week, or on average at least 30 minutes a day (“Physical Education Standards,” n.d.). However, only six states in all of the United States meet this standard, and Arizona is not one of them. In Pima County, not every school requires physical education or even recess in their schedule each day. However, they do have a physical education standard that they follow, such as demonstrating competency in motor

skills, movements, strategies, exhibiting responsible personal and social behavior, and lastly values physical activity for health and enjoyment (“Physical Education Standards,” n.d.). With one in three children being obese in our country, one would think that physical education would be a more mandatory subject to have in school (Rochman, 2011).

The state of Arizona does not have a law in place that requires schools to teach about sexual education or sexually transmitted diseases (“Teen Health,” n.d.). There are only 24 states in the United States that require schools to teach their students about sexual education (“Teen Health,” n.d.). However, this does not mean that schools are not allowed to teach about sexual education, but it is not a requirement for every student, which means that their parents can refuse to have their child in that class. In Pima County, if a school wants to teach sexual education it is solely based and funded by that school, with no extra help from any government departments (“Teen Health,” n.d.).

12. Social Welfare Programs

There are various organizations that provide income supplements or financial support to Pima County residents, including government based, social service or community based, and faith based organizations. The county’s Seer Outreach Subsidy Program, for example, is a government program designed to provide low income county residents with sewer fee reductions. The reductions are tier to a resident household poverty level, with up to a 75% cost reduction available (“Sewer Outreach Subsidy,” n.d.). Another government program is the Family Assistance Administration, a service offered by the Arizona state government. It offers qualifying families with various avenues of nutrition assistance, medical assistance, and namely cash assistance. The cash assistance branch of the administration is limited to people 18 or

younger (“Family Assistance Administration,” n.d.). The Pima County Home Repair & Weatherization Program is another government service that gives single families house repair and weather-appropriate housing financial assistance. This is available to low income families in Marana, Oro Valley, Sahuarita, and other unincorporated Pima County areas (“Home Repair Assistance, 2016). The Arizona Department of Housing offers the HOME PLUS Go Loan Program, which enables Pima County (and other Arizona county) residents to take out a 30-year fixed rate mortgage, importantly with down payment assistance. The percentage of down payment assistance a client receives is tiered by their minimum credit score (“HOME PLUS,” 2016).

Many community organizations offer financial support in Pima County. Old Pueblo Community Services Housing Development provides low to moderate income families with homebuyer educational and support resources, such as house purchasing counseling, credit counseling, down payment help, and house repairing (“Old Pueblo Community,” n.d.). Another community organization is Valley Assistance Services. Their goal is to help the elderly live independently, so they provide volunteers to help the elderly at home as well as rental assistance and finance management education. The organization services the cities of Sahuarita, Green Valley, Amado, Arivaca, Tubac and Tumacacori (“Valley Assistance Services, 2014). Tucson Indian Center Emergency Financial Assistance is a community organization that offers one-time housing and/or utility payment assistance to anyone who has a shut-off, eviction, or foreclosure notice. The organization also provides diapers if needed by a family (“Tucson Indian Center,” 2014). Tucson Urban League Utility Assistance provides very similar monetary assistance too, with the addition of financial counseling offerings and evaporative cooler water bill assistance in

the summer (“Utility Assistance,” 2016). Furthermore, the Primavera Emergency Rent Assistance provides case management and rent financial assistance on a one-time basis to people with an eviction notice (also similar to the previous programs). This program only takes clients the first business day of every month on a first come, first serve basis (“Rental Assistance,” 2015).

There are also faith based organizations that offer income-related assistance. The Interfaith Community Services offers a wide range of programs that assist struggling individuals and families, with three notable financial programs. First, they offer emergency financial aid and case management to any Pima County resident who is struggling. This is subsidized largely by Pima County grant funds. Second, Interfaith Community Services has a program called Gifts of Love, which links screen individuals or families with more wealthy entities (from a person to an organization) that wish to lend a helping hand, monetary or otherwise. Lastly, the organization offers low to medium income families individual assistance with tax filing (“Interfaith Community Services,” 2016). Another organization is St. Vincent de Paul of Southern Arizona. This faith based organization offers anyone in need rental and utility payment help, food, clothing, basic appliances and furniture, and a community support system. In 2012, the Society of St. Vincent de Paul contributed over \$7 million total to 86,732 people in need (“St. Vincent de Paul,” n.d.). Furthermore, the Jewish Family and Children’s Services of Southern Arizona organization offers short term widely-applicable financial assistance (e.g. can be used on more than just household bills) for Jewish individuals and families only (“Jewish Emergency Financial Assistance, 2016).

In terms of special populations, Pima County has multiple resources for specific groups of people. The Pima Council on Aging offers various financial counseling course to help the elderly manage their money and it provides them a community to come to help for also (“Pima Council on Aging,” 2016). Additionally, the American Red Cross provides veterans with monetary assistance and other benefits, such as help finding counseling and community resources (“Veteran Services, 2016).

13. Transportation

The primary means of transportation within Pima County are vehicle, public transportation, and cycling. According to the Pima Association of Governments’ 2030 Regional Transportation Plan, the primary mode of transportation in 2000 was driving alone, representing 74% of the Pima County population (Pima Association of Governments, 2002). This was followed by 15% of the population carpooling and just under 3% of the population using public transit. Similarly, roughly 3% of the population commuted by walking and just under 3% commuted by other means (such as cycling). This was comparable to the national statistics for transportation means, however Pima County residents used public transportation less than the national proportion of 5% (Pima Association of Governments, 2002).

Public transportation services available in Pima County include Sun Tran, Sun Shuttle, Sun Link, and Amtrak. Sun Tran provides transportation through buses with fixed routes that service the City of Tucson, Marana, Oro Valley, South Tucson, and Sahuarita/Green Valley (Sun Tran, 2016). Sun Shuttle provides “Dial-a-Ride” services for people with disabilities living within designated areas as well as a transit service in rural areas including parts of Ajo, Marana, Oro Valley, Catalina, San Xavier, Sahuarita, and Green Valley (Pima County, 2016). The

government of Pima County does not directly implement these services, but instead contracts them out to the Regional Transportation Authority (Pima County, 2016). The Regional Transportation Authority, in concert with the City of Tucson, also manages the Sun Link, a streetcar line that runs through central Tucson. Sun Tran, Sun Link, and Sun Shuttle each offer one way rides for \$1.50 at full price, \$0.50 for economy fares, and children under 5 years ride for free. Economy fares are available for individuals with low incomes, disabilities, Medicare benefits, or with senior status. Sun Shuttle service in rural areas vary in cost from \$3-\$9 depending on the location and distance travelled. The Amtrak train service also maintains a station in Tucson.

Not all of the residents of Pima County have access to reliable transportation. As shown in Figure 9, as many as 8.91% or more household units did not have access to any vehicles in parts of the county (areas shaded in dark purple). For residents in the region containing part of the Tohono O’odham Reservation and the city of Ajo, this lack of access is compounded because there is also limited public transportation in rural areas in Pima County. Overall, 3.7% of the workers over the age of 16 did not have access to a vehicle (U.S. Census Bureau, 2014). Access to transit in Pima County is very limited with a score of 0.2 out of 10 (Housing and Transportation, 2016).

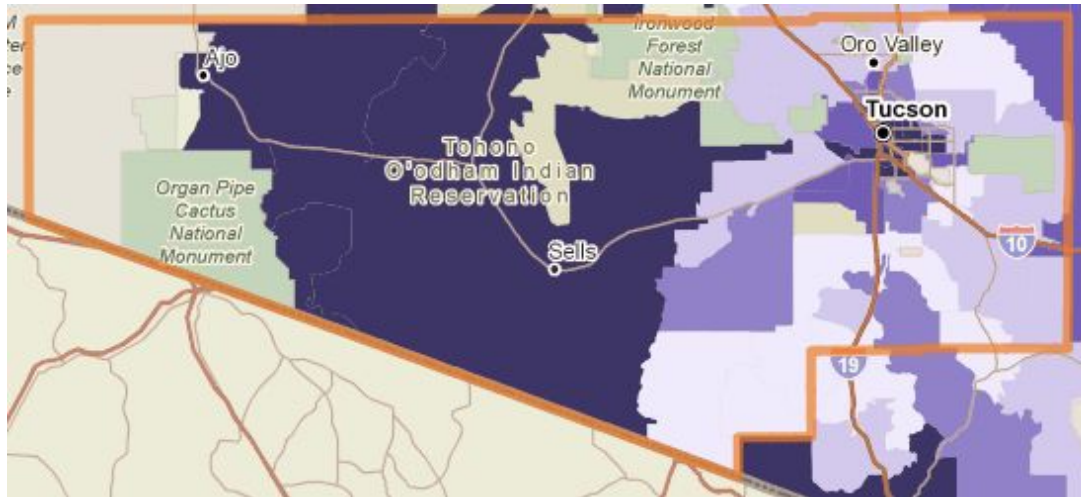


Figure 9. Percent of Housing Units with 0 Vehicles Available (Policy Map, 2011)

Access to transportation was also limited in Pima County due to costs. The annual driving costs for the county are estimated at \$11,018 which includes auto ownership and gas costs (Housing and Transportation Affordability, 2016). These driving costs were 160% of the typical regional household income and is not affordable (Housing and Transportation Affordability, 2016). When other means of transport are considered, the average costs took up 27% of income (Housing and Transportation Affordability, 2016). Due to low density and walkability, biking and walking were also limited means of transportation in Pima County.

In addition to access, one of the greatest transportation challenges Pima County faces is road infrastructure. Road conditions and repairs are worse than they have been in the last 10 years and estimates indicate that it would take at least \$264 million to address the issue (Huckleberry, 2014). This cost is in part because some roads have deteriorated to the point where they must be completely rebuilt in order to be fixed (Pima Association of Governments, 2013). Poor road infrastructure is a significant challenge because it reduces road safety, decreases

biking ability, and can even add between \$300 and \$700 to annual vehicle operating costs (Pima Association of Governments, 2013). This exacerbates the existing limited access to limited transportation means in Pima County.

14. Occupational Data

Pima County is an extremely broad county geographically that covers most of the southern region of Arizona, with very few major cities in it that have a dense workforce. The city of Tucson is the main city in Pima County that falls under this umbrella. The total population of Pima County falls just under one million people sitting at 996,554 people as of 2010 and the city of Tucson's population sits at 526,116 people as of 2010 (Residence, B., 2014). These numbers may have fluctuated slightly over the past six years to be up to current date, but the total, current workforce of Pima County sits at 471,900 people while the unemployment rate for Pima County is currently at 5.4% of the total population (Unemployment Rate in Pima County, AZ., 2016). This is extremely similar to the national average of the U.S. for unemployment which sits at 5% as of September 2016 (Unemployment Rate in Pima County, AZ., 2016). The workforce is dense with consistent workers and the unemployment rates have been on a dramatic downward trend since 2011 when the unemployment rate for the county was at a high 9.6% (Unemployment Rate in Pima County, AZ., 2016). Following this positive trend, the employment in Pima County has been increasing ever since the late 1960's and has not seen a dramatic decrease since then either.

The workforce in Pima County is well diverse in its demographics when split up by age, gender, and race/ethnic groups. For age, Pima County sees a major part of its workforce coming from the 18-34 year old group at 29%, with 35-49 year olds at 19%, 50-64 year olds at 17%,

5-17 year olds at 16%, and 65-84 year olds at 10% (Tucson Census and Employment Data, 2016). A somewhat surprising number is that at 7% (about 35,000) of the population is children at the age of 5 and under (Tucson Census and Employment Data, 2016) A lot of this is due to the large quantity of small businesses/family-owned businesses that are present in Pima County.

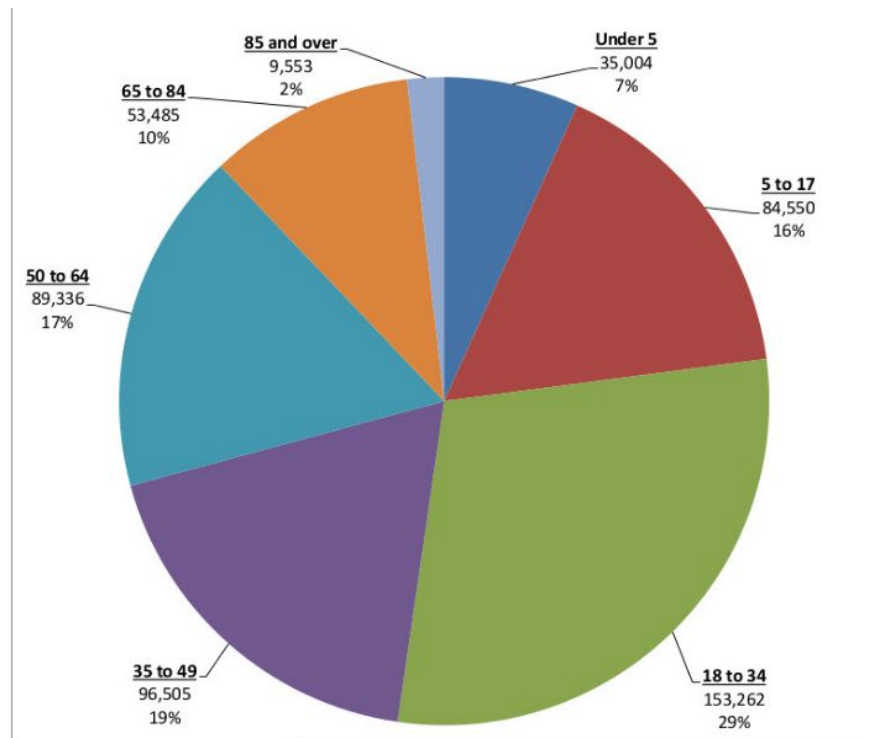
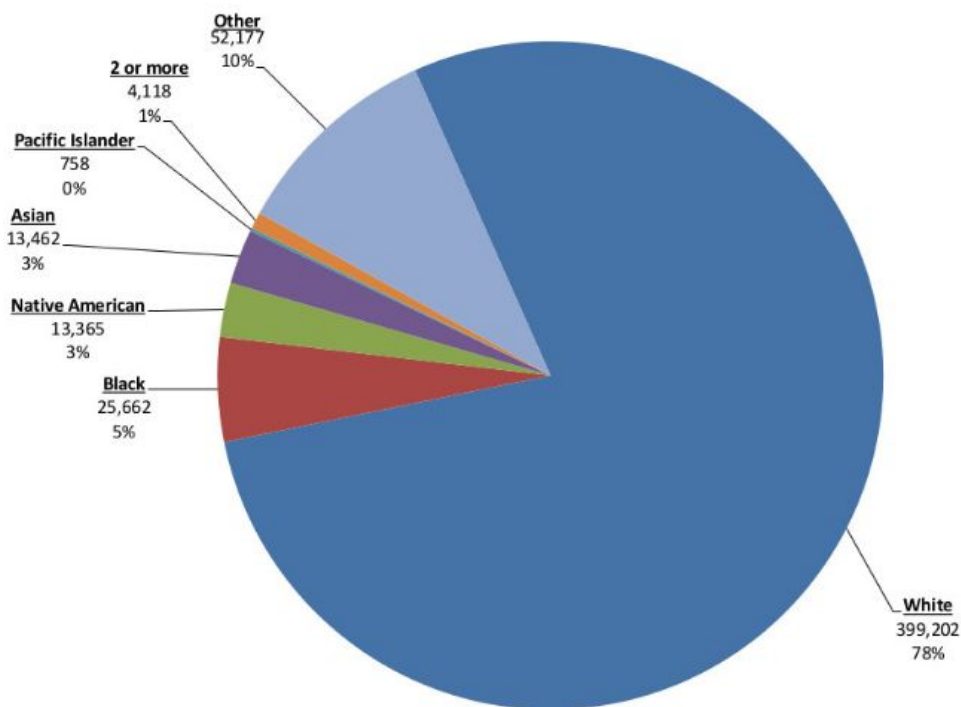


Figure 10. Employment Demographic by Age

And transitioning this to gender, the county shows that the county has approximately 250,000 males workers with about 225,000 female workers dispersed throughout all age groups (Pima County, AZ., 2016). There is not current information on how many male and female workers there are by age group but would be an interesting statistic to conduct research on. Moving on to workforce by race/ethnicity, the county shows a difference in ethnicity workforce of a majority being Non-Hispanic at 58%, and the other 42% being Hispanic. And while there is a majority being Non-Hispanic, at 42% that shows that nearly half of Pima County’s workforce

consists of Hispanic workers. This can be traced back to Pima County’s geographic location being one of the closest counties to the Mexico border. When broken into more specific races (excluding the Hispanic population), Pima County is diverse in its workforce with the dominant majority being White at 399,202 people (78%), African Americans at 25,662 (5%), Asian at 13,462 people (about 3%), Native American at 13,365 (about 3%), people of 2 or more combined races at 4,118 (1%), Pacific Islander at 758 people (less than 1%), and then other unidentified races at 52,177 people (10%) (Tucson Census and Employment Data, 2016). When broken down by age, gender, and race/ethnicity Pima County shows many different forms of its



workforce that combine to the total.

Figure 11. Employment Demographic by Race

With having a relatively smaller workforce compared to other major cities throughout the state, like Maricopa County that has 1.5 million residents and even denser cities like Phoenix,

Pima County has an extremely broad spectrum of employment options available. Many of the jobs available in Pima County consist of trade and transportation, professional/business services, education, leisure and hospitality, financial activities (i.e. banking), manufacturing, human resources, natural resources and mining, government jobs, agriculture, medical, and other miscellaneous positions (Tucson Census and Employment Data, 2016). A large majority the workforce in the county finds work in primarily trade/transportation services (20%), professional and business services at 18%, educational jobs at 17%, leisure and hospitality at 8%, and then miscellaneous jobs at 20% (Tucson Census and Employment Data, 2016). These categories account for a majority of the total 16,363 businesses in Pima County. Another interesting aspect of the demographics that make up the workforce for these several categories is seeing what educational accomplishments or standing these people are in. About 88,504 people working in these fields only have some college experience, while 26,642 have an associate's degree, 48,139 have a bachelor's degree, 31,055 have grad school or professional school training, 9-12th graders have about 30,195 workers, and then 80,409 have a received a high school diploma or GED. This connects back to the age demographic of 18-34 year olds who make up a majority of the workforce population at 29% (Tucson Census and Employment Data, 2016).

While there is wide variety of industries that compose the total workforce, there are some specific companies/businesses that lead the 16,363 businesses in Pima County that help contribute to the overall economy. The top single, overall business that serves as a main source of employment in Pima County is the University of Arizona. The university is located in Tucson and has employees varying from educators, academic advisors, athletic coaches, researchers, financial representatives, landscaping crews, farmers/ranchers, and one of the most important

ones, student-based jobs that help run many of the facilities on campus (the Bookstore, restaurants on campus, the Campus Rec Center, and Resident Assistant's in dorms for example) (Tucson Census and Employment Data, 2016). Following the university is federal/state government positions at 13,472 employees combined (9,909 for federal government and 3,563 for the state) working in areas that consist of: law enforcement, fire departments, medical services, judges, lawyers, border patrol, Game and Fish, security services, senators, mayors, legislators, and many more (Tucson Census and Employment Data, 2016). The next biggest company in line is Raytheon which supplies work for 9,293 people. Raytheon is a company that works heavily with the U.S. government and military and provides services in missile defense, command and control, sensors and imaging, cyber technologies, electronic warfare, precision weapons, training in solving prominent government/military issues, mission support, and innovations work varying in manipulating atoms, coding computer data, and researching methods to conserve/protect the world's power supply (Tucson Census and Employment Data, 2016). Raytheon is one of the most competitive companies in the Pima County yet has an expansive workforce in order to accomplish hundreds of tasks that help our country as a whole in major ways as described. The next major company providing jobs for the county is the University of Arizona Health Network reaching a workforce of 7,413. This network primarily consists of the University Medical Center (UMC) that is located next to the university. UMC provides a plethora of jobs that make it a sought out medical center in the entire country. This is due in fact to its wide range of physicians that specialize in cardiology, orthopedics, neurology, oncology, trauma, and pediatrics. Along with this, there are countless physician assistants, nurse practitioners, nurses, medical assistants, scribes, EMTs, researchers, student interns, and even

educators as UMC also supplements the University of Arizona Medical School (Tucson Census and Employment Data, 2016). These companies supply the vast majority of work in Pima County but some other notable companies to recognize are Tucson Medical Center at 2,536 people, VA Healthcare System at 2,265 people, and then Carondelet Health – St. Joseph’s Hospital at 1,407 people (Tucson Census and Employment Data, 2016).

By having a plethora of occupations in the Pima County, it can lead to different shapes and forms of harm, risk, or injury depending on what it is. Many of the occupations that work in offices, buildings, or inside work environments are shielded from a lot of harm from the get go. While positions like police officers and firefighters, farmers/ranchers, industrial workers, and construction workers tend to face a much higher risk of harm than the before mentioned. Police Officers are dealing with criminals with knives/guns, firefighters risk their lives for others by putting out massive fires and often times rescuing people out of burning buildings. While farmers and industrial/construction workers deal with heavy, dangerous machinery, can be on unstable, high edges, and also work in the heat of Pima County which can reach temperatures of 120 degrees in the summer posing another health risk (Pima County, AZ., 2016). Farmers and ranchers face the most environmental health risks as many of them are outdoors practically 24 hours a day in the sun and heat. This can lead to numerous health risks like dehydration, heat stroke, passing out, severe sunburn, or even skin cancer if exposed a lot over a longer period of time. And with it being a year round job, many of them are sleeping outside in the winters, too, where temperatures can drop into the 20’s or 30’s out in the desert. This can bring on potential frostbite, pneumonia, or damage to muscles and bones. Aside from weather conditions, though, many people in this field of work have to deal with wild animals, too. Anything from packs of

coyotes, packs of javelina, rattlesnakes (extremely poisonous), spiders, and scorpions are all out in the open desert and farm lands (Pima County, AZ., 2016). Not to mention controlling their horses and keeping cattle under control while herding, as well. Another posed problem that arises in this work field is that if a serious injury were to occur, these farmers and ranchers are miles on miles from the closest health facility available. And while there's a big difference in the kind of work put in between a rancher and an office businessman, both have their own respectable health risks that ought to be given their due respect for the work they perform.

15. Other Community Factors Affecting Health

Pima County has various factors that impact the health of the county, but events and organizations show an awareness amongst the county citizens. One way Pima County has shown awareness of its health issues is through the current initiatives of tracking the Zika virus and its spread. The Arizona Poison and Drug Information Center—which is run by the University of Arizona—and the Pima County Health Department teamed up to develop a hotline that people in Pima County can report to with questions about mosquito borne illnesses (Inness 2016). University of Arizona Researchers also developed an app, Kidenga, which tracks mosquito populations to potentially track where outbreaks happen before they start (Inness, 2016). With 39 cases of Zika, 6 of which are in Pima County (Inness, 2016), the hotline and app show a proactive interest in the spread of new diseases in the county.

Pima County also has a lot of bike initiatives to get people more active in the communities. Cyclovia Tucson is a program run by the Living Street Alliance that closes down various streets in Tucson to car traffic and opens them up for safer bike and pedestrian traffic (Cyclovia Tucson, n.d.). Some of the major goals of the event are to get people in the community

more active, increase mobility and street access, and promote awareness for safer bike and pedestrian practices for a better merger between city streets and citizens (Cyclovia Tucson, n.d.). Bike Fest is another annual event in Tucson promoting healthy riding. Bike Fest is held in the month of April and is a partnership between Living Streets Alliance, the City of Tucson, Pima County, and Pima Association of Governments (Living Street Alliance, n.d.). The festival incentivizes bike riding by partnering with local business and holding events throughout the Greater Tucson area throughout April (Living Street Alliance, n.d.). Having these events supporting bike riding and safer streets creates a cleaner environment by encouraging clean travel and bolsters safer community streets through awareness.

Organizations also hold different events in the community to try and garner support and interest in health. El Rio Vecinos, a branch of El Rio, was created to engage millennials in the county in public health and they recently held a fundraiser called the Bow Tie Block Party to raise money for pediatric dental services (Nannini, 2016). The Bow Tie Block Party is an annual event, but El Rio Vecinos has become an integral part of health in the community. The Pima County Behavioral Health found that El Rio Vecinos has improved relations in El Rio as well as helped other non-profit in Pima County improve the health of the community (Nannini, 2016). The Southern Arizona AIDS Foundation is another organization that holds events to raise awareness and support healthy lifestyles in Pima County. They have an annual AIDS Walk that takes place to raise awareness about the disease and fundraise for various programs and services, but they multiple events throughout the year including Festival for Life, Bowling for Tommy, Jell-O Wrestling, and more (Southern Arizona AIDS Foundation, 2016).

There are also youth specific organizations and events to help create a healthier young population. The Pima County Cooperative Extension has a relatively new 4-H program called Youth Voice: Youth Choice and seeks to “encourage thousands of kids to make healthy food choices, boost physical activity and gain leadership skills, leaders say” (Bregel, 2016). The organization partners with schools in Pima, Pinal, and Santa Cruz County to better the nutrition and exercise practices of children (Bregel, 2016). The program has goals of reaching indigenous populations throughout southern Arizona by targeting their communities through channels such as the San Xavier School District and Tucson Indian Center (Bregel, 2016). It also has a Healthy Living Component for older kids that is more involved and teaches leadership as well as how to share what they learn from the program with other kids their own age (Bregel, 2016). Programs teaching healthier habits to youth can have lasting positive effects on the county by creating a generation with a better understanding of health and wellness.

Pima County also holds events for its employees and the public. Every year they hold Health & Wellness Fairs for all city and county employees. Over 50 exhibits of nonprofit and commercial organization are set up for people to browse and explore their healthcare options (Pima County, 2016). There are raffles and challenges that earn people wellness points to try and incentivize their employees and the community to come out (Pima County, 2016). It encourages people to take part in the various vendors programs that can positively affect their health (Pima County, 2016). This biannual event also provides free screenings, information sessions, and demonstrations for the community (Pima County, 2016). Events like this are other ways Pima County Government contributes to the overall health of the county.

Summary

Pima County contains a wide variety of geographical landscape from the wide, flat desert landscape, to the large rolling hills of the Sonoita Valley, and to the vast Catalina Mountain Range where the well-known Mt. Lemmon is located. With so much physical diversity in the county, a plethora of different kinds of botany is able to grow. Pine trees cover the landscape of the mountain ranges while saguaro, cholla, and barrel cacti cover the desert landscape along with numerous mesquite trees. Weather also varies drastically in Pima County. The mountain ranges can see upwards of 90 degrees Fahrenheit in the summers and can drop all the way down to 10-20 degrees in the winter time. The desert regions can be morbidly hot in the summers peaking at 120 degrees Fahrenheit on occasions, but in the winter time temperatures can range from 30 to 40 degrees. This diverse landscape and weather affects all races and ethnicities in the county and can pose health risks to those stuck outdoors, including farmers, construction/industrial workers, and the homeless.

There are 980,000 residents in Pima County. This is the second largest county population in all of Arizona, following Maricopa County with 3.8 million people. In Pima County, the average age of is 37 years old. Residents 18 years and younger make up 26.3% of the population. There are about 15.4% of people 65 years of age and older that reside in Pima County. With the largest population at 58.3%, people ages 19-64 make up the bulk of the population. When the population is broken down by gender, there is a very small gap between the males and females. Of nearly 1 million people in Pima County, women make up 50.9% of the population while men make up 49.1%. The predominant racial group in Pima County is White, representing 74.3% of

the population. The other racial groups in descending population order would be Other, African American, American Indian, Asian American, and Native Hawaiian.

Socioeconomic stratification in Pima County is important to consider because socioeconomic position strongly affects one's health, available resources and services, and other aspects of life. Nearly one-fifth of Pima County residents live below poverty level (19%). This more severely affects women, people under 18 years old, and Hispanic/Latino residents. The median household income is \$46,233, with 45-64 year olds having the highest average income and 15-24 year olds having the lowest. In Pima County, the average family size is 3.13 people. While 82.2% of adults have health insurance, which is higher than the national percentage, American Indians and Hispanics/Latinos have the lowest coverage rates.

In general, men have a higher mortality, but lower morbidity than women. By racial groups, Black or African American and American Indian or Alaska Native people have higher mortality rates than other racial groups in Pima County. However, when looking at morbidity, White and Black or African American groups tend to have higher rates for hospital discharge data. This may not indicate true morbidity as not everyone who experiences illness/injury can visit a hospital. The largest areas of concern were circulatory diseases, respiratory diseases, mental health related illnesses, diabetes, and accidental injuries. All of which were associated with the highest morbidity and mortality for the county. Residents of Pima County see mental health, substance abuse, diabetes, and injury as their largest perceived health issues and would like to see or know about more resources available to them in those areas.

There are many local health resources in Pima County for a variety of causes, including infectious diseases, low socioeconomic status care, and substance abuse care. These resources

come from faith based organizations like the Tucson Interfaith HIV and AIDS Network, governmental organizations like the Pima County Health Department, and nonprofit organizations like the Southern Arizona AIDS Foundation. Special populations also have resources tailored for them, such as injection drug user needle exchanges and child abuse prevention organizations. Residents have bountiful local health resources that address a variety of issues pertinent to Pima County.

Pima County exemplifies a community with many different races and ethnicities, some of which have had historical ties to this land for hundreds of years. Some of these groups are of Hispanic and Hohokam descent and still reside here in the county to this day. Other groups that inhabit Pima County include African American, Caucasian, Asian, Pacific Islander, and other Native American tribes such as the Apaches. These groups all play a role and make contributions to the county. For example, Hispanics and Native Americans provide a lot of the agricultural influence that is heavy in Pima County. Military influences are also large in Pima County. There have been military posts since the 1800's and the Davis-Monthan Air Force Base is currently located in the county.

Pima County is run by a Board of Supervisors who are in part responsible for making health decisions for the county. They receive suggestions from a Health Care Benefits Trust Board who is responsible for health oversight. The Pima County Health Department is the major governmental agency working to improve health in Pima County through services, donations, and community work. There are non-government agencies that also impact health in the community through outreach and services they offer, such as the Pima Council on Aging, which carries out community assessments for the elderly population; the Community Foundation of

Southern Arizona, which contributes to health organizations and the community; and the Women's Foundation of Southern Arizona, which provides grants to various women's groups. Though Pima County makes a majority of the health decisions for the county, non-governmental organizations aid in collecting data that can serve local government and and legislation.

With Pima County being the second largest county in Arizona, it must hold adequate housing to shelter nearly 1 million people. There are approximately 452,000 housing units around Pima County, and with an average of 2.5 people per household there is enough housing units for the residence of Pima County. In reality, only 61.8% of Pima County's population can afford to live in available housing throughout the territory. This means that the other 38.2% of people are either living in halfway houses, apartments which they do not own, or they are homeless. There are approximately 5,100 homeless people in Pima County. There are homeless shelters around the county that take in people under certain conditions. The average cost of a house in Pima County today is \$161,000, which estimates to about \$1,300 a month in bills. For people who cannot afford this, there are other low-income housing options available to them. One available option that people is to be charged about 30% of one's monthly income instead of a base price for rent. This makes living much more comfortable, knowing that one has 70% of their monthly income to spend on their family. Even though there is an adequate amount of housing in Pima County, there isn't an adequate amount of affordable housing and there is still a substantial amount of homeless people.

In terms of food supply in Pima County, there is a need for food. A total of 15.4% residents face food insecurity and 14% live in a food desert. Plus, there is a stark concentration of food resources in the Tucson metropolitan area and not so much outside of that area (this

explains some of the food deserts). There are many organizations in Pima County that help fight food insecurity including WIC, SNAP, Food Plus, the Arizona Farmer's Market Nutrition Programs, food banks, various faith organizations, community gardens, and various nonprofit organizations.

There are many educational resources available in Pima County, from faith-based schools, private schools, charter schools, Montessori schools, to higher and accelerated education schools. There are also resources available for special populations like the Arizona Schools for the Deaf and Blind. There is a 4.2% dropout rate for students preschool-12th grade with 151,731 students enrolled. In terms of four-year high school graduation, 74% of public high school students graduate in that time. Also, 87.3% of Pima County residents have attained at least a high school education. Minorities (except Asians) across the board have a lower high school graduation rate and a high dropout rate, so there is a clear need for more resources to support these populations.

The schools of Pima County follow the guidelines from several different programs such as the Arizona's Department of Education, the National School Lunch Program, the National Association of Sports and Physical Education, as well as the health education standard. Each program is unique to their fields of physical education, sexual education, and deciding what is the proper nutrition to put on Pima County's students plates. There are programs such as free and reduced lunch so families who are a certain percentage under the poverty line do not have to pay full price for their children's school lunch. The school's of Pima County do not have the requirement to teach students about sexual education, so if any school chooses to they must do so using their own resources. Pima County does also not follow the physical education guidelines

set by the National Association of Sports and Physical Education. Even though 1 in 3 children are obese in the United States, there is no mandatory recess of 30 minutes each day in our schools.

Many social welfare programs exist in Pima County that assist low income families and individuals with finances. Organizations do this through offering free counseling, free workshops, one-time monetary loans, donations and/or house repair. There are many resources that provide help if a person receives an eviction, shut-off, or foreclosure notice. Government, faith-based, and community organizations all provide these services. Furthermore, there are resources to help veterans and the elderly. There is a strong need for financial assistance in Pima County, as in 2012, the Society of St. Vincent de Paul alone contributed over \$7 million to nearly 87,000 people that needed help.

The main form of transportation in Pima County is non-carpool driving. Public transportation services offered in Pima County include the Sun Tran, Sun Shuttle, Dial-A-Ride, and the Sun Link. The state of transportation in Pima County was rated 0.2 out of 10 by the Center for Neighborhood Technology's Housing and Transportation Affordability Index, which indicates the efficiency and access to public transportation are very poor. The county faces other transportation challenges, such as cost barriers, low access to walking and biking locations, and poor road infrastructure and quality. Additionally, 8.91% of households do not have access to a vehicle.

Pima County has a workforce of 471,900 people that cover a wide variety of occupations. A majority of this workforce are between the ages of 18-34 (153,262; 29%) and are predominantly Caucasian (399,202; 78%) (Tucson Census and Employment Data). The overall

workforce includes Hispanic, African American, Asian, and Native American populations. There are numerous companies and businesses that employ the residents of Pima County. Some organizations supplying the largest quantity of jobs include the University of Arizona, Raytheon, the University of Arizona Health Network, the City of Tucson, federal organizations, and Tucson Medical Center. While these employers lead the job market, there are numerous other jobs available in construction, industrial work, farming, and small, local businesses. One challenge the county faces is that some of these jobs can pose greater health risks. The aforementioned places of work involve large machinery and many opportunities for accidental injury that could be severe. Thus proper training in these jobs is extremely important, along with the correct training in any job as injury can happen anywhere.

Some of the largest factors impacting health are based from events and community awareness programs. El Rio Vecinos, Southern Arizona AIDS Foundation, Living Street Alliance and its various partnership are all examples of organizations supporting health and wellness in Pima County. All of these organizations have had positive impacts on health in Pima County by engaging the community in public health events to impact lifestyle decisions as well as sharing healthy alternatives and tips. They also raise money for services that they can provide to the community. Pima County itself also holds events for its employees and the public to get people interested in their health options and know more of what is available to them.

The population that seems to face the most health challenges is Pima County residents that are below poverty level. Pima County is the second largest county in Arizona, and 19% of its population is below poverty level. Women and people 18 years or younger are the most common demographics to suffer from poverty. The issue of poverty is also reflected by the fact

that only 61.8% of Pima County's population are able to live in affordable housing. American Indian, Hispanic, and Latino people also have a tendency for low socioeconomic, negatively impacting their health. As shown by morbidity and mortality information, American Indian populations in Pima County are very susceptible to disease. Though White non-Hispanic and Black/African American had slightly higher morbidity in some diseases, American Indians suffered some of the highest mortality rates. Additionally, since Pima County has a 0.2 out of 10 rating for transportation accessibility and efficacy, those suffering from household poverty in Pima County also face large challenges with transportation which can create further issues, such as trouble reaching a job that pays well, and the creation of food deserts. These challenges often lead to a poor quality of life. Improving public transportation and road infrastructure, increasing access to healthy food, and increasing access to safe and affordable housing should all be priorities for improving the health status of Pima County. Health promotion and education programs should focus on delivering services and knowledge to women, adolescents, and American Indian and Hispanic/Latino individuals who are primarily affected by these challenges. These considerations and improvements can hopefully lead to improved health and socioeconomic standards within Pima County.

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