Comprehensive Community Health Needs Assessment for Auxilio Mutuo Hospital 2018

Auxilio Mutuo

El Gran Hospital de Puerto Rico

IMPACTIVO

DATA-DESIGN-INSPIRATION

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II. INTRODUCTION

A. BRIEF HISTORY

The *Sociedad Española de Auxilio Mutuo y Beneficiencia de Puerto Rico* was conceived by Dr. Manuel Thous and constituted by a hundred Spaniards by an act on November 19, 1882: inspired in the protection of those who suffered from illness, the absence of family and the remoteness of their homeland. A clinic was set up in San Juan, which was later extended to another one in Santurce. In 1910, construction started on what became the first building of the current structure. This building was inaugurated in 1912, and in 1926, the Sanatorium was extended with the construction of an annex building for women.

Some facts about the history of the hospital:

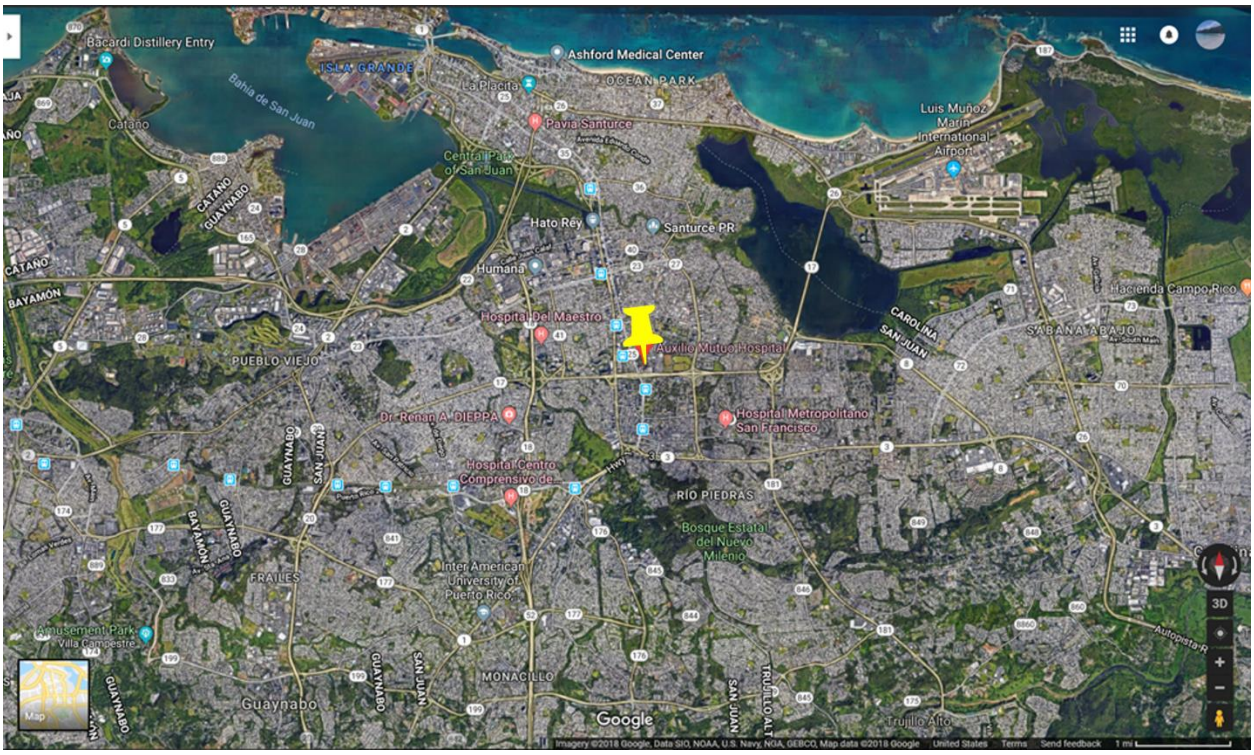
- The land in Hato Rey allowed the cultivation of different vegetables, a henhouse, and a dairy was available to guarantee the supply of food.
- Sports facilities existed on the grounds, the most important being the football field (where the medical office tower is now), which is where the practice of soccer began in Puerto Rico.
- In their emergency rooms or operations, the hospital hosted luminaries and people of very different political ideologies, including great writers, poets, musicians, politicians, presidents of government, archbishops, mayors, and governors.
- In addition, Auxilio Mutuo was the site of visits by prominent figures of Spanish royalty, cardinals, archbishops, ambassadors and diplomats, and many eminent doctors and several Nobel prize recipients.

Currently, Auxilio Mutuo has prominent and well-established services, including but not limited to cardiology, cardiovascular surgery, oncology, radiotherapy and transplant units. The latter service has been, since 2005, a training center for transplant surgery, with accreditations to prepare doctors in that area. The most common procedure is the kidney transplant under a program that started in 1983 with a team of three persons and today exceeding 40 clinicians, practitioners, and administrative staff. Today, the hospital offers more than 40 services, including prenatal care, sports medicine, a cardiovascular diseases unit, pediatrics, a transplant unit, and surgical suites.

B. DESCRIPTION OF THE SERVICE AREA

Auxilio Mutuo Hospital is in Hato Rey, a sector in the capital city of San Juan. The Hospital also operates satellite clinics in the towns of San German, Ponce and Aguadilla, where services for patients in the process of receiving an organ transplant are rendered. The various locations of the satellite clinics help reduce the need for patients to travel to San Juan to receive services, which can be an impediment.

Due to the hospital's strategic position, it serves patients from the municipalities of San Juan, Guaynabo, Carolina and Trujillo Alto. The hospital also receives patients from all of Puerto Rico's seventy-eight municipalities. This study investigates the health needs in the municipalities of San Juan and Guaynabo, which are the towns of origin of the majority of the hospital's patients.



III. CHARACTERISTICS OF THE TARGET POPULATION

A. POPULATION DEMOGRAPHICS

1. GENDER/SEX RATIO AND RACE, CULTURE/ETHNICITY, AND LANGUAGE

San Juan, the capital city of Puerto Rico, sits on the island's Atlantic coast. It has a population of 337,288 (45.6% male and 54.4% female), making it the 46th largest city in the United States (ACS 2017 5-Year estimates). The municipality of San Juan consists of a 77-square-mile area with a population density of approximately 4,380.4 per square mile.

Guaynabo has a population of approximately 87,328 (46.9% male and 53.1% female) (ACS 2017 5-Year estimates). The municipality of Guaynabo consists of a 27.1-square-mile area with a population density of approximately 3,222.4 inhabitants per square mile.

2. MEDIAN AGE AND AGE DISTRIBUTION

As reported in the ACS 2017, Guaynabo and San Juan have an old-age population structure. To determine that a municipality has a critical old-age population, the median age must be more than 30 years, indicating that at least half of its population exceeds 30 years. The median ages for Guaynabo and San Juan are 47.2 years and 45.2 years, respectively (2017 ACS 5-Year estimates). The population age distribution for Guaynabo and San Juan are shown in the table below.

Table 1. Population Distribution by Age for the Municipalities of San Juan & Guaynabo

Municipality or Sector	Age Range						
	< 5 yrs	5-9 yrs	10-14 yrs	15-19 yrs	20-59 yrs	60-64 yrs	65 years and over
Guaynabo	3,475	3,819	4,512	5,022	45,619	6,179	18,702
San Juan	15,136	16,114	17,940	21,513	170,873	21,854	73,858

The average population growth rate of Puerto Rico is -1.74% annually for 2017 (CIA World Fact Book, 2017). Guaynabo experienced a decrease in population from 97,924 in 2010 to 87,328 in 2017 (-10.8%). Additionally, San Juan experienced a decrease in population from 395,326 in 2010 to 337,288 in 2017 (-14.7%) according U.S. Census data. The current trend for PR is a decline in population that can be attributed to emigration, predominantly to the mainland U.S., which is occurring throughout the Island.

Table 2. Population Change for the Municipalities of San Juan & Guaynabo

Municipality	2010-2017
Guaynabo	**-10.8%**
San Juan	**-14.7%**

The U.S. Census Bureau's Puerto Rico Community Survey shows that, during 2017, roughly 388,980 people left the Island by September 2017, the highest registered population decline since the launch of the Puerto Rico Community Survey over a decade ago (a reduction of 10.4%). The Puerto Rico Institute of Statistics reports that the 2017 net migration was -16.9 per 1,000 people. Additionally, the median age of those leaving was 29.3 years, while the median age of people moving to PR is 33.4, contributing to the aging of the Island's population.

B. CORE BARRIERS

1. POPULATION TO ONE FTE PRIMARY CARE PHYSICIAN (PCP) RATIO

The ratio of PR citizens per single primary care provider in 2013 was 1,103.5:1 (PR PCO Needs Assessment 2013). It is expected that this ratio will grow larger in the coming years. According to the College of Physicians and Surgeons of Puerto Rico, of the 9,261 general practitioners working in PR in 2015, only 3,786 remain; and out of 3,324 internists working in PR in 2015, only 1,423 are currently practicing (2018).

2. PERCENT OF POPULATION BELOW 100% OF POVERTY

In San Juan, 42.3% of residents are living under the Federal Poverty Level (FPL), while in Guaynabo 27.2% of residents are living under the FPL (ACS, 2016). The percentage for Puerto Rico overall is 45.1%, and the national benchmark is 15.1%.

3. PERCENT OF POPULATION UNINSURED

Puerto Rico has the second lowest uninsured rate in the United States, with 6.3% of the entire population lacking insurance. In Guaynabo, 8.4% of the population is uninsured, while in San Juan, 12.1% of the population is uninsured (ACS, 2017).

In Puerto Rico there is a Medicaid office in every municipality, and certified Medicaid patients are eligible for the PR Medicaid health insurance program, Vital. Even though patients may be eligible, many do not request or maintain active Medicaid certification, creating gaps in coverage. Additionally, certification must be renewed annually to maintain eligibility for Vital/Medicaid; when certification is cancelled or expires, patients are considered uninsured for the period that they are out of the system as well as the time it takes to re-register in the system.

C. ACCESS TO HEALTH SERVICES

1. HEALTH INDICATORS

a) DIABETES

Age-adjusted diabetes prevalence in the service area is extrapolated to be 12.7% in San Juan and 12.3% in Guaynabo (2016 BRFSS extrapolated using 2017 ACS 5-year estimates), incidence rates that are below the severe national benchmark. The national average for this measure is 15.3%, and the national median benchmark for age-adjusted diabetes prevalence is 13.8%. Puerto Rico has the highest rate of diabetes prevalence in the United States at 15.3%, compared to a national average of 10.5%. The second-highest rate of diabetes prevalence is West Virginia's, at 13.0% (BRFSS 2016).

b) CARDIOVASCULAR DISEASE

The prevalence of angina or coronary heart disease in the service area is extrapolated to be 6.1% in San Juan and 5.9% in Guaynabo (2016 BRFSS extrapolated using ACS age and gender). Lifetime heart attack prevalence was extrapolated to be 4.8% in San Juan and 4.7% in Guaynabo (2016 BRFSS extrapolated using ACS age and gender).

Puerto Rico's commonwealth-wide rate of angina or coronary heart disease is 7.8%, well above the national average of 4.1% and only lower than West Virginia's rate of 8.0%. Puerto Rico's lifetime heart attack prevalence, at 6%, is higher than the national average of 4.4% (BRFSS, 2016).

c) CANCER

The American Cancer Society published a report on 2017 on the incidence of cancer. The report indicated that between 2011 to 2015, prostate cancer incidence rate in Puerto Rico was 146.6 per 100,000, which was 44% higher than the national rate (101.7 per 100,000) (ACS, 2017). The report also included that men in Puerto Rico had 17% higher colorectal cancer mortality rates from 2011 to 2015 compared with the national rate. Among women, breast cancer is the leading cancer cause of death in Puerto Rico, with at least 18% of all deaths between 2011 and 2015. For men, prostate cancer is the leading cancer cause death with 18% (ACS, 2017). As for skin cancer prevalence in the service area is extrapolated to be 0.6% in San Juan and 0.6% in Guaynabo (2016 BRFSS extrapolated using ACS age). The prevalence of all other cancer is extrapolated to be 4.1% in San Juan and 4% in Guaynabo (2016 BRFSS extrapolated using ACS age).

According to the Puerto Rico Cancer Registry, San Juan has an age-adjusted incidence rate of 350.1. while Guaynabo's is 359.8. Both exceed the average for Puerto Rico which is if 342.0. Is important to point out

that Puerto Rico has a higher compliance rate with preventive cancer screening when compared with the national averages. The U.S. national benchmarks for breast cancer screening among women over the age of 40 who have not had a mammogram in the past two years is 27%, and the national benchmark for adults who have not had a fecal occult blood test within the past year is 89% (BRFSS, 2016). In San Juan, the extrapolated rate for women over the age of 50 without a mammogram was 2.7% in 2016. For adults not completing a fecal occult blood test, the rate was of 21% during the same year. For Guaynabo, the extrapolated rate for women over the age of 50 without a mammogram was 2.8% in 2016. For adults not completing a fecal occult blood test, the rate was 22% during the same year. The CDC indicates that at least 30% of the males over the age of 40 in Puerto Rico don't talk to their doctors about prostate cancer screening.

d) PRENATAL AND PERINATAL HEALTH (INCLUDING ADOLESCENT PREGNANCY AND LACK OF ADEQUATE PRENATAL CARE)

San Juan's female population in the 15-to-49-year-old range comprises 43% of all women. Adolescents aged 15-19 make up 6% of the female population (U.S. Census Bureau, ACS 2017, 5-Year estimates). Guaynabo's female population in the 15-to-49-year-old range comprises 41% of all women. Adolescents aged 15-19 make up 5% of the female population (U.S. Census Bureau, ACS 2017, 5-Year estimates). According to the Puerto Rico Department of Health, out of the 28,339 live births in Puerto Rico for 2016, 12% were to mothers under the age of 20 (PRDoH, 2017).

According to the Puerto Rico Primary Care Needs Assessment (2015), the percentage of mothers who sought prenatal care during their first trimester was 83.4%, 47% of births were cesarean, and 10.8% of babies were born at low weight. Although this data is not available at the sector level, the percent of mothers who sought prenatal care during the first trimester for the town of Guaynabo was between 82.4% to 86.5%, and in San Juan it is estimated to be between 73.6% to 82.3%.

e) CHILD HEALTH

In the service area, the current estimated prevalence of asthma among children aged 0-14 years is 2.3% in San Juan and 2.8% in Guaynabo. The lifetime asthma prevalence for children is 3.9% in San Juan and 4.6% in Guaynabo (BRFSS 2016 data extrapolated using ACS age). Current asthma prevalence for children across Puerto Rico is 13.7%, while the national rate is 8.9% (BRFSS, 2016). Lifetime asthma prevalence for children in Puerto Rico is 22.1%, which is significantly higher than the U.S. average (13.7%).

Regarding immunizations, the 2015 Puerto Rico Primary Care Needs Assessment indicates that for the towns of San Juan and Guaynabo the percentage of children who did not receive the recommended immunizations was between 46.4% and 61.3%. For the same year, the average rate of non-immunization throughout Puerto Rico was 43.6%, well above the national average of 28.4%.

f) HYPERTENSION

The prevalence of hypertension in Puerto Rico for the year 2016 was 42.2%, according to the Puerto Rico Department of Health. The extrapolated prevalence of adult diagnoses of hypertension for the service area is 34.5% in San Juan and 33.4% in Guaynabo (2016 BRFSS data extrapolated using ACS age). These rates are significantly higher than the national median benchmark of 29% for this measure of cardiovascular disease.

g) CEREBROVASCULAR (STROKE)

Stroke prevalence in the service area is extrapolated to be 1.7% in San Juan and 1.6% in Guaynabo (2016 BRFSS data extrapolated using ACS age). Stroke prevalence in Puerto Rico is the third lowest in the United States, at 2.1% compared to the national average of 3.2% (BRFSS, 2016).

h) OBESITY

Extrapolated data indicate that 27.4% of the population in San Juan and 27.5% of the population in Guaynabo are overweight. Additionally, 23.1% in San Juan and 23.3% in Guaynabo are obese (2016 BRFSS data extrapolated using ACS age). In Puerto Rico, 67% of the population is overweight and an additional 28% is obese. At the national level the rate of population overweight was 71%, while the obesity rate was 38% (BRFSS, 2016). The rates for Puerto Rico appear to be below the national averages.

i) ASTHMA

The lifetime asthma prevalence for adults was 13.3% in San Juan and 13.1% in Guaynabo, based on extrapolation to the municipal level per age distribution (BRFSS 2016 extrapolated using ACS age). The current asthma prevalence for adults, according to 2016 BRFSS Puerto Rico survey data extrapolated to the municipal level based on the age distribution, is 8.2% in San Juan and 8.2% in Guaynabo. The weighted averages of these measures for the entire service area are 13.2% adult lifelong asthma prevalence and 8.2% adult current asthma prevalence. BRFSS 2016 data indicate that adult current asthma prevalence in Puerto Rico is of 17.5%, compared to 13.6% nationally. Overall, the prevalence of asthma is higher in Puerto Rico than nationally.

j) STD/HIV/AIDS

According to the Puerto Rico Department of Health, as of June 2018, it was estimated that 0.60% (n=20,271) of the population of Puerto Rico was diagnosed with HIV-AIDS, well above the US national average at 0.3%. San Juan accounted for 22% of the cases, while the Metro region, which includes Guaynabo, accounted for 11.5% of the cases.

As for sexually transmitted infections, the rate for chlamydia in Puerto Rico for 2017 was of 0.38%, for gonorrhea it was of 0.04%, syphilis was 0.07% and genital herpes was of 0.13% (PRDoH, 2018). The national rates for these diseases was of 1.14%, 0.37%, 0.07%, and 0.12%; respectively (CDC, 2018). The prevalence in Puerto Rico is well below the national average for all infections except for genital herpes.

k) KIDNEY DISEASE

Is estimated that in Puerto Rico at least 20% of the population suffers from kidney disease, surpassing the national prevalence of 14% (CDC, 2016). According to CMS, in Puerto Rico there are 47 certified dialysis centers, with access to 1,278 beds. In the municipality of San Juan, there are 4 operating dialysis centers with 130 beds. After hurricane Maria, deaths related to kidney disease rose in almost 43%, to 211. Auxilio Mutuo Hospital holds the only renal transplant unit in Puerto Rico performing and average of 80 kidney transplants per year. This number could be higher, however there is a lack of organs and donors in the island. Also, there are a few organs obtained in Puerto Rico which are sent to the mainland, reducing the opportunities for local patients to receive an organ.

l) ELDERLY HEALTH

According to Census Bureau, in 2016 the population over the age of 65 in the town of Guaynabo was 18,702 individuals (21.4%), and for San Juan it was 73,858 individuals (21.9%) (ACS, 2016). Data extrapolated to the service area level based on the age structure of the population indicate that 8.3% of

elderly individuals in San Juan and 8% in Guaynabo (65 years old or greater) have not received a flu shot in the past year; this is well below the national median benchmark of 44.1%.

m) AGE-ADJUSTED MORTALITY RATE

The age-adjusted mortality rate is 1% in San Juan and 0.97% in Guaynabo as of 2016. These results compare to the average of 0.91% Puerto Rico, which is a bit higher than the U.S. national rate of 0.85% (CDC) (PR Department of Health).

Table 3. Leading Causes of Death in Puerto Rico

Leading Causes of Death in Puerto Rico (2015)	Mortality Rate
1. Cancer	18.3
2. Heart Condition	17.7
3. Diabetes	10.4
4. Alzheimer's	7.5
5. Cerebrovascular	4.6

n) INFANT & MATERNAL MORTALITY RATE

The infant mortality rate in Puerto Rico for 2016 was 7.4 per 1,000 live births, while the maternal mortality rate in Puerto Rico in 2015 was 14.0 per 100,000 live births, lower than the national rate of 25 per 100,000 live births nationally for the same year (CDC, 2018).

o) LIFE EXPECTANCY

According to the CIA World Factbook, the 2017 estimate for Puerto Rico's life expectancy is 80.9 (32nd on the list), located above the United States' 80 (43rd). Data is not available at the municipal or sector levels.

2. BEHAVIORAL HEALTH: DEPRESSION, ALCOHOL, AND SUBSTANCE ABUSE

a) DEPRESSION DIAGNOSES

According to the 2015 BRFSS, in Puerto Rico the prevalence of depression was 18.8%, matching the national rate at the time, which was 18.7%. The Puerto Rico Department of Health has indicated that an increase in the cases of depression has occurred Puerto Rico after the 2017 hurricanes. However, the agency has not issued official numbers or an updated report on the incidence and prevalence of depression.

b) SUICIDE RISK

According to data from the Puerto Rico Department of Health, the suicide rate for 2017 was 7.6 per 100,000 inhabitants, a significant increase over the previous year, during which the rate was 5.8 per 100,000 (PRDoH, 2018). These rates are significantly below the national average of 13.4 per 100,000. For the service sites of Auxilio Mutuo Hospital, there were twenty-six (26) reported deaths by suicide during 2017 in San Juan and five (5) in Guaynabo; the average rate for the service area was of 6.3, which was higher than the average rate of 2016 at 3.7.

c) ALCOHOL AND DRUG USE

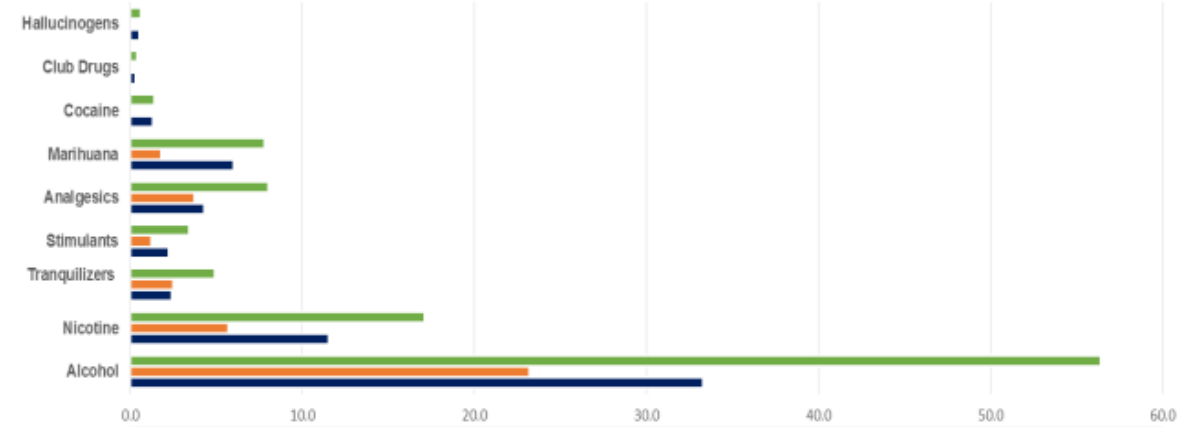
According to the 2016 BRFSS, 63% of Puerto Rican participants indicated that they consume an average of 3 or more drinks per day, well above the national average of 24% who report doing so. As per a report from the Puerto Rico Department of Health (2017), approximately 2 in 10 adults aged 18 to 64 years old

(18.7%) meet 2016 diagnostic criteria for a DSM-IV psychiatric disorder. When including substance use disorders (excluding nicotine dependence) in the rate of a psychiatric disorders, the 12-month prevalence rate in Puerto Rico increases to 23.7% (PRDoH, 2017).

The report also indicates that an estimated 2.5% of the adult population in Puerto Rico need substance use services since they meet criteria for substance dependence disorder. The report also added that 5 in 100 adults aged 18 to 64 in Puerto Rico (5.2%) met DSM IV criteria alcohol abuse disorder in 2016, and 1.5% met criteria alcohol dependence in the same year. One in 20 adults in Puerto Rico (5.1%) met criteria for nicotine dependence in the last 12 months preceding the interview. Women between the ages of 18 to 64 had less probability of being diagnosed with a substance use disorder than did men. The 26 to 45 age group showed the highest prevalence rates for any substance use disorder (5.1%), specifically for nicotine dependence (2.4%), any alcohol use disorder (2.4%), and any drug use disorder (1.5%). Lastly, the report indicates that approximately 7 out of 10 adults (69.8%) who met criteria for alcohol dependence had not received any treatment (i.e., unmet need) in the last 12 months (PRDoH, 2017).

Figure 1. Substance use in 2016 as reported by the Puerto Rico Department of Health (2017)

Figure 6: Substance Use in the Last 12-Months by Gender among Adults 18-64 years old in Puerto Rico



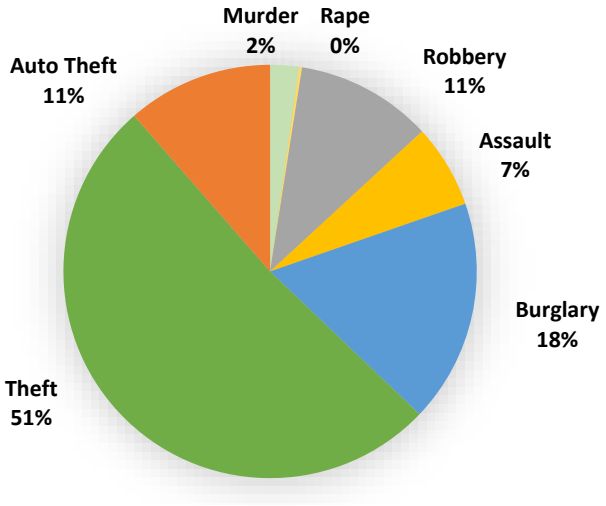
	Alcohol	Nicotine	Tranquilizers	Stimulants	Analgesics	Marihuana	Cocaine	Club Drugs	Hallucinogens
Total population	56.4	17.1	4.9	3.4	8.0	7.8	1.4	0.4	0.6
Female	23.2	5.7	2.5	1.2	3.7	1.8	0.1	0.1	0.1
Male	33.3	11.5	2.4	2.2	4.3	6.0	1.3	0.3	0.5

Note: The use of heroin, inhalants and other drugs is not included because their prevalence rate was less than 0.1%.

3. COMMUNITY VIOLENCE

For 2017 the region of San Juan reported a total of 7,580 incidents, 438 less than in 2016. According to the Puerto Rico Police Department, at least 98% of physical aggressions are not reported. For 2017, there was an increase in the number of reported homicides and robbery cases.

Reports by Type for the Region of San Juan, 2016



IV. SOCIODEMOGRAPHIC DATA

A. UNEMPLOYMENT AND LABOR PARTICIPATION

As of September 2018, the unemployment rate of San Juan was of 7.2%, and Guaynabo had a rate of 4.3% (Unemployment Statistics by Municipalities, PR Department of Labor, November 2018). The unemployment rates for these service areas are lower than the Puerto Rico average unemployment rate (8.6%), which is in turn higher than the U.S. rate (3.6%) (U.S. Department of Labor Statistics, November 2018).

The most dominant industries in San Juan were: government; trade, transportation and utilities; professional and business services; education and health services; and leisure and hospitality. In Guaynabo, the most dominant industries were: healthcare and social assistance; professional, scientific, tech services; and retail (2017 ACS 5-Year estimates). The average weekly wage for San Juan was $604, while in Guaynabo it was $653; the national average is $1,152 per week. According to 2017 ACS 5-Year Estimates, those who worked in the municipality of San Juan had an average travel time of 25.7 minutes, while those in Guaynabo had an average travel time of 26.8 minutes to work.

B. MEDIAN HOUSEHOLD INCOME (EARNINGS, SSI, OTHER PUBLIC ASSISTANCE)

The median household income in San Juan is $32,084, and the median household income in Guaynabo is $33,979 (2016 ACS 5-Year Estimates). In San Juan, incomes have increased compared to the median in the year 2015, which was $22,553, growing by 30%. In Guaynabo, the 2015 median income was $27,400, and the increase represents a gain of 19% in one year. Income levels in the service areas remain less than the U.S. median household income ($59,039) but are above Puerto Rico's average ($19,606).

C. EDUCATIONAL ATTAINMENT

In terms of educational attainment among the population that is 25 years and over, U.S. Census data indicates that 5.8% of the residents in San Juan reported an education level below high school completion. In Guaynabo, this percentage is 4.0%. Only 34.7% of San Juan's population over 25 obtained a bachelor's degree or higher, and the rate is 45.1% in Guaynabo. People with high school degrees or higher represented 78.7% of the population in San Juan and 83.2% of the population in Guaynabo. An additional 10.7% and 12.1% of the populations of San Juan and Guaynabo, respectively, held an associate degree (2016 ACS 5-Year Estimates). These statistics reflect a higher level of education than the average for Puerto Rico, where 30.3% have less than high school education. It can be said that educational attainment in the service areas is relatively high.

D. LITERACY RATES

Literacy rates are not available at the municipal level. The literacy rate across Puerto Rico is 93.3% (CIA World Factbook 2015), compared to 99% nationally. Due to the relatively high educational attainment of those areas, it can be inferred that the service areas have literacy rates somewhat higher than the Commonwealth-wide average.

E. UNIQUE HEALTHCARE NEEDS (CULTURAL/ETHNIC FACTORS SUCH AS SEXUAL ORIENTATION, LANGUAGE, ATTITUDES, AND BELIEFS)

As in most of Puerto Rico, the two main religious groups in the service area are Catholics, which represent most of the population, and a growing Protestant population. Both groups tend to adhere to traditional fundamental doctrines that include disapproval for family planning methods, divorce, and pre-marital sex; these attitudes are reflected in the social demographic characteristics observed in the two regions.

Other cultural factors affecting access to women's healthcare include persistently rigid gender roles, modesty among Hispanic women, and negative attitudes toward users of women's health services. According to various studies, Hispanic women are less likely than non-Hispanic women to obtain PAP tests, mammograms, and other invasive preventive screenings due to "personal barriers to having tests, including embarrassment, fear, and pain." (Bird, T. et al., 2007).

These cultural barriers are noted by Auxilio Mutuo Hospital and considered in staff training to ensure that information and education provided to users and family members, as well as service delivery, is culturally competent. Auxilio Mutuo Hospital offers its entire staff a conference about cultural competency, which focuses on raising awareness of and developing successful responses to the above-mentioned challenges.

Spanish and English are both official languages of Puerto Rico. According to ACS 2016 estimates, in San Juan, 92.6% of the population speaks Spanish only. In Guaynabo, 94.3% are solely Spanish speakers (ACS 2016 5-Year estimates). Staff at Auxilio Mutuo Hospital reflects the same cultural and racial mix as the people in the service areas: most are bilingual in varying degrees. Therefore, cultural/ethnic factors do not comprise a barrier to healthcare.

V. PROVIDERS IN THE SERVICE AREA

Puerto Rico currently contains 72 Medically Underserved Areas and Health Professional Shortage Areas, which are designated based on the demonstration that these areas meet the criteria for having too few health professionals to meet the needs of the population. San Juan and Guaynabo are among the areas designated as Medically Underserved (MUAs) and as areas in need of Primary Care Services.

Figure 1. HRSA Medically Underserved Areas in Puerto Rico

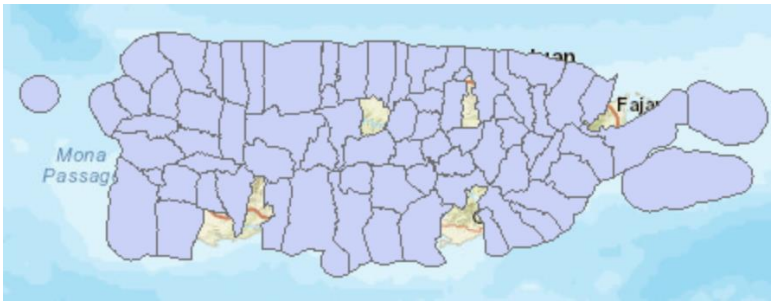


Figure 2. HRSA Areas in Need of Primary Care Services in Puerto Rico

The problem of health services shortage for residents has increased in recent years due to an exodus of qualified health professionals. According to the Puerto Rico Medical Licensing and Studies Board, the number of physicians in Puerto Rico dropped by a rate of 59% from 2015 to 2018; for example, there is just one pediatric neurosurgeon serving the more than 500,000 children of Puerto Rico, while guidelines state there should be one for every 80,000 children.

VI. KEY INFORMANT INTERVIEWS

Key informant interviews were conducted to gather community members' and hospitals patients' point of view in terms of the areas of need related to healthcare services. The interviews consisted of six (6) open-ended questions. Participants were also asked about their city of residence and if they had used the services of the Auxilio Mutuo Hospital. This section gathers the responses obtained through these interviews and identifies the areas of opportunity for the hospital.

A majority, or 77.5% (n=40), of the interviewed participants indicated that they have used the services provided by Auxilio Mutuo Hospital. The remaining participants indicated they use the services of hospitals which are 4.7 miles from Auxilio Mutuo. Of those who participated of the interviews, 28% were from San Juan. Other participants were from towns from which they need to travel an average of 45 to 60 minutes by car or 2 to 2.5 hours by public transportation to get to the Auxilio Mutuo Hospital facilities.

Table 4. Distribution of Key Informants' by Municipality of Residency

Town	Participants	Percentage	Town	Participants	Percentage
Aguas Buenas	1	2.5%	**Lajas**	1	2.5%

Bayamón	4	10.0%	**Loiza**	3	7.5%
Cabo Rojo	1	2.5%	**San Juan**	11	27.5%
Caguas	1	2.5%	**San Lorenzo**	1	2.5%
Cataño	5	12.5%	**Toa Baja**	4	10.0%
Cayey	1	2.5%	**Vieques**	2	5.0%
Dorado	1	2.5%	**Yabucoa**	1	2.5%
Hormigueros	1	2.5%	**Yauco**	1	2.5%
Isabela	1	2.5%			

During an interview with key representatives from the Puerto Rico Department of Health; it was discussed that in accordance with the Puerto Rico Healthy People 2020 Strategic Plan, the Department of Health hopes to promote the adoption of a UNICEF and WHO initiative called: Friend of the Child Hospital. This initiative promotes comprehensive child care as well as breastfeeding (PRDoH, 2012). On the other hand, in the 2016 Health Report; the Department includes among its objectives the development of collaborative agreements between municipalities, hospitals and health centers to guarantee the continuity of care (PRDoH, 2016). Among the quality indicators included in the report, the following stand out:

- The goal of a 1% reduction in the live births of very low birth weight of mothers who give birth in NICU level III hospitals.
- Evaluate the waiting time that patients find to use health services in the government of Puerto Rico.
- Achieve efficiency and coordination of services through electronic exchange of information, in order to make effective the provision of services and reduce costs.

In order to achieve these objectives, it is important that hospitals establish the necessary collaborative agreements with the Department. In this way, access to quality services for citizens could be improved.

A. HEALTHY COMMUNITY VISION

Participants were asked about their vision of a healthy community. From the responses of participants, it was concluded that their vision of a healthy community is a balance of access to health services, education, healthy social relationships, and a safe environment. Participants also indicated that 24/7 access to a hospital, doctors and a community pharmacy were important for them, as were behavioral health and mental health services. A comment that was repeated by most participants was the need of education and orientation on health services and preventive health. Participants indicated that an educated community is a healthier one and that there was a lack of education in their areas. Interviewed participants also indicated that access to healthy food was an important aspect of a healthy community.

B. ACCESS TO PROVIDERS AND SERVICES

Participants were asked if there was a lack of providers or services in Puerto Rico. Overall, participants indicated there was a need for general and internal medicine practitioners. However, most indicated that there was a prominent lack of specialists.

Among the needed specialists, participants specifically named the following:

- Orthopedists
- Endocrinologists

- General and Pediatric Cardiologists
- Gynecologists
- Gastroenterologists
- Dermatologists

Participants also indicated that there was a need for female doctors. Some participants mentioned that most doctors are males, and they would like to have an option of a female doctor for some specialists. Another comment made by participants was the lack of providers "*with more calling.*" When asked what they meant by this comment, participants mentioned that there was a need for providers to be more involved and they felt that providers were more focused on getting patients in-and-out of the door rather than listening to their concerns.

C. BARRIERS TO HEALTH

Participants were asked to indicate which they though were the main barriers to health for them. The main barriers cited by the participates were:

- Economic:
  - Cost of health insurance, medicines, deductibles
- Transportation and security:
  - Dependability on public transportation, which is not reliable
  - Having to travel to other municipalities to receive services
  - Assistance with family members with special health needs
- 24/7 Hospital and pharmacy services:
  - Crowded emergency rooms
  - Lack of personnel
  - Long waiting times
- Education:
  - Need of education on healthy and accessible nutrition
  - Health promotion and prevention programs

D. SPECIAL POPULATIONS

As part of the interview, participants were asked about special populations and their needs. In terms of special populations of specific interest, participants identified the following:

- Low-income population
  - Sometimes do not get a respectful treatment during health visits
- College students
  - College students can afford private insurance and do not qualify for Medicaid
- Children
  - Priority access to services and specialists
- Elderly
  - Some are bed-ridden, and are unable to get to a provider's office
  - Some need financial assistance to afford health services
  - The long waiting times are difficult for them
- Disease-specific:
  - Asthmatics
    - Priority access when in need of services
  - Cancer patients
    - Limited access to required services due to lack of income, insurance or education

- Parkinson disease
  - Better facilities and management of resources
- Women's health
  - Lack of education and understanding of the services required for this population

As part of this question, participants also included key improvements that could increase health in their communities. Among the top responses where:

- Extended hours for services
- Preventive care
- Home care
- Discharge planning
- Health promotion and education
- Workforce development to promoting empathy

E. RECOMMENDATIONS FOR HEALTHCARE PROVIDERS

Interviewed participants were asked for recommendations for local healthcare providers and public health agencies to improve the quality of health and well-being of the community. Participants indicated the following:

- Investment in human resources
  - Review office management
  - Better attention and services from office staff
- Health insurance
  - Reduce the time it takes for referrals and approval of procedures
- Government
  - Identify special populations and address their needs accordingly
- Physician relationship with patients
  - Physicians should be more sensible to the patients' needs
  - Improve communication between both parts
- Improve services
  - Offer more community health fairs
  - Improve health education services
  - Lower or more accessible costs for health services, health insurance and medicines
  - Options for accessible transportation for health service appointments
  - Better follow up after treatments
  - Health education available at medical facilities
  - Make alliance with media outlets, offer educational capsules
- Patient rights and protection
  - Enforce the law and protect patients' rights
  - Monitor elderly health services

In general, interviewed participants indicated that there was a need to improve the physician-patient relationship. Participants mentioned that, for them, it was important to feel that their healthcare provider was invested in their well-being. For participants, it was also important to see an improvement in health education services and health fairs.

F. COMMUNITY HEALTH PRIORITIES

During the interviews, participants were asked to identify the top three health priorities in their communities. According to respondents, diabetes, cancer and high blood pressure were the top three health issues affecting their communities. Table 5 shows the complete list of identified health needs.

Table 5. Top Health Priorities Identified by Participants

Clinical issues	Percentage (n=40)
Diabetes	23%
Cancer	20%
High Blood Pressure	18%
Mental Health	13%
Respiratory Diseases	10%
Asthma	8%
Obesity	8%
Allergies	5%
Heart Diseases	5%
Cholesterol	3%
Endometriosis	3%
Renal Disease	3%

VII. OVERVIEW HEALTH POLICY AND INDUSTRY TRENDS

In 2018, the PR government changed the Medicaid/public health insurance coverage program, calling the new insurance Vital. Under the previous model, which was discontinued on October 2018; Puerto Rico was divided in eight (8) health regions, and the administrating agency for the Health Reform, called the Health Insurance Administration (HIA) or "Administración de Servicios de Salud (ASES)" in Spanish, oversees the Managed Care Health System and to contract the third-party payers for registered providers and to establish policies and regulations for said companies. The new model which came to effect in November with an open enrollment period. During which participants of the public health insurance coverage will be able for the first time to select the healthcare company to administer their coverage. This new model reflects similarities with the open selection concept of Medicare Advantage. No longer will TPA's will be assigned a region. They are now required to offer services island-wide.

As for the Medicare Advantage (MA) population, enrollment has seen an increase during 2018, to approximately 570,000 members by April 2018, from 565,000 members in December of 2017. In the 2019 Call Letter the Centers for Medicare and Medicaid Services (CMS) announce that the policies finalized for 2019 will continue to provide stability for the Medicare Advantage program in the Commonwealth and to Medicare beneficiaries in Puerto Rico who are enrolled in MA plans. These continued policies include basing the Medicare Advantage county rates on the relatively higher costs of beneficiaries in fee-for-service Medicare who have both Medicare Parts A and B, interpreting the criteria used to determine which counties qualify for an increased quality bonus adjusted benchmark, and applying an adjustment to reflect the nationwide propensity of beneficiaries with zero claims (CMS, 2018). A side from recent reviews, the per patient per month rate among Medicare Advantage participants in Puerto Rico, remains among the lowest in the Nation.

A. THE NEW GOVERNMENT HEALTH PLAN: VITAL

Since 1993, Puerto Rico has adopted a Medicaid managed care system, with a plan known as "La Reforma." In 2010, the island reformed its public health care system and implemented the MiSalud program. In this model, which was discontinued on October 31, 2018, Puerto Rico was divided into eight geographic regions, and the administrating agency for the Health Reform, the Health Insurance Administration (ASES), continued to oversee the Managed Care Health System and to contract the third-party payers for registered providers and to establish policies and regulations for such companies. As of July 1, 2017, almost half of the population of Puerto Rico (47.3%) was covered by Medicaid (Mi Salud), with an additional 8.6% covered by Medicare.

The new model, named Vital, which establishes a single island wide region, went into effect on November 2018 with an open enrollment period which runs from November 1, 2018 to January 31, 2019, during which participants of the government's health insurance coverage will be able to select for the first time the healthcare company to administer their coverage. The proposed model implements care models for patients with certain chronic and high-cost/high need (HCHN) conditions such as cancer, diabetes, end-stage renal disease; chronic obstructive pulmonary disease with asthma, hypertension, severe cardiac insufficiency, serious mental illness, and serious emotional disorder. It also introduces the creation of the Medicaid Fraud Control Unit.

In July 2018, ASES submitted to the Centers for Medicare & Medicaid Services (CMS) for review and approval the contracts of the five companies selected to administer the new plan, along with the actuarial certifications which included data regarding viability of the premiums. The new contracts for the companies selected must be approved by CMS. As of December 17, 2018, the actuarial certifications of

the new administration contracts are yet to be approved. Without the endorsement of the United States government, the state government cannot use federal funds to finance Vital.

The most significant changes comparing the MiSalud model and the Vital model are as follows:

- The Government Health Plan (GHP) will transition from a model where a single MCO operates in one of eight geographic regions to an island-wide model. New enrollees will be automatically assigned to an MCO and will have until January 31 to change MCOs.
- Due to the change in the model, MCOs will need to have enough capacity to provide an adequate network and manage services for members who live anywhere in the territory. MCOs are encouraged to propose approaches to meeting this requirement incorporating partnerships with other MCOs and provider-based organizations (health systems, IPAs, etc.). These partnerships could incorporate alternative payment models and various modalities of "value-based care."
- In the new model, the government has placed significant emphasis on MCOs addressing the needs of high-cost GHP members – individuals with chronic or high- cost diseases who are also the highest utilizers of GHP-covered services. In response to this, MCOs will be expected to propose innovative approaches to managing and delivering care to these members.
- In its Fiscal Plan the government is targeting a five-year reduction of almost 18 percent (in current dollars) in the average per-member cost of the program, from approximately $175 to $144. While this goal is not entirely dependent on MCO requirements – for instance, there are assumptions in the Fiscal Plan regarding standardization of provider fees, MFCU-driven fraud recoveries and PDL controls – it is safe to assume that the government will expect MCOs to manage their provider networks, service utilization and reimbursement such that the government's goal becomes achievable.
- Premiums paid for chronic diseases under Vital will be higher than before, which will allow to better manage cancer, diabetes, asthma and other mental, renal and cardiac diseases in patients.
- The selected healthcare companies are encouraged to identify and treat chronic or severe diseases, eliminating the previous tendency to overlook them due to its high cost.
- All negotiations of premiums or costs per insured are subject to the agreement reached with CMS. The budget recommended by the Office of Management and Budget and the Board of Fiscal Supervision for ASES for 2018-2019 is $2,809 million. These figures reflect a slight increase compared to the previous year´s budget, of $2,801 million.
- A rate reduction for suppliers is not justified, particularly after the approval of the congressional measure that made viable the financing of 100% of the new model with federal funds, from January 2018 to September 2019.
- All healthcare companies must compensate medical services providers contracted through Vital for all services provided, whether such provider is contracted to provide services under Vital. The referred medical services will be compensated by the beneficiary´s current healthcare company at a rate equal to that of the contracted providers.
- ASES will ask the Fiscal Oversight Board for an update to use the 2018 Medicaid rates, instead of the 2016 rates, as a guide for healthcare companies when contracting medical services.

B. MEDICAID CLIFF

One of the most pressing concerns related to the Medicaid/Vital Program is the pending PR Medicaid Funding Cliff, whereby the Commonwealth Medicaid Program would return to the established federal spending cap that would reduce current federal funding levels for the program to pre-Affordable Care Act levels for Medicaid. Unlike the 50 states and the District of Columbia, where the federal government will match all Medicaid expenditures at the appropriate federal matching assistance percentage (FMAP) rate

for that state, in Puerto Rico, the FMAP is applied until the Medicaid ceiling funds and the Affordable Care Act available funds are exhausted. The statutory FMAP local matching rate increased from 50% federal / 50% local to 55% federal / 45% local, effective July 1, 2011. Additionally, Puerto Rico's annual federal Medicaid allotment is capped at a level far below what states receive.

Before the hurricanes, Puerto Rico was facing a fiscal abyss beginning in 2018. After Hurricanes Irma and Maria, Puerto Rico 's healthcare spending has skyrocketed due to deteriorating health conditions of the population. On February 9, Congress enacted the Bipartisan Budget Act of 2018, which included temporary financial assistance critically needed, providing $4.8 billion in additional federal Medicaid funding for Puerto Rico, preventing the health system from falling off a fiscal cliff.

This funding is slated to run out by September 2019, and if no action is taken by Congress, Puerto Rico could receive a cut of close to $1.2 billion annually in federal funding. This potential loss in Medicaid funding puts coverage at risk for approximately 1 million people, increasing the number of uninsured on the Island at a time where the devastation caused by Hurricanes Irma and Maria have impacted the socioeconomic status of the service area to increase the number of people who will be eligible for Medicaid/Vital.

The effects of the Medicaid Funding Cliff would significantly impact patient enrollment. First, a further increase of uninsured patients is anticipated. Second, a decrease in Medicaid coverage for current patients would also be present. This could result in a situation where health organizations would need to see more patients with less revenue. As the PR population continues to age, enrollment of more Medicare patients particularly can offset some of the impact of the cuts due to higher reimbursement rates for Medicare-eligible patients.

VIII. STRATEGIC OPPORTUNITIES

This section provides a summary of the recommendations made by those who participated of the interviews. Opportunities and recommendations have been group by area.

A. COMMUNITY OUTREACH AND ENGAGEMENT

- Health education activities and fairs particularly on topics of mental health, nutrition, fitness, chronic diseases and preventive care.
- Provide and inform the community of the available physician's specialists and where they are located.
- Provide information of services available to address the needs to these specific populations.
- Maintain communication with the community leader and volunteers to obtain important information of the community necessities.
- Coordinate mobile health clinics with outreach activities in order to effectively impact all members of the communities.
- Educate people about medical appointments protocols and documents needed.

B. WORKFORCE DEVELOPMENT

- Establish a workshop program for physician and health professionals with topics related to:
    - Communication with patient
    - Patient Engagement
    - Sensibility towards populations with special needs

- Advocate for doctors to be given greater benefits and incentives to retain them in Puerto Rico and decrease the exodus of professionals.

C. ACCESS TO HEALTH SERVICES

- Improve access to services with transportation, outreach activities and organization in medical appointments.
- Improve offer of physicians and specialists in the service area.
- 24-hour health facility (other than an emergency room) and a pharmacy.
- Improve the medical appointments system to reduce waiting time and full offices.
- Provide ambulatory services and mobile treatment units that can reach people in their communities.
- Provide services at home.
- Provide information of services available to address mental health.
- Establish facilities in strategic areas to improve accessibility, in hand with coordinated transportation services.

IX. METHODOLOGY

In 2018, Auxilio Mutuo Hospital contracted Impactivo, LLC. to plan and execute a health needs assessment to better inform them in their strategy development. Additionally, AMH wanted to engage the community and its stakeholders in providing actionable information on how to improve the community's health.

The methodology used for the community health needs assessment consisted of two parts: secondary data analysis, and key informant interviews. The key informant interviews included an interview with a representative of the Puerto Rico Department of Health. Each of these components provided a complementary perspective on health needs within the community as well as other social, cultural, and economic factors so that AMH can better understand its population and continue meeting their needs in a more efficient and effective manner.

A. SECONDARY DATA

Impactivo first carried out a secondary data analysis of the service area to create a quantitative profile of the community, drawing from authoritative sources, including the US Census Bureau, Centers for Disease Control and Prevention, Puerto Rico Department of Public Health, KIDS COUNT, among others. The most recent data available was used for each indicator. When possible, secondary data was obtained at the municipal level and subsequently compared to state and national averages as benchmarks. Quantitative secondary data comprised an integral factor in the objective evaluation of health priorities within the community. Sources for data gathering included:

- Demographic and Socioeconomic Statistics
- Family and Household Statistics
- Education and Income Measures
- Mortality Statistics
- Maternal and Child Health Indicators
- Cancer Statistics
- Sexually Transmitted Illness & Communicable Disease Statistics
- Health Care Access Statistics
- Crime Rate Statistics

As there is limited statistical data to describe the prevalence of health indicators specific to San Juan and Guaynabo, the procurement of estimates through extrapolation was frequently necessary. To estimate these rates, BRFSS data was used in two ways to get more accurate information:

a. The estimates of the San Juan and Guaynabo Statistical Area, which is the closest to the service area, were extrapolated to the service area level based on age and/or gender.
b. When this data was not available, Puerto Rico Commonwealth-level data was extrapolated to the municipal level for San Juan and Guaynabo based on the age and/or gender distribution of the health indicator, then combined as a weighted average to obtain an estimate.

B. PRIMARY DATA

In addition to the utilization of secondary data sources to provide a descriptive background of community health needs and demographics, primary data from the patient population in the service area was collected through a face-to-face interview and an online survey.

AMH contracted Impactivo, LLC to develop survey content, as well as sample design and selection methodology. Impactivo carried out an extensive literature review of community health needs assessment methodology, surveys, and best practices to actively assess the views of healthcare consumers (both insured and uninsured, English and Spanish speakers) and community leaders to identify gaps in services and health priorities in their communities. The instrument for the interviews was based on a design that has been used extensively in Puerto Rico and was enhanced using questions used in other validated community survey instruments including the BRFSS, Vanderbilt University Hospital Community Health Needs Assessment and Pondera Medical Center Community Needs Assessment. In designing the survey methodology, Impactivo considered the community's socio-economic status and access to phone and internet and subsequently designed a survey to be carried out through face-to-face interviews of hospital patients as well as an open online survey.

The survey was available through SurveyMonkey from November 20 to December 7, 2018. Participants were engaged to complete the survey through social media platforms. This approach generated a total of 20 face-to-face interviews and 20 online survey participants.