AUGUSTA
UNIVERSITY

Community Health Needs Assessment

June 2016

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1. INTRODUCTION

As part of the Patient Protection and Affordable Care Act ruling in 2012, hospitals are required to complete a Community Health Needs Assessment (CHNA) every three years. The original CHNA for Georgia Regents University (now Augusta University) was completed in Fiscal Year 2012 with an area of focus of pediatric asthma within the limited service area of Richmond County. For the most recent CHNA, Augusta University Health System (AUHealth) will focus on expanding programs to meet more community needs for stroke care and prevention in the expanded service area of the 18 county Central Savannah River Area (CSRA).

2. BACKGROUND

2.1 Organization Structure and History

The Augusta University Health System (AUHealth) is part of a consolidated university comprised of liberal arts and medical education as well as patient care. This not-for-profit enterprise has a nearly 200-year history of training health professionals who go on to serve communities in Georgia and throughout the nation, and it is known for health-related activities and contributions of its faculty, staff, and students to the uninsured and under-insured members of the community. Augusta University strives to be a top-tier university with a mission of providing leadership and excellence in teaching, discovery, clinical care, and service as a student-centered research university and academic health center. Augusta University embodies the application of and produces tangible and measureable results for research, education, and service to enhance the health of the community.

AUHealth has both nationally and internationally recognized programs, and has been on the cutting edge of research in such areas as cancer, neurology, stroke, women's health, and preventative care. The Children's Hospital of Georgia at Augusta University is one of the leading children's hospitals in the nation through patient- and family-centered care, and AUHealth has one of the area's only Level 1 trauma center and comprehensive stroke center.

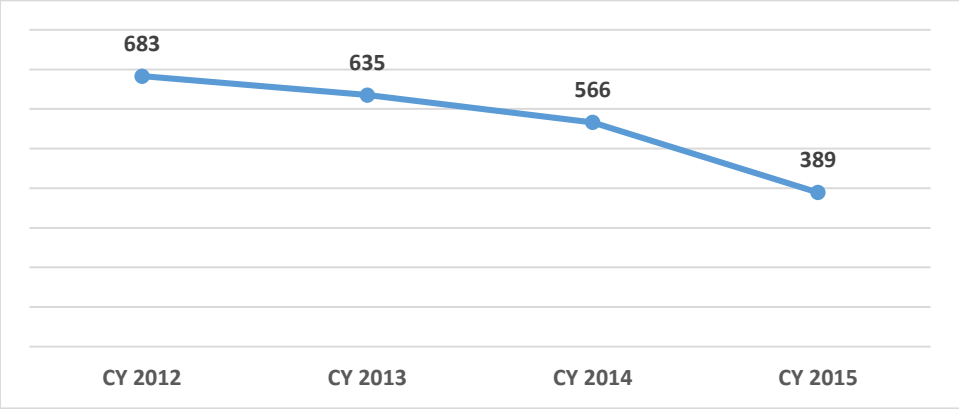
2.2 The 2016 Augusta University Community Health Needs Assessment Team

The 2016 CHNA team is made of members of the Augusta University's Institutional Research division and of the Division of Strategic Partnerships. Additional guidance and decision making was made by staff within the telestroke and neurosciences sections of AUHealth, of the Augusta University Compliance department, and from the health system executive leadership team. Institutional Research is responsible for enterprise-wide data, data analysis, data governance, survey research, and external reporting to state and national organizations for both clinical and education. A relatively newer area at Augusta University, the Division of Strategic Partnerships utilizes physician liaisons to develop and foster relationships between community physicians and departments at AUHealth for networking, referral, and learning way for AUHealth's physicians can partner with community physicians to better meet the health needs of the wider populace in Georgia and South Carolina.

2.3 Results of the Previous CHNA

In the 2012 Community Health Needs Assessment from Augusta University, the hospital teamed up with the Pediatric Health Improvement Coalition to improve quality of care for those suffering from pediatric asthma and to ultimately reduce admissions needed because of asthma related episodes. The focus area for the project was Richmond County, Georgia. Since the project began, the overall outcome of reduced admissions has been successful with an overall 43% decline within all patients from the CSRA (Figure 1) and a 44% decline in AUHealth admissions (Table 1).

Figure 1: CSRA Admissions for Pediatric Asthma, CY2012 – 2015



Source: GHA Discharge Dataset, Inpatient, filtered by patient origin county

Table 1: AUHealth Admissions for Pediatric Asthma, CY2012 – CY2015

	CY12	CY13	CY14	CY15
49300 - Extrinsic asthma nos	91	83	60	77
49301 - Ext asthma w status asth	62	77	68	29
49302 - Ext asthma w(acute) exac	44	27	32	17
49390 - Asthma nos	47	48	20	12
49391 - Asthma w status asthmat	12	14	18	11
49392 - Asthma nos w (ac) exac	11	13	11	3
OVERALL TOTAL OF ADMISSION	267	262	209	149

Source: GHA Discharge Dataset, Inpatient

2.4 Service Area

The hospital system of Augusta University has identified that the Central Savannah River Area (CSRA) is the market and service area on which to focus. This 18 county region is a diverse mix of urban and rural areas spread across two states and makes up the bulk of the primary, secondary, and tertiary market areas for AUHealth (Figure 2).

Figure 2: Primary, Secondary, and Tertiary Market Area Designations of CSRA Counties

According to data from the Georgia Hospital Association's Discharge Dataset, these 18 counties make up over 79% of the originating areas for AU Health patients with most patients originating from three CSRA counties: Richmond, Aiken, and Columbia (Table 2).

Table 2: Percent of Patient Case Share by County for AUHealth, Top 10, FY2015, GHA

County	Patient Case Share (%)
Richmond	35.92%
Aiken	15.61%
Columbia	11.15%
Burke	3.88%
Jefferson	3.35%
Edgefield	2.25%
McDuffie	2.24%
Washington	1.69%
Barnwell	1.54%
Emanuel	1.54%

Source: Georgia Hospital Association's Discharge Dataset, July 1, 2014 – June 30, 2015

3. CURRENT PROJECT

3.1 Methods

This Community Health Needs Assessment utilized both primary and secondary data to determine the focus for the project.

As part of the secondary data analysis, data from the Census Bureau's 2014 American Community Survey was used to determine the overall population trends of the 18 CSRA counties as well as the demographic (e.g., race, gender, age) and socioeconomic (e.g., poverty levels, education) make-up of these counties. A comparative trend analysis was made for this aggregate CSRA area against data for Georgia, South Carolina, and the nation.

Health conditions were explored either at the county or state level depending on the data source. In order to begin narrowing down the potential scope of the CHNA and of the project(s) to be incorporated, the top 10 to 20 conditions seen in Georgia and South Carolina were determined and reviewed using recent data from the CDC, Census Bureau, Healthy People, Robert Wood Johnson Foundation, Health Communities, state led health agencies, and the Agency for Health Research and Quality (AHRQ). Each of these organizations have either synthesized available local and national health data or have conducted large scale surveys of individuals about health conditions, access, and behaviors.

After the initial list of top conditions seen in Georgia and South Carolina were created, information was compared with data from the Georgia Hospital Association to further refine the list of scope options. From there, internal data from Strata was run for calendar year 2015 to see what conditions were seen most often in our hospital to compare to the state data.

In conjunction with the quantitative data analysis of available and internal data, a qualitative and mixed methods study was conducted. Augusta University has a group of community physician liaisons as part of a Strategic Partnerships department. This group has established relationships with community physicians and helps facilitate partnerships between specialists at Augusta University and primary physicians in the CSRA and state wide. These community physicians have a first-hand knowledge of conditions that they see from their patients, and the liaisons conducted informal interviews with these physicians with the direction of a survey created with help from the Survey Coordinator in IE (see Appendix for a copy of the questionnaire). Responses were recorded, transcribed, and reviewed by the core team for themes of what health condition related projects are needed or resources are needed for both health professionals and patients in the identified service area of the CSRA.

With guidance and direction of a statistician, the primary and secondary data was analyzed together to determine the highest ranking significant health related needs to address in this FY16 CHNA for Augusta University. This information along was then pulled together for review by the hospital senior leadership team for final narrowing to one focus area and approval for the CHNA. Within the report narrative, justification for any significant needs that were identified but not included will be addressed.

3.2 Analysis of Findings

3.2.1 Analysis of Findings – Secondary Data

3.2.1a Population Analysis

The prevalence and severity of disease states within a community depends on several factors, including the demographics of the population. The differences in population groups require different types and approaches to health care and inform the resulting project for this needs assessment.

Gender

Georgia, South Carolina, and the United States all follow the pattern of a predominantly female population (Table 3)

Table 3: Gender Breakdown for Georgia, South Carolina, and the United States of America

	Georgia	South Carolina	USA
Females	5,069,761 (51.2%)	2,428,953 (51.4%)	159,591,925 (50.8%)
Males	4,837,995 (48.8%)	2,298,320 (48.6%)	154,515,159 (49.2%)

Source: American Community Survey, Census Bureau, 2014

Similar to its state and national comparisons, according to the Census Bureau's 2014 American Community Survey, the aggregate count across the 18 county Central Savannah River Area (CSRA) also has more females (n = 354,488, 51.1%) than males (n = 339,285, 48.9%). Though, when looking at the counties individually, this is not always the case (Table 4)

Table 4: Gender Breakdown of CSRA Counties, 2014

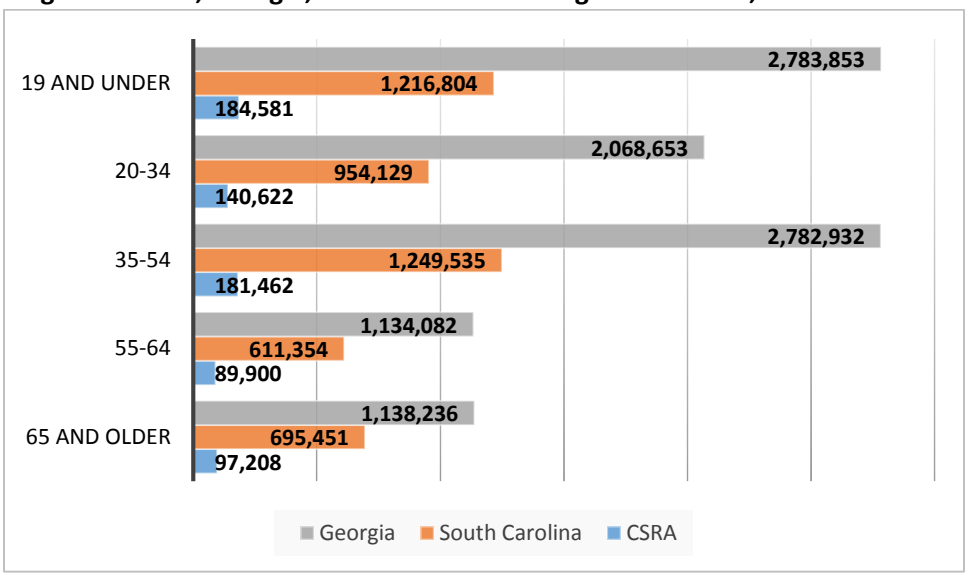
	Females	Males
Burke County, GA	11,965	11,171
Columbia County, GA	67877	64,485
Glascock County, GA	1,565	1,521
Hancock County, GA	4,120	4,923
Jefferson County, GA	8,580	7,974
Jenkins County, GA	4,563	4,231
Lincoln County, GA	3,970	3,830
McDuffie County, GA	11,329	10,234
Richmond County, GA	103,786	97,458
Taliaferro County, GA	868	832
Warren County, GA	2,969	2,657
Washington County, GA	10,334	10,527
Wilkes County, GA	5,326	4,797
Aiken County, SC	84,137	78,854
Allendale County, SC	4,693	5,334
Barnwell County, SC	11,732	10,555
Edgefield County, SC	12,147	14,426
McCormick County, SC	4,527	5,476

Source: American Community Survey, Census Bureau, 2014

Age

The age breakdown for the CSRA shows that in 2014 an estimated 27% of the population was 19 and under (Figure 3).

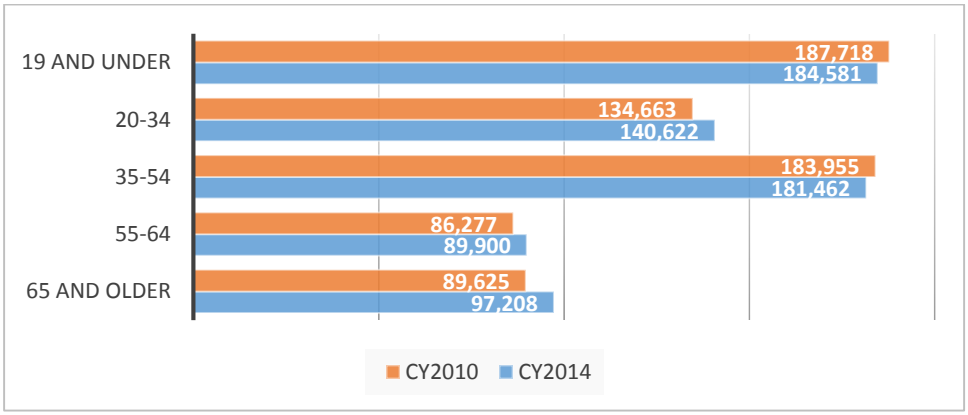
Figure 3: CSRA, Georgia, and South Carolina Age Breakdown, 2014



Source: American Community Survey, Census Bureau, 2014

Looking at growth trends for the CSRA, however, the pediatric population (19 and under) as well as the 35-54 population have both been on the decline from 2010 to 2014. Both the 20-34 group and those who are 55-64 have increased their population numbers by around 4%, but the highest growth has been in the 65 years and older group with an 8.5% increase in numbers (see Figure 4)

Figure 4. CSRA Population Growth by Age Categories 2010 and 2014

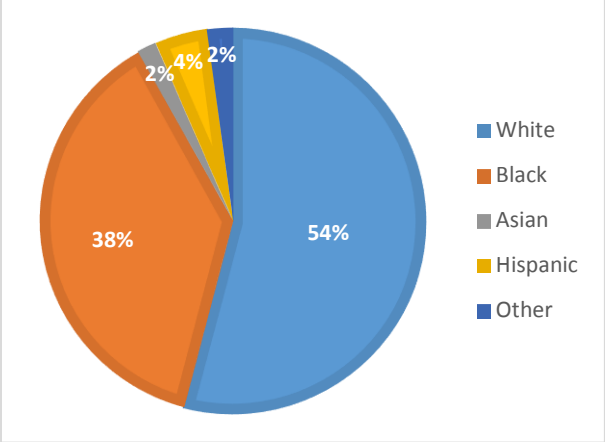


Source: American Community Survey, Census Bureau, 2014

Race/Ethnicity

Nationally, the population is predominately white (n = 197,159,492; 63.9%), and this trend is also the case for Georgia (56.2%), South Carolina (65.3%), and the CSRA (54.1%). However, for the CSRA, African American/Black accounts for approximately 37.8% of the population and the remaining 8.1% is split between Asian, Hispanic, and Other races (see Figure 5).

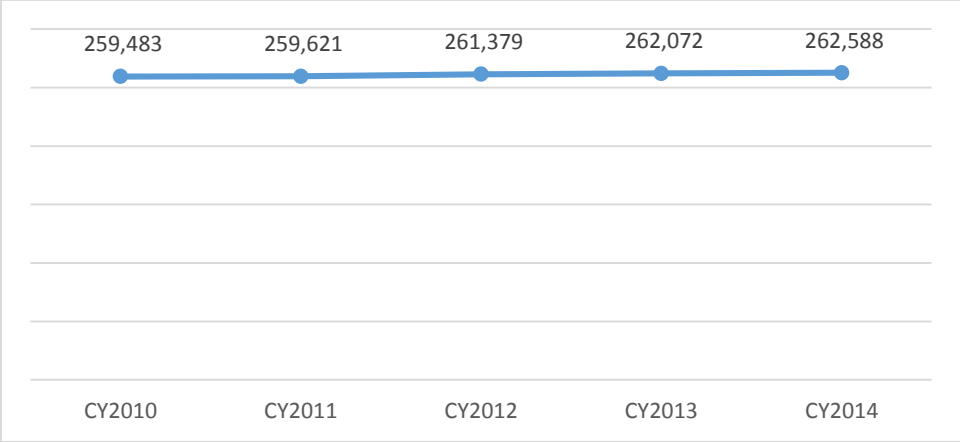
Figure 5. CSRA Racial/Ethnic Breakdown



Source: American Community Survey, Census Bureau, 2014

African Americans/Black have a higher predisposition and is a risk factor for several chronic conditions, including certain cancers, stroke, cardiovascular disease, and diabetes. Looking at the trends from 2010 to 2014 for the CSRA, the overall number of African American/Blacks has increased by 1%. (Figure 6) However, that increase is only within McDuffie, Columbia, Richmond, and Aiken counties.

Figure 6. African American/Black trend in the CSRA, 2010 – 2014



Source: American Community Survey, Census Bureau, 2010-2014

3.2.1b Social and Economic Determinants of Health

Income and Poverty

Within the United States, both Georgia and South Carolina are considered rural and lower income states with approximately 18% of its population living in poverty. Within the U.S., Georgia ranks #33 and South Carolina at #42 based on median household incomes from the 2014 Census Bureau's American Community Survey results (see Table 5 for Georgia and South Carolina numbers). As a small section of both of these states, it is not surprising that over a fifth (21.7%) of the CSRA's population of all ages is considered as living in

poverty according to the 2013 numbers from the Census Bureau (see Table 5). The median household income within this 18 county region is $36,111, with all but 3 of the counties (Columbia, Aiken, and Edgefield) making a median household income of under $40,000. Five of the counties actually make a median income below $30,000: Jenkins ($28,400), Hancock ($26,200), Jefferson ($29,100), Taliaferro ($28,900), and Allendale ($25,700).

Table 5: CSRA, Georgia, South Carolina, and USA Poverty and Income Comparisons

	CSRA	Georgia	South Carolina	USA
% Living in Poverty	21.7%	18.3%	18%	11.5%
Avg. Median Household Income	$36,111	$49,342	$45,033	$53,482

Source: American Community Survey, Census Bureau, 2014

Education

Approximately 16.5% (n = 114,071) of those aged 25 and older in the CSRA have less than a high school education. Breaking that percentage down by county, a third of CSRA counties have over 25% of their adult populations without a high school degree. In more rural counties, such as Taliaferro, that percentage reaches over 31%.

For Georgia and South Carolina as a whole, the percentage is about 15% without a high school degree, and for the United States it is 13.7%.

Access to Care (health insurance, rural pops, HPSAs/MUAs)

One aspect of access to care is being able to pay for the medical care through using some form of health insurance. However, despite the Accountable Care Act initiatives that began in 2012, 17.9% of Georgians and 16% of those in South Carolina were still without health insurance in 2014 (see Table 6 for health insurance population numbers by employment status). In the CSRA in 2014, 15.4% of the population were without health insurance. Seven percent of the total population were employed without insurance, and 1.6% of the population were minors without insurance. Only 59.4% of the total CSRA population had private insurance, whether with or without supplementing some form of public insurance.

Table 6: Comparison of Health Insurance Status for Adults 18-64 (Source: Census, 2014)

	CSRA	Georgia	South Carolina	USA
Overall				
Private Insurance	412,613	6,067,383	2,910,415	203,328,517
Public Insurance (i.e., Medicaid, Medicare)	233,567	2,770,353	1,556,826	96,075,708
No Health Insurance	106,536	1,776,980	737,418	43,878,131
Employed				
No Health Insurance	48,272	867,923	365,034	22,938,045
Unemployed				
No Health Insurance	17,589	265,855	119,024	5,904,238
Not in the Labor Force				
No Health Insurance	28,931	406,508	167,770	15,462,307

Source: American Community Survey, Census Bureau, 2014

3.2.1c Chronic Disease States

Compiling data and national survey results from multiple sources (see Appendix A for a full list of and links to sources), the following chronic disease data were obtained and then ranked in order of incidence to then be analyzed against the primary data to determine focus.

Cancer

One of the leading and well known chronic conditions affecting Americans is cancer. Cancer comes in several forms and can be found in one or multiple areas of the body. According to the National Health Inventory Survey, in 2014 586 participants said that they currently had cancer, of which 23.3% (n = 136) had been diagnosed within the last year. Looking at the immediate area around Augusta University's health system using the Behavioral Risk Factor Surveillance System (BFRSS) metropolitan area tool, 5.93% of the population in the Augusta-Richmond County area have been told that they have or had some form of cancer either in or prior to 2013. Using BFRSS data from 2010 to 2013 Table 7 shows comparisons of cancer incidence.

Table 7: Cancer Incidence Comparisons

	Georgia	South Carolina	USA	Time Period
Cancer Incidence - All Sites	42,393	23,186	1,514,446	2010-2013
Prostate	6,756	3,549	220,000	2007-2011
Breast	6,263	3,362	216,052	2007-2011
Lung	6,160	3,601	212,768	2007-2011
Colorectal	3,891	2,113	142,173	2007-2011
Skin	2,029	1,102	63,806	2007-2011
Head and Neck	1,113	621	37,597	2007-2011
Cervix	403	198	12,530	2010-2013

Source: CDC's BFRSS

The above table shows that overall incidence of cancer occurs more frequently in the prostate, breast, and lung. BFRSS data at this granularity was not available at the county level for Georgia and South Carolina to compare the CSRA to the states and nation; however, the following data is from the Georgia Hospital Association's Discharge dataset of discharges from July 1, 2011 to June 30, 2015 (FY12 – FY15).

Table 8: CSRA Cancer Incidence

	CSRA
Cancer Incidence - All Sites	7622
Prostate	105
Breast	203
Lung	1392
Colorectal	586
Skin/Soft Tissue	149
Head and Neck	102
Cervix	16

Source: GHA Discharge Dataset

This data shows a higher incidence of lung cancer followed by colorectal cancer for the CSRA population.

According to Healthy People 2020, the 2020 target for mortality from overall cancer death in the US is 161.4 per 100,000 population. The overall mortality trend has decreased by 5.9% from 2009 to 2013 in the overall US, but has only fallen 4.6% in Georgia and 4.8% in South Carolina.

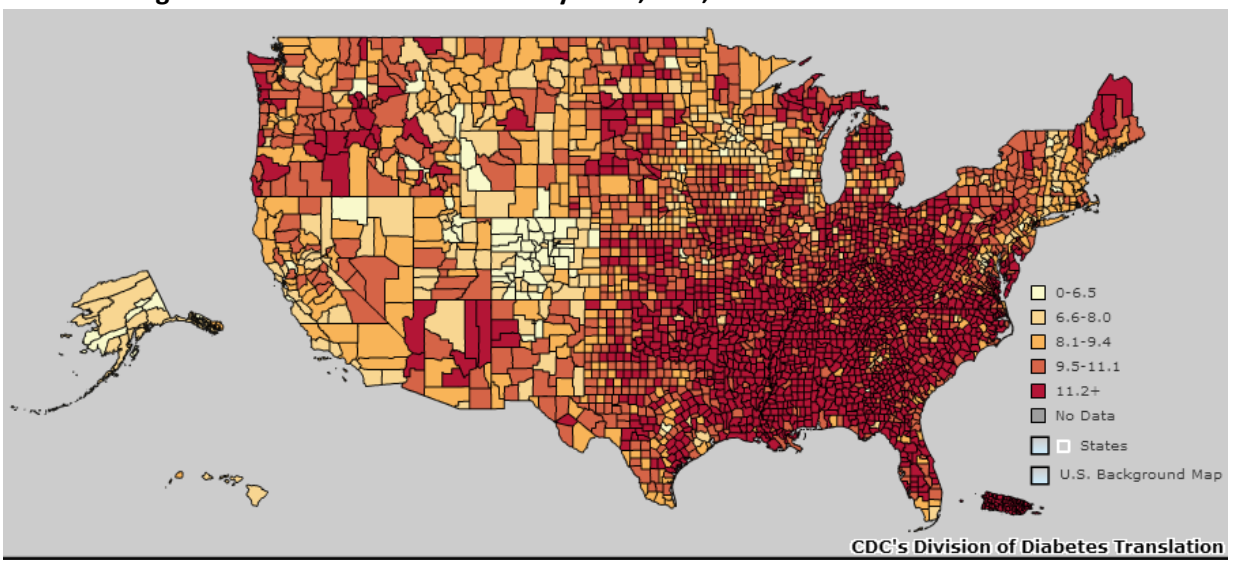
Table 9. Mortality Trends 2009 – 2013, Healthy People 2020 (Age Adjusted, per 100,000 population)

	2009	2010	2011	2012	2013	% Change
US	173.5	172.8	169.0	166.5	163.2	-5.9%
Georgia	175.6	174.8	170.3	169.1	167.6	-4.6%
South Carolina	182.8	183.6	181.9	178.8	174.0	-4.8%

Diabetes

The overall incidence of diabetes in the United States has drastically increased over the past twenty years (http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html) (see Figure 7).

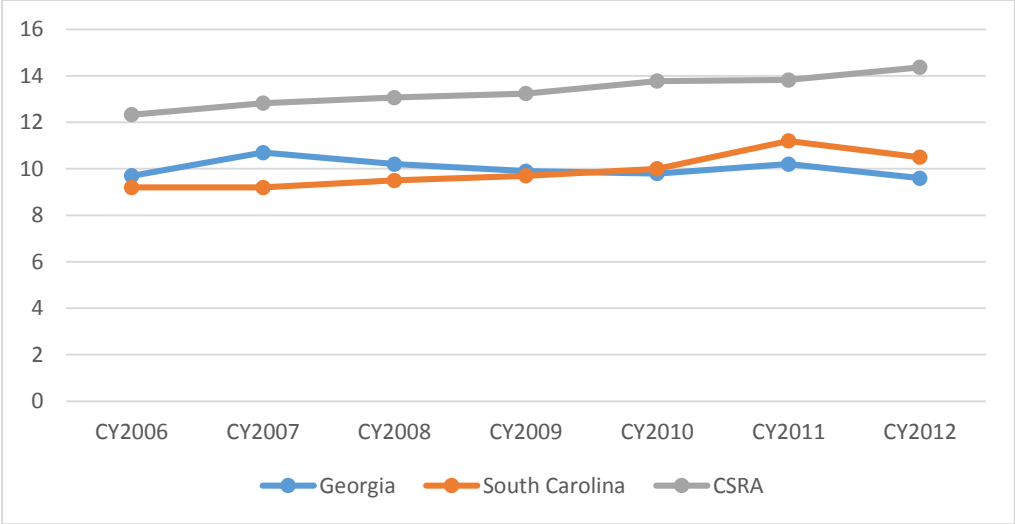
Figure 7: Diabetes Incidence County View, CDC, 2012



Source: http://www.cdc.gov/diabetes/atlas/countydata/atlas.html

For both Georgia and South Carolina, that incidence reached the high range of 9.5% to 15.2% by 2006 and has remained in this high range ever since. However, for the CSRA, the averaged incidence across the 18 counties is both higher than either Georgia or South Carolina and is on a steady rise. (See below for trends 2006 to 2014)

Figure 8: CDC Diabetes Trends for Georgia, South Carolina and CSRA, 2006 - 2012



Source: CDC BFRSS

When examining mortality with diabetes as the main listed cause, HealthyPeople 2020 has a goal to reduce the number of diabetes-related deaths in the United States from 74.0 per 100,000 in 2007 to 66.6 per 100,000 by 2020. Overall the US, Georgia, and South Carolina are on a downward trend from 2009

to 2013; however, the mortality rates for South Carolina are still significantly higher than for either Georgia or the US (see Table 10).

Table 10. Diabetes Mortality Trends 2009 – 2013, Healthy People 2020 (Age Adjusted, per 100,000 population)

	2009	2010	2011	2012	2013	% Change
US	70.8	70.7	70.3	69.1	69.2	-2.26%
Georgia	62.3	65.8	64.7	62.7	61.7	-0.96%
South Carolina	75.9	76.9	70.7	71.3	75	-1.19%

Source: Health People 2020 (www.healthypeople.gov)

Heart and Vascular Disease

Heart and vascular diseases are also among the more prevalent chronic conditions in the United States with nearly a third of the population having been diagnosed with one or more of the conditions, which include heart disease, hyperlipidemia, and hypertension. For all of the conditions, the prevalence rates remain higher in Georgia and South Carolina when compared against the rates in the United States (Table 11).

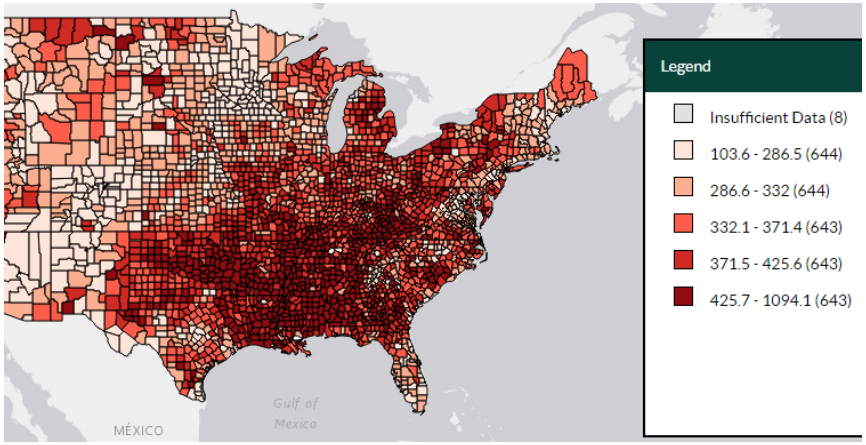
Table 11: Prevalence Rates of Heart and Vascular Diseases in Georgia, South Carolina, and the United States

	Georgia	South Carolina	USA	Time Period
Hyperlipidemia Prevalence	34.4%	37.1%	33.6%	2013
Hypertension Prevalence	34.6%	36%	29.9%	2013
# of Hospitalizations from heart attacks State Inpatient Data)	NA	9,167	323,292	2010

Source: CDC BFRSS

As with many of the other chronic conditions, overall death rates from the disease remain concentrated within the Southeastern portion of the United States (Figure 9).

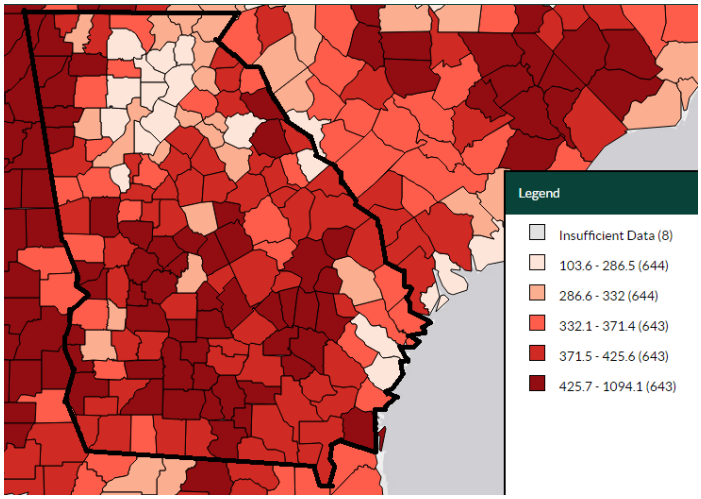
Figure 9: Death Rates per 100,000 from All Heart Disease, 2011 – 2013, Age 35+



Source: CDC Interactive Atlas of Heart Disease and Stroke, 2011-2013

Within Georgia and South Carolina, high rates of heart disease related death are more prevalent in the more rural sections of the state, including several of the CSRA counties (Figure 10).

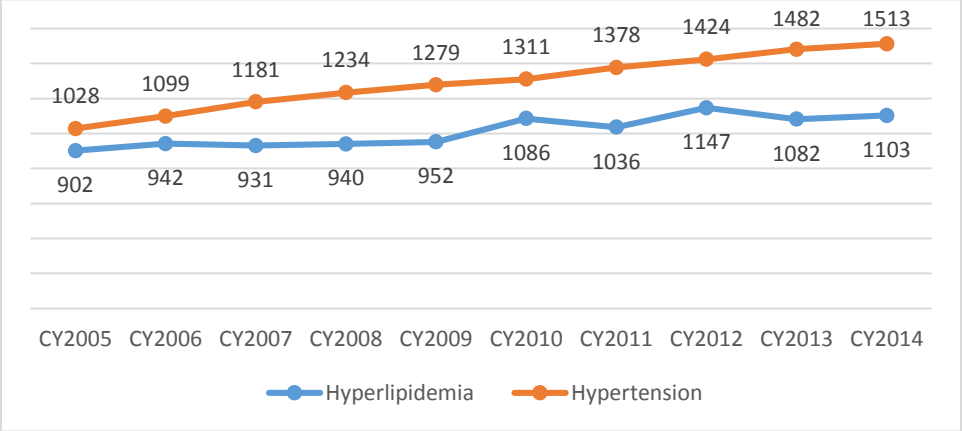
Figure 10: Rate of Heart Disease Death in Georgia, 2013



Source: CDC Interactive Maps

According to Georgia's OASIS database, while death due to other Major Cardiovascular Diseases is on a downward trend (n = 16,150 in 2005 to n = 15,945 in 2014; -1.3% change), Hyperlipidemia and Hypertension are both steadily increasing (Figure 11).

Figure 11: Number of Deaths due to Hyperlipidemia and Hypertension in Georgia, 2005 – 2014

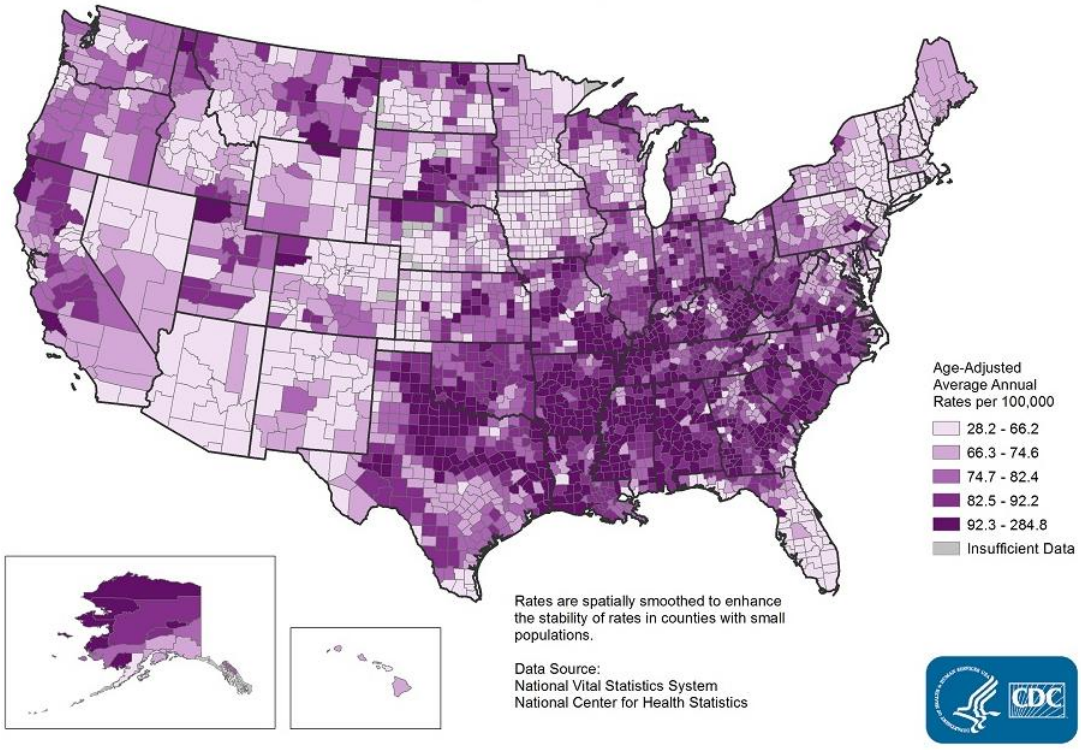


Source: Georgia's OASIS database

Stroke

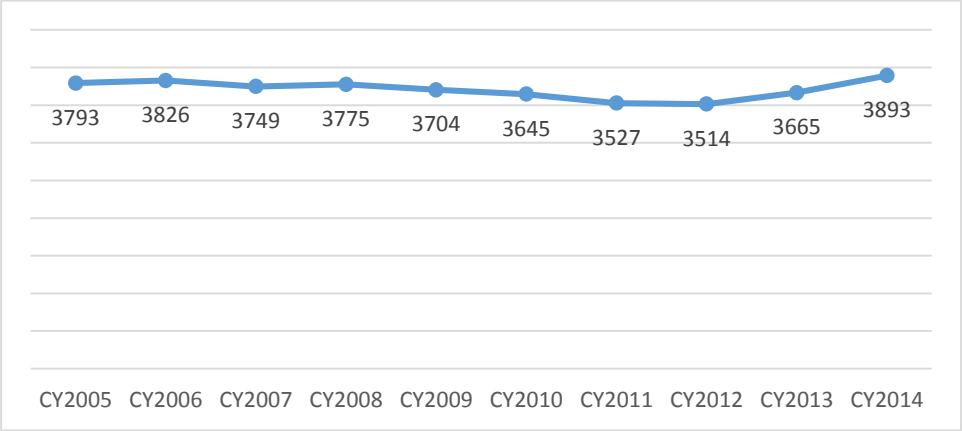
According to the American Stroke Association, stroke is the 5th cause of death and the leading cause of adult disability in the United States. And, while Healthy People 2020 does not have any goals specific to stroke, as with all other disease related topic areas there is a desired decrease in the mortality rate from strokes. Augusta University's Health System and Georgia as a whole tend to appear on the higher end of the stroke mortality spectrum as it is located in the "buckle' of the southeastern "Stroke Belt". This "Stroke Belt", according to the Centers for Disease Control (CDC), is where the incidence and mortality from stroke is the highest in the United States (Figure 9 for map of stroke death rates from the CDC). Looking at the mortality statistics from the CDC, Georgia's mortality rate ranks at 87.75 out of a 100,000 for those 35 and older, and the rate of hospitalization from stroke for residents 65+ ranges from 8.5 per 1,000 Medicare beneficiaries to 17.8 out of 1,000 for all Georgia.

Figure 12: Stroke Death Rates, 2011 to 2013, Adults Aged 35+, by County (Source: CDC Interactive Maps)



Despite increased awareness of stroke prevention, the Georgia OASIS database shows an unchanging trend in the number of people who have died due to stroke from 2005 to 2014 (Figure 13).

Figure 13: Trend in Stroke-Related Deaths, Georgia, 2005-2014



Source: Georgia OASIS database

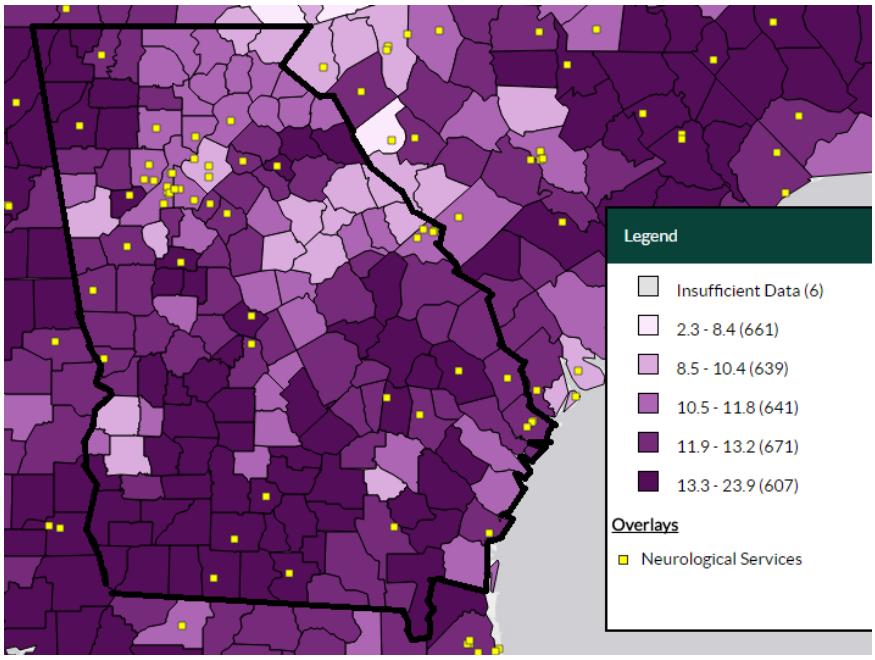
The goal of Healthy People 2020 is the reduction of mortality from diseases and chronic conditions, like stroke. In a study from the American Academy of Neurology, it has been found that stroke patients who see a neurologist while in the hospital are less likely to die during the hospital stay than stroke patients

who do not (5.6% risk vs. 13.5% risk). Likewise, one-year mortality risk for stroke patients decreased by 23% for those who received neurological care. However, when filtered down to look only at Georgia with an overlay of hospitals offering neurological services, CDC's map of stroke mortality (see Figure 14) shows that the majority of Georgia counties have a death rate from stroke of at least a 74.3 per 100,000 adults aged 35 and over. Yet, despite this high mortality rate and the empirical evidence of the benefit of neurology care for stroke patients, only 48 hospitals within Georgia offer neurological specialty services, and only a handful of those also offer inpatient rehabilitation services equipped to handle this follow-up care of this population. Table 12 shows the trends for stroke mortality for the CSRA in comparison with Georgia, South Carolina, and the United States.

Table 12: Stroke Mortality Rates, Comparison of the CSRA and States, 2011-2013, Adults 35+ (Source: CDC BFRSS)

Area	Stroke Mortality Rate (out of 100,000)
Georgia	87.75
South Carolina	94.08
CSRA	87.58

Figure 14: Map of Stroke Mortality in Georgia, 2011 – 2013, Aged 35+, by County



Source: CDC Interactive Maps

Respiratory Diseases

Within the spectrum of respiratory diseases, both asthma and chronic obstructive pulmonary disease (COPD) have moderate prevalence in the United States and, unlike other chronic conditions, have both lower prevalence and

mortality rates in Georgia in comparison to the United States rates. South Carolina in comparison has lower asthma prevalence rates but higher COPD prevalence (Table 13).

Table 13: Asthma and COPD Prevalence and Mortality, GA, SC, and USA

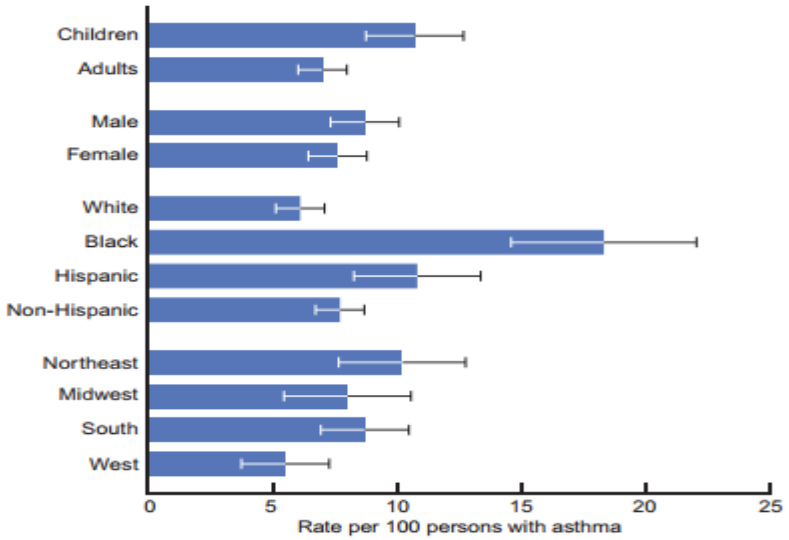
	Georgia	South Carolina	USA	Time Period
Asthma Prevalence (Adults)	8.3%	8.5%	9%	2013
Asthma Mortality Rate	10.75%	13.93%	10.82%	2010
COPD Deaths (over 45)(NVSS)(cases per 100,000)	219.87	247.06	237.97	2010
COPD Prevalence	6.4%	7.5%	6.1%	2013

Source: BFRSS

Looking at a trend of state data from 2005 to 2014 through the state run OASIS database, while the number of individuals who have died from asthma has decreased (from 115 in 2005 to 94 in 2014), the overall numbers of deaths due to other respiratory conditions, including COPD, have increased (n = 6227 in 2005 to n = 7553 in 2014).

According to Healthy People 2020, more than 23 million people living in the United States have asthma (https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases). In a trend comparison from 2001 to 2009, the CDC found that there were 2.1 million asthma related ED visits in 2009 – a number that stayed fairly consistent throughout the whole trend period. Of those ED visits, more were in children and Black/African Americans (See Figure 15)(CDC, National Surveillance of Asthma: United States, 2001-2010).

Figure 15: Asthmas Emergency Department Visits Rates by Age, Sex, Race, Ethnicity, and Geographic Region, 2007 – 2009.



I 95% confidence interval.
NOTES: Crude (unadjusted) risk-based rates are presented. See Table 15 for underlying data.
SOURCE: CDC/NCHS, National Hospital Ambulatory Medical Care Survey.

Source: National Surveillance of Asthma: United States, 2001-2010; Figure 15.

Healthy People 2020's overall goal for respiratory diseases is to "promote respiratory health through better prevention, detection, treatment, and education efforts" (https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases). Also, as with other conditions, Healthy People 2020 has specific data-driven target goals associated with the reduction of asthma associated deaths, hospitalizations, and emergency room visits (Table 14). However, these data were only available from Healthy People 2020 at the national level and not the state level, so comparisons between the service area of Georgia with Healthy People 2020 data could not be made. Despite targets to reduce negative impacts of asthma, deaths due to asthma have remained either steady or have increased for anyone under 65. For those 65 and older mortality have rates have declined, and for all age groups emergency room visits have declined.

Table 14: Healthy People 2020 Goals for Reduction of Asthma Related Deaths, Hospitalizations, and ED Visits

Reduction of Asthma Related Deaths by Age Group							
Age Range	2009	2010	2011	2012	2013	% Change	2020 Target
0-17	2.8	2.5	2.7	2.4	3	7.1	NA
18-34	4.7	4.3	4.4	4.7	4.5	-4.3	NA
35-64	10.8	11.3	10.8	11.9	12	11.1	4.9
65+	38.8	37.7	36	35.7	35.7	-8	21.5
Reduction of Hospitalizations from Asthma by Age Group							
Age Range	2006	2007	2008	2009	2010	% Change	2020 Target
0 - 4	43.3	41.4	35.4	40.6	null	-6.2	18.2
5 - 17	null	13.4	11.2	10.5	12.4	-7.5	NA*
18 - 44	null	7.1	7.7	8	7.2	1.4	NA*
45 - 64	null	16	17	16.7	14.7	-8.1	NA*
65+	23.7	25.3	25.2	29	25.5	7.6	20.1
Reduction of Emergency Room Visits from Asthma by Age Group							
	1995-1997	1998-2000	2001-2003	2005-2007	2009-2011	% Change	2020 Target
0 - 4	150	159.6	153.7	132.8	125.8	-16.1	98.7
5 - 17	null	null	null	73.6	91.1	23.8	NA*
18 - 44	null	null	null	62.3	59.6	-4.3	NA*
45 - 64	null	null	null	37.3	44.5	19.3	NA*
65+	29.5	31.5	30.9	21.9	26.8	-9.2	13.7

Source: Healthy People 2020, https://www.healthypeople.gov/2020/data-search/Search-the-Data?&f[0]=field_topic_area%3A3503

**Reduction of ED visits for ages 5-64 were rolled into one group at the high level where the target was listed (8.7 for hospitalizations and 49.6 for ED Visits). However, for sake of comparison and differences in age groups, data was listed using the expanded population data for the goal.*

In addition to asthma, according to Healthy People 2020, while 13.6 million adults in the US have had a diagnosis of COPD, it is estimated that nearly the same amount have not been diagnosed yet (https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases). COPD is also the 4th leading cause of death in the United States, though it is preventable since most cases are related to cigarette use (CDC, National Center for Health Statistics, Compressed Mortality file 1999-2006). As with asthma, Healthy People 2020 has set data-driven target goals for the reduction of COPD-related deaths, hospitalizations and ED visits; however, all have increased rather than decreased (Table 15).

Table 15: Reduction of COPD-related deaths, hospitalizations, and ED visits, age 45+

	2007	2008	2009	2010	2011	2012	2013	% Change	2020 Target
Deaths	113.9	123.5	117.9	116.6	117.7	114.8	116.5	2.3	102.6
Hospitalizations	56	61.4	62.4	58.7	null	null	null	4.8	50.1
ED Visits	81.7	110.1	117.3	92.9	103.1	null	null	26.2	56.8

Source: Healthy People 2020

Mental Health, Mental Disorders, & Addictive Behaviors

Mental health issues and addictive behaviors can be underlying issues for or could lead to chronic conditions later on. Unlike with other issues, Georgia and South Carolina are actually below the national average for alcohol usage, and Georgia is also below average for current smoking behavior.

Table 16: GA, SC, and USA Comparisons with Alcohol and Tobacco Use

	Georgia	South Carolina	USA	Time Period
Alcohol Use Among Youth	27.9%	28.9%	34.9%	2013
Binge Drinking Prevalence (Adults)	13.2%	15.8%	17.4%	2013
Heavy Drinking Prevalence (Adults)	4.7%	5.6%	6.2%	2013
Current Smokeless Tobacco Use (Adults)	5%	4.6%	4.5%	2013
Current Smoking (Adults)	18.8%	22.7%	19.2%	2013

Source: CDC, BFRSS

Healthy People 2020 has a goal of reducing the proportion of adults who experience major depressive episodes from a baseline of 6.5% nationally to a target of 5.8%; however, the percentage has increased as of 2013 to 6.7%. Likewise, Georgia has experienced a 14.29% increase from 2008 to 2013. South Carolina has seen a reduction from 7.8% to 7.2% from 2008 to 2013, though it started much higher than the national average and remains higher than the US's 6.7% in 2013.

Table 17. Major Depressive Episodes Trends 2008 – 2013, Healthy People 2020 (Age Adjusted, percentage of population)

	2008	2009	2010	2011	2012	2013	% Change
US	6.5	6.6	6.8	6.6	6.9	6.7	3.08%
	2008 - 2011		2009 – 2012		2010 - 2013		
Georgia	6.3		6.4		7.2		14.29%
South Carolina	7.8		9		7.2		-7.69%

Source: Health People 2020 (www.healthypeople.gov); National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration)

Obesity, Oral Health, and Bone Diseases

As with mental health, obesity, poor oral health, and arthritis have also all been found to be underlying issues for other chronic conditions. Overall, Georgia and South Carolina have higher prevalence levels of adults being overweight or obese and on poor oral health. South Carolina also has higher prevalence of arthritis (See Table 18).

Table 18: Prevalence of Arthritis, Obesity, and Poor Oral Health, GA, SC, and USA

	Georgia	South Carolina	USA	Time Period
Arthritis Prevalence (Adults)	23.7%	28.3%	23.7%	2013
Overweight or Obesity (Adults)	65.6%	66.5%	64.6%	2013
Obesity Only(Adults)	30.2%	32%	29.1%	2013
Tooth loss (Adults 18-64)	39.3%	43.2%	35.7%	2012
Six or More Teeth Loss (65+ years)	44.8%	47.4%	39.5%	2012

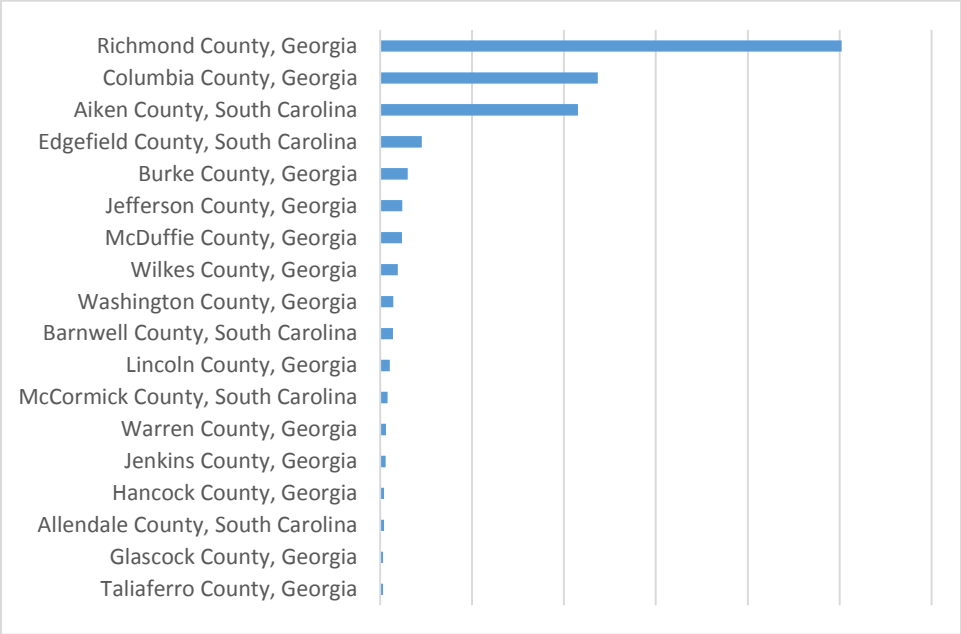
Source: CDC, BFRSS, 2013

3.2.2 Primary Data Analysis

3.2.2a AUHealth CSRA Patient Data

Within calendar year 2015, AUHealth had approximately 585,843 visits from patients living in the CSRA, with a large portion of those having come from Columbia, Richmond and Aiken counties (See Figure 16).

Figure 16: Breakdown of Visits by CSRA County



Source: IDX; CY2015

Patients who presented to AUHealth were 60% female, 48% white, 46% black, 21.9% pediatric, and 78.1% adults. (See Figures 17, 18, 19 for full demographic breakdown).

Figure 17: AUHealth CSRA Patient Gender Breakdown

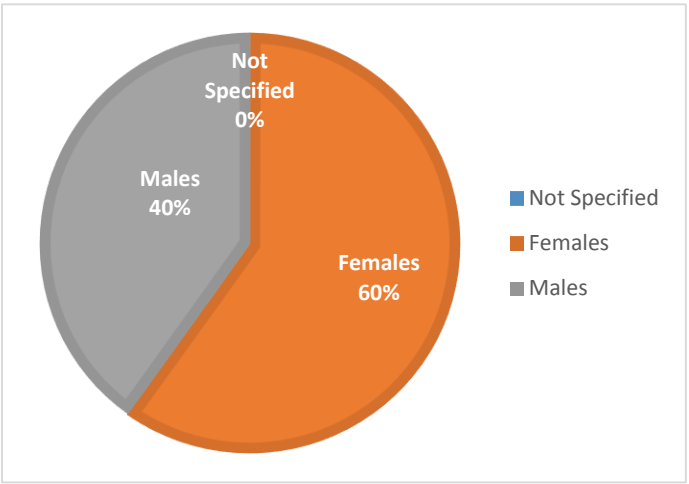


Figure 18: AUHealth CSRA Patient Racial Breakdown

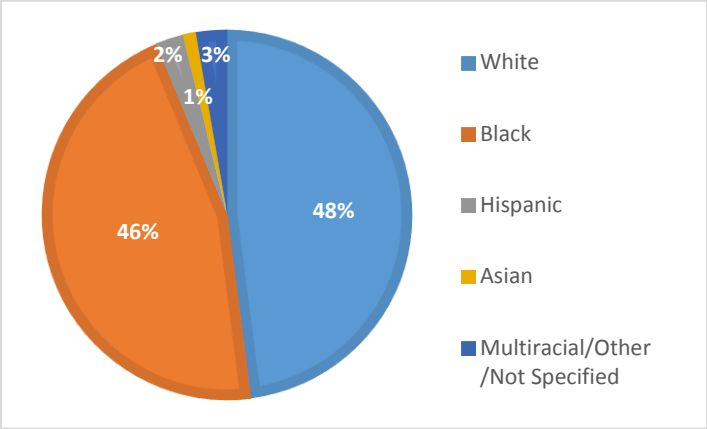
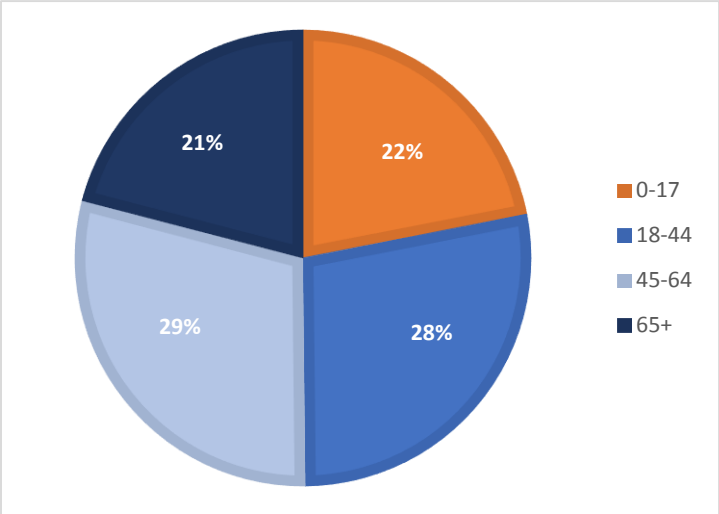


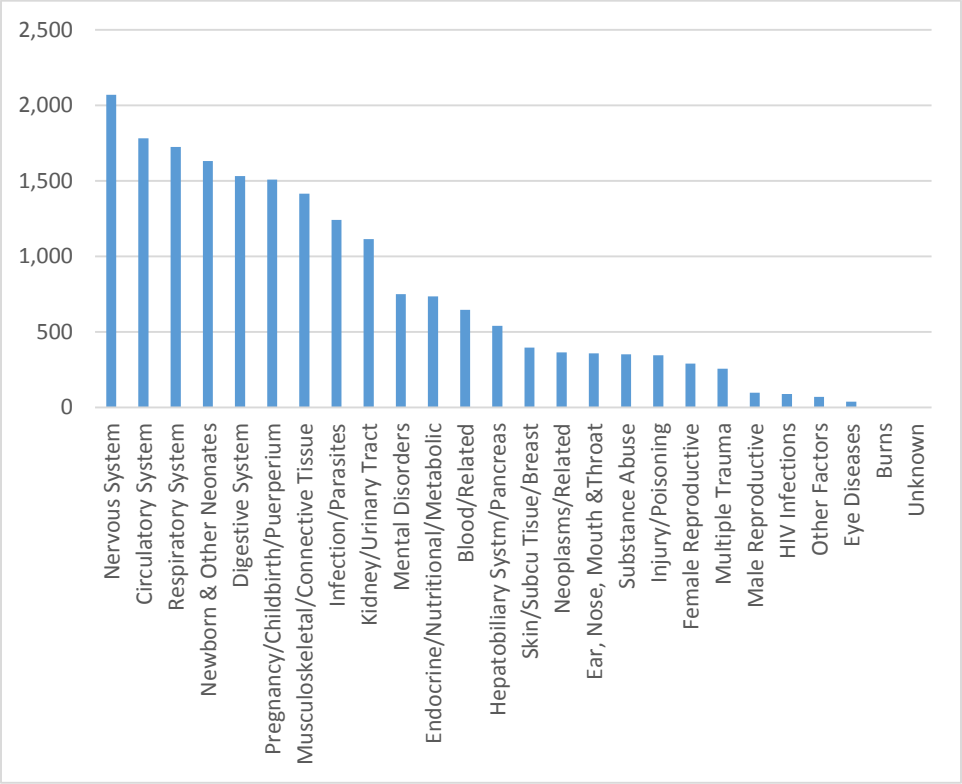
Figure 19: AUHealth CSRA Patient Age Breakdown



Source: GHA Discharge Dataset
Note: 18+ years is all in shades of blue to show overall adult population as well as by age group.

When looked at from an ICD diagnosis code level from the Georgia Hospital Association's Discharge Dataset, the top 20 diagnoses included: hypertension, diabetes, cardiovascular diseases, obesity, kidney disease, depression, anxiety, hyperlipidemia, pulmonary issues, tobacco use, urinary tract infections, and GI disturbances. On a broader level of all discharges in 2015 by aggregate categories, diseases of the nervous system, circulatory system, and respiratory system were the most seen overall (Figure 20)

Figure 20. Inpatient Discharges by Disease Categories, 2015



Source: GHA Discharge Dataset, inpatient

3.2.2b Key Informant Survey/Interviews

A total of 40 survey-led interviews were conducted by the physician liaisons from AUHealth's Office of Strategic Partnerships during the spring of 2016 with primary care community physicians practicing in the 18 county CSRA service area. Physician specialties included Pediatrics, OB/GYN, Family Medicine, and Internal Medicine. See Appendix A for the full questionnaire used in discussion with the physicians.

Overall, physicians surveyed had patients who were primarily white, black, or Hispanic and accepted most forms of insurance or payment, though fewer physicians had patients that were Medicare or Self-pay. When asked about barriers to care that they saw their patients have, almost all said transportation issues (n = 17) with being uninsured also being a common barrier to care access (n = 9).

Providers were given a long list of chronic and prevalent conditions. From those, almost all saw patients with obesity followed closely by asthma and diabetes.

Table 20: Chronic Conditions by Number of Community Providers Who Treat Condition in Their Practice

Condition	# of Providers Who See this in Their Practice
Obesity	36
Asthma	33
Diabetes	31
Hypertension	28
Arthritis	25
Hyperlipidemia	25
COPD	24
Cardiovascular Disease	23
Mental Health	19
Stroke	15
Cancer	12
Other	5
Addiction	4

While some of the physicians surveyed work with all age groups, some work with exclusively adult populations and others exclusively with pediatric populations. When split by age groups, there is some variation in conditions seen in physicians who deal with pediatric populations versus those that only work with adult populations.

For physicians who work with adult populations, almost all see diabetes, hypertension, asthma, and obesity within their patient panels (Table X). For those who work with pediatric populations, obesity stood out as see by almost everyone as a condition that they actively treated for.

Table 21: Chronic Conditions by Number of Community Providers Who Treat Condition in Their Practice, Adult Patients Only

Condition	# of Providers Who See this in Their Practice
Diabetes	22
Hypertension	22
Asthma	22
Obesity	22
Hyperlipidemia	21
Arthritis	21
COPD	19
Cardiovascular Disease	15
Stroke	12
Mental Health	9
Cancer	8
Other	3
Addiction	2

Table 22: Chronic Conditions by Number of Community Providers Who Treat Condition in Their Practice, Pediatric Patients Only

Condition	# of Providers Who See this in Their Practice
Obesity	27
Asthma	23
Diabetes	22
Hypertension	19
Hyperlipidemia	16
Arthritis	16
Cardiovascular Disease	16
Mental Health	16
COPD	14
Cancer	8
Stroke	8
Addiction	3
Other	2

While most of the physicians surveyed claimed that they had privileges to see patients in the hospital, they were not actively involved with community wide efforts for healthcare and therefore did not answer the community health section of the survey. For those that did, answers were exactly the same as what they saw in their patient population, and only two physicians from Barnwell County in South Carolina answered the questions about community resources to say that there were too few in their area and that more were needed. See Appendix B for a listing of community health resources for all CSRA counties.

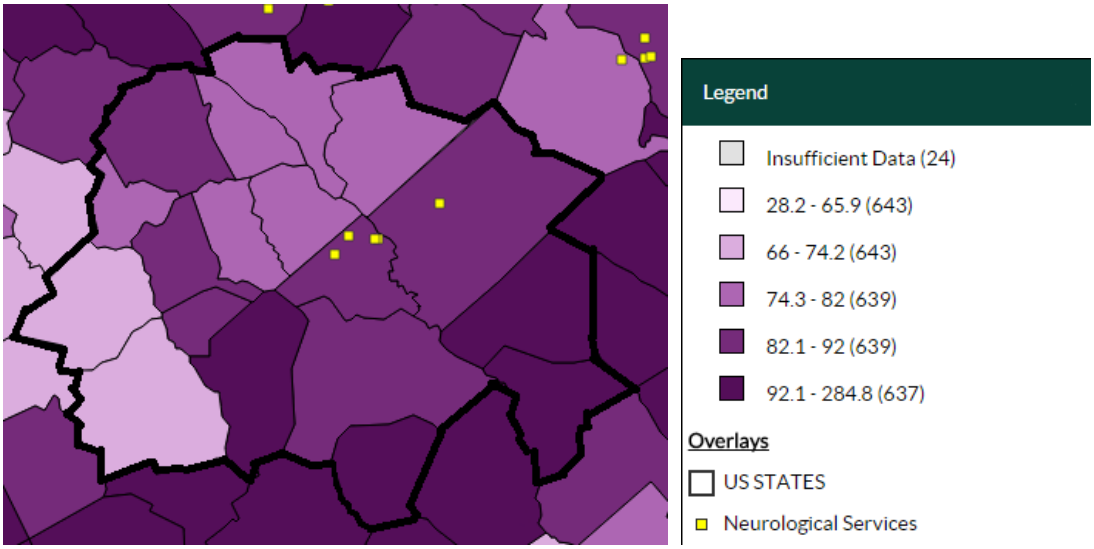
3.3 Project(s) Design and Goals

The final consensus of focus for the Augusta University FY16 CHNA and CHNA project is stroke. Though a singular focus and not as high in numbers as other conditions, this chronic condition comes in many forms and is impacted and compounded by other chronic conditions, including hypertension, heart disease, and obesity [Ostwald et al., 2006]. Stroke, along with these comorbid conditions, had high incidence and mortality rates in in the CSRA as seen in both the secondary and primary data. For AUHealth in calendar year 2015, there were 626 cases of stroke or stroke-related admissions. The demographic population that is most at risk for having strokes of any kind are black women in their mid-50s and older [CDC, 2015]. As was noted by the demographic information for the service area, the CSRA has a population that is approximately 38% black, 51% female, and 27% 55 and older. Looking at the trends of these demographics from the 2010 Census to 2014, the population of older adults is on an upswing (8.5% from 2010 to 2014), meaning that the population that is susceptible to having strokes is also increasing.

When filtered down to look only at the CSRA service area with an overlay of hospitals offering neurological services, CDC's map of stroke mortality (see Figure 21) shows that the majority of CSRA counties have a death rate from stroke of at least a 74.3 per 100,000 adults aged 35 and

over. Yet, despite this high mortality rate, only 5 hospitals within the 18 county area offer neurological specialty services, and those are only in 2 counties.

Figure 21: Map of Stroke Mortality in the CSRA, 2011 – 2013, Aged 35+, by County (Source: CDC)



Of the 5 hospitals in the CSRA providing neurological care, AUHealth is the only one that is recognized as a comprehensive stroke center. Augusta University has a mission "to be the regional leader in stroke care by providing exceptional, state-of-the-art quality and expertise in patient care; by educating our patients, community, healthcare partners and trainees in stroke prevention and treatment; and by fostering research into innovative treatments for stroke patients" (www.augusta.edu/mcg/neurology/specialties/stroke/index.php). AUHealth has established and will continue to establish stroke awareness and prevention programs for both the general population and for the healthcare community.

3.3.1 Community-Based Projects

Within the general population, AUHealth is actively seeking out opportunities to provide educational information.

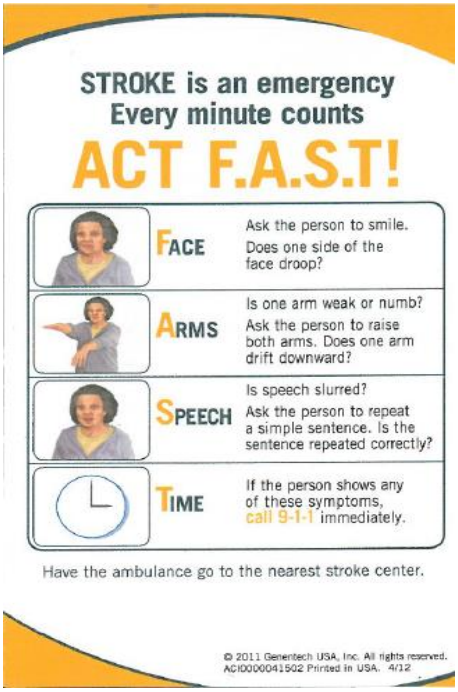
- Strike Out Stroke. One innovative community based initiative was a partnership between the American Heart Association – CSRA chapter, the Augusta GreenJackets baseball team, and AUHealth to learn more about and how to identify the symptoms of strokes, and proceeds from the aptly named event – "Strike Out Stroke" – benefitted the American Heart Association. During a GreenJackets baseball game, patrons could visit activity and simulation stations to get a firsthand experience of the difficulties stroke patients can have after a stroke with speech and fine motor abilities. Healthcare professionals were there to answer questions and handout materials were given to people. Talks are currently underway to make this a routine event.
- Health Fairs. AUHealth has a continual and ongoing presence at several local health fairs at local businesses, local schools, local churches, and at homeless clinics within the CSRA. Nurses and other representatives discuss and provide materials on the signs and

symptoms of stroke, stroke prevention, and what do to do when someone is having a stroke. Working with the Department of Communications and Marketing, an event calendar will be included on the website to further promote the health fairs and other community education efforts for stroke.

- American Heart Association Walk. Having partnered with the American Heart Association for other events, AUHealth has had a team presence for the walk to raise money for the AHA efforts and starting this past year the walk included more focus on stroke and stroke prevention. AUHealth will increase their presence at the event through having a booth and activities for those attending and participating.
- Walmart Clinic. Another community based initiative for stroke education will a table located just outside of the Walmart healthcare clinic in North Augusta, South Carolina (Aiken County). Aiken County has the fastest growing 65 and older population and has one of the highest rates of strokes in the CSRA, so the placement of this table on a rotating 6 month basis will help continue the education of both employees and customers within this high risk area.
- Fast Card. Additionally, Augusta University distributes a "fast card" for patients (Genentech USA) that has been disseminated throughout the community to local primary care physicians' offices and to the general population at health fairs and larger poster sized versions of the information has been placed in elevators and physicians' offices within the area. This card provides quick information to help people identify when a stroke is occurring so that they can obtain care within the optimal window of time (See Figures 22 and 23 for copies of the FAST Card and FAST Poster).

Figure 22. FAST Card

Figure 23. FAST Poster



- Columbia County. The overall fastest growing county in the CSRA though is Columbia County, and AUHealth currently partners with the Columbia County leadership program

to provide tours of various areas within the hospital – including the stroke interventional procedure area – in order to educate current and future leaders of this county about health conditions and the work that AUHealth is doing in these areas.

- Marketing and Communication Efforts. Those in the stroke care of AUHealth will work with the Marketing and Communications team to include more information on the website about community efforts, about what it means to be a comprehensive stroke center, about research being done in the department, and to provide online education information accessible to the general public.

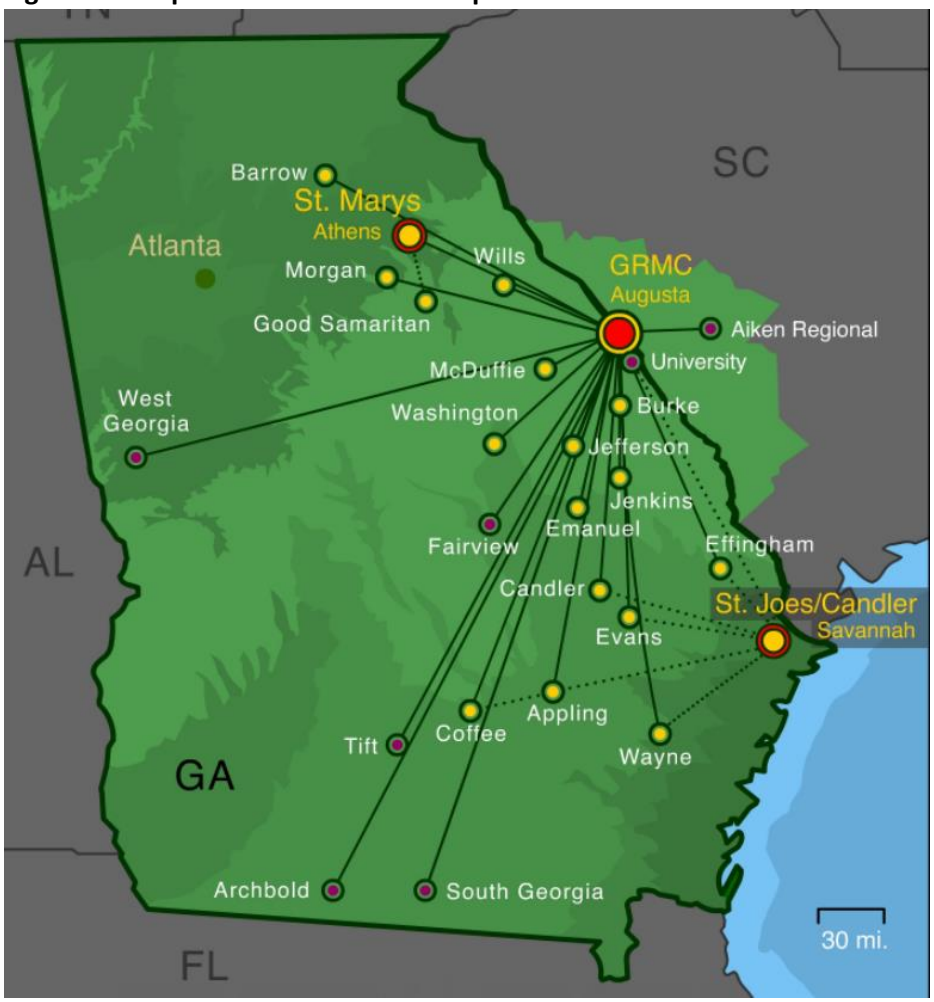
3.3.2 Community Health Professional Projects

While continuing and expanding efforts within the general community, AUHealth will be not only expanding current efforts within the healthcare community but will be creating new programs and tools surrounding stroke care and prevention to aid these community health professionals.

- REACH. AUHealth is also the creator and now partner for and user of the stroke telemedicine program, **R**emote **E**valuation for **A**cute Is**CH**emic Stroke or REACH. This program makes neurological stroke consults more available within rural areas at member hospitals. Utilizing computers and webcams, the 6 Augusta University stroke specialists can help diagnose and treat stroke patients at member hospitals 24/7 at the point of care. Additional education materials including posters, badge cards, and stroke packets have been created for and disseminated to local community physicians and nurses (see Appendix D for copies of the materials). Patients are typically seen during a stroke within Emergency Departments; however, rural hospitals do not always have stroke specialists or neurologists on-staff or on-call to respond to every case that presents. Through the REACH program, emergency room physicians are able to get the consult for diagnosis and treatment of these vulnerable patients during the crucial initial 3 hour window after stroke onset when a medication known as tissue plasminogen activator (tPA) is most effective. This medication dissolves clots, giving patients a better and often lifesaving chance for recovery.

  Member hospitals for the REACH program currently include 18 hospitals in the AUHealth Network and 10 in the St. Joseph's/Candler Network (see Figure 24 for map of the hospitals). One hospitals has joined since 2015, South Georgia Medical Center, and plans are in place to expand the networks in the coming months to incorporate 2 more hospitals – Trinity of Augusta and St. Mary's Sacred Heart, both within the AUHealth Network. Of the 28 current REACH hospitals and 2 coming on board, 7 are within the CSRA.

Figure 24: Map of REACH Member Hospitals



Within calendar year 2015, a total of 1265 consults were conducted with the emergency physicians on potential stroke patients and a total of 182 recommendations were made to use tPA (see Table 23 for breakdown of consults and tPA recommendations by hospital and network). Since the start of the REACH program, more than 1,000 people in rural Georgia and South Carolina have had their lives saved with these telemedicine consults.

Table 23: REACH Consults and tPA Recommendations by Hospital and Network, 2015

Hospital	# of Consults	# of tPA Recommendations
AUHealth Network		
Tift Regional Medical Center	226	25
Fairview Park Hospital	170	16
Aiken Regional Medical Center	163	24
West Georgia Health	78	5
Emanuel Medical Center	64	5
Good Samaritan Hospital	40	7
Burke Medical Center	31	3
St. Mary's Athens Hospital	30	6
Washington County Regional Medical Center	27	3
Archbold Memorial Hospital	24	6
Barrow Regional Medical Center	22	2
Morgan Memorial Hospital	14	4
Jefferson Hospital	11	3
University Heath Care System	10	2
Wills Memorial Hospital	9	4
University Hospital McDuffie	7	1
Optim Medical Center-Jenkins	4	1
St. Joseph's/Candler Network		
St. Joseph's Hospital	159	42
Coffee Regional Medical Center	46	7
Candler Hospital	44	3
Wayne Memorial Hospital	31	6
Candler County Hospital	15	0
Effingham Hospital	12	3
Optim Medical Center Tattnall	11	0
Appling General Hospital	9	2
Evans Memorial Hospital	8	2

Source: Internal AUHealth data tracking the REACH program

The utilization of telemedicine also touches on the most prevalent barrier to care access as identified by the community physicians - transportation. With so few hospitals in the CSRA providing care for this population, an expansion of the stroke prevention and follow-up programs into the smaller primary care clinics that are more easily accessible to these patients may help lower both initial and subsequent stroke rates in at-risk populations. Over the next three years, AUHealth is committed to continuing and expanding the work of the REACH program.

- Standardization and Time Reduction Efforts
    - EMS Education and Outreach. In addition to the outreach to community and rural hospitals through the REACH program, AUHealth will be creating an outreach to EMS. A coordinator will be hired to help lead the education and training efforts with local EMS responders. Standardized protocols will be

created for dealing with stroke patients in order to provide optimal care and to reduce the time it takes to get a patients from the cart to the bed.

- Door to Anteplase Bolus. Additional efforts have recently begun to decrease the average time from when a patient enters the system having a stroke. Once a patient is in, a time out is called for a resident to do the NIH Stroke Scale assessment before the patient is taken to CT and a decision is made to either give the patient a tPa injection or not. Having started in February 2016, the average time from door to anteplase bolus has decreased from 57 minutes to 39 minutes with less variability from month to month. After discharge, patients are followed up via a phone within 7 days and then again approximately 90 days after discharge if the patient had tPA or a thrombectomy using a modified Rankin Scale. So far, no major deficits have been identified in the patients who have started in this newer process of care.
- CSRA Stroke Coalition. Leaders within the AUHealth stroke section are part of a CSRA Stroke Coalition that is working with other hospitals to create standardized practices for the better care of stroke patients.

- Referrals. Two current and ongoing efforts for stroke care and prevention are an urgent referral line and the utilization of physician liaisons. Community physicians and nurses or physicians within the AUHealth System have access to a 24/7 urgent referral line for stroke patients. If a patient is suspected of having a stroke or at risk of having a stroke, providers can bypass traditional scheduling to get a patient an appointment or get the patient in for immediate care. Part of the education to community providers about not only the urgent referral line and other resources available for stroke care at AUHealth are physician liaisons who meet with community providers and who act as a go between in the rare case of any problems that may arise in the care of the community providers' patients at AUHealth. When a physician liaison first meets with a community provider, he or she is given a notebook that contains not only educational materials but also information about AUHealth providers, including the physician's name, picture, specialty, and how to make an appointment for a patient. If a community physician wishes to, tours of the hospital and stroke intervention area are available.
- Consult Notes. Major efforts will be made over the next three years to better provide referring physicians access to patient visit notes. A new physician portal called HealtheLife by Cerner will give a physician a login to access information about shared patients with AUHealth. This information will include consult and procedure notes.
- AUHealth Staff Education. Efforts will be made to increase the education efforts for faculty and staff at AUHealth. Ideas include health fairs and mandatory HR training on the signs and symptoms of stroke.
- Roosevelt Warm Springs. In addition to the REACH program, Augusta University is the CSRA's only comprehensive stroke center and has a joint commission certified stroke program through its Warm Springs Inpatient Rehabilitation Hospital. Patients are accepted at Warms Springs from all over Georgia and the nation, including patients from AU Health's primary service area of the CSRA. Patients who have had a stroke, whatever the severity, and need inpatient rehabilitation are referred from AU Health to Warm Springs for an individualized treatment. Services offered to patients at Warm Springs

include, but are not limited to, modified barium swallow studies; occupational, physical, and speech therapy; and psychological counselling. Patients' families are encouraged to take an active role in the patient's rehabilitation during the stay at Warm Springs, as strokes impact not just the patient but the family as well. More information about Warm Springs and its programs can be found in its Community Health Needs Assessment: http://www.augustahealth.org/media/file/Roosevelt%20Warm%20Springs/WARM%20SPRINGS%20Community%20Health%20Needs%20Assessment_FINAL.pdf.

APPENDIX A: Augusta University 2016 CHNA Community Provider Questionnaire

1. Name of Respondent: _____
2. Respondent's Organization: _____
3. Respondent's Specialty: _____
4. Location of Organization (City, County, State):

   _____ _____ _____

   City State County
5. What age groups do you see in your practice? (Check all that apply)

   ___ 18 years and under ___19 – 64 ___ 65 and older
6. What racial/ethnic groups do you <u>mostly</u> see in your practice?

   ___ White ___ Black ___ Asian ___Hispanic

   ___Other:_____
7. What insurance types do patients in your practice use?

   ___ Commercial ___Medicaid ___Medicare ___Self-Pay

   ___Other: _____
8. What major health conditions do you see in your practice? (Check all that apply)

   ___ Diabetes ___ Asthma ___ Cardiovascular Disease ___ Stroke

   ___ Hypertension ___ Cancer ___ COPD ___ Mental Health

   ___ Hyperlipidemia ___ Arthritis ___ Obesity ___ Addiction

   ___Other: _____
9. What barriers to healthcare do your patients experience?

   ___ Transportation ___ Uninsured ___ Cannot pay for care ___Office hours

   ___ Speak another language ___Other:_____
10. Do you have privileges at a local hospital and see patients who do not attend your practice?

    ___Yes, joint appointment ___Yes, hospitalist ___Yes, other ___No
11. Do you actively participate in health projects or campaigns in your community?

    __Yes __No (END OF SURVEY)

<u>Community Section</u>

12. What racial/ethnic groups are in your community?

    ___ White ___ Black ___ Asian ___Hispanic

    ___Other:_____
13. What major health conditions do you see in your community? (Check all that apply)

    ___ Diabetes ___ Asthma ___ Cardiovascular Disease ___ Stroke

    ___ Hypertension ___ Cancer ___ COPD ___ Mental Health

    ___ Hyperlipidemia ___ Arthritis ___ Obesity ___ Addiction

    ___Other: _____
14. What barriers to healthcare do patients in your community experience?

    ___ Transportation ___ Uninsured ___ Cannot pay for care ___Office hours

    ___ Speak another language ___ Other:_____
15. Are there any community health resources available in your area? If so, list below:

    _____

    _____

    _____

_____
_____

16. What community health resources are lacking for your community?

_____
_____
_____
_____

APPENDIX B: Community Resources

Medical (Free Clinics; Sliding Scale Clinics; Federally Qualified Health Centers)

- Burke County, Georgia
  - Burke County Health Department http://ecphd.com/?
  - Medical Associates (Waynesboro)
  - Medical Associates of Sardis
  - Medical Associates Plus - Keysville
- Columbia County, Georgia
  - Columbia County Health Department http://ecphd.com/?
  - FaithCare Medical Clinic http://wesleyumc.net/ministries/missions
  - Thomson Pediatrics and Internal Medicine
- Glascock County, Georgia
  - Glascock County Health Department http://ecphd.com/?
  - Tri-County Health System
  - Community Health Care Systems, Inc. (Gibson)
- Hancock County, Georgia
  - Hancock County Primary Health Care
  - Tri-County Health System
  - Community Health Care Systems, Inc. (Sparta)
- Jefferson County, Georgia
  - Jefferson County Health Department http://ecphd.com/?
  - Neighborhood Improvement Project, Inc. (Medical Associates Plus – Wrens)
  - Community Health Care Systems, Inc. (Wrens)
- Jenkins County, Georgia
  - Jenkins County Health Department http://ecphd.com/?
- Lincoln County, Georgia
  - Lincoln County Health Department http://ecphd.com/?
- McDuffie County, Georgia
  - McDuffie County Health Department http://ecphd.com/?
- Richmond County, Georgia
  - Richmond County Health Department http://ecphd.com/?
  - Belle Terrace Health and Wellness Center (Neighborhood Improvement Project, Inc.; Medical Associates Plus – Belle Terrace)
  - Beulah Grove Baptist Church – Lamar Medical Center http://bgcrcenter.org/lamarmedicalcent.html
  - Christ Community Health Services Augusta, Inc. (2 locations) http://www.christcommunityaugusta.org/
  - Augusta St. Vincent de Paul Health Clinic
  - Harrisburg Family Health Center http://mjstluke.wix.com/harrisburgfamily
  - Druid Park Community Health Center, Miracle Making Ministries
  - Southcare Medical Center
  - Medical Associates Plus – Augusta
  - Richmond County Medical Society Project Access (www.rcprojectaccess.org)

    - Augusta University Ryan White Outreach Team http://www.csrasafetynet.org/
- Taliaferro County, Georgia
    - Taliaferro County Health Department http://ecphd.com/?
- Warren County, Georgia
    - Warren County Health Department http://ecphd.com/?
    - Tri-County Health System
    - Community Health Care Systems, Inc. (Warrenton)
- Washington County, Georgia
    - Washington County Health Department
    - Sandersville Community Health Center (Community Health Care Systems, Inc.)
    - Tennille Community Health Center (Community Health Care Systems, Inc.)
- Wilkes County, Georgia
    - Wilkes County Health Department http://ecphd.com/?
- Allendale County, South Carolina
    - Lafitte and Warren Medical Center
    - Low County Health Care System, Inc. http://www.lowcountryhealthcaresystem.com/
    - Allendale County Health Department
- Aiken County, South Carolina
    - Margaret J. Weston Medical Center
    - Margaret J. Weston Community Health Center
    - Family Health Center http://findahealthcenter.hrsa.gov/
    - Clyburn Center for Primary Care
- Barnwell County, South Carolina
    - Barnwell County Health Department
    - Barnwell Pediatrics (Low County Health System, Inc.)
    - Barnwell Family Medicine
    - Best Chance for Women (mammograms)
    - Polly Best – Mental Health
- Edgefield County, South Carolina
    - Edgefield Medical Clinic
- McCormick County, South Carolina
    - McCormick Family Practice Center
    - McCormick Elementary School Health

Dental

- Burke County, Georgia
    - Burke County Health Department Dental Clinic
- Richmond County, Georgia
    - Dental College of Georgia student clinic
    - Richmond County Health Department Dental Clinic
    - Neighborhood Improvement Project, Inc. – Dental
    - Broad Street Ministry Center – Hope Dental Clinic http://www.bsmcaugusta.org/hope-dental-clinic
- Aiken County, South Carolina
    - Rural Health Services, Inc. – Dental

APPENDIX C: Sources

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AUHealth REACH. http://www.augustahealth.org/neuroscience-center/stroke/reach-program/stroke-care-center-reach-program