The background of the page is a photograph of a modern multi-story hospital building. The building features a mix of materials: light-colored brick on the lower levels, large glass windows on the upper levels, and a prominent white panel with a blue 'H' logo on the top left. The sky is clear and blue.

Fort Gordon Regional  
Growth Management Plan  
Chapter 7 Draft:  
Health Care Analysis Report

October 25, 2021

# 7 Health Care

## 7.1 Overview

This chapter of the report examines the impact of Installation growth on health care in the Study Area. For the purposes of this report, the Study Area is defined as the Augusta metropolitan area, which encompasses the seven-county area of:

- Burke, Columbia, Lincoln, McDuffie, and Richmond Counties in Georgia
- Aiken and Edgefield Counties in South Carolina

Richmond County is the core metropolitan county that is home to the City of Augusta. Fort Gordon is also primarily located in Richmond County, approximately ten miles southeast of Augusta. However, 67 percent of the metro area population is located in the other six component counties, comprising one integrated economic and population center.

Figure 7.1: Study Area



Source: Corona Insights, 2021

For comparison purposes, this report will concentrate on three years: 2013, 2019, and 2030. The year 2019 is the most recent available data for key data sources used in this section. The year 2013 is a baseline date after recovery from the Great Recession, and the Year 2030 is five years after the base expansion is complete.

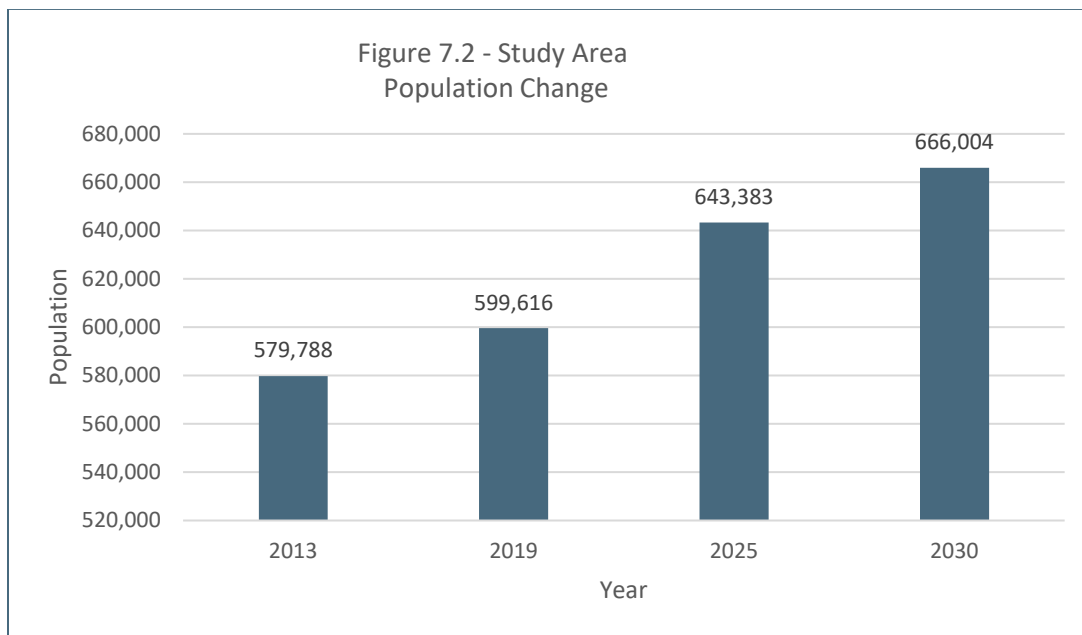
### 7.1.1 Analysis Approach

Health care is a very broad and diverse field. The topic can include personal preventive health such as smoking and mental health that fall under the domain of public health, and can also include health care access issues such as the availability of health care providers and the ability to pay (i.e., health coverage).

The research team addressed these two factors by taking an “exacerbation and gaps” approach. Exacerbation will be used to examine public health issues, and particularly identifying those that will be disproportionately impacted by the influx of a new military-oriented population. The gaps approach will examine areas, and particularly occupations, where the Study Area will require growth to maintain key capacity levels, and/or where the Study Area is currently underrepresented compared to national-level or regional figures.

## 7.2 Demographic Overview – Population Growth and Components

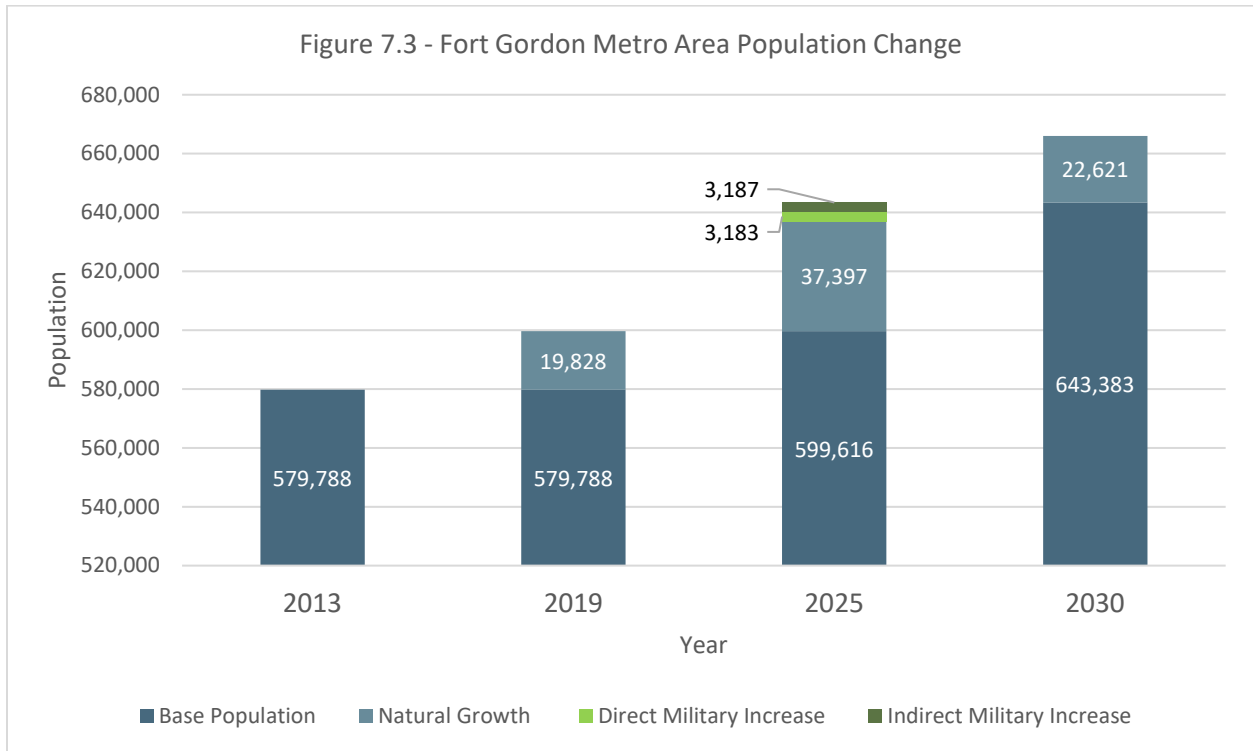
Historic population data shows a slow increase in the Study Area. From 2013 through 2019, the population grew by 3.4 percent. From 2019 to 2025, the population is projected to grow by 7.3 percent, fueled by the military base expansion, before slowing again to a 3.5 percent rate during the next five years after the base expansion is complete in 2025.



Source: Stantec, 2021

This accelerated growth is due to the expansion of Fort Gordon, which will produce approximately 15 percent of the area’s growth in the 2019 to 2025 time frame. Half of this military-related growth will be military personnel, and the other half will be associated civilian personnel (families, support workers, etc.)

As an initial assumption, we will assume that the demographics of the military growth generally align with the current base demographics, which will drive the conclusions of several of the following exhibits.

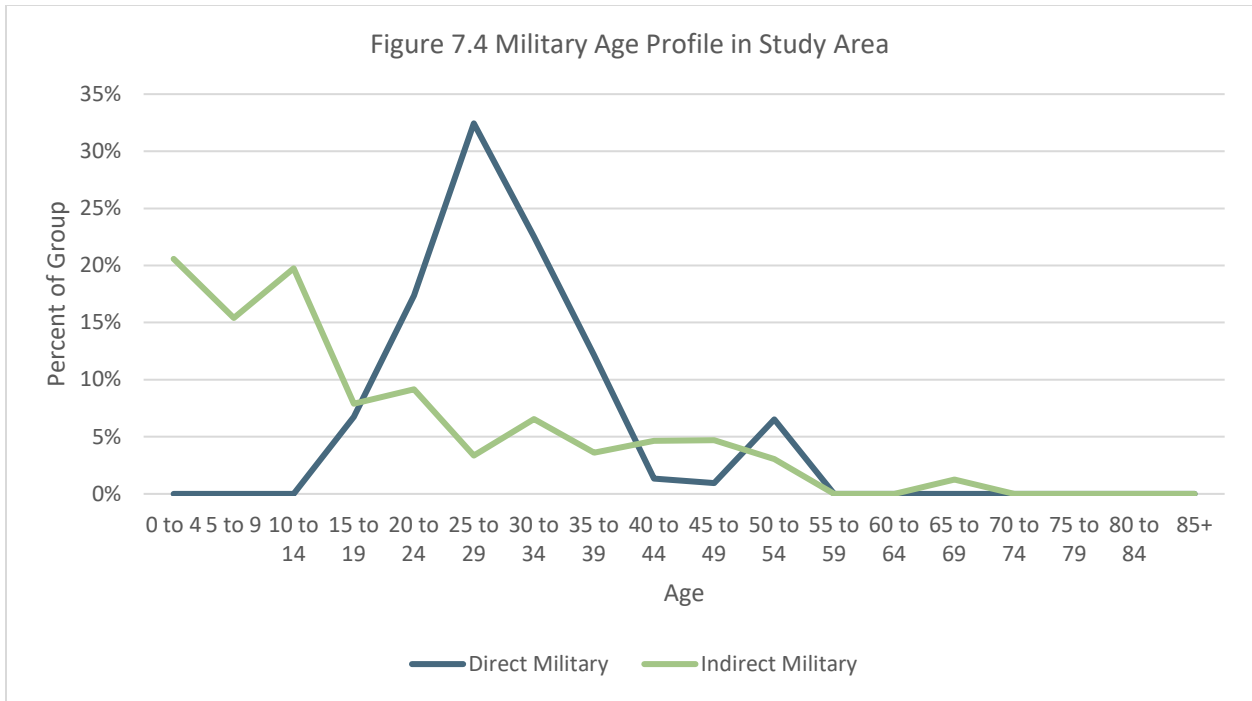


*Source: Stantec, 2021*

The military population currently in the Study Area exists generally in a narrow age band of the 20s and 30s. If we assume that the direct military growth will be similar in structure, the impact of the growth will be somewhat diluted in terms of impacting senior health needs.

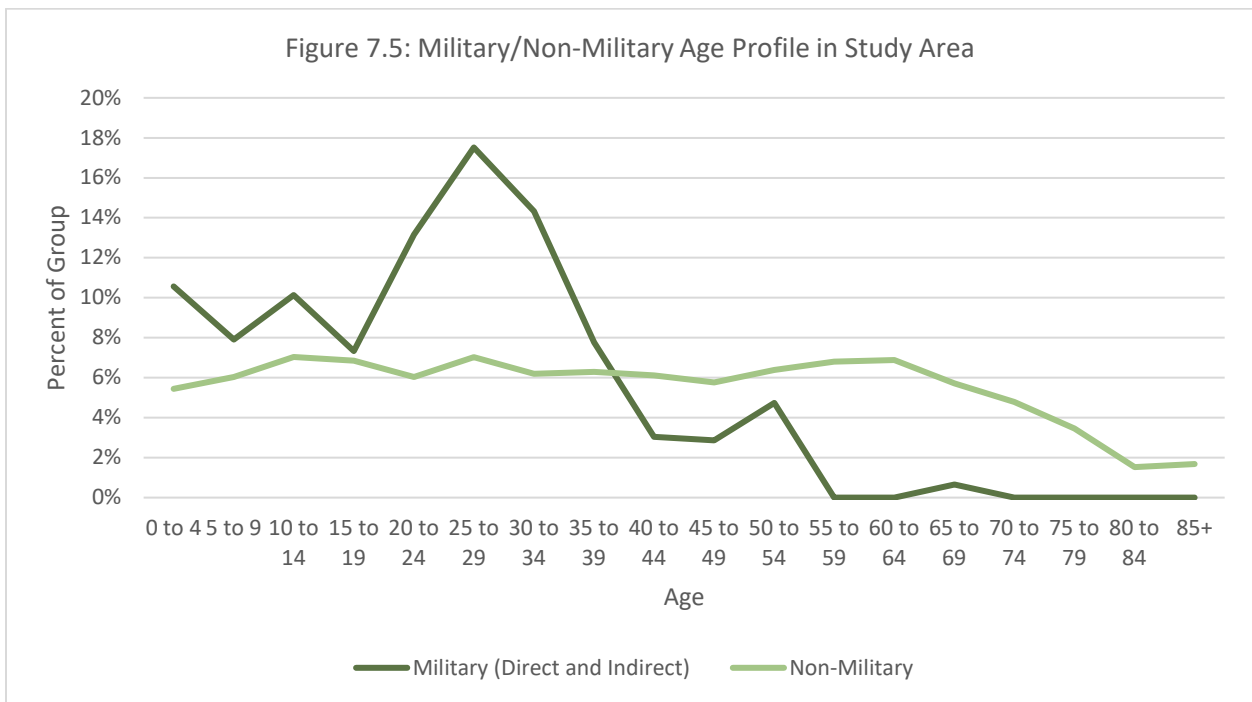
Additionally, the indirect military growth will likely be a subset of age bands as it will include working-age people and children, but likely few seniors.

The graph below shows the age distribution of military personnel and others in their household (indirect military), and then compares them to the general non-military population in the area.



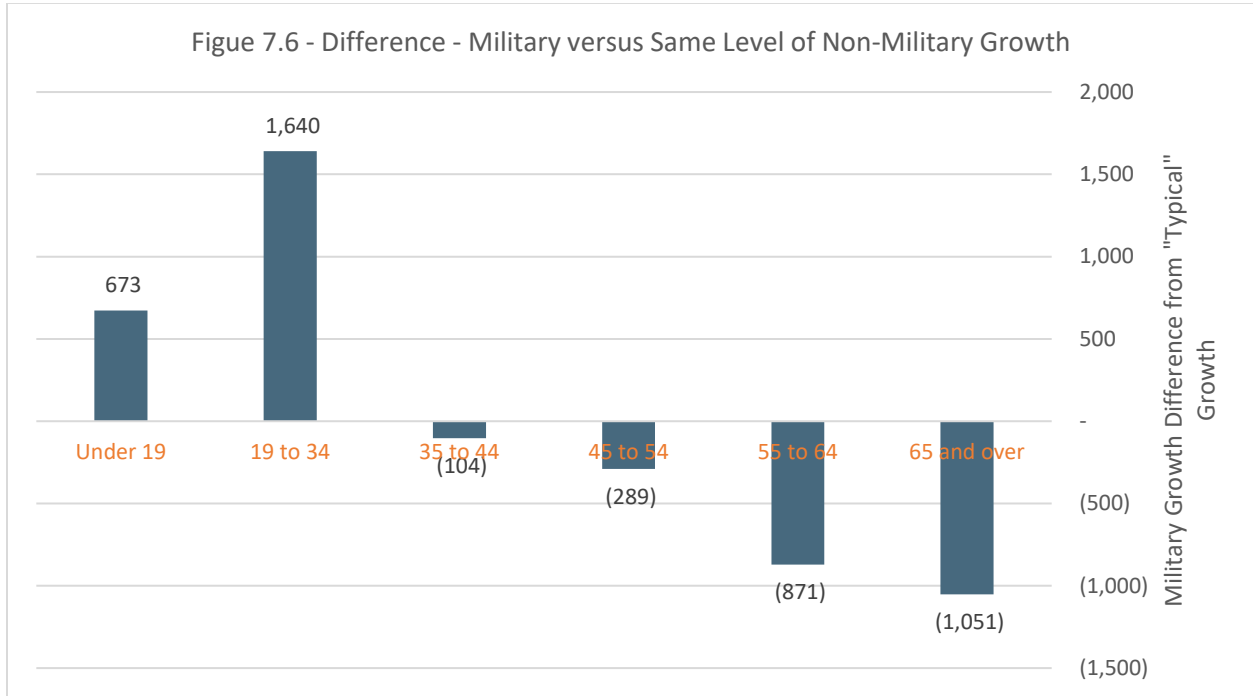
Source: In-depth analysis of American Community Survey, US Bureau of the Census, 2021

If we combine the direct and indirect military, we can see that military growth will tilt toward younger age demographics, and particularly the 20 to 34 age group.



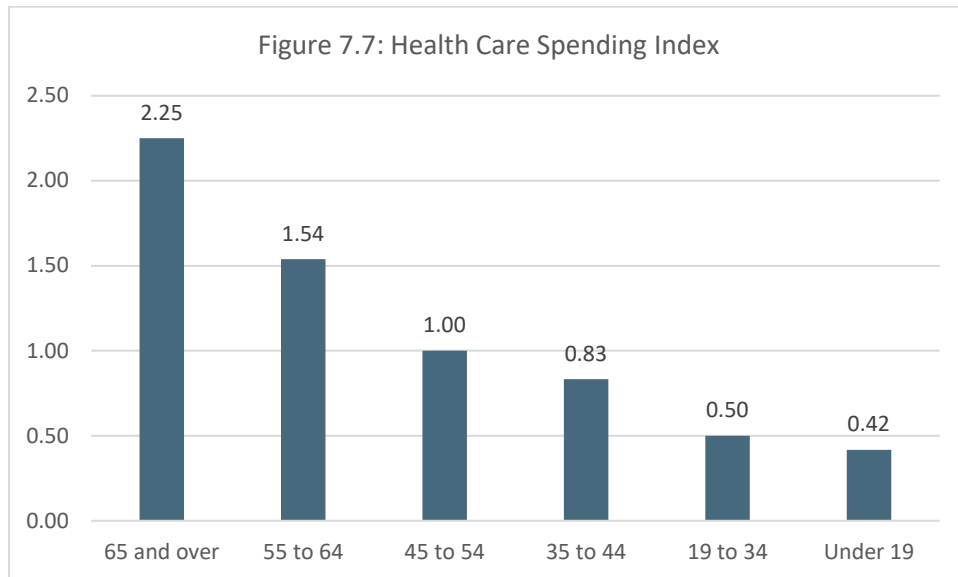
Source: In-depth analysis of American Community Survey, US Bureau of the Census, 2021

Because of these age differences, growth in the military population will like quite different than a similar raw level of growth among a non-military population. The graph below compares the projected growth profile of the military population (direct and indirect) versus a hypothetical growth profile of the general population. As can be seen, the military population growth will have a much younger skew.



Source: *In-depth analysis of American Community Survey, US Bureau of the Census, 2021*

This growth profile will have differences in terms of stress on the health care system. As seen below, younger populations tend to require less health care.

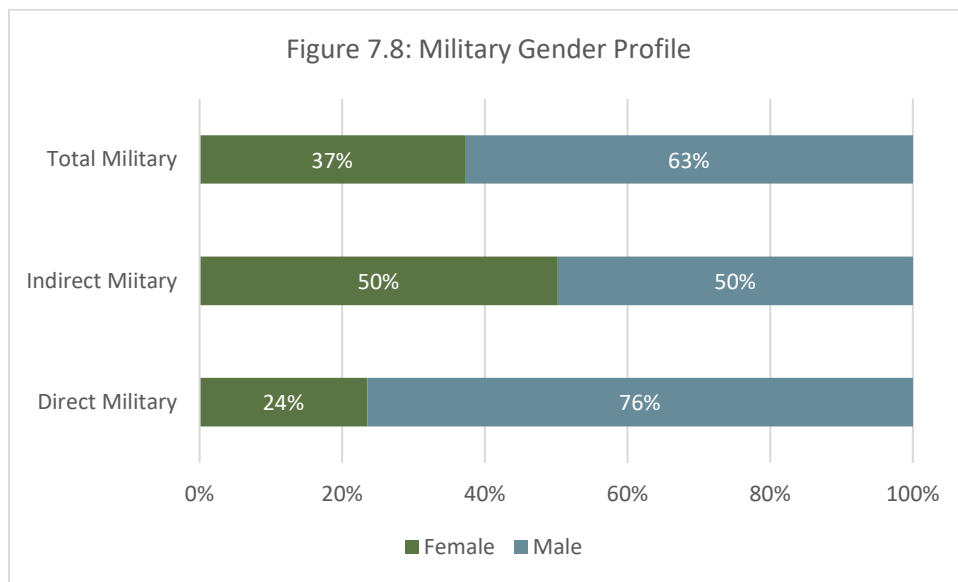


Source: *Peterson Center on Healthcare and KFF (Kaiser Family Foundation), 2021*

The net result of the military age skew is that health needs and health issues that affect people in their 20s and 30s will be of particular interest when considering health care impacts. Additionally, growth among the military population will produce only 54 percent of the demand on health care that a corresponding general population growth would incur.

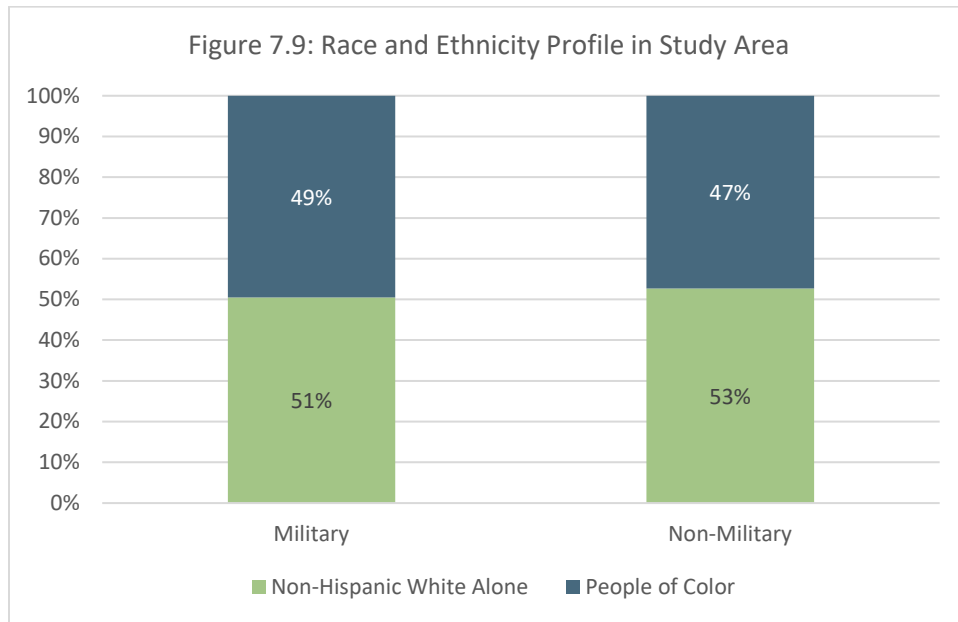
Installation growth may potentially have an impact on gender breakdowns in the Study Area since the active military population tends to be disproportionately male. The graph below shows that the anticipated majority of military population increase would be male, based on existing gender population figures.

However, the indirect military population increase includes a significant number of family members of military personnel and exists at a 50/50 breakdown by gender. Therefore, while the population increase will skew more male than a corresponding natural increase, the gender impact will likely not be skewed enough to create notable gender-specific impacts.



Source: In-depth analysis of American Community Survey, US Bureau of the Census, 2021

The growth at Fort Gordon will slightly increase the proportion of BIPOC (Black, Indigenous, and People of Color) people in the metro area, though the change will be negligible.

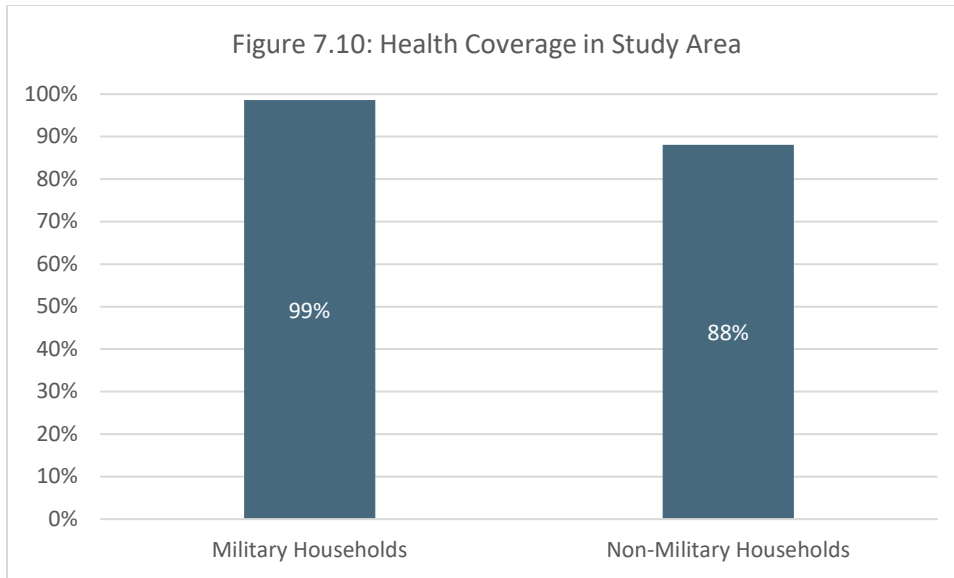


Source: In-depth analysis of American Community Survey, US Bureau of the Census, 2021

Another key differentiating factor is health coverage, which is provided for all military personnel and households through the TRICARE program (with a handful of exceptions). Via the Affordable Care Act, a strong majority of non-military people also have health coverage, but the figure is not generally all-encompassing as seen in the military.

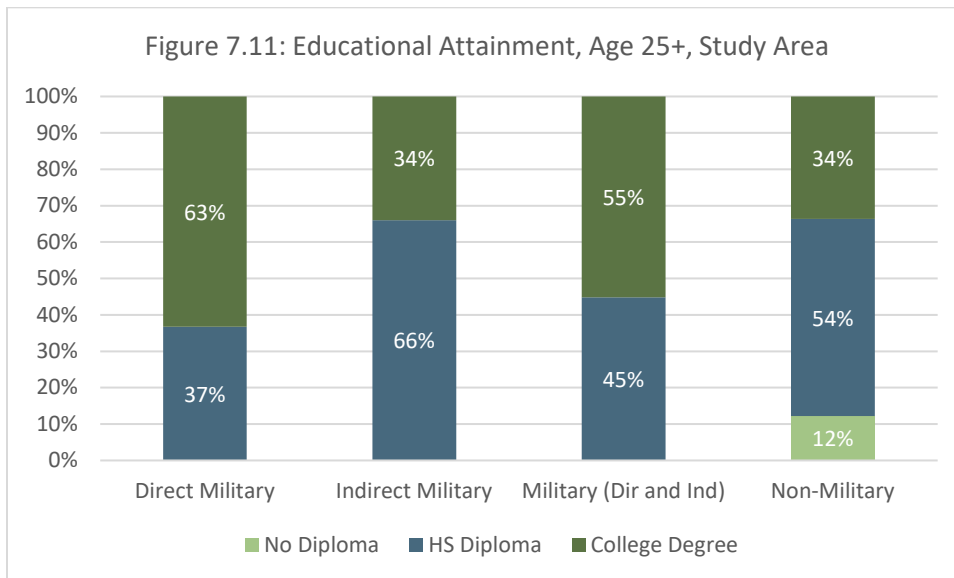
Despite having military health coverage, it should be noted that military personnel often use civilian health care, with TRICARE-related expenditures of nearly \$168 million in local health care purchases during Fiscal Year 2019, according to data from the EAMC Resource and Analysis Division.





Source: In-depth analysis of American Community Survey, US Bureau of the Census, 2021

The military population also skews toward higher education levels in the local area, with more college degrees and fewer people who did not complete high school. The exhibit below includes only people age 25 or older.



Source: In-depth analysis of American Community Survey, US Bureau of the Census, 2021

### 7.2.1 Key Public Health Issues

The first set of issues to consider is those that are related to healthy behaviors and healthy environments. This research was conducted by examining existing studies in the area, and then identifying whether those issues would be disproportionately impacted by the addition of a significant influx of military-oriented population.

The research in general discovered several issues that are deemed to be of high priority for improvement in the Study Area or in constituent parts of the metro area. These include:

- Substance abuse, including opioids
- Mental health, including: depression, anxiety, and bullying among youth, sedentary lifestyle
- Lack of transportation leading to (or related to) poverty
- Aging issues
- Leading causes of death such as cancer and heart disease
- Above-average causes of death such as lung, colorectal, and breast cancer.
- Early diagnosis of cancer among people of color
- Leading health problems include Cancer, hypertension, obesity, poor nutrition, diabetes, heart disease, substance abuse, opioid abuse, STDs, and arthritis
- Low medical IQ in terms of healthy living and preventive care and medical language
- Tobacco use
- Health coverage
- Dental care
- Lack of primary care physicians
- Lack of capacity in community health clinics
- Food deserts
- Affordable housing

When considering which of these will be most impacted by base expansion, two factors come into play: the unique attributes of the military community and the sheer size of the expansion. Size will have impacts on all of the above areas, of course, but when considering the military community’s attributes, one can identify areas where impacts will likely be larger or smaller than the increase would normally produce. Those areas where the impacts may be disproportionately large warrant special consideration.

Table 7.1 – Public Health Relative Impacts

Proportionately Larger Impacts	Proportional Impact	Proportionately Smaller Impact
<ul style="list-style-type: none"> <li>• Substance abuse</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of primary care physicians</li> <li>• Mental health</li> <li>• Diagnosis and preventive care among people of color</li> </ul>	<ul style="list-style-type: none"> <li>• Aging</li> <li>• Leading/above average causes of death</li> <li>• Health coverage</li> <li>• Dental care</li> <li>• Affordable housing</li> <li>• Lack of transportation</li> <li>• Tobacco use</li> <li>• Low medical IQ</li> <li>• Food deserts</li> <li>• Community health clinic capacity</li> </ul>

Source: Corona Insights, 2021

Again, demand for all health care will increase due to the scale of the population growth. However, because the population growth will skew toward younger adults with health coverage and jobs, challenges such as aging and lack of health coverage will rise at a proportionally lower rate. Similarly, poverty-related social determinants like housing and transportation, and community issues such as food deserts and clinic capacity will increase in need, but at a lower rate than might be expected given the population growth since part of the new population will arrive with jobs and health benefits in hand.

Similarly, there’s no strong indication for or against other issues like mental health and lack of primary physicians being disproportionately impacted.

If the military population is slightly more likely to be BIPOC, then early diagnosis can be disproportionately impacted, but as noted, the variation between the military and non-military populations is negligible.

While the more highly educated characteristics of the military population may point toward less substance abuse, the younger age profile points toward higher substance abuse. This would indicate that substance abuse is an area where extra effort should be considered.

### 7.3 Health Care Provision Gaps

Four different methods and data sources are used to examine health care provision gaps.

The analysis philosophy related to the provision of health care examines the presence of health professionals in the Study Area. We examine in some cases comparisons of per-capita health professionals versus the two-state Georgia-South Carolina area, in order to identify areas where the supply of health care might be constricted. We also examine per capita rate changes via a third measure for selected health professionals.

### 7.3.1 Occupational Presence in the Study Area

The first analysis examines the density of various occupations. The research team developed an index measure that compares the Study Area to the national average and the two-state Georgia/South Carolina region. The index is the per-capita presence of an occupation in the Study Area divided by the per-capita presence of that same occupation in the two-state region. Therefore, an Index of 1.0 means that the Study Area has an average presence of that occupation relative to the region. An index of less than one means that the Study Area has a lower presence of that occupation than average, and a presence of greater than one means that the Study Area has an above-average presence.

Note that a low index may not mean that a profession is underserved in an absolute sense since the figures are relative to the regional average, and similar a high index may not mean that a profession is overserved. It merely indicates a higher likelihood of those things.

These figures are based on current populations. A notable increase in population will push these indices lower.

A number of occupations are underrepresented, as shown in the table below. However, a few patterns and key occupations particularly stand out.

- Pharmacy staff are underrepresented.
- A number of technician fields are underrepresented, including MRI, sonogram, radiologic, and laboratory technicians.
- Various types of therapists are slightly underrepresented.
- First-line care occupations such as paramedics and personal care aides are underrepresented.

Table 7.2 – Underrepresented Occupations in the Study Area

Occupation	Workers Per 10,000 People			Index Weight (Study Area to National)
	Study Area	GA-SC	USA	
Speech-Language Pathologists	1.43	5.20	6.25	0.27
Chiropractors	0.72	2.23	2.23	0.32
Nurse Practitioners, And Nurse Midwives	2.53	6.88	7.16	0.37
Radiologic Technologists and Technicians	3.55	7.52	7.33	0.47
Physician Assistants	1.64	3.38	4.65	0.48
Opticians, Dispensing	0.96	1.98	2.50	0.48
Emergency Medical Technicians	2.77	5.45	4.65	0.51
Surgeons	0.63	1.22	1.88	0.52
Pharmacists	6.35	12.04	11.56	0.53
Other Healthcare Practitioners and Technical Occupations	1.86	3.11	3.36	0.60
Dental Hygienists	5.10	8.36	6.93	0.61
Veterinarians	1.68	2.75	3.12	0.61
Pharmacy Technicians	8.44	13.81	13.55	0.61
Clinical Laboratory Technologists and Technicians	7.48	11.27	11.97	0.66
Personal Care Aides	24.49	32.44	56.30	0.75
Occupational Therapists	2.09	2.66	4.57	0.79
Magnetic Resonance Imaging Technologists	1.09	1.35	1.51	0.81
Diagnostic Medical Sonographers	2.00	2.48	3.10	0.81
Miscellaneous Health Technologists and Technicians	3.54	4.01	5.36	0.88
Other Therapists	3.70	3.92	6.64	0.94
Surgical Technologists	4.38	4.53	3.67	0.97
Physical Therapist Assistants and Aides	3.06	3.09	4.36	0.99

Source: In-depth analysis of American Community Survey, US Bureau of the Census

Professions that are over-indexed include both doctors and registered nurses, dentists, and various types of assistants (medical, dental, nursing, respiratory, and therapy). Note of course that the large educational presence in fields such as medicine, nursing, and dentistry may be artificially inflating these indices since academic staff cannot be removed from the numbers.

Table 7.3 – Overrepresented Occupations in the Study Area

Occupation	Workers Per 10,000 People			Index Weight (Study Area to National)
	Study Area	GA-SC	USA	
Physical Therapists	6.82	6.76	9.11	1.01
Veterinary Assistants and Laboratory Animal Caretakers	2.08	1.90	2.28	1.09
Physicians	28.69	24.54	30.34	1.17
Paramedics	5.48	4.52	4.18	1.21
Registered Nurses	136.64	110.93	116.96	1.23
Dietitians and Nutritionists	4.38	3.15	3.68	1.39
Home Health Aides	10.78	7.69	21.85	1.40
Licensed Practical and Licensed Vocational Nurses	31.97	22.46	25.63	1.42
Medical Assistants	25.25	16.93	21.11	1.49
Respiratory Therapists	5.95	3.90	4.00	1.53
Cardiovascular Technologists and Technicians	2.70	1.62	1.71	1.66
Dentists	6.75	3.96	6.20	1.70
Veterinary Technologists and Technicians	7.25	3.96	5.24	1.83
Medical Records Specialists	13.57	7.16	6.74	1.89
Nursing Assistants	92.82	48.44	52.84	1.92
Optometrists	1.64	0.85	1.55	1.92
Orderlies and Psychiatric Aides	3.82	1.74	2.83	2.19
Dental Assistants	20.46	9.20	11.95	2.22
Radiation Therapists	3.37	1.11	0.57	3.05
Podiatrists	0.88	0.29	0.36	3.06
Nurse Anesthetists	8.96	1.60	1.48	5.60
Psychiatric Technicians	13.48	1.81	2.94	7.47
Occupational Therapy Assistants and Aides	14.28	1.89	1.95	7.55
Recreational Therapists	8.37	0.95	0.60	8.79

Source: In-depth analysis of American Community Survey, US Bureau of the Census

### 7.3.2 Employment Capacity in the Study Area

A second way to examine health care capacity is to examine employment at health care providers. This can highlight potential gaps in capacity following the Fort Gordon expansion. An analysis of capacity based on total employment is shown below. These data do not separate support staff from medical staff; all employees of the medical offices are counted in the chart below.

Table 7.4– Employer Types in the Study Area

Establishment Type	USA, 2019		Study Area, 2019			Comparison to National Ratios		New Employment by 2030 Needed to Maintain 2019 Ratios
	Employment	Employees Per 10,000 People	Employment	Employees Per 10,000 People	Local Ratio to USA	Employment Shortfall in 2019	Employment Shortfall in 2030 if no Growth	
Offices of physicians (except mental health specialists)	2,506,655	76.4	3,833	63.9	0.84	746	1,248	406
Offices of physicians, mental health specialists	43,770	1.3	43	0.7	0.54	37	46	5
Offices of dentists	975,666	29.7	1,499	25.0	0.84	283	479	159
Offices of chiropractors	140,492	4.3	140	2.3	0.55	117	144	15
Offices of optometrists	135,328	4.1	169	2.8	0.68	78	105	18
Offices of mental health practitioners (except physicians)	140,765	4.3	84	1.4	0.33	173	201	9
Offices of physical, occupational and speech therapists, and audiologists	417,813	12.7	384	6.4	0.50	379	462	41
Offices of podiatrists	35,317	1.1	42	0.7	0.65	23	30	4
Offices of all other miscellaneous health practitioners	93,376	2.8	89	1.5	0.52	82	100	9
Family planning centers	24,575	0.7	10	0.2	0.22	35	40	1
Outpatient mental health and substance abuse centers	280,154	8.5	110	1.8	0.21	402	456	12
HMO medical centers	159,781	4.9	0	0.0	0.00	292	323	0
Kidney dialysis centers	129,072	3.9	454	7.6	1.93	0	0	48
Freestanding ambulatory surgical and emergency centers	165,073	5.0	230	3.8	0.76	72	104	24
All other outpatient care centers	413,531	12.6	339	5.7	0.45	416	498	36
Medical laboratories	193,907	5.9	57	1.0	0.16	297	335	6
Diagnostic imaging centers	92,481	2.8	13	0.2	0.08	156	174	1
Home health care services	1,528,844	46.6	3,089	51.5	1.11	0	13	327

Establishment Type	USA, 2019		Study Area, 2019			Comparison to National Ratios		
	Employment	Employees Per 10,000 People	Employment	Employees Per 10,000 People	Local Ratio to USA	Employment Shortfall in 2019	Employment Shortfall in 2030 if no Growth	New Employment by 2030 Needed to Maintain 2019 Ratios

Table 7.4 (continued)

Ambulance services	185,556	5.7	382	6.4	1.13	0	0	40
Blood and organ banks	81,294	2.5	241	4.0	1.62	0	0	26
All other miscellaneous ambulatory health care services	76,812	2.3	168	2.8	1.20	0	0	18
General medical and surgical hospitals	5,586,027	170.2	15,480	258.2	1.52	0	0	1,638
Psychiatric and substance abuse hospitals	251,237	7.7	0	0.0	0.00	459	508	0
Specialty (except psychiatric and substance abuse) hospitals	241,213	7.3	0	0.0	0.00	441	487	0
Nursing care facilities (skilled nursing facilities)	1,623,081	49.4	2,497	41.6	0.84	468	793	264
Residential intellectual and developmental disability facilities	574,238	17.5	749	12.5	0.71	300	414	79
Residential mental health and substance abuse facilities	217,611	6.6	0	0.0	0.00	398	440	0
Continuing care retirement communities	489,311	14.9	15	0.3	0.02	879	974	2
Assisted living facilities for the elderly	509,759	15.5	973	16.2	1.04	0	61	103
Other residential care facilities	124,496	3.8	102	1.7	0.45	125	150	11

<sup>1</sup> Red shading represents areas with a ratio of less than 0.8 for the local area compared to the national average.

Source: U.S. Census Bureau (2019). All Sectors: County Business Patterns, including ZIP Code Business Patterns, by Legal Form of Organization and Employment Size Class for the U.S., States, and Selected Geographies: 2019



To keep the same ratio of provider to 10,000 residents, an additional 1,638 general hospital employees will be needed in the Study Area, which is the equivalent of an average-sized hospital in the area. While hospitals are currently overindexed, this may be in part due to the medical school and treatment of out-of-area individuals. If the goal is to maintain current per-capita levels, this suggests the need for an additional hospital to be built in the area or at least significant hospital expansion.

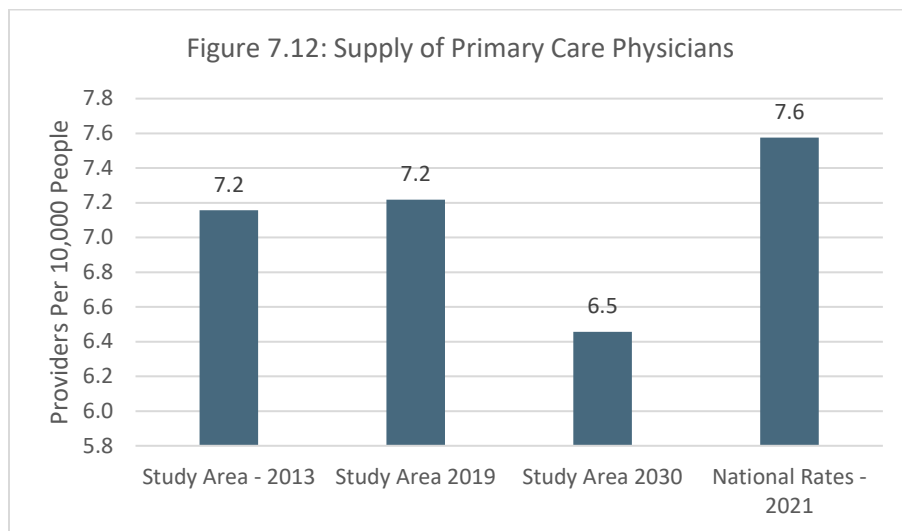
It is also predicted that there will be a notable gap in elderly care without expansion in that area. Between assisted living facilities for the elderly, home health care services, and nursing care facilities (skilled nursing facilities) there will need to be an increase of 672 employees. However, these needs will be somewhat overstated due to the fact that the direct military growth will generally not include users of those services.

There will need to be an additional 545 dentist office employees and physician office employees added to the area as well.

It is important to note the largest medical school and dental school in the Study Area. The Medical College of Georgia – Augusta University has 230 first year students and 552 academic staff. The Dental School of Georgia has more than 300 dental students. Both institutions provide additional care capabilities for the surrounding area.

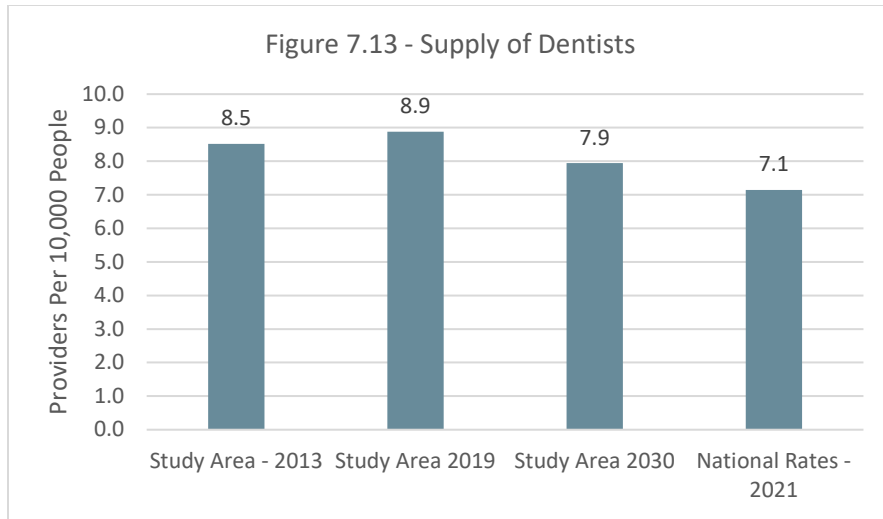
### 7.3.3 Professional Occupations in the Study Area

The research team examined per-capita rates of selected key high-skill positions to examine required needs. Per-capita rates for the Study Area are shown in the following graph. Data for 2030 assume no increase in the number of providers to cover population growth.



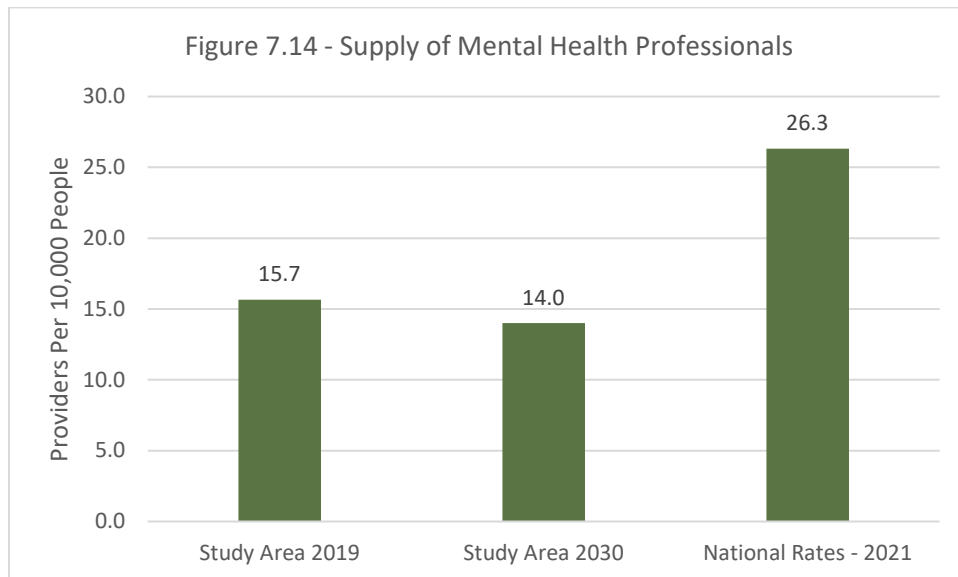
Source: countyhealthrankings.org

With a 2019 count of 439 Primary Care Physician providers, the Study Area falls short of the current national rate by approximately 22 providers. Given the anticipated growth in the area, the Study Area would need approximately 76 new providers by 2030 to meet the current national average.



Source: countyhealthrankings.org, 2021

With a 2019 count of 540 Dentist providers, the Study Area exceeds the national rate and would still exceed the rate in 2030 even with no increase in providers.



Source: countyhealthrankings.org, 2021

With a 2019 count of 180 mental health professional providers, the Study Area falls short of the current national rate by approximately 134 providers. Given the anticipated growth in the area, the Study Area would need approximately 158 new providers by 2030 to meet the current national average.

Note that due to a definitional change that obfuscate comparisons, 2013 baseline data is not presented for this group.

Table 7.5 - Medical Specialization Physicians

	2020 Study Area		2018 Study Area		2018 National	
	Number	#/10,000	Number	#/10,000	Number	#/10,000
Allergy & Immunology	21	0.35	19	0.31	4,774	0.15
Anesthesiology	145	2.38	149	2.45	41,762	1.31
Cardiology	100	1.64	98	1.61	22,211	0.69
Dermatology	44	0.72	45	0.74	12,051	0.38
Emergency Medicine	166	2.73	161	2.65	42,348	1.32
Endocrinology	20	0.33	18	0.30	7,495	0.23
Internal Medicine	502	8.25	504	8.29	115,557	3.61
Neurology	87	1.43	119	1.96	13,717	0.43
Obstetrics & Gynecology	146	2.40	148	2.43	41,656	1.30
Oncology	70	1.15	66	1.09	12,423	0.39
Ophthalmology	67	1.10	70	1.15	18,817	0.59
Orthopedics	111	1.82	108	1.78	19,001	0.59
Pediatrics	228	3.75	216	3.55	58,435	1.83
Psychiatry	144	2.37	143	2.35	38,205	1.19
Radiology	135	2.22	135	2.22	27,719	0.87
Surgery	186	3.06	185	3.04	25,042	0.78
Urology	39	0.64	35	0.58	9,921	0.31

Source: CSRA and analysis of American Medical Association Mapper data, 2021.

The above table shows that the numbers of specialists per capita has changed slightly over the past two years, and in all cases is larger than the corresponding ratios for the nation. All measures would remain overindexed in 2030 even without growth in their numbers.

Table 7.6 - Nursing Staff and Hospital Personnel

	Augusta Metro Area		USA	
	Number	#/10,000	Number	#/10,000
Registered Nurses	3,273	53.8	1,610,150	50.3
Licensed Practical Nurses	148	2.4	74,506	2.3
Total Personnel	8,832	145.2	5,314,958	166.1

Source: American Hospital Association Hospital Statistics (2019)

Similar to the specialist figures, we see that nurses in hospitals are overindexed compared to national figures. The measures would become slightly underindexed in 2030 without growth in their numbers, requiring approximately 148 new nurses to maintain consistency with the national average. Total hospital personnel is currently underindexed, and in light of current growth would require approximately 2,460 new personnel to meet the national average.

Table 7.7 - Hospital Capacity

	Augusta Metro Area		USA	
	Number	#/10,000 Residents	Number	#/10,000 Residents
Community Hospitals	9	0.15	5,141	0.16
Hospital Beds	1,846	30.35	787,995	24.62
Admissions	79,321	1,304	34,078,100	1,065
Inpatient Days	440,921	7,249	185,149,928	5,786
Surgical Operations	84,371	1,387	28,368,697	887
Outpatient Visits – Emergency	335,990	5,524	143,432,284	4,482
Outpatient Visits - Total	1,480,811	24,344	785,235,256	24,539

Source: American Hospital Association Hospital Statistics (2019)

## 7.4 Strategic Priorities and Recommendations

Over the course of the research, selected key areas of future need emerged that should be a priority for improvement, and which can benefit both the base and community. While there are several areas identified in this section of the report, five appear to rise as being of particular interest. These are presented below in no particular order:

**Issue:** The number of primary care physicians exist falls below national average and may fall further behind as the area grows.

### **Why this is a priority:**

The Study Area is currently staffed at a rate below the national average of primary care physicians on a providers per 10,000 person basis. We estimate that 22 new primary care physicians are needed now to rise to the national average, and 76 will be needed in 2030 relative to current ratios. (Note that this is primary care physicians only as specialists are overindexed in the local area.)

### **Potential partners and solutions:**

Working with the local university system to identify incentives to increase graduates' propensity to stay and practice in the local area. From both the literature review and in-depth interviews with local healthcare professionals, low access to healthcare was mentioned as being a major barrier to healthy individuals. The Study Area included the Medical College of Georgia - the flagship medical school of the University System of Georgia, the state's only public medical school, and one of the top 10 largest medical schools in the United States. This college supplies medical services to the surrounding communities through its academic health center Augusta University Health.

Despite having a medical school nearby, healthcare professionals interviewed noted that a shortage of primary care physicians exists because not enough of the medical school graduates choose to stay in the area. One reason for this is that these graduates could be getting paid more if they went to other areas of the country, this could be further exacerbated by the pressure of high student debt. This high debt also has a strong influence over whether graduates of public medical schools will choose family and primary care. As debt increased for public medical students, their odds of practicing family care or primary care decreased (Phillips et al, 2014).

The State of Georgia could provide more funding to these local colleges, especially in the form of scholarships encouraging future doctors, nurses, and other health care services professionals (such as physicians and nurse aides) to remain in the Study Area. The Medical College of Georgia) is the leading provider of physicians to Georgia of the five other medical schools in the State. More than 51% of its graduates remain in Georgia to practice with an average retention rate of 39%. Currently at the Medical College of Georgia, there are scholarships specifically for keeping students in Georgia. One scholarship is for a medical student who has matched into a primary care residency in Georgia. Another scholarship has the main goal of addressing the physician shortages of rural Georgia. Similarly, future scholarships could require that medical students get matched into a primary care residency in the Study Area. An increase in funding and direct contribution to student scholarships in other colleges and technical schools would be beneficial. These include the University of South Carolina Aiken and Aiken Technical College to name a few.

South Carolina developed a Rural Health Action Plan in 2017 that addressed the need for recruiting and retention of various health professions into rural areas. While the scope does not reach the core of the metropolitan area, the recommendations are similar so the report's recommendations were relevant: innovate recruiting practices, broaden scholarship support, ensure sustainable pay relative to larger urban areas, and identify needs before they reach critical levels.

**Issue:** Gaps in pharmacy capacity may occur

**Why this is a priority:**

As shown in Table 7.2, the Study Area is currently notably understaffed among this profession relative to the national average of pharmacists and pharmacy technicians on a basis of providers per 10,000 people, and a notable population increase will increase the problem. The number of professionals in pharmacy and pharmacy tech would need to roughly double to meet the average presence of those degrees elsewhere in Georgia and South Carolina.

**Potential partners and solutions:**

The solutions in this situation are similar to those discussed above for physicians.

**Issue:** Gaps in capacity may occur in a number of medical technician professions

**Why this is a priority:**

As shown in Table 7.2, the Study Area is currently notably understaffed in numerous professions such as MRI, sonogram, radiologic, and laboratory technicians, and a notable population increase will increase the problem. The number of professionals in pharmacy and pharmacy tech would need to increase by anywhere from 25 percent to 100 percent in these various technical specialties to meet the average presence of those degrees elsewhere in Georgia and South Carolina.

**Potential partners and solutions:**

The solutions in this situation are similar to those discussed above for physicians. Also, given that selected other professions that require similar levels of education and training are overrepresented in the community, it would appear that increasing visibility of these specific career options in schools and other settings is a good place to start.

**Issue:** Substance Abuse and Mental Health capacity will need to be expanded

**Why this is a priority:**

Aside from being impacted by the accelerated growth, it is likely to be disproportionately impacted by the addition of military personnel whose age profile falls into a more vulnerable area.

Mental health providers, while a more broad field than substance abuse, may provide a proxy measure for current capacity, and that occupation is notably underrepresented in the Study Area compared to

national averages. Increasing the number of mental health providers by nearly double (180 to 338) would meet current national ratios.

**Potential partners and solutions:**

Working with the base is an obvious solution to this program. Substance abuse is also typically a high priority for public health departments. Expanding paramedic services, which was identified earlier as an area of shortage, could also assist with immediate health care needs. A recent article in the Journal of the Georgia Public Health Association, linked later in this section of the report, also noted that Community Health Workers can be a valuable tool for mental health along with physical health issues, and can also lessen burdens on other strategic issues identified in this report, such as hospital and physician capacity.

**Issue:** Added hospital capacity may be warranted.

**Why this is a priority:**

Hospitals are currently overindexed against national averages, which means that the Study Area has more hospitals per capita than the average American community. Growth will reduce that surplus but will not eliminated.

However, the presence of the large medical teaching facilities may somewhat misrepresent capacity, particularly if those facilities draw out-of-area patients.

Based on anticipated growth rates, an additional capacity of roughly 1,585 hospital employees will be needed to maintain service levels at their current level in the face of increased growth. This is roughly the equivalent of a new hospital of average size in the area and suggests demand for an additional hospital to be built in the area, or at least significant hospital expansion.

**Potential partners and solutions:**

Informing local hospitals of the expected increased need will be informative so they can consider strategic expansions. Economic development officials can also be of service to inform healthcare companies of future increased demand. Expansion of Fort Gordon’s medical capacity, both in terms of hospital capacity and urgent care, is also an obvious solution for part of the increased demand and will lessen burdens on other parts of the community.

## 7.4.1 Prioritization, Phasing, and Implementation Plan

The recommendations summarized above have been divided into a timeline. Short-term actions should be undertaken within 1-3 years; mid-term actions should be undertaken within 4-5 years, and long-term actions should be undertaken within 5+ years. Ongoing indicates activities that should be undertaken annually or regularly within the planning timeframe.

Funding requirements are indicated as low (time cost, but little or no funding), moderate (funds required) or high (significant funding required).

Potential leadership does not indicate that a particular group or organization has discussed this strategy with the research team or has committed to lead the strategy, but merely points out the types of organizations that typically lead similar efforts.

Identification of Issues, Goals, and Strategies		Priority Level	Funding Requirement	Potential Leadership
<b>Capacity Building</b>				
Increase the number of primary care physicians				
<b>Goal</b>	<b>Add new primary care physicians to the local market</b>			
Strategy	Develop partnerships with local employers for local residencies, internships, and other training.	Short-term	Low	Health care philanthropy, medical school
Strategy	Calculate and promote true compensation by understanding and communicating cost of living differentials in the Study Area versus larger markets	Mid-term	Low	Local economic development organization
Strategy	Increase use of incentives (e.g., loan forgiveness) for physicians graduating locally to stay in the area. Identify partners in this effort.	Long-term	High	Health care philanthropy, local government
Strategy	Work with employers to increase compensation or benefits in physician recruitment	Long-term	High	Health care philanthropy, local government

(Continued on following page)



<b>Increase pharmacy staff capacity</b>				
<b>Goal</b>	<b>Increase pharmacy capacity, with a goal of doubling.</b>			
Strategy	Same strategies shown above for physicians. However, replicate efforts for pharmacy technicians as well as pharmacists.	(See above)	(See above)	(See above)
<b>Increase the supply of medical technicians</b>				
<b>Goal</b>	<b>Increase training and career paths in medical technology fields such as MRI, sonography, radiology, and lab tech fields.</b>			
Strategy	Increase awareness of career opportunities out of high school	Short-term	Low	Local high schools, colleges with relevant programs
Strategy	Offer financial aid or other incentives for students to pursue these fields. Identify partners in this effort.	Mid-term	Moderate	Health care philanthropy, local government
<b>Increase hospital capacity</b>				
<b>Goal</b>	<b>Increase hospital capacity by the equivalent of 1,000 new employees.</b>			
Strategy	Communicate future needs to existing hospitals to assess current expansion planning.	Short-term	Low	Local economic development organization
Strategy	If necessary, communicate needs to non-local hospital providers to inform them of upcoming growth opportunities.	Mid-term	Low	Local economic development organization
<b>Expand substance abuse and mental health capacity</b>				
<b>Goal</b>	<b>Expand capacity to prevent and treat mental health and substance abuse issues.</b>			
Strategy	Join working partnerships with on-base resources and public health agencies to understand and leverage current capacity	Near-term	Low	Fort Gordon, local public health departments
Strategy	Increase paramedic and first-responder capacity to address personal crisis situations, using similar strategies as seen above for increasing the supply of medical technicians and hospital capacity.	Mid-term	Moderate	Local government, local public health departments, vocational training organizations

### **Summary of Near Term Strategies:**

*Near-term strategies should focus on communications and identifying potential partners and partnership opportunities.*

- Communicate what is going to happen so local employers and training/education partners can adjust their own plans.
- Identify organizations with similar goals and missions to explore partnership opportunities. These might include topics such as local training opportunities and also prevention efforts aimed at substance abuse and mental health.
- Develop a marketing plan to promote careers in medical technology.

### **Summary of Mid Term Strategies:**

*Mid-term activities should focus on filling gaps in local capacity, labor pipelines, and information.*

- If local hospitals are unable or uninterested in filling future capacity, work with economic development organizations to reach out to non-local hospitals that are looking for expansion opportunities.
- Conduct a study of compensation versus cost of living to potentially inform physicians and pharmacists of the advantages of staying in the local area.
- Address potential paramedic and first-responder shortages with help from partnerships identified in the near-term work.
- Work with partners to identify financial incentives to encourage enrollment in medical technology fields (including pharmacy technology).

### **Summary of Long Term Strategies:**

*Long-term activities should focus on attracting and retaining highly trained individuals.*

Using the partnerships developed in the near-term strategies and the information developed in the mid-term strategies, develop incentive programs to attract and retain primary care physicians and pharmacists in the local area.

## Appendix A

### Supporting Documentation - Interviews with Health Care Professionals

Interviews were conducted with local health care professionals, a portion of which had military backgrounds. Of the physicians interviewed, two are also professors at the Medical College of Georgia. Another interviewee had extensive experience nursing in the Augusta area. Among the health care professionals there were concerns of shortages in the availability of health care professionals and services. While the COVID-19 pandemic has certainly contributed, with one physician stating that there are not enough hospital beds due to the pandemic and that the three area hospitals are going on diversion every week, it is apparent that this is a historical problem. The health care worker reported that Georgia typically ranks at about 45 in the nation for healthcare and even lower for psychiatric care. All health care professionals interviewed agreed that mental health was a major problem in the area that needed to be addressed.

The consensus among the physicians was that there was a primary care shortage in the study area. One interviewee who had recently moved to the area and happened to be on TRICARE, noted that he spent a significant amount of time calling to find a provider. Once he was able to secure an appointment for a primary care provider, the wait was about three months out. He went on to say that some residents will have to wait up to six months when it should not be more than a thirty day wait to see a new provider. With this shortfall already existing in the population as it is, these health experts say that an increase in population would exacerbate the problem since Fort Gordon does use the surrounding medical providers to meet their needs.

The nursing expert described the nationwide nursing shortage as a nursing retention problem. She believes that it is highly important to offer nurses better compensation to make them want to stay at their place of work and in the Augusta area. This can be a challenge because traveling nurses and nurses in other states get paid more. The interviewee also suggested that hospitals stop contracting traveling nurses and work harder to retain local nurses.

The health care professionals noted the importance of social determinants of health. All of them mentioned the importance of nutrition, with the subject of local food deserts in the Augusta area being prominent. People did not have access to fresh food options and had to resort to buying meals from dollar and convenience stores. Public transportation in the Augusta metro area was described as rudimentary and a contributor to problems with access to care. Ultimately, experts agreed that better preventative care was necessary to lessen the health concerns that were prominent in the area with chronic diseases such as diabetes and heart disease. Having primary care to help manage these diseases was important so that people did not end up in already overcrowded emergency departments. Misuse of emergency rooms was also a major concern; it was stated that many residents used the ER as a walk-in clinic.

Suggestions offered by these health experts to help lessen some of these concerns, especially in light of expansion at Fort Gordon, which will increase the population are building a new urgent care clinic on base. This would help keep the emergency departments at the surrounding hospitals from overcrowding. It was also suggested that the installation expand the health services that they offer on post instead of outsourcing to the surrounding areas. To address the shortage of primary physicians, partnerships with the local medical colleges were suggested. One expert suggested providing more scholarships and

residencies to encourage local medical school graduates to stay in Georgia and more specifically in the Study Area.

## Supporting Documentation - Review of Existing Studies

### *LITERATURE REVIEW PROCESS*

For each health topic, our approach was to review all the relevant literature we could find focusing on research published in 2015 or later. We used a variety of search terms, and then identified the reports and articles that are the most relevant to our needs. These reports and articles were read in-depth, and we produced a write up review of how these findings are relevant to barriers and opportunities to growth in healthcare services going forward for Study Area. Findings that are relevant to the campaign development going forward are summarized in this document.

## **COMMUNITY HEALTH NEEDS**

### Georgia's Primary Care Dashboard Update 2016

<b>Year</b>	<b>2016</b>
<b>Study purpose</b>	To determine Georgia's position in relation to other states primary care services in 2016, how much has changed from past years, and determine what needs to be done to meet the goal of increasing the ratio of primary care physicians to 100/100,000 by 2020.
<b>Summary</b>	<ul style="list-style-type: none"><li>• Overview of primary care medical pipeline model that encourages students to pursue medical careers from an early age.</li><li>• 2020 Estimates: the U.S. will face a shortage of 45,000 primary care physicians and 46,100 surgeons and medical specialists.</li><li>• In 2015: Physician to population ratio: 220.9/100,000 (rank-39 in U.S.)</li><li>• In 2015: Primary Care Physician to population ratio: 77.8 (rank – 41in U.S.)</li><li>• In 2015: Percent of Physicians aged 60 or older: 21.3% (rank-40 in U.S.)</li></ul>
<b>Link to study</b>	<a href="http://augusta.edu">Georgia's Primary Care Dashboard (augusta.edu)</a>
<b>Authors</b>	AHEC Network
<b>Publication</b>	Georgia Statewide AHEC Network

Georgia's Health Care Workforce Data (select counties) 2021

<b>Year</b>	<b>2020</b>
<b>Study purpose</b>	To determine the combined number of physician and primary care services in 2019-2020 the Richmond, McDuffie, Columbia, Lincoln, and Burke counties in Georgia.
<b>Statistics</b>	<ul style="list-style-type: none"><li>• Family Medicine Physician: 50.3 PHYS / 100K people</li><li>• Internal Medicine Physician: 57.3 PHYS / 100K people</li><li>• Emergency Medicine Physician: 31.2 PHYS / 100K people</li><li>• Nurses: 1,822.1 NURSES / 100K people</li><li>• Physician Assistants: 51 PAS / 100K</li></ul>
<b>Source</b>	Georgia Board of Healthcare Workforce
<b>Link to Source</b>	<a href="#">Health Care Workforce Data   Georgia Board of Health Care Workforce</a>

## CSRA Community Needs Assessment Report

<b>Year</b>	<b>2018</b>
<b>Study purpose</b>	A community needs assessment for the Central Savannah River Area.
<b>Main Concerns</b>	One key health care finding states that drug and alcohol abuse is a major cause of poverty. This indicates that resources may be needed to provide support and alleviate the existing substance abuse problems. The CSRA is currently working with local mental health, substance abuse and general health providers to refer people in need of assistance.
<b>Other Concerns</b>	Lack of transportation was mentioned in the context of residents being unemployed and contributing to poverty. Lack of transportation was also a challenge in accessing health care for individuals. There is a need to find solutions to better provide transportation whether it be expanding the public transportation system or offering more creative solutions.
<b>Analysis</b>	Interviews with local health care professionals confirmed that this was also a challenge to residents in Metropolitan areas that have public transportation not only in rural communities which lack the infrastructure. Suggestions included expanding public transportation and also creative solutions such as programs incorporating ride sharing.
<b>Link to study</b>	<a href="http://csraeoa.org">CSRA Community Needs Assessment (csraeoa.org)</a>

UNIVERSITY HOSPITAL Community Health Needs Assessment

<b>Year</b>	<b>2019</b>
<b>Study purpose</b>	To identify the health needs of the community surrounding the University Hospital which primarily serves the Richmond and Columbia counties in Georgia and Aiken County in South Carolina.
<b>Summary of Findings</b>	<ul style="list-style-type: none"> <li>• There is an aging population to plan for, in all counties, the number of seniors (65+) will be growing.</li> <li>• The leading causes of death in all the counties are cancer and heart disease.</li> <li>• Death rates for lung, colorectal, and breast cancer are higher in many counties than national and state rates, while screening rates are lower.</li> <li>• Among University Hospital patients, African American people tend to get cancer diagnoses at later stages than white people. This is more pronounced here than it is in national or state data.</li> <li>• Richmond County has a good ratio of providers to people compared to top-performing counties nationally.</li> </ul>
<b>Main Concerns of Community</b>	<p><u>From community listening sessions:</u></p> <p>What are the major health problems in McDuffie County?  Cancer, hypertension, obesity, poor nutrition, diabetes, heart disease, substance abuse, opioid abuse, STDs, arthritis, mental health including: depression, anxiety, and bullying among youth, sedentary lifestyle</p> <p>What is causing these problems?  <i>Social determinants:</i> Poverty underlines all these problems and magnifies every illness, lack of access to medication, to primary care, to mental health resources, exposure to violence, neglect of seniors, access to transportation, limited hours to visit providers, no gym to exercise, people eating at gas stations</p> <p><i>Education:</i> lack of education in the form of low medical IQ, “Southern” cooking - which is considered unhealthy, health care in general is discouraging for people</p>



<b>Other Noteworthy Comments</b>	“People don’t believe in preventive care; only seek healthcare when sick; respond to sentinel events such as a shingles outbreak or a family member having a heart attack”  <b>Tobacco use – community members noted that smoking is prevalent in the military and among millennials</b>
<b>Link to study</b>	<a href="#">chna-2019-main-final.pdf (universityhealth.org)</a>

University Hospital McDuffie Community Health Needs Assessment

<b>Year</b>	<b>2016</b>
<b>Study purpose</b>	To identify the health needs of the community surrounding the University Hospital McDuffie which primarily serves McDuffie County Georgia.
<b>Summary of Findings</b>	<ul style="list-style-type: none"> <li>• The percentage of adults without insurance has slowly been increasing.</li> <li>• Very low number of mental health providers.</li> <li>• Cancer mortality is relatively high, especially for colorectal and lung cancer.</li> <li>• Diabetes is a significant problem in McDuffie County. There is a high death rate, and a higher incident rate of diabetes than in neighboring counties. Experts hypothesize that this is the result of a genetic disposition.</li> </ul>
<b>Main Concerns of Community</b>	<p><u>From community listening sessions:</u></p> <p>What are the major health problems in McDuffie County?  “Heart disease, diabetes including the rise of juvenile and early onset diabetes, mental health problems, increase in dental problems”</p> <p>What is causing these problems?  <i>Access to care:</i> “Adults and youth are lacking primary care physicians, there is a lack of insurance, a general lack of understanding the importance of preventative care - people will not see a physician until there is a problem that needs to be addressed, there are a low number of providers in area, physicians are unwilling to accept Medicaid patients which causes a backlog of patients waiting to be seen, there are long waiting periods to see a physician, transportation is an issue and more generally access to care, cost of services, fear among illegal immigrants to seek care”</p> <p><i>Education:</i> “Language and environment of healthcare is intimidating and confusing, health literature is written above the appropriate reading level which is causing illiteracy, increasing poverty every year, there is a lack of resources to educate parents living in poverty, grandparents are often heads of household and they have a different view of healthcare in that they are not inclined to go to the doctor”</p> <p><i>Mental health:</i> “Diminished mental health resources; nowhere to refer patients for care; patients bounce between emergency departments and jail, difficulty accessing mental health resources for</p>

	those without transportation to neighboring metropolitan areas such as Augusta” “Genetic factors, alcohol/drug use by parents, and environment are considered underlying causes to mental health problems “
<b>Other Noteworthy Concerns</b>	Poor diet caused by learned eating habits and higher ratio of unhealthy food options to healthy options.
<b>Link to study</b>	<a href="#">uhm chna.pdf (universityhealth.org)</a>

## **IMPLEMENTATION STRATEGIES AND ACTION PLANS**

### South Carolina's Rural Health Action Plan

<b>Year</b>	<b>2017</b>
<b>Study purpose</b>	A framework to implement strategies to improve rural health over the course of the next 3-5 years in rural South Carolina. This includes areas of Edgefield and Aiken Counties.
<b>Health Action Steps</b>	<p>Notable Steps Include:</p> <ul style="list-style-type: none"><li>• Supporting and expanding efforts that innovate recruiting and retaining health care professionals.</li><li>• Broadening existing scholarships and creating new health profession scholarships along with programs for students. Use opportunities like summer internships to create a pipeline of students entering health professions.</li><li>• Providing sustainable pay for new health care workers. Specifically in roles such as community health workers and community paramedics. This also includes providers like clinical pharmacists, social workers, and care managers.</li><li>• Defining the current and future need for emerging health professions including community health workers and community paramedics to increase recruitment in rural areas.</li></ul>
<b>Analysis</b>	Despite focusing on rural health, this action plan has many points that are also applicable health care in metropolitan areas. Recruiting and maintaining health care professionals was a widely mentioned subject in the literature and among interviews with local health care professionals.
<b>Link to study</b>	<a href="#">Rural Health Action Plan Recommendations   Affordable Housing   Health Professional (scribd.com)</a>

University Hospital Community Health Needs Assessment Implementation Strategy

<b>Year</b>	2019
<b>Study purpose</b>	Outline to address health needs derived and chosen from 2019 Community Health Needs Assessment.
<b>Main Health Concerns</b>	<ul style="list-style-type: none"> <li>• Heart disease and stroke</li> <li>• Diabetes</li> <li>• Maternal health</li> </ul>
<b>Overview of Action Steps</b>	<p>Women’s Wellness on Wheels to screen for cardiovascular disease and diabetes. They will help develop a prevention plan by providing health education and connections to primary care.</p> <p>A Diabetes Prevention Program will be launched by University Hospital to provide education that promotes general wellbeing measures such as healthy eating and exercise. This will be offered to those at risk of developing type 2 diabetes.</p> <p>Maternal Mortality and Morbidity will be addressed by placing an emphasis on POST-BIRTH warning signs. Internal staff will be trained, and a public campaign will be created to raise awareness of this concern in the public. New mothers will also receive information at the hospital about these warning signs.</p>
<b>Link to study</b>	<a href="#">chna-is-2019-main-final2.pdf (universityhealth.org)</a>

## University Hospital McDuffie Community Health Needs Assessment Implementation Strategy

<b>Year</b>	2016
<b>Study purpose</b>	Outline to address health needs derived and chosen from 2016 Community Health Needs Assessment.
<b>Main Concerns</b>	<ul style="list-style-type: none"><li>• Diabetes</li><li>• Cancer</li><li>• Heart disease and stroke</li><li>• Health literacy</li></ul>
<b>Overview of Action Steps</b>	<ul style="list-style-type: none"><li>• Support groups for health literacy</li><li>• Classes teaching about heart disease and strokes</li><li>• Cardiovascular screening program for diabetes, heart disease, and stroke</li><li>• Educational outreach to primary care providers for diabetes</li><li>• Webinars to promote awareness of diabetes and health literacy</li><li>• Arranging community screening opportunities at local community events for cancer</li><li>• Community fairs to screen and increase awareness of the main concerns identified.</li></ul>
<b>Link to study</b>	<a href="#">uhm implementation strategy.pdf (universityhealth.org)</a>

Fight Substance Abuse, Improve Mental Health Care to Help More Georgians

<b>Year published</b>	<b>2017</b>
<b>Study purpose</b>	Georgia has a need to improve mental health care to fight the rising substance abuse rates.
<b>Key findings</b>	<ul style="list-style-type: none"> <li>• In 2016, 32% percent of Georgia adults reported poor mental health. Those with a mental illness are more likely to engage in substance abuse than people without.</li> <li>• Between 2012 - 2016 the number of drug overdoses increased by 35%.</li> <li>• Approximately 69% of drug overdose deaths in 2016 were related to opioids and synthetic drugs.</li> <li>• Investing in early intervention and prevention is key. Programs that promote mental health are needed for school aged children as well.</li> <li>• Expanding access to care is needed, particularly with health insurance to ensure that more mental health services are covered. This can be done through telehealth services especially in areas that have health care provider shortages.</li> <li>• Other social determinants of health are important to consider such as quality and affordable housing options.</li> </ul>
<b>Analysis</b>	Mental Health and substance abuse were issues mentioned the community assessments of the Augusta area hospitals. Both this policy report and the CHNA's mention that the substance abuse problems are more pronounced in rural areas.
<b>Link to study</b>	<a href="#">Fight-Substance-Abuse-Improve-Mental-Health-Care-1.pdf (gbpi.org)</a>
<b>Authors</b>	Laura Harker, Policy Analyst
<b>Publication</b>	Georgia Budget and Policy Institute

## Making the Case for Community Health Workers in Georgia

<b>Year published</b>	<b>2020</b>
<b>Study purpose</b>	To promote the effectiveness of Community Health Workers in helping reduce mortality and morbidity of chronic diseases which much of Georgia's population are at high risk of acquiring.
<b>Key findings</b>	There is significant evidence that Community Health Workers and Community Health Worker programs are effective and beneficial. Georgia should maintain formal efforts to train and establish a lasting workforce of community health workers.
<b>Methodology overview</b>	Scan of Community Health Worker topics including research studies, programs, and other projects. Community Health Workers' current and past efforts in Georgia were also reviewed.
<b>Analysis</b>	Community Health Workers go by a variety of names and have been helping the community for several years. There is evidence that Community health workers are effective and a good return on investments. They help connect medical and social resources to allow patients, especially those from vulnerable populations, to receive the care they need. Community health workers have been proven to reduce visits to Emergency Departments and other unnecessary hospitalizations that result from chronic diseases.
<b>Link to study</b>	<a href="https://doi.org/10.20429/jgpha.2020.080116">https://doi.org/10.20429/jgpha.2020.080116</a>
<b>Authors</b>	Gail G. McCray, MA, MCHES , Berneta L. Haynes, JD , Adrienne S. Proeller, BA, Christopher E. Ervin, MD, and Arletha D. Williams-Livingston, PhD, MPH, MBA
<b>Publication</b>	Journal of the Georgia Public Health Association



The Relationship Between Food Deserts, Farmers' Markets and Food Assistance in Georgia Census Tracts

<b>Year published</b>	<b>2016</b>
<b>Study purpose</b>	To explore the relationship in Georgia between food deserts, farmers' markets, and the availability of food assistance programs.
<b>Key findings</b>	<p>20% of Georgia's census tracts are food deserts and of these food deserts, 7.2% have a farmers' market within their boundaries.</p> <ul style="list-style-type: none"> <li>• 3.2% Farmers' Market Nutrition Program (FMNP) coupons</li> <li>• 9.6% accept Women, Infants, and Children Fruit and Vegetable Checks (WIC-FVC)</li> <li>• 21.6% accept Supplemental Nutrition Assistance Program (SNAP) benefits.</li> </ul>
<b>Methodology overview</b>	2014 USDA Food Desert Atlas and the USDA Farmers' Market Directory data was used. From this data, farmers' market locations were geocoded in ArcGIS. Spatial visualization and descriptive statistics were used to explore the relationships.
<b>Analysis</b>	<p>Less than 10% of farmers' markets in Georgia are located in food deserts, and even fewer accept food assistance programs. As a result, fresh food remains inaccessible to low-income residents in these areas and residents in general. A lack of access to fresh food is associated with poor nutrition and can lead to diet related diseases such as obesity. Increasing the availability of farmers' markets that can accept food assistance and farmers' markets in general would be beneficial.</p> <p>This research has further implications in accessible public transportation.</p>
<b>Link to study</b>	<a href="https://doi.org/10.20429/jgpha.2016.050309">https://doi.org/10.20429/jgpha.2016.050309</a>
<b>Authors</b>	Andrea M. Brace, PhD, CHES, Todd L. Matthews, PhD, Bobbi Finkelstein, and Daniela Beall
<b>Publication</b>	Journal of the Georgia Public Health Association

## Prescribing Remedies for Georgia’s Medical Provider Shortage

<b>Year published</b>	2016
<b>Study purpose</b>	To investigate where in the state of Georgia healthcare provider shortages exist and to provide solutions to address these shortages with policy tools.
<b>Key findings</b>	<ul style="list-style-type: none"> <li>• Approximately two-thirds of Georgia’s counties fall below the statewide average number for the following healthcare professionals: nurses, physician assistants, primary care doctors and total doctors per 100,000 residents.</li> <li>• Shortages exist primarily in rural regions, but they are also seen in more metropolitan areas.</li> <li>• Lincoln, McDuffie, and Burke Counties all had below average rates of providers per capita with doctors, primary care physicians, nurses, and physician assistants.</li> <li>• Columbia County had below average rates of providers per capita with nurses and physician assistants.</li> <li>• Richmond County remained at an average rate of providers per capita or better for all providers.</li> <li>• Non-physician providers (such as community health workers) can be a valuable resource in areas where physician shortages are the highest.</li> <li>• Georgia produces more medical school students than it has the residency spots required for them to graduate. Georgia is creating alternative methods to fund new residencies.</li> </ul>
<b>Analysis</b>	From conducting interviews with local health care professionals, the topic of primary care doctor shortages and nurse shortages was a persistent one. One interviewee noted that while there were plenty of students graduating with nursing degrees, what was lacking was practicums and internships for students to be placed into. Similarly, this report states that the number of federally funded residency spots has remained the same since the 1990’s.
<b>Link to study</b>	<a href="#">Medical-Provider-Shortage.pdf (gbpi.org)</a>
<b>Authors</b>	Tim Sweeney, Director of Health Policy
<b>Publication</b>	Georgia Budget and Policy Institute

Other Sources:

Elements of Access to Health Care. Content last reviewed June 2018. Agency for Healthcare Research and Quality, Rockville, MD.

<https://www.ahrq.gov/research/findings/nhqrdr/chartbooks/access/elements.html>

Social Determinants of Health. Content last reviewed June 2021. Office of Disease Prevention and Health Promotion, HealthyPeople.gov.

<https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>

## Supporting Documentation – Information on Major Local Health Care Providers

The following overviews of medical providers are reproduced from information supplied to the research team by the Central Savannah River Area Regional Commission.

### **Medical Facilities Descriptions: Augusta Area Federal**

#### Eisenhower Army Medical Center

The Dwight D. Eisenhower Army Medical Center (EAMC) is a 93-bed medical treatment facility located on-site at Fort Gordon. Active-duty personnel and their TRICARE beneficiaries use the medical center and clinics for their primary health care. Numerous military retirees in the Augusta area also use the medical center's facilities and pharmacy.

EAMC serves as a training hospital for military doctors, and partners with the Medical College of Georgia and the Augusta Veterans Affairs Medical Center in training programs and patient care. For example, TRICARE dependents in need of obstetrics services are sent to University Hospital, while the Augusta VA runs a spinal-cord rehabilitation unit and an active-duty rehabilitation unit. In return, civilian, non-TRICARE dependent patients are often sent to Eisenhower for use of its hyperbaric chamber.

The hospital offers a comprehensive set of services, including:

- Allergy
- Audiology / Speech Pathology
- Cardiology
- Chiropractic
- Dental
- Dermatology
- Dietetics
- Emergency Services
- Family Medicine
- Gastroenterology
- Infectious Disease
- Internal Medicine
- Mental Health
- Nuclear Medicine
- OB/GYN
- Occupational Therapy
- Ophthalmology
- Optometry
- Orthopedics
- Otolaryngology
- Physical Therapy
- Podiatry
- Primary Care
- Psychiatry
- Psychology
- Pulmonology
- Social Work
- Surgery
- Traumatic Brain Injury
- Urology

#### Charlie Norwood Veterans Affairs Medical Center

Operated by the United States Department of Veterans Affairs, the Augusta VA Medical Center (CNVAMC) is a major, multipurpose veterans' hospital which provides a range of medical services. CNVAMC includes two divisions in Augusta and 3 community-based outpatient clinics in Athens and Statesboro, GA, and Aiken, SC. The medical center employs about 2,500 staff and welcomes about 46,000 veterans each year with a budget of nearly \$600 million. As a level-1a health care system, CNVAMC is categorized as a high-complexity hospital system and provides tertiary care in medicine, surgery, neurology, psychiatry, rehabilitation medicine, and spinal cord injury.

CNVAMC's Downtown Division is authorized for 156 beds (58 medicine, 27 surgery, and 71 spinal cord injury), while the Uptown Division, located approximately three miles away, is authorized 82 beds (57 psychiatry, 15 blind rehabilitation and 10 rehabilitation medicine). In addition, a 132-bed Restorative/Nursing Home Care Unit and a 60-bed Domiciliary are located in the Uptown Division. These facilities are part of Veterans Integrated Service Network, located in Atlanta, along with seven other VA Medical Centers across Alabama, Georgia, and South Carolina.

Specialty programs available at CNVAMC include:

- Ambulatory Surgery
- Audiology
- Blind Rehabilitation Center
- Cardiac Catheterization Laboratory
- Cardiopulmonary Rehabilitation
- Domiciliary
- Home Based Primary Care
- Hospice
- Intensive Psychiatric Community Care
- Long-term Psychiatric Care
- Neurosurgery
- Open Heart Surgery
- Post-Traumatic Stress Disorder
- Pulmonary Function Laboratory
- Respiratory Therapy
- Respite Care
- Sleep Laboratory Program
- Speech Pathology
- Spinal Cord Injury Center
- Stroke Rehabilitation
- Substance Abuse Treatment Program
- Women's Health Clinic

### **Medical Facilities Descriptions: Augusta Area Non-Federal**

#### *Augusta University Medical Center*

Augusta University Medical Center is an academic medical center and health care network that offers primary, specialty and sub-specialty care in the Augusta area and throughout the Southeastern United States. The Center encompasses:

- 478-bed medical center (Medical College of Georgia).
- 154-bed children's hospital (Children's Hospital of Georgia).
- Medical office building with more than 80 outpatient practice sites.
- Regional Level I Trauma Center and Regional Level II Pediatric Trauma Center.
- Cancer Center, including a freestanding outpatient clinic, radiation oncology building and the M. Bert Storey Cancer Research Building.

- Satellite locations throughout the area and various freestanding clinics for specialty and subspecialty care.
- Partnerships with rural hospitals across Georgia to improve access to advanced health care options.

### **Medical College of Georgia**

The Medical College of Georgia (MCG) is the health sciences school for the University System of Georgia and one of the top 10 largest medical schools in the United States. MCG is the state's leading provider of physicians, graduating the largest number of physicians of the four Georgia-based medical schools, and offers the most comprehensive primary and specialty care in the region. MCG encompasses 930 medical students, 576 residents in 51 programs, 791 full and part-time faculty, 3,047 volunteer faculty, and 866 full and part-time staff. The expert health care team and state-of-the-art facilities combine to provide residents throughout the Southeast with the most advanced medical care available.

The MCG Medical Center complex forms the core of MCG facilities and includes a 478-bed adult hospital, an Ambulatory Care Center with more than 80 outpatient clinics in one convenient setting, a Specialized Care Center housing, and a 13-county Level I regional trauma center. MCG also includes a variety of dedicated centers, such as the off-site Sports Medicine Center and Senior Health Center.

In addition to providing care in the Augusta area, MCG's physicians travel to over 80 satellite clinics throughout Georgia. MCG works closely with patients' primary physician via the MCG Telemedicine Center, which allows patients and their hometown doctors to interact directly with MCG physicians using cameras, voice systems and electronic diagnostic devices.

Specialty programs available at MCG include:

- |                       |                           |
|-----------------------|---------------------------|
| • Blood Disorders     | • Mental Health           |
| • Cancer Treatments   | • Neuroscience            |
| • Children's Health   | • Orthopedic Services     |
| • Cystic Fibrosis     | • Otolaryngology          |
| • Dermatology         | • Plastic Surgery         |
| • Diabetes Care       | • Rehabilitation Services |
| • Digestive Health    | • Respiratory Disorders   |
| • Emergency Health    | • Sports Medicine         |
| • Eye Services        | • Surgery                 |
| • Family Medicine     | • Trauma                  |
| • Heart Services      | • Urology                 |
| • Infectious Diseases | • Women's Health          |

### **Children's Hospital of Georgia**

The Children's Hospital of Georgia (CHOG) is a 154-bed academic children's hospital and the only children's hospital in the Augusta area. The hospital is among the largest pediatric facilities in the United States.

CHOG provides neonatal intensive care and pediatric intensive care available as defined by the American Academy of Pediatrics. It is staffed by a team of pediatric specialists who deliver inpatient and outpatient care for everything from common childhood illnesses to life-threatening conditions such as neurological conditions and cancer.

CHOG has an award-winning Extracorporeal Membrane Oxygenation (ECMO) program, which is considered a pioneer in this area, having started the first program in the Southeast in 1985, and designated a Center of Excellence in 2012.

### **University Hospital Care System**

University Hospital Care System (UHCS) is a private, non-profit 581-bed hospital system located in downtown Augusta and the surrounding area, which serves a 25-county region in Georgia and South Carolina through a network of facilities. UHCS's presence in Augusta dates back two hundred years and has grown into one of the largest, most comprehensive healthcare providers in Georgia. Care is provided through three hospitals, comprehensive inpatient and outpatient services, nursing facilities, home health services, prompt care facilities, primary care and specialty physicians, and rehabilitative care programs. One of the newest additions to UHCS is a 25-bed medical center located in McDuffie County, which offers medical and health services for people of the surrounding area.

UHCS medical staff includes nearly 500 primary care physicians and specialists that provide services ranging from routine preventive and diagnostic care to comprehensive cardiovascular and oncology services. University performs a broader spectrum of surgeries, treats more patients, and delivers more babies than any other area hospital.

To render health care more accessible, UHCS also offers the following special programs and services:

Satellite medical centers in 16 locations.

- University Health Link, a physician-hospital partnership that works with local companies to provide more than 118,000 employees and their family members access to medical care.
- University Home Health, which provides physician-directed in-home care, including skilled nursing, cardiac therapy, IV therapy, wound and pulmonary care, diabetes management, and physical and speech therapy.
- The ASK-A-NURSE program, which makes available registered nurses 24 hours a day, 7 days a week, to provide callers with health information and physician referrals.

Major health care services provided at UHCS include:

- Bariatric Surgery/Bariatrics Management
- Cancer Treatment
- Diabetes Treatment
- Emergency & Prompt Care
- Emergency Services

- Endocrinology
- Gastroenterology
- Heart, Vascular and Pulmonary Rehabilitation
- Maternity Care
- Medical Records
- MRI and Open MRI
- Neuroscience
- Nutrition Services
- Occupational Health
- Oncology
- Orthopedics & Spine
- Palliative Care
- Pediatric Services
- Pediatrics
- Prompt Care
- Radiology Services
- Rehabilitation & Therapy
- Rheumatology
- Speech and Hearing
- Sports Medicine
- Stroke Unit
- Surgery
- Vein Center
- Women's Health
- Women's Health - Breast Health Center
- Wound & Hyperbaric Center

### **University Hospital Summerville**

University Hospital Summerville (UHS, formerly St Joseph Hospital), is a 231-bed, acute-care facility that has served the Augusta area since 1952, and provides general medical and surgical care as well as inpatient, outpatient, and diagnostic services. UHS became known for pioneering many medical discoveries, including cochlear hearing implants, stereotactic mammography, and a unique treatment program for hip and knee replacement.

Hospital services include:

- Allergy/Immunology
- Anesthesiology
- Dermatology
- Endocrinology
- Family Practice
- Gastroenterology
- Hematology
- Hospice
- Infectious Disease
- Internal Medicine
- Nephrology
- Neurology
- Oncology
- Otolaryngology
- Podiatry
- Psychiatry
- Pulmonology
- Radiation Oncology
- Radiology
- Rheumatology
- Urology
- Wound Care

### **Doctors Hospital**

Doctors Hospital is a 350-bed full-service tertiary care center and a leading provider of in robotic surgery, advanced orthopedic services, and emergency care.

Doctors is certified as a Primary Stroke Center, as well as an Accredited Chest Pain Center, and was recently the first hospital in the area to be designated a Center of Excellence in Women's Health Surgery.



Doctors is also home to the nationally acclaimed Joseph M. Still Burn Center. The Center is one of the largest in the United States and serves as a primary burn care center for the Southeastern United States. The 70-bed unit sees admission of more than 3,000 inpatient admissions annually, one-third of them pediatric patients. The Center maintains a Burn Team of specialists including plastic surgeons, general and trauma surgeons, maxillofacial surgeons, pediatricians, and psychiatrists, along with nurses, physician's assistants, occupational and physical therapists, and social workers.

Major services provided at Doctors include:

- Aquatic Therapy
- Bariatrics
- Burn Center
- Cancer Treatment
- Cardiac Services
- Cardiopulmonary
- Digestive Disease Treatment
- Disk Degeneration
- Emergency Care
- Endoscopy
- Maternity Care
- Occupational Therapy
- Pediatric Care
- Physical Therapy
- Pulmonary
- Radiation Therapy
- Rehabilitation Services
- Spine Surgery
- Sports Medicine
- Stroke Recovery
- Surgery
- Vascular Services
- Women's Services

### **Walton Rehabilitation Hospital**

Walton Rehabilitation is a 60-bed non-profit physical medicine and rehabilitation hospital. The hospital cares for more stroke patients than any other hospital in Georgia and offers acute and sub-acute adult and pediatric inpatient and outpatient programs for persons recovering from stroke, head injuries, chronic pain and other disabling illnesses and injuries. The hospital includes the Children's Rehabilitation Center, outpatient rehabilitation, transitional living center, physician services, and independent living services. Walton Options for Independent Living offers accessible housing, employment, assistive technology, alternative formats and advocacy.

Major services provided at Walton Rehabilitation include:

- Amputation
- Arthritis
- Balance and Vestibular Rehabilitation
- Brain Injuries
- Cardiac Care
- Diabetes
- Hip Fracture
- Joint Replacement
- Neurological Disorders
- Oncology
- Parkinson's Disease
- Pulmonary Treatment
- Spasticity Management
- Spinal Cord Injury
- Stroke
- Wound Care

### **East Central Regional Hospital at Augusta**

The East Central Regional Hospital at Augusta (ECRH) consists of two campuses which provide mental health and developmental disabilities services for a 33-county area in eastern Georgia. Operated by the Georgia Department of Behavioral Health & Developmental Disabilities, the 390 bed facilities are designated as Emergency Receiving Facilities and employ nearly 1,400 medical professionals and support staff.

Major services provided at ECRH include:

- Activity Therapy
- Behavioral Management
- Dietary Services
- Discharge Planning and Placement
- Forensic Services
- Individual and Group Counseling
- Inpatient Treatment
- Integrated Recovery Plans
- Laboratory Services
- Medication Management
- Occupational Therapy
- Physical Therapy
- Psychiatric and Psychological Evaluation
- Social Work
- Speech Therapy
- Transitional Services
- Work Therapy

### **Select Specialty Hospital Augusta**

Select Specialty Hospital Augusta (SSH) is a long-term acute care hospital offering a wide range of critical illness recovery treatment services. The 80-bed hospital is designed to provide comprehensive, specialized care for high-acuity patients who need more time to recover.

Major services provided at SSH include:

- Amputations
- Arterial & Vascular Ulcers
- Brain Injuries
- Cancer Treatments
- Cardiac & Heart Failure
- Chronic Lung Disease
- Diabetes
- Infectious Diseases
- Kidney & Dialysis Treatments
- Neurology
- Neuromuscular Disorders
- Post-Trauma Recovery
- Pulmonary and Ventilator Treatments
- Spinal Cord Injuries
- Stroke
- Wound Care

## **Aiken Regional Medical Centers**

Aiken Regional Medical Centers (ARMC) is a 273-bed acute care hospital that has serviced Aiken and surrounding communities since 1917. The hospital offers a comprehensive range of medical services, including specialty programs such as a cardiovascular center, cardiovascular imaging, cancer care institute, 24/7 emergency department, joint academy, women's center, wound healing institute, pediatric center, behavioral health center, neurosurgery and rehabilitation therapy. The 14-bed Inpatient Rehabilitation Unit opened its doors in Fall of 2017, and the hospital added 14 outpatient surgery beds in summer of 2018.

Major services provided at ARMC include:

- Behavioral Health
- Cancer Treatment
- Cardiology
- Cardiopulmonary Services
- Cardiovascular Services
- Critical care (ICU / PCU)
- Diabetes
- Dialysis
- Emergency Medicine
- Enterostomal therapy
- Gynecology
- Hematology / Oncology
- Inpatient Rehabilitation
- Neuroscience
- Outpatient Surgery
- Orthopedic Care
- Pediatrics
- Physical therapy
- Radiology
- Rehabilitation Therapy
- Respiratory Services
- Sleep Disorder Treatment
- Social Services
- Stroke Care
- Urology
- Vascular Care
- Women's LifeCare Center
- Wound Care