

FINANCIAL ANALYSIS

Cost Comparison of Nursing Homes and HCBS

The current median cost of nursing home care is \$58,856 for a semi-private room; for HCBS, the median annual cost is \$41,184 for a home health aide and \$20,800 for adult day health care.

Table 3 below shows the ranges of costs in the state overall and across different geographic areas. These numbers represent average annual costs for one person; for Medicaid enrolled patients and residents, the state's share of expenses are 30 percent of these costs.

Table 3. Annual Cost Comparison of HCBS and Nursing Homes Per Person³

	HCBS		Nursing Homes
	Adult Day Health Care	Home Health Aide	Semi-private room
State Median Cost	\$20,800	\$41,184	\$58,856
Fayetteville	\$18,720	\$43,472	\$60,225
Fort Smith	\$20,800	\$41,184	\$53,692
Hot Springs	\$16,640	\$41,138	\$62,050
Jonesboro	N/A	\$38,438	\$54,750
Little Rock	\$17,680	\$42,328	\$64,788
Pine Bluff	\$20,800	\$41,184	\$54,750
Source: Genworth 2016 Cost of Care Survey			

³Since Medicaid and CNHP reimburses for only semi-private rooms, this is the information provided in Table 3. For comparison purposes only, below is the cost of a private room and the expected percent change between nursing homes and HCBS from 2016 to 2021.

	Private room	Private room % change
State Median Cost	\$70,343	4.0%
Fayetteville	\$62,050	-1.0%
Fort Smith	\$65,153	3.0%
Hot Springs	\$73,000	4.0%
Jonesboro	\$69,350	6.0%
Little Rock	\$75,190	5.0%
Pine Bluff	\$60,225	3.0%

Table 4 shows percent cost changes between nursing homes and HCBS over a five-year period throughout the state (2016 to 2021).

In reviewing these figures, Medicaid pays about \$59,000 a year for a nursing home resident, with the state paying almost \$18,000 of that through the 30 percent match. Based on the best available data, CNHP pays about \$133,000 per eligible veteran per year with no state match. The effectiveness of placing disabled veterans with at least a 70 percent service disability rating in VA certified facilities becomes

paramount for VA care and cost considerations. For example, estimating 7 percent of the 657 projected extra beds that are eligible for CNHP (based on current disability level percentage), the state can save approximately \$2.7 million in lieu of payments assuming these veterans' benefits are being paid by Medicaid only.⁴ Identifying and ensuring proper care arrangements for veterans with at least a 70 percent service disability rating also returns approximately \$4.2 million more per year in federal funds to support their care.

Table 4. Five-Year Growth Rate for HCBS and Nursing Homes

	Adult Day Health Care	Home Health Aide	Semi-private room
State Median Cost	5.0%	2.0%	2.0%
Fayetteville	3.0%	1.0%	1.0%
Fort Smith	5.0%	-1.0%	1.0%
Hot Springs	N/A	2.0%	3.0%
Jonesboro	N/A	2.0%	4.0%
Little Rock	2.0%	3.0%	4.0%
Pine Bluff	5.0%	N/A	5.0%
Source: Genworth 2016 Cost of Care Survey			

Construction Alternative

Construction of a future veteran home has many unpredictable factors, such as the location and cost of land, the number of rooms, and future costs of labor and materials. Based on the most recent construction costs of the North Little Rock veterans' home of just over \$24 million, a new 100-bed facility may be in a similar range (K. Watkins, email communication, Oct 18, 2016). The state's projected veteran nursing home need is expected to be well within the range of current capacity of LTC facilities that can be coupled with a trend towards home health reducing reliance on skilled nursing facilities.

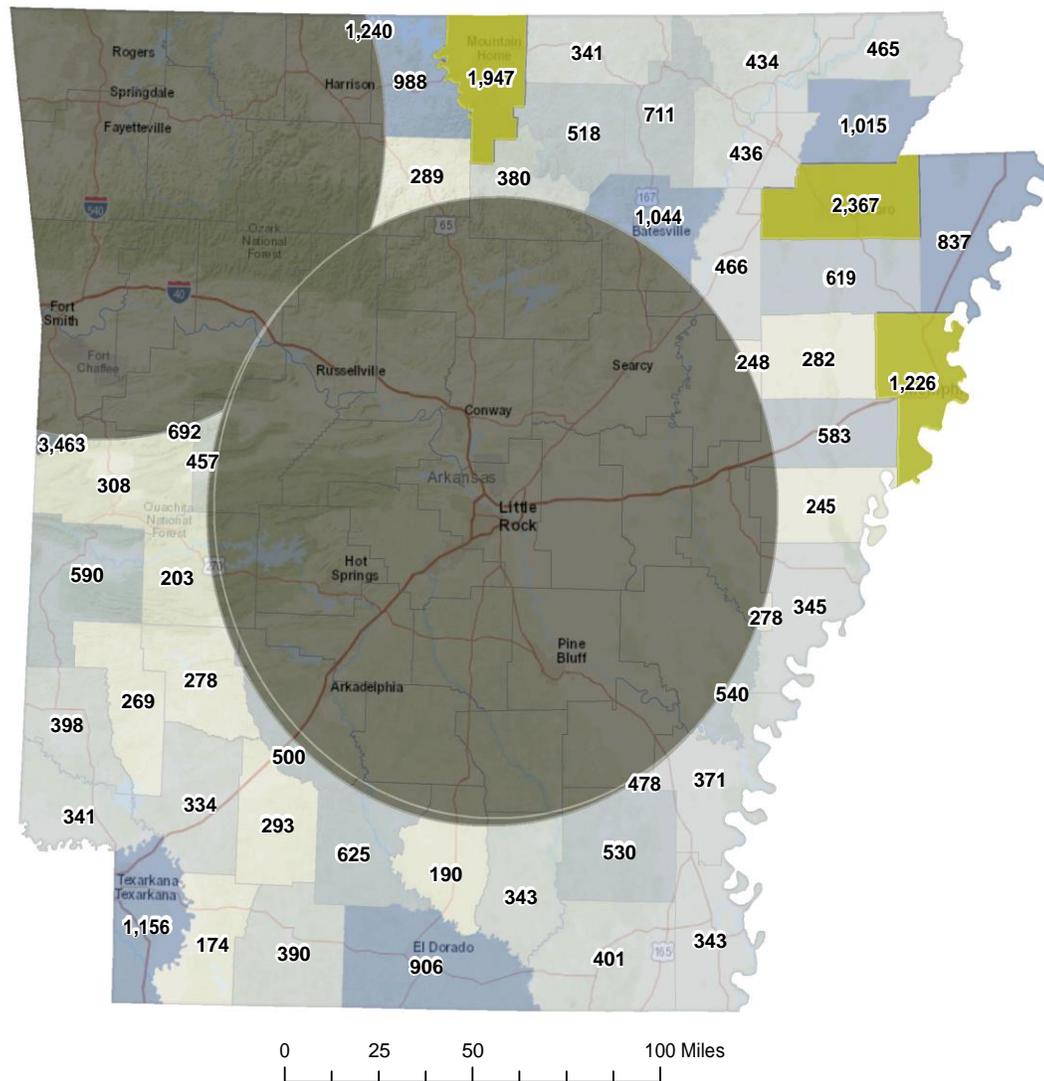
Based on the expected number of veterans 65 and older per county in the year 2043, there are three locations that may be good candidates if a determination is made to build a new facility. Because state veterans' homes cannot be within 75 miles of each other, those counties within that distance from existing homes are not included. The three potential locations in order of fit are (see Figure 9 on the next page):

1. Craighead County – 2,367 expected veterans
2. Baxter County – 1,947 expected veterans
3. Crittenden County – 1,226 expected veterans

⁴ These figures do not include veterans who could be eligible for CNHP and are already in nursing homes, just not in VA-approved homes.

Figure 9. Potential Locations for Future Facilities Based on Expected Population of Veterans 65 and Older in 2043

Potential Locations for Future Facilities Based on Expected Population of Veterans 65 and Older in 2043



County	Year_2037	Year_2038	Year_2039	Year_2040	Year_2041	Year_2042	Year_2043
Craighead	2,627	2,582	2,538	2,491	2,440	2,392	2,367
Baxter	2,354	2,279	2,202	2,140	2,074	2,012	1,947
Crittenden	1,440	1,412	1,377	1,327	1,288	1,254	1,226

Source: VetPop2014 Table 9L county-level veteran population by state, 2013-2043. Veterans 65 and older.

GLOSSARY OF TERMS

Term	Meaning
AAA	Area Agency on Aging
ACA	Affordable Care Act
ACS	American Community Survey
ADVA	Arkansas Department of Veterans Affairs
AGIO	Arkansas Geographic Information Office
AHA	Arkansas Hospital Association
CMS	Centers for Medicare & Medicaid Services
CNHP	Community Nursing Homes Program
Community Based Care	Care that is outside a skilled nursing facility with a community setting including in-home services, residential care facility services, assisted living facility services, adult foster home services, and adult day services.
COV	Coefficient of variation
DHS	Arkansas Department of Human Services
HCBS	Home- and community-based services
Long-term care	All services related to long-term care services or provided for in any long-term care facilities regardless of the setting of the care licensed by the Arkansas Department of Human Services.
LTC	Long-term care
LTSS	Long-term services and supports
Medicaid	Payer for long-term care services for eligible, low-income individuals as determined by the Arkansas Department of Human Services Division of County Operations in Medicaid eligible homes as determined by the Arkansas Department of Human Services' Office of Long-term Care.
Medicare	Federal medical insurance for those 65 or older and those on disability. Medicare coverage for nursing homes is limited to conditions related to a qualifying hospital stay where the doctor certifies daily skilled care is needed by skilled nursing facilities.
MOE	Margin of error
Nursing facility	A facility that provides comprehensive care similar to hospitals, but in a facility outside of the hospital setting such as a skilled nursing facility.
OFCCP	Office of Federal Contract Compliance Programs
Skilled nursing facility	A facility providing skilled nursing, primarily in rehabilitative services, for those who can no longer cope or have difficulty coping with the required activities of daily living.
VA	U.S. Department of Veterans Affairs
VCIA	Veterans Choice Improvement Act of 2016
VD-HCBS	Veteran-Directed Home and Community Based Services program
Veteran (federal definition)	A person meeting the requirements of United States Code, Title 38, section 101, as currently adopted who served on active duty and was discharged or released under conditions other than dishonorable.

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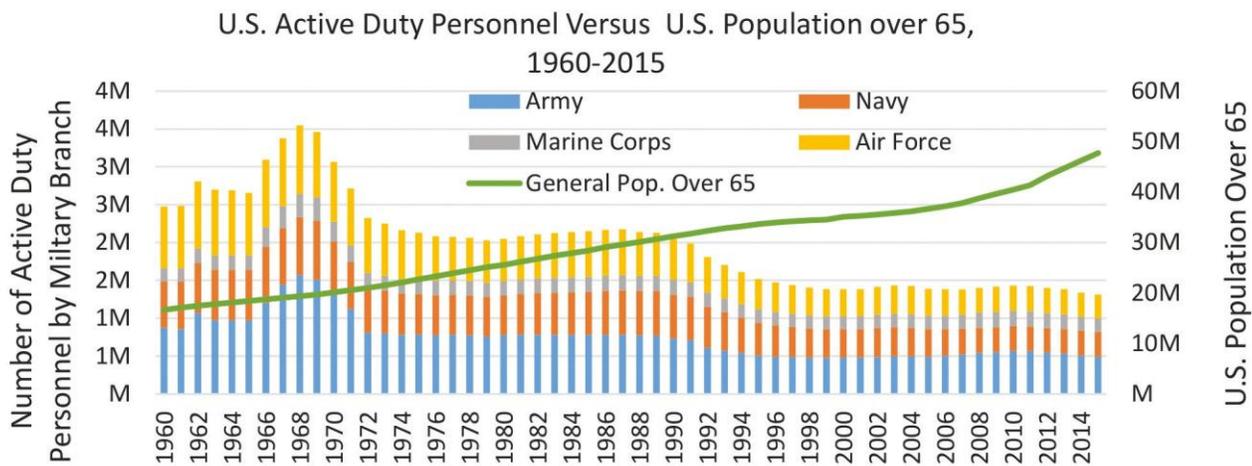
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APPENDIX I – DEMOGRAPHICS

The state is changing. The number of older Arkansans is increasing, racial and ethnic minorities are becoming a larger share of the population, and more women are entering the military each year. The Baby Boomer generation is retiring, and with them include the last of the draft era veterans, which is where differences begin to emerge between general population trends and trends for veterans. As seen in Figure 8, moving

from the Vietnam era high of 3.5 million active duty personnel in 1968, personnel dropped to 2.0 million in 1979 and to 1.4 million by 2000. At the same time, the general population over 65 years old (green line on the right axis) increased steadily over the same period, from 16.7 million in 1960 to more than 47 million in 2015.

Figure 8. U.S. Active Duty Personnel Versus U.S. Population over 65, 1960-2015



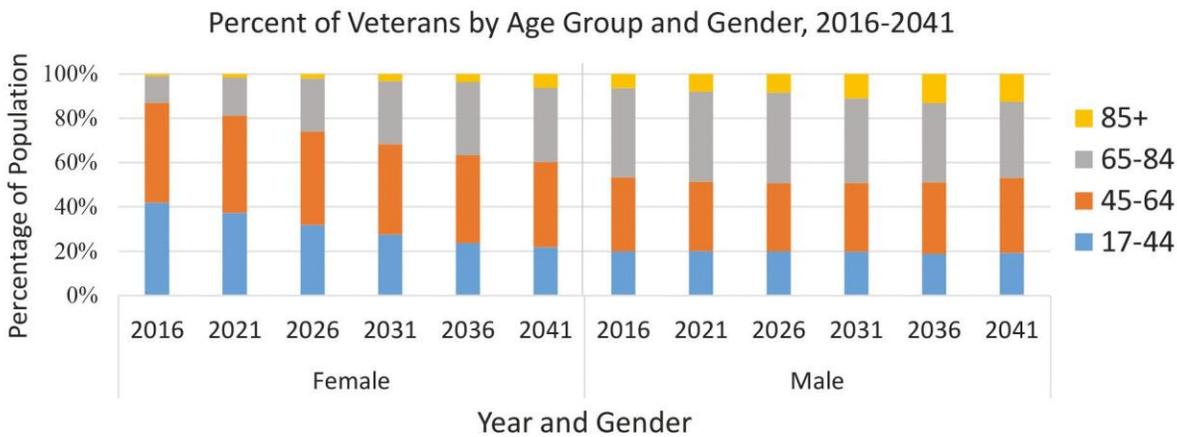
Source: Defense Manpower Data Center, DoD Personnel, Workforce Reports & Publications: https://www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp; General Population: U.S Census Bureau, Population Estimates, Historical Data: <https://www.census.gov/popest/data/historical/index.html>

Gender Projections

The Arkansas veteran population is expected to undergo demographic changes commensurate with changes in the state and nation as a whole, including an increasing proportion of females and minority veterans. In 2016, female veterans in Arkansas were 8.7 percent of the total veteran population, and are projected to increase to 18.9 percent by 2041. Figure 9 shows the changes in groups by gender over time. The left half indicates that females in the age groups

17-44 and 46-64 will decrease over the next 25 years, while the higher age groups (65-84 and over 85) will increase. On the contrary, males currently make up 91.3 percent of Arkansas veterans, but are projected to decrease to 85.1 percent by 2041. Their numbers by age, shown on the right side of Figure 9, indicate that the younger age groups today (17-44 and 45-64) will remain flat as a percentage of the whole. The age group 65-84 will shrink by 5.8 percent over the next 25 years, from 42.2 percent today to 34.4 percent in 2041.

Figure 9. Percent of Veterans by Age Group and Gender, 2016-2041



Source: VetPop Data. Age and Gender http://www.va.gov/vetdata/veteran_population.asp

Service Disability Projections

Veterans' service disability levels have a large effect on long-term care cost projections. Approximately 7.3 percent (18,094) of the veteran population in Arkansas has a service-related disability rating of 70 percent or greater. Of those determined to have a service-related disability, 39.8 percent have a rating of 70 percent or higher.



Racial Projections

The racial makeup of veterans in Arkansas is also changing. As seen in Table 5, White veterans comprise 82.3 percent of the state’s veteran population, decreasing to 73.3 percent by 2041. That decrease is offset by percentage increases in all other racial/eth-

nic groups. Black veterans in the state, while increasing by an additional 2.5 percent of the total veteran population between 2016 and 2041, are decreasing in number from 32,685 to 30,875. Hispanic veterans and veterans of other racial groups are all increasing in number.

Table 5. Arkansas Veteran Racial and Ethnic Numbers and Percent by Selected Years, 2016-2041

Year	White	Black	Hispanic	Other	Total
2016	202,822	32,685	3,776	7,162	246,445
	82.3%	13.3%	1.5%	2.9%	
2021	192,677	33,861	4,209	7,365	238,112
	80.9%	14.2%	1.8%	3.1%	
2026	181,036	34,063	4,867	7,755	227,721
	79.5%	15.0%	2.1%	3.4%	
2031	169,073	33,571	5,983	8,600	217,227
	77.8%	15.5%	2.8%	4.0%	
2036	156,294	32,459	7,596	9,992	206,341
	75.7%	15.7%	3.7%	4.8%	
2041	143,611	30,875	9,609	11,870	195,965
	73.3%	15.8%	4.9%	6.1%	

Source: Table 8L: Vetpop2014 Living Veterans by State, Race/Ethnicity, Gender, 2013-2043
http://www.va.gov/vetdata/veteran_population.asp

VA-Approved Nursing Homes

There are approximately 21 veterans approved nursing homes in the State of Arkansas, as outlined in Table 6 by county. There are approximately 2,318 licensed beds in these facilities, with 50 beds in transition from the Heritage of Hot Springs Health and

Rehab Center to the Serenity Pointe Health & Rehab Center. The average occupancy rate of the combined facilities is 73 percent. The anticipated net bed need for these facilities in 2021 is -2,091, which means that these facilities will have additional beds to accommodate more veterans in the future.

Table 6. Arkansas VA-Approved Nursing Homes

County	Facility Name	Licensed Beds	Beds in Transition	Total Beds	Occupancy As of April 2016	2021 Net Bed Need
Chicot	Dermott City Nursing Home	70	0	70	89.83%	-71
Clark	Courtyard Gardens & Health & Rehab Center	100	0	100	80.67%	-241
Cleburne	Highland of Heber Springs Health & Rehab	140	0	140	52.50%	60
Cleveland	Green House Cottages of Southern Hills	75	0	75	89.07%	-13
Conway	Brookridge Cove Rehab & Care Center	118	0	118	66.45%	-37
Faulkner	Conway Healthcare & Rehab Center	105	0	105	75.12%	38
Garland	Heritage of Hot Springs Health & Rehab	152	50	102	64.18%	-118
Garland	The Pines Nursing & Rehab	70	0	70	77.61%	-118
Grant	Sheridan Healthcare & Rehab Center	121	0	121	63.56%	-6
Independence	Batesville Health & Rehab	150	0	150	62.47%	-114
Jackson	Lindley Healthcare & Rehab Center	120	0	120	89.65%	-144
Jefferson	Davis East Nursing Home	126	0	126	55.35%	-205
Lonoke	Chambers Nursing Home Center	90	0	90	77.19%	-251
Ouachita	Pine Hills Health & Rehab Center	106	0	106	55.01%	-257
Polk	Rich Mountain Nursing & Rehab	115	0	115	70.54%	-19
Prairie	Des Arc Nursing & Rehab Center	98	0	98	64.83%	-105
Pulaski	Premier Health & Rehab Center	132	0	132	89.57	-142
Saline	Heartland Rehab and Care Center	119	0	119	83.83%	222
Sharp	Ash Flat Nursing & Rehab Center	105	0	105	63.74%	-37
Union	Courtyard Rehab & Health Center, LLC	101	0	101	77.02%	-391
Yell	Mitchell's Nursing Home	105	0	105	83.48%	-142
	Total Beds	2,318	50	2,268	72.94%	(2,091)

Source: Arkansas Health Services Permit Agency (2016). Health Care Facilities and Services Need SFY 2017.

APPENDIX II – DATA AND METHODS

Demographic Data Sources

- Veteran age, service level, and level of disability by county: Table 9L VetPop2014 County- Level Veteran Population by State 2013-2043 accessed September 2016 at <http://www.va.gov/vetdata/>
- Veteran service level and median income by census tract: Table ACS 5 YR Table S2101 Year 2014 accessed September 2016 at <http://factfinder.census.gov>
- Veteran District Offices: Arkansas Department of Veterans Affairs
- State, county, and census tract boundaries shapefiles: Arkansas Geographic Information Office (AGIO) assessed September 2016 at <http://gis.arkansas.gov>
- LTC facilities locations shapefile: asdi.health.LONG_TERM_CARE_FACILITIES_ADH provided by the Arkansas Geographic Information Office accessed September 2016 at <http://gis.arkansas.gov>
- LTC facilities occupancy: pdf file “Health Care Facilities and Services Need SFY 2017” Prepared for the Arkansas Health Services Permit Agency by the Arkansas Health Services Permit Commission. Last updated 6/16/2016
- LTC facilities rating: Accessed via web October 2016 by search for state of Arkansas at <https://www.medicare.gov/nursinghomecompare/results.html#state=AR&lat=0&lng=0>

Demographic Analysis Methodology

The American Community Survey (ACS) Five-Year Estimate

Because the usefulness of the five-year ACS comes from its ability to measure social and economic characteristics rather than the counts of people, as the decennial census does, it is important to understand when the ACS can be used most effectively (U.S. Census Bureau, 2008). For our analyses regarding the distribution of veterans 65 and older using ACS data (rather than VetPop2014), the goal is not to report the number of veterans per a given geographic area,

but to report the distribution of veterans. Data for those maps that include estimates of veterans, particularly the hot spot analysis, are based on data at the census tract level, which is a small geographic unit representing an average of 4,000 people each (U.S. Census Bureau, 2008).

Because the census tract unit of analysis is often less reliable than larger areas, such as county or state, care must be taken in deciding which attributes to use. The Census Bureau provides indications of validity based on the margin of error (MOE), which is reported at the 90 percent confidence level. Based on the MOE, users can then calculate the standard error and the coefficient of variation (COV) for each observation (U.S. Census Bureau, 2008). The COV is particularly important to calculate when using census tract level data because the sample size is often not large enough to apply to the overall population. Once the COV was established, further analysis was done to determine the acceptable level of COV. Research has shown the following (ESRI, 2014):

- High Reliability: Small COVs (less than or equal to 12 percent) are most reliable because the sampling error is small relative to the estimate, and the estimate is reasonably reliable.
- Medium Reliability: Estimates with COVs between 12 and 40 percent should be used with caution.
- Low Reliability: Large COVs (more than 40 percent) indicate that the sampling error is large relative to the estimate. The estimate is considered very unreliable.

Using calculation methods provided by the U.S. Census Bureau and ESRI, the following attributes were chosen for their reliability and then entered into a geodatabase for further spatial analysis. This was done by joining ACS tables to the census tract and county shapefiles provided by AGIO. While not all of the below attributes were included in this report, they are included in the geodatabase package for

future analysis:

- Tract level (all medium reliability with COVs close to 20-30 percent) – Veterans 65 and older, period of service/Vietnam, veteran median income, civilian population 18 and over.
- County level (most were high reliability with COVs close to 10 percent while a few were medium reliability with COV close to 15 percent) – Veteran period of service/Vietnam/Korea/World War II, veteran median income, civilian population 18 and over, gender, age, race, educational attainment, poverty level, disability status.

VetPop2014

The VetPop2014 is the latest official measure of veteran populations provided by the VA. It is a combination of data gathered by the VA, the Department of Defense (DoD), and the U.S. Census Bureau (U.S. Department of Veterans Affairs, 2015). Although we have been unable to precisely determine VetPop data reliability because it uses ACS as well as Census 2000 data, along with data provided by the DoD and the VA, it was assumed for this report that its reliability is similar to that at the county or state level where there is a low margin of error and therefore a low COV. By joining VetPop2014 data with county shapefiles provided by the AGIO, the following tables were entered into a geodatabase. Again, while not all of the below attributes were included in this report, they are included in the geodatabase package for future analysis:

- Forecast of veteran populations – Table 9| VetPop2014 County-Level Veteran population by State, 2013-2043
- Compensation by County 2015 – Table Compensation and Pension by County

Long-Term Care Facilities (LTCs)

A shapefile of all LTCs within the state was downloaded from the AGIO and then entered into the geodatabase. The shapefile of LTCs provided by the AGIO has information regarding name,

location, and number of beds per facility among other attributes. Two fields were added and then manually updated according to facilities that contract with the VA and facilities that may qualify for future contracts based on star rating (K. Gately, personal communication, Sept. 19, 2016; Arkansas Health Service Permit Agency, 2016). While all facilities are included in the geodatabase package, for the purposes of this analysis, definition queries were employed to symbolize only those facilities of interest.

Veteran Bed Projections

In the absence of a thorough census of veterans in nursing facilities in Arkansas, this report attempts to estimate LTC veteran populations in nursing homes by using the VetPop age and gender forecast through 2041, the 2014 Census Bureau population estimates, and the 2015 Nursing Home Data Compendium. Women are nearly double the population in nursing homes and, with increasing military service of women, gender is a stronger justification for estimating the nursing home population in Arkansas compared to other demographics populations.

The 2015 Nursing Home Data Compendium by CMS indicates that 16.5 percent of women in Arkansas age 85 and over reside in nursing homes, compared to 8.1 percent of men in the same group. The same report lists the 65 and over population, therefore Census data is used to separate the over-85 group from the over-65 group to establish a population percentage residing in nursing homes for each gender between 65 and 84, reaching 2.3 percent for women and 1.5 percent for men in nursing homes.

Spatial Estimates and Methodology

Generate Spatial Weights Matrix File

This process was run prior to the spatial autocorrelation and hot spot analyses to account for the differences in size and location of census tracts so that each tract, regardless of its nearness or farness from other

tracts, will be included in the analysis. This process generates a '.swm' file to be used in subsequent analyses and is included in the geodatabase package. The tool parameters are detailed below:

- Conceptualization of Spatial Relationship: FIXED_DISTANCE
- Distance Method: EUCLIDEAN
- Threshold Distance: 79200 (feet)
- Number of Neighbors: 2
- Row Standardization: Yes

Moran's I (Spatial Autocorrelation)

While all geographic data will have some amount of spatial autocorrelation, a high amount of spatial autocorrelation could have an impact on further statistical tests, such as a hot spot

analysis (Getis-Ord G_i^*). Running the Moran's I will determine to what extent the "distribution of values is dependent on the distribution the spatial distribution of the features," which in this case will be veterans 65 and older per census tract (Mitchell, 2009). The Moran's I index varies from -1 to 1, where -1 indicates negative spatial autocorrelation and +1 indicates positive autocorrelation (Mitchell, 2012). The results of this statistical test returned a Moran's Index of .194069, a z-score of 10.23, and a p-value of 0.000, indicating that there is less than a 1 percent chance that the clustered pattern is the result of random chance.

The null hypothesis for the test is that there is no global clustering of veterans aged 65 and older. While we are unable to reject the null hypothesis, which is most often the case with geographic data, because the Moran's Index indicates a global clustering pattern, it is beneficial to compare the clustering of veterans to the clustering of the entire population to determine if veterans are more or less clustered similarly to the entire population (Mitchell, 2009). To do this, we ran the global Moran's I on the entire population using the same parameters. The results of this test were similarly significant with a z-score of 11.77, indicating that both veterans and the entire population are similarly distributed. Because Moran's I is a

global statistic, it is also beneficial to run a local statistic on both. Using the Getis Ord G_i^* , we were able to determine that veterans aged 65 and older are more clustered than what we would expect for the entire population. In other words, the results of subsequent spatial analyses will not be greatly overemphasized because of the apparent differences in the distributions of both veterans and the entire population when using local spatial statistics (Mitchell, 2012).

APPENDIX III – APPLICABLE LAWS AND REGULATIONS

Federal Law

38 C.F.R. § 71 – Caregivers Benefits and Certain Medical Benefits Officered to Family Members of Veterans
38 C.F.R. § 51.1 et seq. – Per Diem for Nursing Home Care of Veterans in State Homes
38 C.F.R. § 52.1 et seq. – Per Diem for Adult Day Health Care of Veterans in State Homes

Section 6086 of the Deficit Reduction Act of 2005 (DRA) added section 1915(i) to the Social Security Act (the Act) providing states the option to offer home and community-based services, previously available only through a 1915(c) HCBS waiver, through the state’s Medicaid state plan.

Affordable Care Act

The Affordable Care Act expanded coverable services under 1915(i) to include any of the HCBS permitted under section 1915(c) HCBS waivers, certain services for individuals with mental health and substance use disorders and other services requested by a state and approved by the Secretary of Health and Human Services. The changes support ensuring the quality of HCBS, require states to offer the benefit statewide and enable states to target 1915(i) State Plan HCBS to particular groups of participants but not limit the number of participants who may receive the benefit. In addition to the above provisions, the final rule also establishes a set of requirements for home and community-based settings under the 1915(i), 1915(c) and 1915(k) Medicaid authorities, and a set of person-centered planning requirements for Medicaid HCBS participants under 1915(c) and 1915(i).

OFCCP Compliance Requirements

Executive Order 11246 requires an organization providing services to federal employees, military personnel or veterans as a contractor or subcontractor to follow specific requirements, including:

- Developing a written affirmative action plan that sets out specific and result-oriented procedures

for ensuring equal employment opportunities for all applicants and employees;

- Self-auditing and tracking of the workforce to ensure that equal employment opportunities are implemented with respect to all applicants and employees;
- Ensuring that women and minorities are adequately represented in the organization's workforce, are not disproportionately subjected to involuntary terminations and are proportionally afforded promotional opportunities; and
- Taking steps to overcome a shortfall in the representation of women and minorities, including outreach, recruitment and training activities to boost the pool of qualified women and minorities.

State Law

A.C.A. § 20-81-102 et seq. – Arkansas Veterans' Affairs Act 432 of 1985, codified in A.C.A. §20-81-105, amended Section 6 of Act 324 of 1979 to require the Arkansas Department of Veterans Affairs to promulgate guidelines for admission to the Arkansas Veterans Home and to conform to Federal requirements necessary to qualify the Arkansas Veterans Home as a Nursing Home and Domiciliary for veterans. Act 38 of 2013 created the Arkansas Veterans’ Home Task Force to study issues related to opening a new Arkansas Veterans’ Home and to develop specific recommendations for review, consideration, and implementation by the General Assembly.

