

**Petition to Change Linear Accelerator Need Methodology  
Consistent with Actions Taken by State Health Coordinating Council in 2009 to  
Redefine Service Areas in the annual *State Medical Facilities Plan***

**I. Name, Address, Email Address, and Phone Number of Petitioner**

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**II. Statement of the Requested Change**

Cape Fear Valley Health System (“Cape Fear Valley”) requests that the SHCC approve a change to the Linear Accelerator Need Methodology to make it consistent with actions taken by the SHCC in 2009 to redefine Service Areas for Acute Care Beds, Operating Rooms, Fixed MRI, and Cardiac Catheterization in the annual *State Medical Facilities Plan (SMFP)*.

Specifically, Cape Fear Valley requests that the following adjustments be made to Chapter 9, Linear Accelerators, in the *2012 SMFP*:

1. Hoke County be included in both Linear Accelerator Service Areas 17 and 18.
2. The proportion of linear accelerator volume performed on residents of Hoke County is assigned to Cumberland County in Linear Accelerator Service Area 18 when such volume is performed on a linear accelerator in Cumberland County.
3. The proportion of linear accelerator volume performed on residents of Hoke County is assigned to Moore County in Linear Accelerator Service Area 17 when such volume is performed on a linear accelerator in Moore County.

**III. Background Information Regarding Petitioner**

Cape Fear Valley is a non-profit regional health system with 765 beds, five hospitals, and primary care physician offices throughout Cumberland County and surrounding areas, including Hoke and Bladen Counties. Cape Fear Valley Medical Center, located in Fayetteville, is an acute care hospital offering quality care in open-heart surgery, cancer treatment, maternity services, emergency medicine, pediatric intensive care, wellness programs, and more. Highsmith-Rainey Specialty Hospital, located in Fayetteville, provides long-term acute care as well as an urgent care facility. Bladen County Hospital, located in Elizabethtown, is a public, not-for-profit facility that includes a 24-hour Emergency Department, a Medical/Surgical Unit, an Intensive Care Unit, and an up-to-date Birthing Center. Cape Fear Valley Rehabilitation Center is a physical rehabilitation

facility offering inpatient and outpatient care for brain- and spinal-cord injured, neurologically impaired patients, stroke patients, and orthopedic patients. Behavioral Health Care is a comprehensive psychiatric hospital with inpatient and outpatient services for children, adolescents, and adults.

Cape Fear Valley has physician offices located throughout Fayetteville and surrounding counties, including a medical office building, Hoke Family Medical Care, in Raeford, Hoke County. That facility is open five days per week and has two primary care physicians, two physician extenders, cardiologist coverage, nephrology coverage, and allergy coverage.

In addition to a broad set of physician coverage in Hoke County, Cape Fear Valley provides after-hours urgent care, radiology services, EKG, pulmonary function, occupational medicine, city employee sick call, all county and city drug testing, Special Olympics participant physicals, and a broad array of laboratory services to Hoke County residents.

On January 7, 2011, the Certificate of Need Section granted an Exemption from Review to allow Hoke Health Services, LLC to construct a medical office building in Raeford, Hoke County, located on property fronting Johnson Mill Road and Fayetteville Road (NC State Hwy 401). This Medical Office Building will also include Hoke Imaging, LLC to include digital mammography, x-ray and ultrasound.

### **Cape Fear Valley Cancer Center Program**

The Cape Fear Valley Cancer Center provides comprehensive treatment options for cancer patients. Since FY 2008, CFV has treated an annual average 44% of all residents of Hoke County in need of cancer treatment as evidenced in **Table 8**. Treatment options include medical oncology (chemotherapy), radiation oncology and surgery. The program is accredited by the American College of Surgeons Commission on Cancer. Cape Fear Valley's approach to cancer treatment is multi-disciplinary, meaning that a team of specialists collaborates to provide comprehensive care that meets the physical and emotional needs of cancer patients and their families.

The Cape Fear Valley Cancer Resource Center provides patient education and ongoing support by providing a wealth of the most current, cancer-related information. Four support groups are offered each month, which provides information as well as a forum for sharing and support. The Oasis Complementary Medicine Program offers an array of services that address the mind, body and soul for patients who are receiving treatment or those who have completed treatment. These individual sessions and group classes complement conventional therapies.

The Radiation Oncology Department offers leading-edge technology, including a revolutionary 4D CT simulator, Intensity Modulated Radiation Therapy (IMRT) and Image-Guided Radiation Treatment. Stereotactic Radiosurgery, utilizing CyberKnife, will complement the robust cancer treatment facility armament this summer.

The Medical Oncology Department offers chemotherapy in a comfortable outpatient setting. Patients may also enroll in clinical trials that may offer improved treatment options or, in some cases, new hope when conventional treatment has failed.

#### **IV. Background Information on Actions Taken by the SHCC in 2009 to Redefine Service Areas in the annual *State Medical Facilities Plan***

On July 6, 2009, Cape Fear Valley submitted a “Petition for Adjustment to Need Determination to Adjust the Acute Care Bed, Operating Room, and MRI Multi-County Service Areas for Moore, Hoke, and Cumberland Counties by Applying Updated Data in Step 1 of the Defined Methodologies” (“2009 Petition”).

In the 2009 Petition, Cape Fear Valley sought to (1) designate Hoke and Cumberland Counties as one multi-county service area for acute care beds, operating rooms and magnetic resonance imaging, as a result of updating data used to define service areas in accordance with Step 1 of the defined acute care beds and operating room methodologies and (2) to designate Moore County as a single county service area for acute care beds, operating rooms, and MRI as a result of using the same updated data.

On October 9, 2009, the SHCC denied the 2009 Petition, and instead assigned Hoke County to Moore and Cumberland Counties, respectively, which resulted in eight two-county service areas:

- Cumberland-Hoke Multi-county Acute Care Bed Service Area
- Cumberland-Hoke Multi-county Operating Room Service Area
- Moore-Hoke Multi-county Acute Care Bed Service Area
- Moore-Hoke Multi-county Operating Room Service Area
- Cumberland-Hoke Multi-county Cardiac Catheterization Service Area
- Cumberland-Hoke Multi-county MRI Service Area
- Moore-Hoke Multi-county Cardiac Catheterization Service Area
- Moore-Hoke Multi-county MRI Service Area

Those eight two-county service areas appeared for the first time in the *2010 SMFP*.

The first update of Multi-County Acute Care Bed Service Areas occurred in the *2011 SMFP*. Under Step 1 of the Acute Care Bed Need Methodology set forth in Chapter 5 of the *2011 SMFP*, the three most recent years of available acute care days patient origin data are combined and used to determine multi-county service acute care bed service area groupings using the following decision rules:

1. Counties lacking a licensed acute care hospital are grouped with the single county where the largest proportion of patients received inpatient acute care services, as measured by acute inpatient days, unless:

- a. Two counties with licensed acute care hospitals each provided inpatient acute care services to at least 35 percent of the residents who received inpatient acute care services, as measured by acute inpatient days.
2. If 1. a. is true, then the county lacking a licensed acute care hospital is grouped with both the counties which provided inpatient acute care services to at least 35 percent of the residents who received inpatient acute care services, as measured by acute inpatient days.

In accordance with Step 1 of the Acute Care Bed Need Methodology set forth in Chapter 5 of the *2011 SMFP* and the decision rules therein, Hoke County was grouped with both Moore County and Cumberland County, respectively.

Under Step 3 of the Operating Room Need Methodology set forth in Chapter 6 of the *2011 SMFP*, when determining need for operating rooms, Hoke County's population growth was assigned as follows:

- Cumberland County was assigned the proportion of Hoke County's population growth equal to the proportion of Hoke County residents receiving surgical services in Cumberland County.
- Moore County was assigned the proportion of Hoke County's population growth equal to the proportion of Hoke County residents receiving surgical services in Moore County.

Combined surgical patient origin data for years 2007 – 2009 from the 2008 – 2010 Hospital and Ambulatory Surgical Facility License Renewal Applications were used to determine the proportion of Hoke County residents receiving services in Cumberland and Moore Counties, respectively.

Fixed MRI Service Areas and Cardiac Catheterization Equipment Planning Areas are the same as the Acute Care Bed Service Areas defined in Chapter 5, Acute Care Beds, in the *2011 SMFP*. As such, Hoke County was grouped with both Moore County and Cumberland County, respectively, for purposes of fixed MRI Service Areas and the Cardiac Catheterization Equipment Service Areas in Chapter 9 of the *2011 SMFP*.

### **Recommendation Proposal**

In this Petition, Cape Fear Valley requests that the SHCC approve a change to the Linear Accelerator Need Methodology to make it consistent with actions taken by the SHCC in 2009 to redefine service areas in the *SMFP*, as discussed above.

Specifically, Cape Fear Valley Health System (“Cape Fear Valley”) requests that the following adjustments be made to Chapter 9, Linear Accelerators, in the *2012 State Medical Facilities Plan* (“*SMFP*”):

1. Hoke County be included in both Linear Accelerator Service Areas 17 and 18.

2. The proportion of linear accelerator volume performed on residents of Hoke County is assigned to Cumberland County in Linear Accelerator Service Area 18 when such volume is performed on a linear accelerator licensed to Cape Fear Valley Health System in Cumberland County.
3. The proportion of linear accelerator volume performed on residents of Hoke County is assigned to Moore County in Linear Accelerator Service Area 17 when such volume is performed on a linear accelerator licensed to FirstHealth Moore Regional Hospital in Moore County.

The proposed change may result in changes to at least two other counties in western North Carolina. As illustrated in **Table 9**, patient origin data for Clay and Transylvania Counties shows that a three year average of over 35% of patients in need of radiation treatment using a linear accelerator has been provided by a facility outside of the currently defined service area. A complete set of Equipment Inventory Forms for freestanding oncology centers were not available as of February 28, 2011. Outstanding data will not impact Hoke County based upon the review of data from FY 2008 and FY 2009.

**V. Reasons for the Proposed Adjustment**

In the *2011 SMFP*, a linear accelerator’s service area is the linear accelerator planning area in which the linear accelerator is located. Patient origin data reported on the annual Hospital License Renewal Applications and Linear Accelerator Registration and Inventory Forms are used to establish service areas. Linear accelerator planning areas are the 27 multi-county groupings shown in Table 9G of the *2011 SMFP*.

The multi-county groupings for Service Areas 17 and 18, respectively, are defined as follows in Table 9G.

**Table 9G: Linear Accelerator Service Areas**

Area	County
17	Moore
	Hoke
	Lee
	Montgomery
	Scotland
	Richmond
18	Cumberland
	Bladen
	Robeson
	Sampson
	Sampson

*Source: Table 9G, 2011 SMFP, page 138*

Unlike the Acute Care Bed Need Methodology, the Linear Accelerator Need Methodology does not contain decision rules used to determine multi-county service area

groupings. Instead, as part of the determination of whether an additional linear accelerator is needed in a service area, three principal questions are addressed:

1. Are the linear accelerators in a linear accelerator service area performing more than 6,750 procedures (ESTVs) per accelerator per year?
2. Is the population that lives in a linear accelerator service area sufficiently great to support the addition of another accelerator (population per accelerator greater than 120,000 – a figure suggested by the Inter-Society Council for Radiation Oncology)?
3. Does the patient origin data show that more than 45 percent of the patients come from outside the service area?

To examine the second and third questions, linear accelerator service areas are delineated including in each area the counties that are closest to a linear accelerator. Two exceptions are employed in applying that method:

- a. Where patient origin data indicate a county’s primary use of a linear accelerator that is not closest, the county is aligned with the linear accelerator county where most or a plurality of its citizens go for linear accelerator services.
- b. When a linear accelerator county has a population too small to support it, that county is combined with an adjacent county to which a sizeable percentage of patients go for linear accelerator services, according to the base county’s patient origin data.

Data regarding Hoke County in Linear Accelerator Service Area 17 has been organized in order to examine each of the two questions noted above based on Linear Accelerator Treatment patient origin data reported by providers in Cumberland and Moore Counties, respectively, in the 2009-2011 Hospital License Renewal Applications.<sup>1</sup>

**Hoke County of Origin Summary – Linear Accelerator Service Area 17  
Linear Accelerator Treatment Patients  
October 2007 - September 2010**

Service Area	Total # of Patients	Cape Fear Valley Medical Center		FirstHealth Moore Regional	
		# of Patients	% of Patients	# of Patients	% of Total Patients
17					
FY 2008	68	24	35.3%	34	50.0%
FY 2009	57	31	54.4%	13	22.8%
FY 2010	72	31	43.1%	33	45.8%
Three Year Average	66	29	<b>44.2%</b>	27	39.5%

Source: *Attachment 1, Table 8*

<sup>1</sup> Please note that there are no freestanding linear accelerators in Linear Accelerator Service Areas 17 and 18. As such, data analysis was limited to Linear Accelerator Treatment patient origin data presented in the 2009-2011 Hospital License Renewal Applications.

The data in the previous table shows that over the last three fiscal years, a growing **plurality** of Hoke County residents received linear accelerator treatment services on linear accelerators licensed to Cape Fear Valley in Cumberland County than at FirstHealth Moore Regional (“FHMR”) in Moore County. In other words, based on an average of the last three fiscal years of data, **more** Hoke County residents received linear accelerator treatment services on linear accelerators licensed to Cape Fear Valley in Cumberland County than at FHMR.

Grouping Hoke County in Linear Accelerator Service Area 17 is no longer accurate. The multi-county groupings in Linear Accelerator Service Areas 17 and 18 should be changed to reflect correctly that Hoke County residents are using Cumberland County linear accelerators to meet their linear accelerator treatment service needs. Consequently, Hoke County also should be grouped with Cumberland County in Linear Accelerator Service Area 18, which is an adjacent county to which a sizeable percentage of Hoke County patients go to receive linear accelerator treatment services, according to the base county’s patient origin data, shown in the previous table.

Please see **Attachment 1, Tables 1-9** for a detailed presentation of state-wide, 100-county Linear Accelerator Treatment patient origin data as reported in the 2009-2011 Hospital License Renewal Applications and the 2009-2011 Linear Accelerator Registration and Inventory Forms received by the Planning Section as of February 28, 2011.

Please note that **Attachment 1, Table 9** shows that based on an average of the last three fiscal years of data received and input as of February 28, 2011, the multi-county groupings in Linear Accelerator Service Areas 1, 2, and 4 may need to be reviewed. It is only for the sake of completeness that Cape Fear Valley makes the SHCC aware of this finding. Cape Fear Valley does not request any change to those multi-county groupings.

## **VI. Statement of Adverse Effects on the Population**

A continuation of inaccurate multi-county groupings in Linear Accelerator Service Areas 17 and 18 adversely effects the population of Hoke County in two ways. First, it is inconsistent with the actions taken by the SHCC in 2009 to redefine the Acute Care Bed, Operating Room, Fixed MRI, and Cardiac Catheterization Service Areas in the annual *SMFP*. Linear accelerator treatment services should be accorded the same status as acute care beds, surgical services, fixed MRI services, and cardiac catheterization services. Second, Hoke County residents deserve for their health care choices to be acknowledged fully and represented accurately in the Acute Care Bed, Operating Room, Fixed MRI, Cardiac Catheterization, and the Linear Accelerator Need Methodologies.

## **VII. Statement of the Alternatives Considered**

There are no alternatives to this proposal. Cape Fear Valley seeks to have the *2012 SMFP* reflect the correct distribution of linear accelerator treatment services provided to the residents of Hoke County consistent with actions taken by the SHCC in 2009 to

redefine the Acute Care Bed, Operating Room, Fixed MRI, and Cardiac Catheterization Service Areas in the annual *SMFP*.

### **VIII. The Project Would Not Result in an Unnecessary Duplication of Services**

Cape Fear Valley is not requesting additional health service resources. It is requesting that the *2012 SMFP* correctly reflect the most current and accurate linear accelerator data, which is that Hoke County should be included in both Linear Accelerator Service Areas 17 and 18. That request is consistent with actions taken by the SHCC in 2009 to redefine the Acute Care Bed, Operating Room, Fixed MRI, and Cardiac Catheterization Service Areas in the annual *SMFP*.

### **IX. The Project is Consistent with the Three Basic Principles Governing the Development of the SMFP**

This Petition is consistent with the provisions of the Basic Principles. A proper and consistent alignment of Linear Accelerator Service Areas ensures that the high quality linear accelerator treatment services provided by Cape Fear Valley will continue to be available to Hoke County residents, and that Cape Fear Valley will have the ability to improve geographic access to linear accelerator treatment services for residents of Hoke County.

### **X. Conclusion**

Cape Fear Valley is requesting that the SHCC adjust the Linear Accelerator Service Areas to designate Hoke and Cumberland Counties as one multi-county service area.

Therefore, Cape Fear Valley requests that the following adjustments be made to Chapter 9, Linear Accelerators, in the *2012 State Medical Facilities Plan* (“*SMFP*”):

1. Hoke County be included in both Linear Accelerator Service Areas 17 and 18.
2. The proportion of linear accelerator volume performed on residents of Hoke County is assigned to Cumberland County in Linear Accelerator Service Area 18 when such volume is performed on a linear accelerator licensed to Cape Fear Valley Health System in Cumberland County.
3. The proportion of linear accelerator volume performed on residents of Hoke County is assigned to Moore County in Linear Accelerator Service Area 17 when such volume is performed on a linear accelerator licensed to FirstHealth Moore Regional Hospital in Moore County.