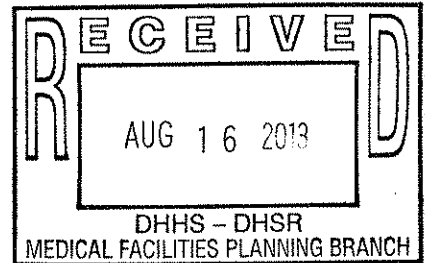


August 15, 2013

Mr. Jerry Parks
Chairman, North Carolina State Health Coordinating Council
c/o North Carolina Division of Health Service Regulation
Medical Facilities Branch
2714 Mail Service Center
Raleigh, NC 27699-2714



Dear Chairman Parks:

Thank you for the opportunity to comment on the Petition submitted by Novant Health – Thomasville Medical Center (“Petitioner”) to the State Health Coordinating Council, requesting an adjusted need determination for one shared fixed cardiac catheterization equipment in Davidson County in the Final 2014 State Medical Facilities Plan (“SMFP”). Wake Forest Baptist Health – Lexington Medical Center (“LMC”) strongly opposes the Petitioner’s request because it conflicts with the spirit and intent of the SMFP by ignoring excess capacity in the subject market, improperly using inpatient market share as a proxy for cardiac cath market share and fails to show the volume required to generate a need.

Excess Capacity Exists in the Market

It is clear from a review of the most recent license renewal application for FFY 2012 that there are approximately eight (8) cardiac catheterization units that are in surplus and serve the Davidson County market. Forsyth Medical Center currently holds half of the licensed units, as they own or control four (4) of those eight (8). Adding another fixed unit to Davidson County would only increase the surplus for Forsyth Medical Center, which is ignored in the Petition since it contends that 283 of its procedures currently come from Davidson County.

Medical Center	Fixed Inventory	FFY 12 Weighted Procedures	Need Based on 80% Utilization	Excess Capacity
Forsyth				
Forsyth Medical Center	8	4511	3.76	4
North Carolina Baptist Hospital	5	3536	2.95	2
Guilford				
High Point	4	4371	3.64	
Moses Cone	7	5701	4.75	2
The Cardiovascular Diagnostic Center	1	837	0.7	
Rowan				
Novant- Rowan Regional	1	1532	1.28	

Inpatient Market Share is not a good proxy for Cardiac Cath Market Share

Cardiac catheterization is primarily an outpatient service and the majority of the procedures are performed on an outpatient basis, not on an inpatient basis. A better proxy to estimating volume would have been to review outpatient surgery as a proxy for cardiac catheterization market share. The inpatient market share for North Carolina Baptist Hospital and High Point Regional that are used in the Petition are not representative of outpatient utilization. Using this market share as a proxy enables the Petitioner to inflate the cardiac catheterization volume attributed to Davidson County patients.

A review of the FFY 2012 data sourced from license renewal applications demonstrates that Forsyth Medical Center, Rowan Medical Center and Thomasville Medical Center are clearly aligning their market share assumptions with inpatient trends, rather than outpatient trends, as shown below. The only explanation for this is that the Petitioner intentionally used this approach to inflate the estimated volumes in order to substantiate a need.

<i>DAVIDSON COUNTY market share</i>	<i>Market Share from Novant Petition</i>	<i>FFY 12 IP Market Share- Surgical Cases</i>	<i>FFY 12 OP Market Share- Surgical Cases</i>
Thomasville Medical Center	6.1%	13%	27%
Forsyth Medical Center	21%	19%	8%
Rowan Medical Center	1.7%	3%	4%
Lexington Medical Center		16%	19%
North Carolina Baptist Hospital	24.5%	26%	12%
High Point Medical Center	40.1%	15%	6%

**All patient origin data for IP and OP surgeries contained in license renewal applications, including hospital and ambulatory, were reviewed for FFY 12 for Health Service Areas I, II, and III along with Duke and UNC to calculate market share for Davidson County.*

Inadequate volume

According to Table 9X of the 2014 Proposed SMFP, the mobile cardiac catheterization unit for the Petitioner reported a volume of 93 procedures in FFY 2012. The Petitioner then contends in its Petition that it is on track to increase that volume by nearly 40% for FFY 2013, which equates to approximately 134 procedures using the Table 9X volume. This volume is still well below its procedure capacity of 300, as reported in the 2014 Proposed SMFP. Further, this number is considerably lower than the 246 procedure volume threshold required to generate a need¹. Since the methodology presented in the Petition is flawed and is based on inappropriate market share trends to predict cardiac cath volume from Davidson County, it is unreasonable to conclude that there is a need in Davidson County.

This volume is also in direct contrast to the volume projected by Carteret General Hospital's ("CGH") 2012 Petition to the SHCC for Central Carolina Hospital's ("CCH") 2010 Petition to the SHCC, seeking need determinations for cardiac catheterization equipment in their respective counties. (Copies of these two Petitions are attached as *Exhibits A and B.*)

CGH's 2012 Petition reported over 1,000 outpatient cardiac catheterization procedures being performed on Carteret County residents in 2010 and 2011, more than Davidson County, even though Davidson County's population is more than twice the size. Further, Carteret County is much more isolated than Davidson County, which is surrounded by multiple medical facilities with available cardiac catheterization capacity.

CCH's 2010 Petition, in contrast to the Petitioner's, showed that CCH was performing close to or at the required 240 mobile cardiac catheterization procedures, in contrast to the Petitioner's, which has never performed close to that level. Further, even CCH's mobile cardiac catheterization equipment operated only 8 hours per week, similar to the Petitioner's mobile cardiac catheterization equipment.

Thus, the Petitioner has not demonstrated the type of significant demand for cardiac catheterization services in Davidson County, which justified the approval of the CGH and CCH Petitions.

¹ It is important to note that the volumes the Petitioner uses in the table on Page 7 of its Petition are not consistent with the volumes in Table 9X of the 2014 Proposed SMFP. This should raise concern for the reasonableness and accuracy of the utilization and methodology from the Petitioner, in addition to the fact that the volumes are still well below capacity.

Conclusion

The Petition presented by the Petitioner conflicts with the basic principles of the SMFP, which are to ensure adequate access to safe, quality health care in North Carolina while achieving the maximum value possible for that care. The Petitioner ignores the surplus capacity in the market and fails to address this as part of its Petition. In addition, the volume methodology is based on inpatient market share, which is not reflective of outpatient trends or true utilization. For these reasons, LMC recommends the Petition to adjust the need determination for one shared fixed cardiac catheterization equipment in Davidson County for the Final 2014 SMFP be denied. Thank you for your consideration. Please do not hesitate to contact me at (336) 238-4213 if you have any questions.

Sincerely,



Steven C. Snelgrove

President

**Petition to the State Health Coordinating Council
Regarding Cardiac Catheterization Equipment Adjusted Need Determination
For the 2013 State Medical Facilities Plan**

August 1, 2012

Petitioner

Name: Carteret County General Hospital
Address: 3500 Arendell Street (P.O. Box 1619)
Morehead City, NC 28557

Contact

Name: Richard A. Brvenik, CEO
E-mail: dbrvenik@ccgh.org
Phone: 252-808-6094

STATEMENT OF REQUESTED ADJUSTMENT

On behalf of Carteret County General Hospital, Richard A. Brvenik, CEO, requests the following special need adjustment to the *2013 State Medical Facilities Plan (SMFP)*.

Chapter 9, Table 9Z should be changed as follows:

Table 9Z: Shared Fixed Cardiac Catheterization Equipment Need Determination
(Proposed for Certificate of Need Review Commencing in 2013)

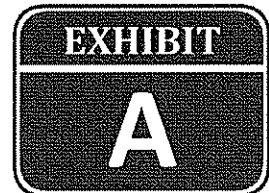
Based on information submitted in a Special Needs Petition, it is determined that there is a need for one additional shared fixed cardiac catheterization laboratory in Carteret County.

Cardiac Catheterization Service Area	Shared Fixed Cardiac Catheterization Equipment Need Determination	Certificate of Need Application Due Date**	Certificate of Need Beginning Review Date
Carteret County	1***	TBD	TBD

* Need determinations as shown in this document may be increased or decreased during the year pursuant to Policy GEN-2 (See Chapter 4).

** Application Due Dates are absolute deadlines. The filing deadline is 5:30 p.m. on the Application Due Date. The filing deadline is absolute (See Chapter 3).

*** The projected need for Carteret County was revised as the result of an Adjusted Need Determination Petition.



REASONS FOR THE PROPOSED ADJUSTMENT

Overview

Carteret General Hospital (Carteret General) asks that the *Proposed 2013 State Medical Facilities Plan (SMFP)* be adjusted to include a special need for one shared fixed cardiac catheterization laboratory in the Carteret County service area. This would modify Chapter 9 of the *2013 SMFP*.

Carteret County has a year round population of approximately 68,000 that seasonally increases to approximately 150,000. Carteret General, located in Morehead City, is the sole community hospital in Carteret County. Although heart disease is tied with cancer as its leading cause of death, the county has no cardiac catheterization laboratory.

This request is the result of considerable thought, including trying and considering several other alternatives. Several aspects of Carteret County make this a unique and compelling case. The median age of Carteret County residents is 46+ years, approximately 10 years older than the average population of North Carolina. The median age is increasing, according to the State Demographer. In 10 years, the median age will be 48.4.

Carteret County is two peninsulas, a total of 100 miles long; and residents of some communities Down East are an hour from Carteret General and two and more hours from the nearest cardiac catheterization laboratory in New Bern. In good traffic, the nearest cardiac catheterization laboratory is 42 minutes away from Carteret General, at CarolinaEast Medical Center (CarolinaEast) in New Bern. The Croatan National Forest segregates Carteret from New Bern. CarolinaEast is 35 minutes away from the closest Carteret County community, Newport. By contrast, Newport is 16 minutes from Carteret General. The American Heart Association (AHA) cardiac care standard is 30 minutes door to treatment¹. Most residents of Carteret County are more than 60 minutes from the cardiac catheterization door.

As expected, large numbers of Carteret County residents seek cardiac catheterization procedures. According to the Thomson-Reuters hospital billing database, 830 to 980 inpatient procedures and 850 to 1,200 outpatient cardiac catheterization procedures were referred out of Carteret County in each of the last three years. Please see Attachment A for the data summary. That is more than enough cases to support a full cardiac catheterization laboratory and far more than the 240 annual standard for a shared fixed laboratory. Our request is verbally supported by the two major institutions to which we refer: CarolinaEast and Vidant and by our cardiologists. Please see Attachment B for letters of support.

Carteret General offers tertiary cancer services and is an active participant in the regional cardiac care network. Carteret General is committed to strengthening the cardiac care program.

¹American Heart Association. <http://circ.ahajournals.org/content/110/5/588/F1.expansion.html>

Although Carteret General is active in the American College of Cardiology/EMS sponsored Regional Approach to Cardiovascular Emergencies Cardiac Arrest Resuscitation System (RACE CARS) network, has a cardiac intensive care unit and is served by two groups of cardiologists, including three board-certified invasive cardiologists, we do not offer cardiac catheterization. The hospital offers tPA for heart attacks, but that is not enough for complete standard of care. Around us, comparable hospitals like Onslow Memorial and Lenoir Memorial provide cardiac catheterization services. Carteret General does not yet offer this service. However, we are ready now and the need is there.

Carteret General has an angiography laboratory, and has since 1989. It was replaced in 1996, and is due for another replacement soon; the community would benefit from an investment that serves both cardiac and vascular patients, many of whom have the same chronic disease. Carteret General has a cardiac rehabilitation program. We would like to expand our preventive diagnostic services. Having cardiac catheterization capacity will also help retain the level of high quality physicians who work in concert with the hospital to keep local hearts healthy.

In summary, the proposed solution would bring cardiac catheterization closer to a large and growing population of persons in need of cardiac diagnostic services. It would permit Carteret County to build reasonable capacity in a program that is already committed to and involved in a regional cardiac care network. Carteret General has demonstrated commitment to access, value and quality in all of its services and would extend that commitment to cardiac catheterization.

Quality, Access and Value

Quality

The Centers for Medicare and Medicaid Services (CMS), The American Heart Association, the Agency for Health Care Research and Quality (AHRQ), North Carolina Hospital Quality Center, and Joint Commission have set standards for quality of hospital and cardiac care.

Carteret General will be featured in the U.S News and World Report for our achievement of the American Heart Association Gold Award for Heart Failure. We achieved Silver last year and bronze the year prior. Carteret General focuses on clinical excellence and quality improvement strategies. We have incorporated evidence-based practices into daily protocols, standardized procedures, and use electronic information systems as tools to gather information, provide feedback, and support clinical decisions. We are in the top 10-percent for all core CMS measures. See Attachment C for a list of Carteret General's recent quality recognitions.

AHA quality standard for cardiac care is 30 minutes, door to treatment. Presently, Carteret County residents are restricted to tPA and referral as the treatment options. A cardiac catheterization laboratory in Carteret County would enable a good portion of the 39,000+ at risk residents (age 45+), and more in the tourist season to get appropriate treatment sooner, even before heart attacks occur. Even our part time residents favor the 45+ age group.

Invasive cardiologists who practice in Carteret County are members of a larger group based in New Bern. They have an established mechanism for maintaining volume-based skills. They have participated with Carteret General in developing our cardiac program to meet our own and their quality standards.

Access

Although a need in the *2013 SMFP* does not guarantee Carteret General as the awardee, the hospital has an excellent track record of serving all persons. It is the county hospital. Last year, 4.5 percent of net revenue was charity patients and 15.7 percent was bad debt. Even with health reform, both are growing. Medicaid covers 10 percent of our patients. The hospital charity policy is generous, extending to persons up to 300-percent of the federal poverty level. Hospital patient origin tracks the county's diversity, and the hospital has an aggressive patients' rights policy.

Value

Cost and quality together make up value. In addition to the high quality standards set for every service in the hospital, Carteret General is consistently the low charge provider for comparable services used by county residents. This is intentional. An attentive Board of Trustees works to contain the local cost of health care services. Having cardiac catheterization available in on equipment that will also be used for vascular procedures will provide efficiency and scale that will help sustain lower pricing.

Limitations of the *2013 SMFP* Methodology

The *2013 Proposed SMFP* has two methodologies for calculating cardiac catheterization need. One addresses facilities and their related service areas that have cardiac catheterization equipment. The other addresses counties that have no cardiac catheterization laboratories. The first allocates a cardiac catheterization lab need when the number of diagnostic equivalent procedures in an existing equipment service area divided by the number of laboratories exceeds 1,500. However, the service area for the needed equipment is restricted to the acute care hospital service area where current equipment is located, regardless of where patients of the cardiac catheterization laboratory originate.

The second methodology permits applicants in a service area that has no laboratory to lease a mobile lab and allocates a shared fixed laboratory when the number of mobile procedures reaches 240 in the last reported state planning year.

Neither methodology recognizes the need generated when patients are forced to leave their home county for service because no service is available locally.

Neither Licensure nor Planning Section collects patient origin data for cardiac catheterization. Data are available only from proprietary databases, like Thomson-Reuters. Moreover, the North Carolina Hospital License Renewal Applications, the database for the *SMFP*, lists ICD-9 codes for cardiac catheterization. ICD-9 codes cover only inpatients. Cardiac catheterization has shifted and more than half of the procedures are now done as outpatient services, often with overnight observation care. Outpatient procedures are coded with CPT codes. While patterns in reported data suggest that providers are reporting all procedures, it is unclear if some have excluded outpatient data in licensure reports. CPT code designations also changed in 2011, making it difficult to match year to year data. Nonetheless, Carteret General has matched CPT and ICD codes in Thomson-Reuters data, included in Attachment A.

Statement of Adverse Effects on the Population if the Adjustment is Not Made

If the proposed adjustment is not made, people seeking approximately 1,500 to 1,800 non-EP procedures a year will have no alternative but to travel 45 minutes to two hours to get cardiac catheterization and will likely continue travelling to get all of their cardiac care. Residents will be more likely to delay and defer appointments because of travel difficulties; and the county's cardiac care program will have a very limited scope. Residents of Carteret County will remain geographically isolated and continue to have higher out of pocket costs for travel and transportation.

The 35,700 residents of Carteret County who are over 45 today, and more in future years, will not have a local option. According to the State Demographer, in 2012, Lenoir has approximately 27,000 people over 45. Lenoir County has cardiac catheterization services.

Carteret General will find it difficult to develop its cardiac care program. It will be required to direct most emergency cardiac patients to leave town. This does not make sense in a community the size of Carteret County, with a population of persons over 45 as large as it is. Moreover, it will be difficult for the county to retain cardiologists, when they cannot work to the full scale of their certification and training. These adverse effects are not necessary, given the demonstrated number of procedures originating from the county.

Statement of Alternatives Considered and Found Not Feasible

The *Proposed 2013 SMFP* includes a need for an additional cardiac catheterization laboratory in neighboring Craven, Jones and Pamlico county service area. (*SMFP Table 9Y*) The procedures that generated that need include residents of Carteret County. Carteret General could apply for a CON to respond to that need. However, the *SMFP* would require that it be located in one of those counties and not at Carteret General.

Another alternative is to include Carteret County among the eligible locations for the Craven-Jones-Pamlico laboratory. The 2011 patient origin data for cardiac catheterization support including Carteret County in that service area. CarolinaEast, the only provider in that service area, reported 3,205 weighted cardiac catheterization procedures in 2011. Data from Thomson-Reuters indicates that 542 of those procedures (unweighted) were inpatient residents of Carteret County. Thompson Reuters' data also indicate that inpatients were half of the total. Hence, Carteret County likely represents approximately 34 percent of the CarolinaEast cardiac catheterization procedures ($542 * 2 / 3,205 = 0.34$). That would require us to start with a dedicated cardiac catheterization laboratory.

Another alternative is for Carteret General to lease a mobile cardiac catheterization unit and build volume to 240 catheterizations, and then apply for a shared fixed cardiac catheterization/angiography laboratory. This alternative fits with the *Proposed 2013 SMFP Cardiac Catheterization Methodology 2*. However, it is expensive. Such a lease must support both Carteret General's and the mobile company's overhead and Carteret General would not build local asset value. Moreover, the mobile unit would not give the county full time coverage. Cardiac events do not schedule themselves to fit mobile unit schedules. Our community also tends to perceive mobile facilities as lower quality than fixed resources.

The mobile solution would provide no efficiency in use of existing resources. The mobile would come with its own staff and would not build capacity in the community. The mobile would, in fact, be redundant with equipment already available at Carteret General. Angiography equipment is currently designed to provide both angiography and cardiac catheterization procedures.

With the number of cardiac catheterization procedures provided to Carteret County residents in facilities around the state staying in excess of 1,500 a year, it is very reasonable to assume that a shared fixed laboratory located in Carteret County and operating full time can provide in excess of 240 cardiac catheterization procedures a year on equipment that would be available following a 2013 Certificate of Need application process.

Thus, the better alternative is to permit Carteret General to apply for a shared fixed cardiac catheterization/angiography laboratory in the Carteret County service area in 2013. Carteret General meets the *SMFP* test of a hospital location. This is efficient, cost effective and will let the Carteret County cardiac care system continue to work to expand local capacity within the regional cardiac care delivery system.

EVIDENCE OF NON-DUPLICATION OF SERVICES

Carteret County has no cardiac catheterization capacity. Yet, Carteret County population at risk by age is larger than Lenoir County. In 2012, Carteret County has 35,700 people over age 45; Lenoir County has 27,000. Lenoir County has a cardiac catheterization laboratory and maintains a respectable volume of procedures that would justify a shared fixed laboratory. Carteret County participates actively in a regional cardiac care program and would continue to do so, referring primarily to both CarolinaEast and Vidant Health. The scope of the shared laboratory would not adversely affect growth at either of these institutions.

A shared fixed laboratory closer to a large population at risk may increase the number of persons receiving cardiac catheterization, because the service will be more accessible. According to the Thomson-Reuters' data, 35 percent of Carteret County cardiac catheterizations (296) were done in facilities other than CarolinaEast. The threshold volume of procedures for a shared fixed lab, 240 diagnostic equivalents, is a reasonable way to offer closer services without unnecessarily duplicating capacity. Data in the *SMFP* show that diagnostic equivalent procedures at CarolinaEast increased an average 10 percent a year between 2009 and 2011. In all likelihood, CarolinaEast would soon recover any volume that might stay at Carteret General.

Together with a regional program of support for the service professionals, this would be an ideal solution.

EVIDENCE OF CONSISTENCY WITH NORTH CAROLINA MEDICAL FACILITIES PLAN BASIC GOVERNING PRINCIPLES

Safety and Quality

In a planning context, this request meets the standards of safety and quality. It moves Carteret County closer to the AHA cardiac care standard of 30 minutes door to treatment. It would put cardiac catheterization service at a county hospital that exceeds CMS minimum quality standards for heart care.

Invasive cardiologists on the medical staff whose group also serves CarolinaEast will assure that physicians can maintain volume required to sustain skill levels. Carteret General has demonstrated willingness to partner with top level tertiary providers to maintain technician competency. It is partnered with Wake Forest University Baptist Medical Center for 24/7 tertiary teleconference back up for its stroke program and works with New Hanover based radiation oncologists to sustain competency in its cancer program. Acceptance of this petition could provide Carteret County with a balance of competition and collaboration in cardiac care.

Retaining good physicians in the community is critical to maintaining high quality health care services. Cardiologists expect to work at the level at which they were trained. Carteret County has good cardiologists, and enabling them to perform cardiac catheterization in Carteret County would help us keep them in the county.

Access and Value

See discussion starting on page 4.

A shared fixed cardiac catheterization laboratory in Carteret County would remove a geographic isolation barrier and enable a hospital with an excellent track record of community access to apply for a diagnostic service that has demonstrated demand among residents of the county.

The shared fixed laboratory offers economy of scale that offsets smaller volumes of cardiac catheterization procedures with other vascular procedures. This is an ideal solution for a geographically isolated county that is starting a program.

CONCLUSION

Carteret County has a geographically isolated population that has demonstrated demand for cardiac catheterization services sufficient to support a full cardiac catheterization laboratory. The local health care delivery system is organized to deliver sustainable quality that scores high on national benchmarks and is already associated with physicians who maintain the volume of cardiac catheterization services that are needed to maintain skills that are essential for patient safety. Those physicians support the proposal. A mobile catheterization laboratory is an expensive and unnecessary interim step. A shared fixed cardiac catheterization laboratory in this service area is a conservative and reasonable special need adjustment to the *2013 State Medical Facilities Plan*.

ATTACHMENTS

Reported Cardiac Catheterization Procedures	A
Letters of Support	B
Quality.....	C
County Population by Age.....	D

Prepared with assistance from PDA, Inc., Raleigh, NC

**Cardiac Catheterization Procedures Reported for
Carteret County Residents**

	2009	2010	2011
Inpatient ICD -9	986	947	838
Outpatient CPT	874	1,202	1,070
Total	1,860	2,149	1,908

**Cardiac Catheterization Procedures Reported for Carteret
County Residents - Exclusive of Electrophysiology**

	2009	2010	2011
Inpatient ICD -9	764	792	674
Outpatient CPT	744	1030	907
Total	1,508	1,822	1,581

Note: Data drawn from Thomson-Reuters Market Planner inpatient and ambulatory databases. Outpatient CPT Codes changed in the middle of the state reporting year 2011.

CPT codes were cross-walked to the ICD-9 codes used in the NC Hospital License Renewal form to identify cardiac catheterization procedures.

State Inpatient PivotTable Report - Market Share by Hospital

Database: Inpatient NC (MS-DRG) 10/01/2008 - 09/30/2009

Area Selection: Carteret County

Selected Hospital: Carteret County Gen Hosp

** Procedure count includes all codes submitted on a patient record.

State Data Analyst 2.13

SDAT2013.SQP

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Procedures	HospitalName							
PXCode	Cape Fear Valley Hlth Sys	CarolinaEast Medical Ctr	Carolinas Medical Center	Carteret County Gen Hosp	Duke Health Raleigh Hosp	Duke University Med Ctr	Forsyth Memorial Hospital	Lenoir Memorial Hospital
0050								
0051		1						
0052		1						
0054								
0066		129			2		2	
3596								
3606		15					1	
3607		106			2		1	
3721						4		
3722	1	226	1		2	1	1	
3723		11	1			3		1
3725			1			1		
3726						3		
3727						3		
3734						3		
3771		1		12				
3772		9		40		1		
3774		1						
3775				2				
3776				2				
3777								
3779								
3781				12				
3782		1						
3783		9		40		1		
3785				2				
3787				2				
3794		5						
3799								
9910		9		2		1		
Grand Total	1	524	3	114	6	21	5	1
	1	524	3	114	6	21	5	1
Less EP	1	489	3	0	6	9	5	1

State Inpatient PivotTable Report - Market Share by Hospital

Database: Inpatient NC (MS-DRG) 10/01/2008 - 09/30/2009

Area Selection: Carteret County

Selected Hospital: Carteret County Gen Hosp

** Procedure count includes all codes submitted on a patient record.

State Data Analyst 2.13

SDAT2013.SQP

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Procedures							
PXCode	New Hanover Regional M.C.	Onslow Memorial Hospital	Pitt County Memorial Hosp	Rex Healthcare	UNC Hospitals	WakeMed	Grand Total
0050			2				2
0051			9			4	14
0052							1
0054			1				1
0066	1		35	1	2	8	180
3596			1				1
3606			11		2		29
3607	1		22	1	1	8	142
3721	1				1		6
3722	1		112	3	3	10	361
3723	1		4		1	3	25
3725							2
3726			8			3	14
3727			4		1	2	10
3734			6		1	3	13
3771							13
3772		1	5			1	57
3774			2				3
3775							2
3776						1	3
3777						1	1
3779			1			1	2
3781							12
3782							1
3783		1	5			1	57
3785							2
3787			1				3
3794			8				13
3799						1	1
9910			2		1		15
Grand Total	5	2	239	5	13	47	986
Less EP	5	0	197	5	10	33	764

State Inpatient PivotTable Report - Market Share by Hospital

Database: Inpatient NC (MS-DRG) 10/01/2009 - 09/30/2010

Area Selection: Carteret County

Selected Hospital: Carteret County Gen Hosp

** Procedure count includes all codes submitted on a patient record.

State Data Analyst 2.13

SDAT2013.SQP

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PXCode	HospitalName							
	CarolinaEast Medical Ctr	Carolinas Medical Center	Carteret County Gen Hosp	Duke Raleigh	Duke University Med Ctr	Durham Regional Hospital	New Hanover Regional M.C.	Onslow Memorial Hospital
Procedures	Procedures	Procedures	Procedures	Procedures	Procedures	Procedures	Procedures	Procedures
0050								
0051								
0066	122			1	4	1	3	
3571	1							
3606	12			1	2	1		
3607	104				2		3	
3721					8			
3722	220			1	7	2	6	1
3723	11	1			2		1	
3726	1				2			
3727	1				1			
3734					2			
3772	10		42					
3774	2							
3775	3		2					
3776	2							
3779								
3781			4		1			
3782	1							
3783	10		11					
3787	1		1					
3794	3							
3798	1							
3799					1			
9910	1		1		1		2	
Grand Total	506	1	61	3	33	4	15	1

506 1 61 3 33 4 15 1

Less EP 470 1 0 3 25 4 13 1

State Inpatient PivotTable Report - Market Share by Hospital

Database: Inpatient NC (MS-DRG) 10/01/2009 - 09/30/2010

Area Selection: Carteret County

Selected Hospital: Carteret County Gen Hosp

** Procedure count includes all codes submitted on a patient record.

State Data Analyst 2.13

SDAT2013.SQP

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	Pitt County Memorial Hosp	Rex Healthcare	The NC Baptist Hospitals	UNC Hospitals	WakeMed	Total Procedures	Total % Down
PXCode	Procedures	Procedures	Procedures	Procedures	Procedures		
0050	2					2	0.2%
0051	4	1		1	1	7	0.7%
0066	43		1		10	186	19.6%
3571	4					5	0.5%
3606	14					30	3.2%
3607	25		1		10	146	15.4%
3721	1					9	1.0%
3722	128		3		8	376	39.7%
3723	12				4	31	3.3%
3726	6		1			10	1.1%
3727	1		1	1		5	0.5%
3734	2		1	1		6	0.6%
3772	4					56	5.9%
3774	1					3	0.3%
3775						5	0.5%
3776	2					4	0.4%
3779	2					2	0.2%
3781						5	0.5%
3782	1					2	0.2%
3783	4					25	2.6%
3787	1					3	0.3%
3794	12					15	1.6%
3798						1	0.1%
3799						1	0.1%
9910	5			1	1	12	1.3%
Grand Total	274	1	8	4	34	947	100.0%

274 1 8 4 34 947

Less EP 233 1 5 1 33 792

State Inpatient PivotTable Report - Market Share by Hospital
 Database: Inpatient NC (MS-DRG) 10/01/2010 - 09/30/2011
 Area Selection: Carteret County
 Selected Hospital: Carteret County General Hospital
 ** Procedure count includes all codes submitted on a patient record.

State Data Analyst 2.13
 SDAT2013.SQP
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PXCode	HospitalName							
	CarolinaEast Medical Center	Carteret County General Hospital	Cone Health	Duke Raleigh	Duke University Medical Center	Forsyth Memorial Hospital	New Hanover Regional Medical Center	Pitt County Memorial Hospital
0050								1
0051	2						1	3
0066	124		1		2	1	6	17
3571								3
3596	1				1			
3606	25				1	1	3	6
3607	85		1		1		3	11
3721					6			
3722	242			1	2	1	9	68
3723	13				2		1	6
3726	4				1			11
3727					1			9
3734	6				2			8
3771		4						1
3772	10	26			3		1	6
3774	2							1
3775		2						
3776	1							
3777		1						1
3779	2							2
3781								
3782								1
3783	10	2			2		1	6
3787	1	1						1
3794	3							3
3798	1							1
9910	10						1	7
Grand Total	542	36	2	1	24	3	26	173

Without EP	492	-1	2	1	15	3	23	115
------------	-----	----	---	---	----	---	----	-----

150
 0.75
 112.5
 3205
 655
 20%
 1084
 3205
 34%
 1084

State Inpatient PivotTable Report - Market Share by Hospital
 Database: Inpatient NC (MS-DRG) 10/01/2010 - 09/30/2011
 Area Selection: Carteret County
 Selected Hospital: Carteret County General Hospital
 ** Procedure count includes all codes submitted on a patient record.

State Data Analyst 2.13
 SDAT2013.SQP
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	Rex Healthcare	The North Carolina Baptist Hospital	University of North Carolina Hospitals	WakeMed	Total Procedures	Total % Down
PXCode	Procedures	Procedures	Procedures	Procedures		
0050					1	0.1%
0051					6	0.7%
0066	1	1		2	155	18.5%
3571		1			4	0.5%
3596					2	0.2%
3606					36	4.3%
3607	1	1		2	105	12.5%
3721					6	0.7%
3722	2	2	2	7	336	40.1%
3723			1		23	2.7%
3726					16	1.9%
3727			1		11	1.3%
3734			1		17	2.0%
3771			1		6	0.7%
3772				1	47	5.6%
3774					3	0.4%
3775					2	0.2%
3776					1	0.1%
3777					2	0.2%
3779					4	0.5%
3781			1		1	0.1%
3782					1	0.1%
3783				1	22	2.6%
3787					3	0.4%
3794				1	7	0.8%
3798					2	0.2%
9910			1		19	2.3%
Grand Total	4	5	8	14	838	100.0%
	4	5	8	14	838	
Without EP	4	5	2	11	674	

542 CarolinaEast
 35% not Carolina
 East
 296

Carteret County

Cardiac Cath Procedures

FY 2009 through Q1 FY 2012

Thompson-Reuters Market Expert –NC Ambulatory Surgery Database - includes Hospital Outpatient

CPT Code	CPT	2009	2010	2011 estimate adjusted for code change mid year
33206	Insert heart pm atrial	-	1	-
33207	Insert heart pm ventricular	1	5	3
33208	Insrt heart pm atrial & vent	5	18	16
33212	Insert pulse gen sngl lead	7	5	9
33213	Insert pulse gen dual leads	18	27	17
33214	Upgrade of pacemaker system	-	-	1
33215	Reposition pacing-defib lead	1	1	1
33216	Insert 1 electrode pm-defib	-	-	-
33217	Insert 2 electrode pm-defib	1	-	1
33218	Repair lead pace-defib one	-	1	-
33222	Revise pocket pacemaker	1	-	2
33223	Revise pocket for defib	-	4	2
33233	Removal of pm generator	25	35	27
33234	Removal of pacemaker system	-	-	-
33235	Removal pacemaker electrode	-	1	-
33240	Insrt pulse gen w/singl lead	16	16	18
33241	Remove pulse generator	14	14	16
33244	Remove eltrd transven	2	-	-
92980	Insert intracoronary stent	6	4	-
92981	Insert intracoronary stent	1	1	-
92982	Coronary artery dilation	1	2	10
92984	Coronary artery dilation	-	2	3
92986	Revision of aortic valve	-	-	4
92995	Coronary atherectomy	-	-	1
93501	No Longer Valid - 11 Right heart catheterization	5	1	-
93505	Biopsy of heart lining	9	3	9
93510	No Longer Valid - 11 Left heart catheterization	192	264	196
93526	No Longer Valid - 11 Rt & Lt heart catheters	36	47	64
93527	No Longer Valid - 11 Rt & Lt heart catheters	-	1	-
93531	R & l heart cath congenital	-	2	3
93533	R & l heart cath congenital	1	-	-
93539	No Longer Valid - 11 Injection, cardiac cath	22	51	36

Carteret County

Cardiac Cath Procedures

FY 2009 through Q1 FY 2012

Thompson-Reuters Market Expert –NC Ambulatory Surgery Database - includes Hospital Outpatient

CPT Code	CPT	2009	2010	2011 estimate adjusted for code change mid year
93540	No Longer Valid - 11 Injection, cardiac cath	26	50	44
93541	No Longer Valid - 11 Injection for lung angiogram	-	-	4
93542	No Longer Valid - 11 Injection for heart x-rays	1	-	4
93543	No Longer Valid - 11 Injection for heart x-rays	198	248	216
93544	No Longer Valid - 11 Injection for aortography	21	35	28
93545	No Longer Valid - 11 Inject for coronary x-rays	225	317	264
93566	Inject r ventr/atrial angio	-	-	1
93567	Inject suprvlv aortography	-	-	20
93580	Transcath closure of asd	-	2	-
93620	Electrophysiology evaluation	13	15	19
93621	Electrophysiology evaluation	5	6	13
93623	Stimulation pacing heart	13	10	18
93651	Ablate heart dysrhythm focus	8	13	-
Total		874	1,202	1,070
Total without EP		744	1,030	907

Source:

Thompson Data for Carteret County residents regardless of where they went.

2011 data likely contains 1st Qtr FY 2011 data (Oct-Dec 10) but not data from Jan 1, 2011 on because CPT codes changed in CY 2011.

No longer valid refers to codes that changed in 2011



VIDANT HEALTH™

July 26, 2012

NC Department of Health & Human Services
State Health Coordinating Council
2714 Mail Service Center
Raleigh, NC 27699-2714

To Whom It May Concern:

On behalf of Vidant Medical Center, I would like to express our strong support for Carteret General Hospital's request to modify the Proposed 2013 State Medical Facilities Plan (2013 SMFP) to include a special need for one fixed cardiac catheterization laboratory in Carteret County. This would be a modification to Chapter 9 of the SMFP, specifically addressing the Carteret County service area.

Vidant Medical Center serves as the region's only Level 1 Trauma Center and regional referral center and is committed to working with communities and other providers to ensure that patients and families are able to receive the very best care, closest to home. It is important that those resources needed to deliver on said promise are available, in place, and supported by a skilled team which includes a regional referral center. Vidant Medical Center is also the teaching hospital for the Brody School of Medicine at East Carolina University and our missions although separate are complimentary so that we are able to enhance the quality of life for the communities and citizens we serve. We accomplish this through partnerships like the one we enjoy with Carteret General Hospital.

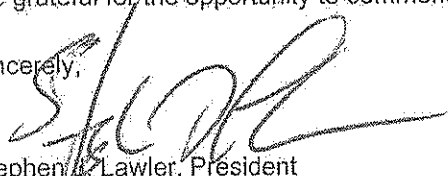
Carteret General Hospital has demonstrated their commitment to serving their community and a commitment to high quality outcomes, superb service and they have enjoyed a strong reputation over the past many years. Carteret County participates actively in a regional cardiac care program and would continue to do so for therapeutic procedures and open heart surgery and they frequently rely on Vidant Medical Center for support.

Additionally, Carteret County is a large county that enjoys a broad geography and it is in the best interest of the people of that area to have high-end diagnostic capability at this hospital, close to home. In this case, there are some communities that are an hour travel to the hospital and two or more hours from the nearest cardiac catheterization laboratory. This proposed solution would bring this important modality closer to a large and growing population of people over 45. It would permit Carteret County to build reasonable capacity in a cardiac program that is already committed to a regional network of care. Finally, this proposal would also compliment successful programs already in place, such as the cardiac rehabilitation program.

Vidant Medical Center
2100 Stantonsburg Road
Greenville, NC 27834-2818
PO Box 6028
Greenville, NC 27835-6028
252.847.4100
VidantHealth.com

We appreciate the opportunity to support Carteret General Hospital, both in words and in actions, and we are grateful for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Lawler', written over the word 'Sincerely,'.

Stephen A. Lawler, President
Vidant Medical Center

cc: CEO, Carteret General Hospital

July 31, 2012

Nadine Pfeiffer, Chief
Planning Section
Division of Facility Services
801 Ruggles Drive
2714 Mail Service Center
Raleigh, North Carolina 27699-2714

RE: Petition for Shared Fixed Cardiac Catheterization Laboratory, Carteret County

Dear Ms. Pfeiffer,

This is to request staff endorsement and State Health Coordinating Council approval of the request from Carteret General Hospital for an amendment to the *2013 Proposed State Medical Facilities Plan* to include a special need for a shared fixed cardiac catheterization laboratory for Carteret County.

I have practiced in Carteret County for 30 years and see an increasing number of patients who need cardiac catheterization procedures to determine the best treatment program for their heart conditions. The hospital confirmed my experience of the high numbers with data from hospital bills. My colleagues and I refer patients to both Vidant and CarolinaEast. My patients travel two to eight hours round trip for these tests, and though both hospitals do their best, we still have breaks in continuity of care and communication. I tend to work more with Vidant, whose leadership has assured me of their support for this request. Though not an invasive cardiologist myself, I would welcome this service in the community for my patients.

Thank you for your time and attention. I would be happy to answer any questions you may have.

Regards,



Chandroth Purushothaman, MD
Cardiologist,
Morehead City, North Carolina

Quality

Carteret General is committed to quality. To put that in perspective, Quality and Safety are strategic board adopted imperatives for our organization. Our culture is focused on safety and excellence. We have demonstrated continued improvements in our quality outcomes over the past five (5) years, achieving the following:

- 1) We began work with Healthcare Performance Improvement in 2008 to improve our culture of safety and reliability. We have demonstrated drastic improvements in our outcomes, going from 34 days between serious safety events in 2008, to 324 days as of today. We have worked with the North Carolina Hospital Association in adapting a Just Culture Philosophy, implementing policies, processes and algorithm that guide our organization with event reviews, ensuring a learning culture and engagement among all levels of the organization including Medical Staff.
- 2) We will be featured in the U.S News and World Report for our achievement of the American Heart Association Gold Award for Heart Failure. We achieved Silver last year and bronze the year prior. Carteret General focuses on clinical excellence and quality improvement strategies. We have incorporated evidence-based practices into daily protocols, standardized procedures, and use electronic information systems as tools to gather information, provide feedback, and support clinical decisions. We are in the top 10-percent for all core measures.
- 3) Carteret General was the only hospital of the 21 hospitals involved in the Catheter Associated Urinary Tract Infection collaborative asked to participate in a film produced by CMS demonstrating our exemplary outcomes.
- 4) Readmissions are a focus today, and we have been involved in a regional collaborative and just entered the NoCVA Collaborative with the NCHA focusing on readmission improvements. Our current rate for Heart Failure-Heart Failure (HF-HF) readmission rate is 8.5-percent. Our regional data demonstrate an average for all hospitals in the collaborative, an average of 11.1-percent for October 2011 through June 2012. For all-cause readmissions, our HF rate is 13.8-percent, with our regional hospitals averaging 21.9 percent, and the national benchmark is 24.7 percent. Quality outcomes and performance is very important to the organization. To ensure we are continuing to focus on our highest readmission population, we implemented a Telehealth program. It began with HF, and is now expanding to include other chronic conditions.
- 5) We have Joint Commission Disease Specific Accreditation for our Joint program, as well as Blue Cross, Blue Distinction for our Joint Program. We also achieved ASMBS Designation in 2008 for our Bariatric Program. We will be surveyed October/November 2012 for Joint Commission Disease Specific Stroke. We participate in the Telestroke program with Wake Forest University Baptist Medical Center. They were chosen due to real time access to Board-certified vascular/neuro physicians 24/7.

- 6) We have demonstrated outcomes better than the national average for a couple of the Hospital Acquired Conditions – Central Line Assoc. Blood Stream Infections/Ventilator Associated Pneumonia outcomes are below national benchmark and 0-percent for VAP for extended period of time.
- 7) We have produced excellence in our outcomes and standards of care, with a focus on cost effective care. We pride ourselves in being one of the lowest cost providers. We have focused on best utilization of resources, with ensuring excellence in care delivery. Our HCAHP scores demonstrate higher averages than the state, nation and region in most indicators.

July 1, 2012
 County Total
 Age Groups -
 Standard

County	Age Groups							Total	Median Age	Over 45
	45-54	55-59	60-64	65-74	75-84	85-99	100+			
Alamance	22,048	10,090	8,783	12,521	7,448	3,445	40	153,498	39.18	64,375
Alexander	5,744	2,610	2,531	3,822	1,852	568	8	37,800	41.84	17,135
Alleghany	1,538	854	870	1,374	787	281	3	10,978	46.56	5,707
Anson	3,886	1,902	1,705	2,282	1,216	553	7	26,738	40.1	11,551
Ashe	4,013	2,164	2,147	3,436	1,801	711	10	27,711	46.18	14,282
Avery	2,656	1,225	1,208	1,900	1,023	416	7	17,830	43.13	8,435
Beaufort	6,588	3,714	3,744	5,781	2,837	975	15	48,211	44.19	23,654
Bertie	3,107	1,641	1,386	1,929	1,256	497	5	20,726	42.72	9,821
Bladen	4,934	2,740	2,519	3,515	1,827	578	9	35,126	41.67	16,122
Brunswick	14,348	8,379	10,499	18,369	6,920	1,955	18	112,210	48.36	60,488
Buncombe	34,461	17,859	16,752	23,044	12,508	6,150	78	247,633	41.13	110,852
Burke	13,646	6,331	6,049	8,854	4,899	1,755	17	90,769	41.94	41,551
Cabarrus	27,219	10,934	9,293	12,705	6,469	2,615	30	183,933	37.29	69,265
Caldwell	12,715	6,033	5,576	8,133	4,164	1,411	10	83,292	42.2	38,042
Camden	1,647	708	555	852	404	144	1	9,837	41.02	4,311
Carteret	10,506	5,648	5,544	8,390	4,142	1,489	9	68,665	46.53	35,728
Caswell	3,791	2,026	1,765	2,440	1,207	457	5	23,727	44.48	11,691
Catawba	23,238	10,646	9,681	13,789	7,058	2,659	24	155,644	40.28	67,095
Chatham	9,551	4,915	4,872	7,369	3,998	1,874	12	65,814	44.65	32,591
Cherokee	3,681	2,173	2,362	4,148	1,997	729	8	27,380	49.04	15,098
Chowan	2,064	1,124	1,095	1,694	985	402	7	14,831	44.71	7,371
Clay	1,367	886	968	1,597	825	321	4	10,550	50.43	5,918
Cleveland	14,568	7,026	6,406	9,139	4,791	1,691	9	98,391	40.96	43,630
Columbus	8,205	4,017	3,742	5,516	2,915	900	10	57,736	40.17	25,305
Craven	12,924	6,623	6,138	9,420	5,419	2,017	17	105,812	36.06	42,558
Cumberland	41,257	18,746	15,416	19,815	10,298	3,220	30	330,958	31.65	108,782
Currituck	4,199	1,818	1,485	2,117	919	311	4	23,637	42.33	10,853
Dare	5,451	2,934	2,630	3,665	1,705	517	3	34,418	44.39	16,905
Davidson	25,444	11,448	10,253	14,876	7,723	2,615	30	164,601	41.14	72,388

Source: NC Office of State Budget and Management

July 1, 2012
 County Total
 Age Groups -
 Standard

Davie	6,504	3,157	2,811	4,225	2,300	924	5	41,843	43,32	19,926
Duplin	8,169	4,086	3,645	5,261	2,923	1,016	9	60,329	38,44	25,109
Durham	33,848	16,161	13,874	16,285	8,250	4,173	54	275,946	33,51	92,645
Edgecombe	8,102	4,332	3,763	4,947	2,655	1,018	12	56,089	40,31	24,829
Forsyth	50,557	23,359	20,414	26,885	15,414	6,564	82	358,101	37,43	143,275
Franklin	9,699	4,539	3,916	5,248	2,541	921	11	63,214	39,98	26,875
Gaston	31,030	14,257	12,676	17,008	9,038	3,281	33	209,411	39,56	87,323
Gates	1,988	894	725	1,159	558	227	2	11,328	42,84	5,553
Graham	1,261	650	656	1,076	593	211	3	9,036	44,34	4,450
Granville	10,003	4,347	3,854	5,001	2,418	875	15	61,427	40,86	26,513
Greene	3,151	1,580	1,259	1,637	907	332	6	21,572	38,5	8,872
Gulford	69,516	31,680	27,661	36,272	19,995	8,903	99	501,003	36,62	194,126
Halifax	8,147	4,140	3,737	5,103	2,963	1,181	17	54,223	42,32	25,288
Harrett	15,526	6,709	5,843	8,109	3,995	1,307	13	121,493	33,71	41,502
Haywood	8,839	4,415	4,574	7,579	4,265	1,608	13	60,152	46,51	31,293
Henderson	14,729	7,737	8,007	13,889	8,384	3,616	33	110,199	45,97	56,395
Hertford	3,565	2,010	1,632	2,245	1,288	531	6	24,610	41,55	11,277
Hoke	6,080	2,720	2,105	2,452	1,141	364	3	50,347	31,55	14,865
Hyde	819	495	417	519	298	117	2	5,815	42,08	2,667
Iredell	25,986	10,574	9,379	13,144	6,802	2,292	20	163,282	39,69	68,197
Jackson	4,817	2,678	2,702	4,185	1,948	649	9	41,496	36,28	16,988
Johnston	25,721	10,458	9,209	12,236	5,438	1,814	18	175,467	37,01	64,894
Jones	1,543	912	740	1,052	612	228	0	10,412	43,97	5,087
Lee	7,968	3,835	3,306	4,785	2,595	1,064	12	58,712	37,52	23,565
Lenoir	8,575	4,556	3,937	5,527	3,265	1,193	12	59,287	41,37	27,065
Lincoln	12,952	5,694	5,167	7,262	3,252	1,047	7	79,726	41,51	35,381
Macon	4,613	2,577	2,905	4,997	2,822	1,017	11	34,990	48,56	18,942
Madison	3,104	1,729	1,635	2,336	1,204	480	8	21,399	44,28	10,496
Martin	3,511	2,089	1,814	2,587	1,453	486	6	23,893	45	11,946
McDowell	6,646	3,338	3,236	4,631	2,438	944	13	45,715	42,48	21,246
Mecklenburg	131,583	53,776	44,196	52,758	25,907	11,625	143	957,938	34,49	319,988
Mitchell	2,252	1,223	1,120	1,934	1,062	408	3	15,492	46,23	8,002

July 1, 2012
 County Total
 Age Groups -
 Standard

Montgomery	3,828	1,994	1,919	2,794	1,371	600	5	28,048	40.81	12,511
Moore	11,883	6,011	6,291	11,076	7,015	3,325	44	90,387	45.43	45,645
Nash	14,447	7,068	6,417	8,342	4,326	1,752	15	96,585	40.45	42,367
New Hanover	27,368	13,548	12,566	17,926	9,164	4,029	44	210,229	37.67	84,645
Northampton	3,212	1,790	1,577	2,570	1,429	589	8	21,864	45.96	11,175
Onslow	17,852	8,169	6,654	9,030	4,667	1,379	16	188,081	26.16	47,767
Orange	18,961	8,977	7,504	8,885	3,996	1,705	19	137,760	33.61	50,047

**Petition for an Adjustment to the Shared Fixed Cardiac Catheterization
Equipment Need Determination for Lee County**

August 2, 2010

DFS Health Planning
RECEIVED

From: Doug Doris, Chief Executive Officer
Central Carolina Hospital
1135 Carthage Street
Sanford, NC 27330

AUG 02 2010

Medical Facilities
PLANNING SECTION

To: State Health Coordinating Council and Medical Facilities Planning Section
Division of Division of Health Service Regulation
2714 Mail Service Center
Raleigh, North Carolina 27699-2714

Re: PETITION: Central Carolina Hospital requests an adjustment in the Shared Fixed Cardiac Catheterization Equipment Need Determination for Lee County as set forth on page 188 in the *Proposed 2011 State Medical Facilities Plan (SMFP)* to identify a need for one unit of shared fixed cardiac catheterization equipment in Lee County.

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

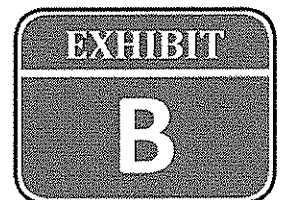
Central Carolina Hospital
1335 Carthage Street
Sanford, NC 27330
Attn: Doug Doris, CEO
(919) 774-2103
doug.doris@tenethealth.com

II. Statement of the Proposed Need Adjustment

Central Carolina Hospital (CCH) requests that the State Health Coordinating Council (SHCC) approve an adjusted need determination for one unit of shared fixed cardiac catheterization equipment in Lee County, and for that need determination for one unit of shared fixed cardiac catheterization equipment to be reflected in the *2011 SMFP*. A table for Shared Fixed Cardiac Catheterization Equipment Need Determination should be included in the Cardiac Catheterization Section as follows.

Table 9xx: Shared Fixed Cardiac Catheterization Equipment Need Determination

Hospital Service System	Shared Fixed Cardiac Catheterization Equipment Need Determination	Certificate of Need Application Due Date	Certificate of Need Beginning of Review Date
Lee	1	February 15, 2011	March 1, 2011



III. Background Information Regarding Petitioner

CCH is a 137-bed acute care community hospital in Sanford, North Carolina. As the only hospital in rural Lee County, CCH is the county's primary provider of inpatient acute care, diagnostic and therapeutic services, and emergency services. CCH has provided diagnostic cardiac catheterization services through a contracted mobile unit since 1993. During that time, CCH has proven that it provides quality heart catheterization services and operates a safe program. CCH works within the guidelines set by The American College of Cardiology Society for Cardiac Angiography and Interventions Clinical Expert Consensus Document on Cardiac Catheterization Laboratory Standards. Following those guidelines, CCH performs careful risk screening and maintains transfer agreements with FirstHealth Moore Regional, UNC Hospitals, and Duke University Hospital for patients who require open heart surgery.

IV. Reasons for the Proposed Adjustment

Cardiac Catheterization Equipment Need Determination Methodology

There are two standard methodologies used to determine need for additional fixed cardiac catheterization equipment and shared fixed cardiac catheterization equipment. Methodology 1 is applicable to service areas that have fixed cardiac catheterization equipment. Methodology 2 is applicable to service areas that do not have fixed cardiac catheterization equipment. Methodology 2 is applicable to Lee County, which has no fixed cardiac catheterization equipment.

Page 188 of the *Proposed 2011 Plan* reads as follows:

Methodology 2:

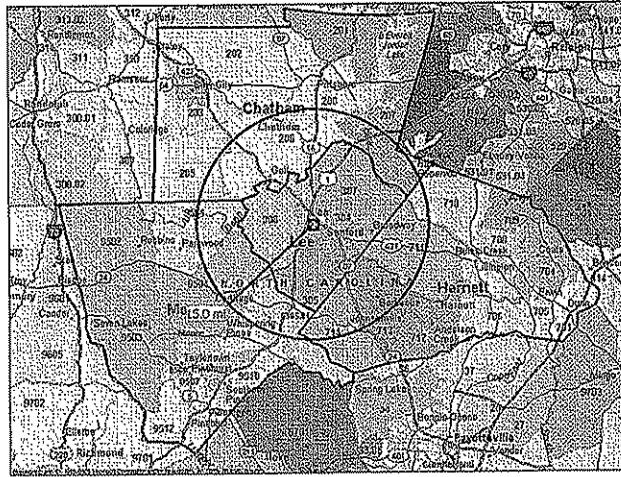
For cardiac catheterization equipment service areas in which a unit of fixed cardiac catheterization equipment is not located, need exists for one shared fixed cardiac catheterization equipment (i.e. fixed equipment that is used to perform both cardiac catheterization procedures and angiography procedures) when:

- a. The number of cardiac catheterization procedures as defined in 10A NCAC 14C .1601(5) performed at any mobile site in the cardiac catheterization equipment service area exceeds 240 (300 procedures X 80 percent) procedures per year for each eight hours per week the mobile equipment is operated at that site during the 12-month period reflected in the 2010 Hospital License Renewal Application or the 2010 Registration and Inventory of Cardiac Catheterization Equipment on file with the North Carolina Division of Health Service Regulation; and
- b. No other fixed or mobile cardiac catheterization service is provided within the same cardiac catheterization equipment service area.

CCH Four-County Service Area for Inpatient Services

CCH has a four-county service area for inpatient services (CCH Service Area), which includes Lee County and parts of Harnett, Chatham, and Moore Counties, as shown in the following map.

Central Carolina Hospital Census Tract Service Area



The population of the CCH Service Area is approaching 90,000 persons. In addition to the census tracts in Lee County, census tracts within a 15 mile radius, located in Chatham, Moore, and Harnett Counties with main highway connectors to Lee County and Sanford, are included in the CCH Service Area as reflected in the following table. Lee County residents represent 80% of all inpatient admissions at CCH.

CCH Service Area Population - Census Tract			
County	Census Tract	2007	2009
Primary Service Area			
Lee	All	56,330	58,574
Secondary Service Area			
Chatham	206	5,081	5,356
Chatham	205	3,852	4,060
Moore	9505.01	6,473	6,680
Harnett	711	14,096	14,967
Total		85,832	89,638

Source: CCH 2010 LRA

Cardiac resources in the CCH Service Area are limited. In surrounding counties, FirstHealth Moore Regional in Pinehurst provides extensive cardiac services, and is one of the referral centers for the CCH Service Area. There are no cardiac catheterization services in Harnett and Chatham Counties. Many of the residents of western Harnett County, southern Chatham County, and eastern Moore County are physically closer to CCH and look to CCH for health care services. Nearly 20% of all admissions at CCH in FY 2009 were from Harnett, Chatham, and Moore Counties. Patient origin for outpatient diagnostic cardiac catheterizations performed on the CCH mobile cardiac catheterization lab in FY 2009 is reflected in the following table.

CCH Outpatient Diagnostic Cardiac Catheterization Patient Origin - 2009	
Lee	76.2%
Harnett	21.3%
Chatham	2.5%

Source: Thomson Reuters NC Hospital Outpatient Database

As shown in the previous table, residents of Lee County represented over 75% of total outpatient diagnostic cardiac catheterizations performed at CCH in 2009. The remaining volume was from Harnett and Chatham Counties.

In 2008, per capita income and median household income for Lee County residents were below the state average.¹ In addition, the unemployment rate in Lee County was greater than the State average. Data released from the North Carolina Employment Security Commission shows Lee County unemployment at 12.3% as of May 2010. The statewide unemployment was 9.9%.

Requiring travel outside the CCH Service Area automatically deters a substantial proportion of the residents from follow up on treatment or diagnostic recommendations. That is true regardless of their insurance status. Those decisions involve more than the cost of care itself. Reasons for deferral involve the perception of distance from home, fear of travel on the interstate and urban beltways, and distance from family and support networks.

Historical Cardiac Catheterization Utilization at Central Carolina Hospital

CCH has four full-time invasive cardiologists on its medical staff, the fourth cardiologist, a physician from Duke, will begin full-time practice at CCH in August 2010. In addition, Duke also intends to rotate three additional cardiologists resulting in the equivalent of another full-time cardiologist to practice at CCH.

CCH provides cardiac catheterization procedures on mobile equipment provided by FirstHealth Moore Regional. CCH is the only cardiac catheterization provider in Lee County. On the two half days per week the mobile unit averages four hours per day.

In FY 2009 (October 2008 – September 2009), CCH provided a total of 122 mobile cardiac catheterization procedures² in the eight hours per week (four hours per day, two days per week) that the mobile cardiac catheterization lab is present at CCH.

Based upon Methodology 2, CCH must provide 240 cardiac catheterization procedures on the mobile equipment to project a need for a shared fixed cardiac catheterization equipment in the *Proposed 2011 SMFP*. CCH had not reached the threshold by September 30, 2009. CCH, however, exceeded that 240 procedure threshold in the twelve month timeframe ending July 2010 and was extremely close to the threshold for the three previous twelve month periods as shown in the following table.

¹ www.census.org; American finder

² Diagnostic cardiac catheterizations as defined by ICD-9 codes 3721, 3722, 3723

Historical Cardiac Catheterization Utilization October 2008 - July 2010											
	10/08 -9/09	11/08 -10/09	12/08 -11/09	1/09 -12/09	2/09 -1/10	3/09 -2/10	4/09 -3/10	5/09 -4/10	6/09 -5/10	7/09 -6/10	8/09 -7/10
Running Twelve Month Total	148	165	177	185	202	211	216	238	238	236	253

Source: CCH Internal Data; Attachment 1

As shown in the previous table, in the twelve month timeframe beginning in May 2009, CCH has nearly exceeded the 240 cardiac catheterization procedures required to determine a need for a shared fixed cardiac catheterization lab in Lee County. CCH exceeded the threshold in the most recent twelve month timeframe, August 2009 through July 2010. Furthermore, available cardiac catheterization hours at CCH from August 2009 through July 2010 were utilized at 84% of capacity³. There is a current immediate need for shared fixed cardiac catheterization equipment in Lee County.

Historical Cardiac Catheterization Growth Rate October 2008 - July 2010											
	10/08 -9/09	11/08 -10/09	12/08 -11/09	1/09 -12/09	2/09 -1/10	3/09 -2/10	4/09 -3/10	5/09 -4/10	6/09 -5/10	7/09 -6/10	8/09 -7/10
Running Twelve Month Total	148	165	177	185	202	211	216	238	238	236	253
Monthly Growth Rate		11.5%	7.3%	4.5%	9.2%	4.5%	2.4%	10.2%	0.0%	-0.8%	7.2%
Average Monthly Growth Rate for Last 10 Months											5.6%

Source: CCH Internal Data; Attachment 1

As shown in the previous table, cardiac catheterizations at CCH increased at an average annual monthly growth rate of 5.6% since October 2008. Assuming the capacity of the mobile cardiac catheterization lab could support additional volume, and that volume grows at the historical monthly growth rate for the next two months, total CCH cardiac catheterization volume in FY 2010 will exceed the 240, as shown in the following table.

Central Carolina Hospital - Monthly Cardiac Catheterization Procedures - Projected September 09-August 10 and October 2009 through September 2010 (FY 2010)			
	8/09 -7/10	9/09 -8/10	10/09 -9/10
Running Twelve Month Total	253	267	282
Average Monthly Growth Rate for Last 10 Months	5.6%		

Source: CCH Internal Data; Attachment 1

As reflected in the previous table, projected cardiac catheterization volume for FY 2010 will exceed the threshold required to identify a need for shared fixed equipment in Lee County. Residents of the CCH Service Area should not have to wait another full year for a need

³ Calculation = 253 procedures / 300 (capacity for 8 hour timeframe as defined on page 188 of the Proposed 2011 SMFP) = 84.3%

determination, and then perhaps another year for the CON process to finalize for shared fixed cardiac catheterization equipment.

The cardiac catheterization service at CCH is not available five days a week. As a result, many CCH patients are referred elsewhere as time is critical for optimal patient care. CCH physicians and the CCH emergency department refer a significant volume of cardiac catheterization patients to Moore Regional Hospital, UNC Hospitals, and Duke University Hospital due to unavailability of mobile service. In FY 2009, 85% of outpatient cardiac catheterizations were completed outside of Lee County. Many of these patients could have been appropriately treated at CCH if fixed cardiac catheterization services had been available. In addition, many patients of CCH in need of a cardiac catheterization procedure at times when the mobile equipment is unavailable refuse to make a trip to Pinehurst, Chapel Hill or Durham despite the exceptional quality available at those hospitals. For patients, travel and cost are significant barriers to care. Shared fixed cardiac catheterization services need to be available to CCH patients on a full-time basis.

Background Information Regarding Cardiovascular Disease

Cardiovascular Disease and Coronary Artery Disease

Cardiovascular disease (CVD), including heart disease and stroke, remains the leading cause of death in Lee County as in the United States despite improvements in prevention, detection, and treatment. ⁴ CVD is no longer thought of as a disease that primarily affects men as they age. It is a killer of people in the prime of life, with more than half of all deaths occurring among women. Coronary artery disease affects more than 70 million Americans (one quarter of our population) with close to one million deaths per year in the United States. Over 6 million hospitalizations each year are due to cardiovascular disease. For every person who dies from a heart attack or angina, 18 people live with these conditions. For every person who dies from a stroke, seven people cope with the consequences of a non-fatal event. Many of these survivors are disabled and cannot lead productive lives. They also are at high risk for additional events. These numbers are increasing as the epidemic of heart disease and stroke continues.

The economic impact of cardiovascular disease on the U.S. health care system continues to grow as the population ages. The cost of heart disease and stroke in the United States is projected to be \$394 billion in 2005, including health care expenditures and lost productivity from death and disability.

Risk factors include advanced age, family history/genetic susceptibility, obesity, smoking, altered lipid metabolism including elevated LDL cholesterol and fatty acids in the blood, chronic diseases such as diabetes, high blood pressure and kidney failure. Current preventative measures include improved diet and nutritional status, exercise, smoking cessation, stress reduction, and medications such as statins, aspirin, and anti-hypertensive agents.

Coronary Angiography

Coronary angiography is currently the standard for diagnosing coronary artery disease and is the primary method used to help delineate coronary anatomy.⁵ In

⁴ Text excerpted from: <http://www.bocaradiology.com/Procedures/cardiac/index.htm>

⁵ Text excerpted from: <http://www.bocaradiology.com/Procedures/cardiac/index.htm>

addition to defining the site, severity, and morphology of lesions, coronary angiography helps provide a qualitative assessment of coronary blood flow and helps identify collateral vessels. Correlation of the coronary angiogram and left ventriculogram findings permits identification of potentially viable areas of the myocardium that may benefit from a revascularization procedure. Left ventricular function can be further evaluated during stress using atrial pacing, dynamic exercise, or pharmacologic agents. Also, valvular function with pressure measurements can be performed to quantify severity of disease.

The procedure involves passing a plastic catheter over a guide wire and selectively injecting x-ray contrast into the aorta (main artery coming out of the heart) and the coronary arteries, which supply oxygen to the heart. The major complication rate of this procedure including stroke, heart attack, infection, arterial injury, and death is approximately 1% at most centers. The radiation exposure for diagnostic imaging alone is approximately 3 to 6 mSv but can go above 30 mSv in prolonged interventional procedures. Relatively large doses of iodinated contrast may be used which can be toxic to the kidneys.

More than 4 million patients per year undergo invasive cardiac catheterization each year in the U.S. with more than 30% of these examinations being normal.⁶ Approximately one million undergo revascularization procedures including stenting and coronary artery bypass grafting.

Health Status and Heart Disease Death Statistics

According to the NC State Center for Health Statistics, CCH Service Area residents have death rates which are much higher than the State average. In 2008, the mortality rate for residents of Lee County was 224.3 deaths per 100,000 compared to the State's rate of 188.8 deaths per 100,000. The following table reflects mortality statistics for heart disease and for all causes for the CCH Service Area.

⁶ Text excerpted from: <http://www.bocaradiology.com/Procedures/cardiac/index.htm>

Mortality Rates			
	Heart Disease - 2004-2008	All Causes -2008	All Causes - Age-Adjusted 2004-2008
Lee	220.8	224.3	219.7
Chatham	223	234.9	180.1
Harnett	183.5	165.1	227.8
Moore	256.7	233.3	156.4
North Carolina	196.8	188.8	202.2

Source: North Carolina State Center for Health Statistics

As reflected in the previous table, Lee County residents have higher death rates than the North Carolina average in all cases. According to the NC State Center for Health Statistics, heart disease was the leading cause of death in Lee County from 2004 to 2008. The following table reflects hospitalization rates by disease categories for the CCH Service Area.

Hospitalization Rates by Disease per 1000 Population By County - 2008			
	Cardiovascular and Circulatory Diseases	Cerebrovascular Disease	Heart Disease
Lee	18.1	3.1	16.3
Chatham	16.3	2.7	11.2
Harnett	18.8	3.2	13.3
Moore	23.4	4.0	16.2
North Carolina	17.6	3.0	11.8

Source: North Carolina State Center for Health Statistics

The hospital admission rate per 1,000 for residents of Lee County admitted with a principal diagnosis of heart disease of 16.3 admissions per 1,000 is well over the North Carolina average of 11.8 admissions per 1,000 as shown in the previous table.

As part of its community mission, CCH must strive to develop its cardiac care program. Its patients need and deserve a more fully developed cardiac care program close to home. Cardiac catheterization is a key element in a cardiac care program because it is the definitive tool for diagnosis and management of coronary artery disease.

Peripheral Vascular Disease

More than 12 million persons in the United States suffer from vascular disease. Approximately one million Americans develop symptoms of peripheral vascular disease (PVD) each year^{7,8}. The most common cause of peripheral artery disease is atherosclerosis, or buildup of plaque in the arterial walls. Many of these cases are complicated by cardiac disease, hypertension, diabetes, lipid disorders or kidney disease. Recent data suggests that peripheral vascular disease continues to be a prevalent yet under-diagnosed and under-treated condition.⁹

⁷ <http://northernkentuckyangiographyforperipheralvasculardisease.com/>

⁸ http://www.stphc.com/peripheral_vascular_angiography.aspx

⁹ Id.

Patients with PVD typically suffer from exercise induced pain the in calf, thigh or buttocks. More advanced cases may present with foot pain at rest, non-healing foot ulcers or wounds or gangrene.

Risk factors for developing PVD are:

- Smoking
- High Blood Pressure
- Diabetes
- High cholesterol
- Obesity
- Sedentary lifestyle
- Family history of vascular disease.

Peripheral vascular disease shares the same risk factors as coronary artery disease and the diseases often occur together.

Peripheral Angiography

A peripheral angiogram^{10, 11} is a test that uses dye and special X-rays to show the inside of arteries that supply blood to a patient's legs. A peripheral angiogram allows the interventional cardiologist to determine if narrowing or blockage exists, the location and to what extent.

Not unlike a coronary angiogram to view the coronary artery anatomy, a peripheral angiogram procedure involves threading a long, thin flexible tube (catheter) into the arteries of the leg. Dye is injected through the catheter and special X-rays are taken while the dye is flowing through the arteries. A patient is awake during the procedure. Mild sedation may be given.

Angiography via an arterial catheter is the gold standard in imaging of the arterial system of the lower limbs. It provides high resolution imaging of the entire lower limb vascular tree and allows percutaneous vascular intervention at the same sitting. Peripheral angiography has had tremendous success returning blood flow to the lower extremities for limb salvage and non-healing wound patients.

Cardiac Catheterization and Peripheral Angiography Utilization Rates

Diagnostic cardiac catheterization statewide has experienced a steady decrease for the past three years. Cardiac catheterization, nevertheless, remains the most effective tool for the diagnosis of coronary artery disease¹². The North Carolina diagnostic cardiac catheterization rate has been trending downwards towards 7.0 per 1,000. Lee County outpatient diagnostic cardiac catheterization rates have been greater than the State average for the last two years, as shown in the following table.

Lee County Residents - Total Outpatient Diagnostic Cardiac Catheterizations Per 1,000 FY 2008 and FY 2009

¹⁰ Id.

¹¹ <http://bjr.birjournals.org/cgi/content/full/74/879/219>

¹² <http://www.bocaradiology.com/Procedures/cardiac/index.htm>

	2008	2009
Outpatient Diagnostic Cardiac Catheterizations per 1000 Population	8.8	10.6

Source: Thomson Reuters Outpatient Database

As shown in the previous table, utilization of outpatient diagnostic cardiac catheterization by Lee County residents in 2009 was considerably greater than the 7.0 diagnostic cardiac catheterization rate per 1,000 population for the State of North Carolina. In addition, the previous table shows that outpatient diagnostic cardiac catheterization by Lee County residents increased from 2008 to 2009. That growth may be a result of the higher incidence of cardiac disease in Lee County, as previously discussed, and the increased utilization of the mobile cardiac catheterization equipment at CCH. Prior to January 2008, CCH had a Duke mobile catheterization unit on site; however, only cardiologists credentialed by Duke could utilize that equipment.

In January 2008, the FirstHealth mobile catheterization unit replaced the Duke equipment allowing all cardiologists credentialed at CCH access to the equipment. As a result, in 2008, CCH performed 9% of all outpatient diagnostic cardiac catheterizations on Lee County residents. CCH market share increased to 17% of all outpatient diagnostic cardiac catheterizations on Lee County residents in 2009 as shown in Attachment 1.

The following table projects future inpatient and outpatient diagnostic cardiac catheterizations at CCH through 2016 based upon current market share.

Projected Diagnostic Cardiac Catheterization Volume Lee, Harnett and Chatham Counties					
	2012	2013	2014	2015	2016
Total Population – Lee, Harnett, Chatham Counties	249,808	255,160	260,496	265,840	271,175
Service Area 2009 Outpatient Diagnostic Cardiac Catheterization Use Rate per 1,000	6.2	6.2	6.2	6.2	6.2
Projected Outpt Dx Cardiac Cath – Lee, Harnett, Chatham Counties	1,545	1,578	1,611	1,644	1,677
CCH 2010 Market Share	17.1%	17.1%	17.1%	17.1%	17.1%
CCH Projected Outpatient Diagnostic Cardiac Catheterization Volume	264	270	276	281	287
CCH Inpatient Diagnostic Cardiac Catheterization Volume - 25% of Total ¹³	88	90	92	94	96
Total Projected CCH Diagnostic Cardiac Catheterization Volume	352	360	368	375	383

Source: Attachment 1

Note: CCH Service Area includes Lee County and parts of Harnett, Chatham, and Moore Counties; census tract cardiac catheterization data was not available for 2012-2016. As a result, CCH used three county population as a proxy.

A shared fixed laboratory means that cardiac catheterization is not the only procedure performed on the equipment. Peripheral angiography procedures represent the majority of other procedures done on shared fixed equipment. For both cardiac catheterization and peripheral angiography services, CCH needs to capture only a very small market share of the projected three county cardiac catheterization volume to be financially successful and to justify performance-wise a full time peripheral angiography service at CCH. The Duke cardiologists

¹³ Based upon historical data; Attachment 1

have expressed interest in providing peripheral angiography services at CCH. Additionally, CCH is involved in ongoing discussions with vascular surgeons capable of performing peripheral angiography services who have expressed interest in CCH.

The same disease/environmental factors that cause vascular disease in the periphery, cause it in the heart. Thus, patients who have vascular disease could be treated in their home service area with a team of competent professionals who would collaborate on their total care. Pharmaceutical regimen, often difficult for such patients, could be coordinated locally. Peripheral angiography would complement the projected cardiac catheterization volume to assure the shared fixed equipment is a cost effective alternative. The following table projects total peripheral angiography procedures for Lee, Harnett and Chatham Counties through 2016.

Projected Peripheral Angiography Volume Lee, Harnett and Chatham Counties					
	2012	2013	2014	2015	2016
Total Population – Lee, Harnett, Chatham Counties	249,808	255,160	260,496	265,840	271,175
Peripheral Angiography Incidence Rate per 1,000 Population ¹⁴	15.6	15.6	15.6	15.6	15.6
Projected Peripheral Angiography – Lee, Harnett, Chatham Counties	3,897	3,980	4,064	4,147	4,230
CCH Projected Market Share	15.0%	15.0%	15.0%	15.0%	15.0%
CCH Projected Peripheral Angiography Volume	585	597	610	622	635

Source: Attachment 1

Note: CCH Service Area includes Lee County and parts of Harnett, Chatham, and Moore Counties; census tract cardiac catheterization data was not available for 2012-2016. As a result, CCH used three county population as a proxy.

As shown in the previous table, there is sufficient volume cardiac catheterization and peripheral angiography equipment in these three counties to support the shared fixed cardiac catheterization equipment at CCH.

The addition of shared fixed cardiac catheterization services will improve access and decrease the time and costs associated with traveling to Pinehurst, Chapel Hill or Durham for those much-needed services.

¹⁴ Incidence rate based upon data included in 2007 Scotland Memorial Petition for Shared Fixed Cardiac Catheterization Equipment, from the Advisory Board

Benefits of Fixed Cardiac Catheterization Equipment at Central Carolina Hospital

Decrease Out-Migration for Cardiac Services and Improve Access to Cardiac Services in the CCH Service Area

Many residents of the CCH Service Area choose stay in Lee County for their health care whenever possible. For its full time services, CCH enjoys 49 percent market share of Lee County residents, even with the significant outmigration for cardiology inpatient care. That reflects both its positive reputation and, **more importantly**, the reliance and dependency the community has on CCH to meet its health care needs.

Most Lee County residents live 35 minutes to an hour away from the nearest fixed cardiac catheterization equipment. The nearest provider is in Pinehurst, approximately 35 minutes from CCH. Providers with fixed equipment in the Raleigh/Durham/Chapel Hill area are as much as an hour away from CCH.

Given the frequency of demand for cardiac procedures - it is unreasonable for residents of the CCH Service Area to travel for that critical diagnostic procedure. For many, the time involved means a delay of hours or more likely, days to get appropriate treatment. Time involved in stabilizing a patient; determining a diagnosis, arranging medical transport, coordinating care teams at the referral hospital adds up to critical time lost for each patient for whom timely cardiac catheterization is the best solution.

Physician Retention

CCH medical staff has over 100 active physicians in 20 specialties. CCH is actively recruiting additional primary care physicians and specialists. Recruiting and retaining qualified medical specialists is one of the most critical and difficult things a rural community hospital must accomplish to maintain its financial viability and to provide needed services to its community.

Having appropriate technology is a major component in successful recruiting efforts. CCH's medical staff includes four experienced full-time invasive cardiologists. All four are Board Certified. Based upon ongoing discussions with Duke, CCH anticipates the addition of an equivalent fifth full-time cardiologist in the next six months. The addition of a new cardiologist at CCH will positively impact the provision of cardiac catheterization insuring that the mobile equipment continues to be utilized over 240 procedures per year, further supporting the need for shared fixed cardiac catheterization equipment at CCH in Lee County.

The health status of the four-county population served by CCH demands that CCH retain qualified cardiology staff. Shared fixed cardiac catheterization equipment is critical to retaining the excellent cardiology staff as documented in the letters of support from CCH physicians in Attachment 2.

V. The Project Would Not Result in an Unnecessary Duplication of Services

As discussed above, CCH refers its cardiac care patients to FirstHealth Moore Regional, UNC Hospitals, and Duke University Hospital. FirstHealth Moore Regional performed over 3,500 diagnostic cardiac catheterizations in 2009. UNC Hospitals and Duke together did more than 5,000 diagnostic cardiac catheterizations.

As shown in the projections set forth above, sufficient volume will be generated in the future at CCH, holding market share constant, based only upon population growth, to assure that the additional number of cardiac catheterizations that will be done at CCH will not make a difference in the viability of the programs at FirstHealth Moore Regional, UNC Hospitals, and Duke. Assuming that CCH increases its market share due to improved diagnostic capacity, CCH's referrals to those specialty centers will likely increase. In fact, FirstHealth, CCH's mobile cardiac catheterization vendor, receives most of CCH's referrals for scheduling overflow and more specialized procedures.

CCH has discussed this Petition with representatives from FirstHealth Moore Regional and Duke.

VI. Statement of the Alternatives Considered

Maintain the Status Quo – Continue Mobile Services

FirstHealth Moore Regional provides CCH with quality equipment for which CCH is appreciative. Mobile service, however, is at best, an interim solution. Mobile service is inefficient, adds overhead, and is always at risk of a truck breakdown and/or damage to the equipment on the road. It can compromise patient privacy during transport to and from the mobile unit.

CCH's patients are treated in a space that is physically outside the hospital. Patients are exposed to the elements while being transported between hospital and mobile unit. The service is not available every day; but patients get sick every day.

Any time that a service nears its capacity, scheduling becomes increasingly difficult. Patients become frustrated and cardiologists become frustrated and the result is more referrals out of system. Patient word of mouth is powerful. The more patients that must be referred to providers outside of the CCH Service Area, the more other patients choose to seek service out of the CCH Service Area. CCH can relieve capacity and scheduling constraints by adding another day. That, however, would result in a vicious cycle - ease scheduling for a period, utilization increases, almost reach the threshold for fixed service, then capacity/scheduling issues once again force referrals to providers out of the Service Area to the frustration of patients and cardiologists. Mobile service does not address accessibility for CCH's proven program.

The successful mobile cardiac catheterization experience at CCH and the demand for the service from cardiologists and primary care physicians demonstrate a need and illustrate that CCH can sustain the volume required by a shared fixed service.

For those reasons and for the reasons stated above, maintaining the status quo is not acceptable.

Performance of CT Angiography

Multi-slice (64) computed tomography is an effective tool for ruling out coronary artery disease. It is good for checking status of CABG repairs. It reduces the need for diagnostic cardiac catheterization by only five percent, and cannot replace cardiac catheterization as the standard for diagnosis. Its primary role is as a substitute for nuclear stress tests. CT Angiography also carries high radiation exposure risks. CCH has a 64-slice CT scanner. The cardiologists at CCH do not perform CT Angiography. As previously stated, CT Angiography is a complement to cardiac catheterization services for the diagnosis of coronary artery disease, not a replacement.

Development of a Shared Fixed Cardiac Catheterization Laboratory

A shared fixed cardiac catheterization lab will make cardiac services available all day, every day at CCH. It will allow CCH patients to remain close to home for crucial, timely cardiac care, possibly preventing disease progression. A shared fixed lab will allow CCH physicians to treat vascular disease throughout a patient's body, rather than limiting it to one part of the body.

V. Statement of the Adverse Effects on the Population

CCH has surpassed the planning threshold set forth in Methodology 2. If this Petition is not approved, and an adjusted need determination for one shared fixed cardiac catheterization equipment not included in the *Final 2011 SMFP*, patients from the CCH Service Area will suffer through additional years of waiting to avail themselves of the advantage of a locally available shared fixed cardiac catheterization service. A full-time shared fixed cardiac catheterization service at CCH will allow treatment of cardiac disease early with good results preventing the disease's progression to a later stage where patients require more drastic intervention.

CCH has demonstrated success with the services it offers. CCH has highly qualified, experienced physicians and staff in place to offer the service. Delaying CCH patients' access to full-time shared fixed cardiac catheterization service denies them access to quality cardiac care that can be provided successfully and more cost-effectively closer to home.

VIII. 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.

Residents of the CCH Service Area are forced to seek care outside of Lee County for most inpatient cardiac services and 85% of outpatient diagnostic cardiac catheterization services. The population of the CCH Service Area is large enough to support shared fixed cardiac catheterization equipment. Approval of this Petition will allow improved access to basic inpatient and outpatient services that should be provided at the local level.

The request in this Petition is not without precedent. In 2007, the SHCC approved two Petitions for Shared Fixed Cardiac Catheterization Equipment at Scotland Memorial Hospital and Halifax Memorial Hospital, respectively.

The cost of providing mobile cardiac catheterization is expensive for both the hospital and its patients. The development of shared fixed cardiac catheterization equipment in Lee County will allow the residents of the CCH Service Area to receive care locally in a lower cost community hospital.

CCH is submitting this Petition in order to expand access to inpatient and outpatient cardiac care, and to provide high quality care in a safe environment.

IX. Conclusion

CCH Service Area residents currently have very limited access to cardiac catheterization services. CCH has a mobile unit on site only two half days per week. At all other times, CCH Service Area residents are forced to leave home and incur added expense and time for cardiac catheterization services. CCH Service Area residents have a higher cardiac death rate and higher inpatient admissions for cardiac services than North Carolina residents as whole. Cardiac catheterization services should be available locally – in Lee County, specifically.

CCH has the cardiologists, physicians, and staff to support a fulltime shared fixed cardiac catheterization service. It has demonstrated that it can sustain the volume of cardiac catheterizations needed to support the service, and that other providers will not be adversely affected by that service. The CCH Service Area has more than enough demand to support a shared fixed cardiac catheterization service. Patients will benefit from the addition of a shared fixed cardiac catheterization laboratory in Lee County in the Final *2011 SMFP*.

Central Carolina Hospital - Monthly Cardiac Catheterization Procedures - October 2008 through July 2010																							
8/08	9/08	10/08	11/08	12/08	1/09	2/09	3/09	4/09	5/09	6/09	7/09	8/09											
3	4	2	3	5	4	1	6	3	0	0	6	6											
1	6	6	2	2	5	8	9	8	8	8	15	19											
4	10	8	5	11	24	14	15	21	5	15	21	22											
Running Twelve Month Total											148	165	177	185	202	211	216	238	238	236	253		
Monthly Growth Rate												11.5%	7.3%	4.5%	9.2%	4.5%	2.4%	10.2%	0.0%	-0.8%	7.2%	5.6%	
Average Monthly Growth Rate for Last 10 Months																							

Source: CCH Internal Data

Note: July total estimated based upon actual utilization through July 23rd

Central Carolina Hospital - Cardiac Catheterization Procedures - Projected September 09, August 10 and October 2009 through September 2010 (FFY 2010)													
8/09	9/09	10/09	11/09	12/09	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	
253	267	282											
Running Twelve Month Total											253	267	282
Average Monthly Growth Rate for Last 10 Months											5.6%		

Source: CCH Internal Data

Note: July total estimated based upon actual utilization through July 23rd

Central Carolina Hospital - Monthly Cardiac Catheterization Procedures - October 2008 through July 2010																									
8/08	9/08	10/08	11/08	12/08	1/09	2/09	3/09	4/09	5/09	6/09	7/09	8/09	9/09	10/09	11/09	12/09	1/10	2/10	3/10	4/10	5/10	6/10	7/10		
3	4	2	2	3	5	4	1	6	3	0	0	6	6	6	3	4	7	8	8	7	5	6	4	7	
1	6	6	2	2	5	8	8	9	8	8	8	15	15	19	12	12	15	12	12	22	22	31	14	18	15
4	10	8	5	11	24	14	14	20	5	5	8	15	21	21	16	22	22	20	29	29	36	20	22	22	22
Running Twelve Month Total											148	165	177	185	202	211	216	238	238	236	253				
Monthly Growth Rate												11.5%	7.3%	4.5%	9.2%	4.5%	2.4%	10.2%	0.0%	-0.8%	7.2%	5.6%			
Average Monthly Growth Rate for Last 10 Months																									
75.0%	40.0%	25.0%	60.0%	45.5%	16.7%	7.1%	30.0%	12.5%	0.0%	0.0%	40.0%	28.6%	13.0%	25.0%	31.8%	40.0%	24.1%	13.9%	30.0%	18.2%	31.8%				

Source: CCH Internal Data

INPATIENT HOSPITAL UTILIZATION AND CHARGES BY PRINCIPAL DIAGNOSIS AND COUNTY OF RESIDENCE, NORTH CAROLINA, 2008 (EXCLUDING NEWBORNS & DISCHARGES FROM OUT OF STATE HOSPITALS)								
CARDIOVASCULAR & CIRCULATORY DISEASES	Cases/County Resident	Rate per 1000 population	Cerebrovascular Disease	Cases/County Resident	Rate per 1000 population	Heart Disease	Cases/County Resident	Rate per 1000 population
MARTIN	1,577	36.2	MARTIN	169	7.1	HALIFAX	1,445	26.2
LENOIR	2,058	55.8	LENOIR	277	6.6	EDGECOMBE	1,241	25.9
anson	1,990	55.5	anson	158	6.2	LENOIR	1,404	24.4
JONES	1,546	33.0	JONES	59	5.7	RICHMOND	1,101	23.5
HALIFAX	765	32.0	EDGECOMBE	274	5.3	NORTHAMPTON	489	23.1
EDGECOMBE	323	31.1	HALIFAX	290	5.3	NASH	1,890	20.1
VANCE	657	31.0	VANCE	209	4.8	MARTIN	478	20.0
RICHMOND	740	29.2	Craven	451	4.6	JONES	203	19.7
Craven	2,638	28.1	RICHMOND	216	4.6	Carteret	1,239	19.5
SCOTLAND	1,034	27.9	HYDE	25	4.5	allegany	212	19.1
HYDE	3,822	27.8	SCOTLAND	165	4.5	SCOTLAND	706	19.0
PAMLICO	1,685	26.5	PAMLICO	57	4.4	ROBESON	2,469	18.9
HERTFORD	1,895	25.8	berke	47	4.3	WASHINGTON	245	28.6
berke	2,051	25.6	HERTFORD	102	4.3	SURRY	1,309	17.8
SURRY	282	25.3	NASH	397	4.2	CALDWELL	1,398	17.5
NASH	2,391	24.5	SURRY	309	4.2	SWAIN	239	17.1
ROBESON	341	24.4	Carteret	260	4.1	SAMPSON	1,105	15.9
STANLY	322	24.1	COLUMBUS	223	4.1	anson	424	16.7
NORTHAMPTON	313	24.3	NORTHAMPTON	86	4.1	WILSON	1,320	16.7
COLUMBUS	1,306	23.9	ROBESON	531	4.1	bladen	539	16.6
Carteret	1,036	23.8	STANLY	247	4.1	LEE	925	16.3
WILKES	1,548	23.7	Alamance	591	4.0	WAYNE	1,891	16.3
WARREN	474	23.6	MOORE	344	4.0	MOORE	1,379	16.2
ROCKINGHAM	2,006	23.5	ROCKINGHAM	368	4.0	PAMLICO	299	16.2
Alamance	752	23.4	WARREN	90	4.0	ROCKINGHAM	1,483	16.2
MOORE	1,850	23.4	WILKES	266	4.0	CHOWAN	237	16.1
YADKIN	2,128	23.2	CHOWAN	27	3.9	Craven	1,562	16.0
CHOWAN	2,675	23.1	YADKIN	148	3.8	berke	319	15.9
STOKES	1,527	22.7	CALDWELL	302	3.8	CLEVELAND	1,551	15.8
CALDWELL	330	22.5	DUPLIN	202	3.8	COLUMBUS	859	15.6
DUPLIN	2,206	22.5	STOKES	176	3.8	beaufort	723	15.5
SAMPSON	853	22.4	allegany	41	3.7	MONTGOMERY	428	15.5
allegany	1,037	22.3	bladen	119	3.7	YADKIN	592	15.5
bladen	836	22.3	SAMPSON	245	3.7	WILKES	1,039	15.4
WILSON	613	22.2	beaufort	168	3.6	MCDOWELL	680	15.3
WASHINGTON	1,253	21.8	CLEVELAND	330	3.6	PERSON	574	15.3
HAYWOOD	3,151	21.6	GASTON	748	3.6	VANCE	657	15.3
GASTON	1,125	21.1	HAYWOOD	205	3.6	DUPLIN	795	14.9
CLEVELAND	632	20.4	WASHINGTON	47	3.6	TRANSYLVANIA	469	14.9
beaufort	900	20.2	WILSON	283	3.6	MITCHELL	232	14.5
FORSYTH	1,798	20.1	CABARRUS	589	3.5	PERQUIMANS	185	14.3
FRANKLIN	1,148	20.1	WILSON	1,204	3.5	ashe	371	14.1
PERSON	260	20.1	FRANKLIN	201	3.5	GRAHAM	114	14.1
WAYNE	1,159	20.1	PERSON	131	3.5	HENDERSON	1,459	14.1
brunswick	2,043	19.9	WAYNE	405	3.5	Alamance	2,049	14.0
CABARRUS	473	19.9	brunswick	351	3.4	JOHNSTON	2,275	14.0
RUTHERFORD	422	19.9	RUTHERFORD	218	3.4	burke	1,243	13.9
SWAIN	523	19.9	SWAIN	46	3.3	GREENE	292	13.8
ROWAN	2,037	19.6	burke	282	3.2	brunswick	1,598	13.6
YANCEY	314	19.6	GREENE	68	3.2	HAYWOOD	772	13.6
MONTGOMERY	2,068	18.9	HARNETT	354	3.2	alexander	494	13.4
PENDER	3,069	18.9	IREDELL	492	3.2	HARNETT	1,454	13.3
PIT	882	18.9	MONTGOMERY	89	3.2	LINCOLN	968	13.0
HARNETT	696	18.8	PENDER	166	3.2	STANLY	771	12.9
IREDELL	3,197	18.8	PIT	501	3.2	GRANVILLE	706	12.6
burke	451	18.7	ROWAN	437	3.2	HERTFORD	299	12.6
GREENE	2,890	18.7	YANCEY	60	3.2	IREDELL	1,926	12.6
RANDOLPH	1,184	18.6	ashe	82	3.1	RUTHERFORD	795	12.6
MITCHELL	1,021	18.2	GUILFORD	1,472	3.1	STOKES	580	12.4
LEE	337	18.1	HENDERSON	825	3.1	YANCEY	223	12.3
GUILFORD	3,666	17.9	LEE	179	3.1	MACON	414	12.1
HENDERSON	1,336	17.9	MITCHELL	50	3.1	PENDER	618	11.9
ashe	923	17.8	RANDOLPH	442	3.1	NORTH CAROLINA	108,494	11.8
NORTH CAROLINA	6,039	17.6	DAVIE	128	3.0	CABARRUS	1,954	11.7
TYRELL	75	17.5	GRANVILLE	171	3.0	TYRELL	50	11.7
DAVIE	2,411	17.4	NORTH CAROLINA	27,965	3.0	DAVIE	477	11.6
GRANVILLE	160,785	17.4	TYRELL	19	3.0	ROWAN	1,602	11.6
TRANSYLVANIA	924	17.2	TRANSYLVANIA	89	2.9	GASTON	2,329	11.4
PERQUIMANS	335	16.8	alexander	102	2.8	NEW HANOVER	2,185	11.4
NEW HANOVER	886	16.7	DAVIDSON	941	2.8	DAVIDSON	1,801	11.3
alexander	569	16.6	NEW HANOVER	539	2.8	POLK	214	11.3
DAVIDSON	3,188	16.6	PERQUIMANS	36	2.8	CATAWBA	1,737	11.2
MACON	2,967	16.5	avery	49	2.7	CHATHAM	879	11.2
MCDOWELL	2,612	16.4	CATAWBA	421	2.7	FORSYTH	3,792	11.0
CATAWBA	2,523	16.3	CHATHAM	162	2.7	RANDOLPH	1,549	11.0
CHATHAM	7,621	16.2	LINCOLN	199	2.7	FRANKLIN	626	10.8
LINCOLN	2,305	16.2	MACON	93	2.7	MADISON	222	10.7
avery	868	15.9	MCDOWELL	119	2.7	PIT	1,657	10.7
UNION	637	15.4	CUMBERLAND	313	2.6	PASQUOTANK	439	10.6
CUMBERLAND	280	15.2	JACKSON	95	2.6	GUILFORD	4,866	10.4
JACKSON	4,828	15.2	JOHNSTON	413	2.6	avery	186	10.1
JOHNSTON	289	15.2	UNION	498	2.6	JACKSON	375	10.1
DURHAM	62	14.9	DURHAM	639	2.5	buncombe	2,261	10.0
ORANGE	810	14.6	ORANGE	327	2.5	CUMBERLAND	3,139	9.9
POLK	541	14.6	buncombe	539	2.4	WATAUGA	443	9.8
PASQUOTANK	3,283	14.4	PASQUOTANK	99	2.4	CHEROKEE	263	9.7
buncombe	3,683	14.1	POLK	46	2.4	DURHAM	2,465	9.5
MADISON	1,798	13.9	CHEROKEE	66	2.2	WARREN	190	9.5
CHEROKEE	365	13.5	MADISON	46	2.2	ORANGE	1,220	9.4
WAKE	605	13.3	GRAHAM	17	2.1	HYDE	50	9.1
GRAHAM	549	12.4	WAKE	1,845	2.1	Hoke	373	8.4
ONSLow	2,267	11.9	MECKLENBURG	1,742	2.0	CLAY	84	8.0
MECKLENBURG	2,068	11.7	ONSLow	852	2.0	ONSLow	1,897	7.9
Hoke	9,803	11.3	CASWELL	43	1.8	CASWELL	180	7.7
GATES	259	11.1	GATES	21	1.8	WAKE	6,525	7.6
CASWELL	113	10.8	Hoke	78	1.8	UNION	1,396	7.3
WATAUGA	9,195	10.5	WATAUGA	78	1.7	CAMDEN	64	6.6
CLAY	95	9.6	CLAY	14	1.3	GATES	78	6.6
DARE	110	9.3	DARE	36	1.1	MECKLENBURG	5,698	6.5
CURRITUCK	239	7.0	CAMDEN	10	1.0	DARE	169	5.0
CAMDEN	135	5.7	CURRITUCK	24	1.0	CURRITUCK	95	4.0

Source: North Carolina State Center for Health Statistics

Attachment 1

County	Hospitalization Rates by Disease per 1000 population			Mortality Rates		
	Cardiovascular and Circulatory Diseases	Cerebrovascular Disease	Heart Disease	All Causes 2008	All Causes - Age Adjusted 2004-2008	Heart Disease 2004-2008
LEE	18.1	3.1	16.3	224.3	219.7	220.8
CHATHAM	16.3	2.7	11.2	234.9	180.1	223
HARNETT	18.8	3.2	13.3	165.1	227.8	183.5
MOORE	23.4	4.0	16.2	233.3	156.4	256.7
NORTH CAROLINA	17.6	3.0	11.8	188.8	202.2	196.8

Source: North Carolina State Center for Health Statistics

HospitalName	2008					2009				
	IP	Market Share	Days	Market Share	LOS	IP	Market Share	Days	Market Share	LOS
Central Carolina Hospital	4,009	47%	16,781	43%	4.2	4,445	49%	17,872	42%	4.0
First Health Moore Rgnl	1,852	22%	7,522	19%	4.1	1,925	21%	7,943	19%	4.1
UNC Hospitals	1,535	18%	8,462	22%	5.5	1,557	17%	9,473	22%	6.1
Cape Fear Valley Hlth Sys	255	3%	1,170	3%	4.6	319	3%	1,626	4%	5.1
Duke University Med Ctr	227	3%	1,401	4%	6.2	287	3%	2,358	6%	8.2
Rex Healthcare	147	2%	761	2%	5.2	135	1%	512	1%	3.8
WakeMed	136	2%	821	2%	6.0	115	1%	887	2%	7.7
WakeMed Cary	105	1%	431	1%	4.1	71	1%	293	1%	4.1
Betsy Johnson Mem Hosp	34	0%	96	0%	2.8	42	0%	135	0%	3.2
Durham Regional Hospital	36	0%	208	1%	5.8	40	0%	156	0%	3.9
Duke Health Raleigh Hosp	34	0%	265	1%	7.8	40	0%	132	0%	3.3
Sandhills Regional M.C.	17	0%	79	0%	4.6	29	0%	134	0%	4.6
Moses H Cone Mem Hospital	27	0%	239	1%	8.9	22	0%	81	0%	3.7
The NC Baptist Hospitals	20	0%	298	1%	14.9	18	0%	184	0%	10.2
New Hanover Regional M.C.	16	0%	82	0%	5.1	13	0%	100	0%	7.7
Pitt County Memorial Hosp	17	0%	244	1%	14.4	10	0%	75	0%	7.5
Highsmith-Rainey Mem Hosp	2	0%	72	0%	36.0	8	0%	355	1%	44.4
Carolinas Medical Center	11	0%	56	0%	5.1	7	0%	58	0%	8.3
Southeastern Reg Med Ctr	4	0%	12	0%	3.0	7	0%	37	0%	5.3
Nash Health Care System		0%		0%		6	0%	52	0%	8.7
Scotland Memorial Hosp		0%		0%		6	0%	11	0%	1.8
High Point Regional Hosp	4	0%	21	0%	5.3	5	0%	17	0%	3.4
NC Specialty Hospital	7	0%	18	0%	2.6	4	0%	6	0%	1.5
Johnston Memorial Hosp	4	0%	26	0%	6.5	4	0%	24	0%	6.0
Forsyth Memorial Hospital	3	0%	16	0%	5.3	4	0%	11	0%	2.8
Mission Hospital	1	0%	4	0%	4.0	4	0%	13	0%	3.3
Frye Regional Med Center	1	0%	14	0%	14.0	4	0%	7	0%	1.8
Chatham Hospital	3	0%	6	0%	2.0	3	0%	7	0%	2.3
Sampson County Mem Hosp		0%		0%		3	0%	5	0%	1.7
Wayne Memorial Hospital	3	0%	7	0%	2.3	2	0%	18	0%	9.0
Catawba Valley Medical	3	0%	24	0%	8.0	2	0%	11	0%	5.5
Craven Regional Med Ctr	1	0%	1	0%	1.0	2	0%	5	0%	2.5
Brunswick Hospital		0%		0%		2	0%	6	0%	3.0
Iredell Memorial Hospital		0%		0%		2	0%	9	0%	4.5
Thomasville Medical Ctr	3	0%	6	0%	2.0	1	0%	9	0%	9.0
Onslow Memorial Hospital	3	0%	8	0%	2.7	1	0%	4	0%	4.0
Alamance Regional Med Ctr	2	0%	15	0%	7.5	1	0%	9	0%	9.0
CMC-Northeast	1	0%	1	0%	1.0	1	0%	2	0%	2.0
Watauga Medical Center	1	0%	2	0%	2.0	1	0%	1	0%	1.0
Carteret County Gen Hosp	1	0%	1	0%	1.0	1	0%	1	0%	1.0
Rowan Regional Med Center	1	0%	1	0%	1.0	1	0%	2	0%	2.0
Northern Hosp-Surry Cnty		0%		0%		1	0%	2	0%	2.0
Granville Medical Center		0%		0%		1	0%	2	0%	2.0
Presbyterian Hospital	5	0%	35	0%	7.0		0%		0%	
Nash Hospitals	4	0%	25	0%	6.3		0%		0%	
Chowan Hospital	2	0%	6	0%	3.0		0%		0%	
Maria Parham Hospital	2	0%	5	0%	2.5		0%		0%	
Annie Penn Hospital	1	0%	3	0%	3.0		0%		0%	
Davis Medical Center	1	0%	3	0%	3.0		0%		0%	
Mercy Hospital	1	0%	1	0%	1.0		0%		0%	
Beaufort County Hospital	1	0%	4	0%	4.0		0%		0%	
Lexington Memorial Hosp	1	0%	2	0%	2.0		0%		0%	
Franklin Regional Med Ctr	1	0%	4	0%	4.0		0%		0%	
	8,545		39,259			9,152		42,645		

Source: Thomson Reuters NC Hospital Database

CCH Outpt Dx CC Mkt Share				
Lee	3721	2	0.3%	
Lee	3722	84	13.5%	
Lee	3723	7	1.1%	14.9%
Harnett	3722	26	4.4%	4.4%
Chatham	3722	3	1.3%	1.3%
		122		

Source: Thomson Reuters NC Hospital Outpatient Database

2009 Outpt Dx CC Patient Origin	
Lee	76.2%
Harnett	21.3%
Chatham	2.5%

Source: Thomson Reuters NC Hospital Outpatient Database

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Lee	58,574	59,375	60,215	61,059	61,904	62,743	63,587	64,429	65,273	66,114	66,955
Harnett	112,864	116,144	119,499	122,814	126,150	129,476	132,807	136,132	139,462	142,792	146,121
Chatham	62,492	63,589	64,763	65,935	67,106	68,277	69,446	70,614	71,780	72,947	74,110
Total	233,930	239,108	244,477	249,808	255,160	260,496	265,840	271,175	276,515	281,853	287,186
Lee,Harnett,Chatham Outpt Dx CC Volume County/Projected Dx CC	1447	1479	1512	1545	1578	1611	1644	1677	1710	1743	1776
Total Service Area Use Rate	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
CCH Mkt Share	8.4%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%	17.1%
CCH Lee,Harnett,Chatham Outpt Dx CC	122	253	259	264	270	276	281	287	293	298	304
CCH Inpt Dx CC - 25%	41	84	86	88	90	92	94	96	98	99	101
Total Projected CCH Dx CC Volume	163	337	345	352	360	368	375	383	390	398	405

Source: Thomson Reuters NC Outpatient Database; NC OSBM, CCH Internal Data

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Lee	58,574	59,375	60,215	61,059	61,904	62,743	63,587	64,429	65,273	66,114	66,955
Harnett	112,864	116,144	119,499	122,814	126,150	129,476	132,807	136,132	139,462	142,792	146,121
Chatham	62,492	63,589	64,763	65,935	67,106	68,277	69,446	70,614	71,780	72,947	74,110
Total	233,930	239,108	244,477	249,808	255,160	260,496	265,840	271,175	276,515	281,853	287,186
Lee,Harnett,Chatham Outpt Dx CC Volume County/Projected Dx CC	3298	3563	3814	3897	3980	4064	4147	4230	4314	4397	4480
Peripheral Vascular Incidence / 1000 Population	14.1	14.9	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
CCH Mkt Share	0.0%	0.0%	0.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
CCH Lee,Harnett,Chatham	0	0	0	585	597	610	622	635	647	660	672

Source: Scotland Memorial 2007 Petition for Shared Fixed Cardiac Cath Equipment; NC OSBM, CCH Internal Data