

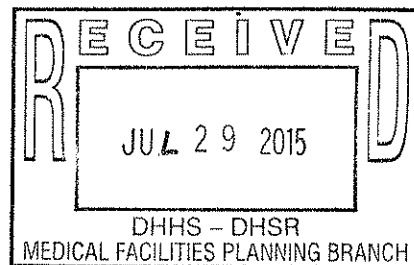
North Carolina State Health Coordinating Council
 c/o Medical Facilities Planning Section
 Division of Health Service Regulation
 2714 Mail Service Center
 Raleigh, NC 27699-2714

Re: Harnett Health Petition for an Adjusted Need Determination for One Fixed/Shared Cardiac Catheterization Equipment in Harnett County in the *Final 2016 SMFP*

I. Petitioner

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II. Requested Adjustment

Harnett Health requests an adjusted need determination for one shared fixed cardiac catheterization equipment allocation in Harnett County in the *Final 2016 State Medical Facilities Plan (Final 2016 SMFP)*.

Chapter 9, Cardiac Catheterization, should be changed as follows:

Table 9Z: Shared Fixed Cardiac Catheterization Equipment Need Determination
(Proposed for Certificate of Need Review Commencing in 2016)

Cardiac Catheterization Service Area	Shared Fixed Cardiac Catheterization Equipment Need Determination*	Certificate of Need Application Due Date**	Certificate of Need Beginning of Review Date
Harnett	1	February 15, 2016	March 1, 2016

*Need determinations 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).

Harnett Health is requesting the CON review for the adjusted need determination in Harnett County be included in the 2016 SMFP as early as possible to allow the development of this needed service as expeditiously as possible.

III. Reasons for Proposed Adjustment

A. Harnett Health System Cardiac Services

Harnett Health has been serving the medical needs of Harnett County and surrounding communities since 1938. Over the years as the population has grown, Harnett Health has grown and now consists of two hospital facilities: Betsy Johnson Memorial Hospital in Dunn is a 101-bed acute care community hospital with a full range of inpatient and outpatient services, birthing rooms, and an emergency department; and Central Harnett Hospital is a new 50-bed acute care community hospital in Lillington with a full range of inpatient, critical care, and outpatient services, and a very busy emergency department. The employees, physicians, and volunteers of Harnett Health work to improve the health of Harnett County communities on a daily basis.

Harnett Health currently provides a wide variety of cardiac programs and the development of cardiac catheterization is a needed and logical next step. Current programs include:

Cardiac Testing – (Cardiopulmonary Services) are provided at three locations in Harnett County.

- Harnett Health Medical Park | 803 Tilghman Drive, Suite 500 | Dunn, NC
- Central Harnett Hospital | 215 Brightwater Drive, Lillington, NC
- Betsy Johnson Hospital | 800 Tilghman Drive, Dunn, NC

Outpatient Cardiac Testing – The following cardiac tests can be performed in Dunn or Lillington at a Harnett Health facility.

- Arterial Doppler Study
- Cardiac Stress Tests
- Cardioversion
- Echocardiography
- Electroencephalogram (EEG)
- Electrocardiogram (EKG)
- Event Monitor
- Holter Monitor
- Ionized Calciums
- Nuclear Stress Test
- Pharmacological Cardiac Stress
- Pulmonary Function Test (PFT)
- Stress Echocardiography
- Tikosyn Administration and Monitoring
- Transesophageal Echo (TEE)

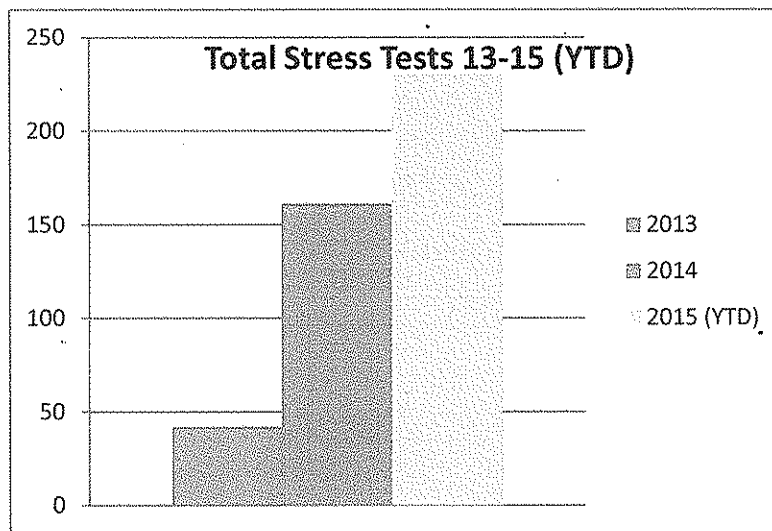
Cardiac Rehabilitation – Cardiac Rehab Services are available at Betsy Johnson Hospital in Dunn. Harnett Health’s Cardiac Rehab program, certified by the AACPR, focuses on helping patients recover from their heart condition and improve their quality of life. The Cardiac Rehabilitation program at Harnett Health includes:

- Telemetry monitored exercise
- Nutrition counseling
- Education
- Stress management.

A dedicated staff consisting of an exercise physiologist, nurses and dietitian all work together under the supervision of the medical director. As needed, vocational rehab counselors are called to help assess certain patient’s needs. Lasting approximately 12 weeks, the program is covered by Medicare, Medicaid and most insurance plans.

Cape Fear Valley Health System began managing Harnett Health in November 2014 and is committed to providing community services in the community. CFVHS expanded the cardiac specialty clinic by extending hours and recruiting cardiologists, including interventional cardiologists, to Dunn. Cardiologists are present at Harnett Health seven days a week. Since October 2014 through May 2015 acute care utilization by cardiac patients at Harnett Health has averaged 88 inpatients per month. From January through May of 2015 Harnett Health has had over 800 inpatient and emergency department cardiology consults. This reflects an average of 162 patients per month.

In addition utilization of outpatient cardiac services also has increased. The following graph illustrates the volume increases in stress tests (inpatient and outpatient) over the last three fiscal years (Oct-Sept).



Year to date stress test volumes from October through April have already exceeded volumes from FFY 2014 by 43%.

In addition, Harnett Health has an active ongoing STEMI protocol with Cape Fear Valley Medical Center and cardiac transfers are the number one reason for transfers from the emergency department. The hospital offers TPA for heart attacks, but that is not enough for complete standard of care. Comparable hospitals in neighboring counties like Johnston Memorial and Central Carolina Hospital provide diagnostic and interventional cardiac catheterization services.

Harnett Health and its cardiologists have demonstrated a successful track record with the cardiac services they offer today including:

- Board-certified cardiologists on the Harnett Health medical staff with expertise in diagnostic and interventional cardiac catheterization procedures, cardiac electrophysiology, cardiovascular disease, and nuclear cardiology;
- Cardiology groups with offices in Harnett County;
- Harnett Health is active in the American College of Cardiology/EMS sponsored Regional Approach to Cardiovascular Emergencies Cardiac Arrest Resuscitation System (RACE CARS) network.
- While Harnett Health currently is not an Accredited Chest Pain Center through the Society of Chest Pain Centers (SCPC), our relationship with CFVHS and CFVHS cardiology/cardiac services will enable Harnett Health to meet these criteria in the future. Currently EMS has a protocol for “acute coronary syndrome patients” (ACS), similar to STEMI so emergency dispatch are included in the Harnett Health ACS clinical pathway. Meeting quality of care measures based on consistently improving the process of care for “acute coronary syndrome patients” starts with the onset of patient symptoms and included emergency dispatch services, emergency medical services catheterization lab, observation unit, cardiac rehabilitation program, and discharge from the facility. In the future the following criteria will be added to the Harnett Health PEER REVIEW/QPI when cardiac catheterization services are added.
 1. Screening of low- to moderate-risk patients with chest pain
 2. Providing rapid evaluation of symptoms and testing to determine whether patients are having a heart attack
 3. Providing coordinated care for chest pain patients
- Partnership with the Cape Fear Valley Health System Cardiologist and Cardiothoracic Surgeons, integrating the cardiac expertise and resources of the tertiary hospital cardiac programs with Harnett Health’s cardiac programs and assuring access to readily available resources for Harnett Health’s cardiac patients when the need arises. Availability of a variety of cardiac imaging studies offered in the Harnett Health radiology department, including nuclear medicine and CT cardiac studies.
- Harnett Health has an ongoing cardiac rehabilitation program. The Harnett Health Cardiac Rehabilitation program is for people with known heart disease who have had a recent event or intervention. The Harnett Health cardiac rehabilitation program

continues to thrive and is staffed by dedicated professionals offering programs in exercise therapy, nutrition education & counseling, psychosocial education & counseling, smoking cessation, and general education about how the heart works and each patient's medications.

- Harnett Health has an active ongoing STEMI protocol with Cape Fear Valley Medical Center.

Harnett Health is on stand-by, 24 hours per day 7 days per week, to meet the cardiac needs of the community—close to home. Cardiac services at Harnett Health cover emergency care, diagnostic examination, treatment, and cardiac rehabilitation, with board-certified cardiologists available 24 hours a day. Harnett Health has teamed up with the area's best heart specialists to offer a powerful combination of leading-edge technology and hometown compassion for comprehensive local cardiology care.

However, cardiac transfers are the number one reason for transfers from the emergency departments. We believe most of these patients should be staying home and not incurring the additional strain and expense of traveling to CFV or Rex or WakeMed for services that could be provided in Harnett County. Cardiologists at Harnett Health need the tools necessary to treat patients in Harnett County.

B. Population Growth of Harnett County

The population of Harnett County is the fourth fastest growing county in North Carolina, and has a population exceeding 127,000 persons. However, there are no fixed or mobile cardiac catheterization services in the county at this time. 100% of patients in need of diagnostic and interventional cardiac catheterization must leave the county for this level of care. This growth is expected to continue. Harnett Health is committed to meeting the healthcare needs of its population.

From 2010 to 2015 Harnett County was the fourth fastest growing county in North Carolina based upon percentage growth as shown in the following table.

Counties with Greatest Population Growth in North Carolina 2010-2015

County	2010	2011	2012	2013	2014	2015	CAGR 2010-2015
Brunswick	108,085	110,276	112,583	115,670	117,852	121,581	2.4%
Mecklenburg	923,417	940,107	962,839	992,527	1,013,290	1,032,636	2.3%
Wake	906,910	924,069	945,522	964,934	985,320	1,005,385	2.1%
Harnett	115,724	118,425	121,287	123,432	125,717	127,965	2.0%

Source: NC Office State Budget and Management

Wake County is located just north of Harnett County and Cumberland County is located just south of Harnett County. Growth from 2010 to 2015 in Harnett County is due to growth in the

Triangle and growth of Fort Bragg in Cumberland and Hoke Counties. This growth is projected to continue with population in Harnett County approaching 140,000 by 2019.

Counties with Greatest Projected Population Growth in North Carolina 2015-2019

County	2015	2016	2017	2018	2019	CAGR 2015-2019
Brunswick	121,581	124,672	127,761	130,853	133,944	2.5%
Hoke	51,577	52,413	53,525	54,870	56,369	2.2%
Cabarrus	196,033	200,873	205,275	209,290	213,147	2.1%
Mecklenburg	1,032,636	1,054,579	1,076,522	1,098,464	1,120,405	2.1%
Union	220,597	225,235	229,876	234,514	239,154	2.0%
Wake	1,005,385	1,025,465	1,045,542	1,065,621	1,085,700	1.9%
Johnston	183,313	186,770	190,382	194,119	197,950	1.9%
Pender	57,705	58,831	59,980	61,116	62,263	1.9%
Durham	297,811	303,422	309,030	314,629	320,224	1.8%
Harnett	127,965	130,209	132,452	134,697	136,942	1.7%

Source: NC Office State Budget and Management

As shown in the previous table, Harnett County and three other counties in the Triangle area of North Carolina, Wake, Durham, and Johnston are among the ten counties projected to grow the fastest in the State between 2015 and 2019. Adding cardiac catheterization capability in Harnett County to meet the need of Harnett County residents will result in available capacity in Durham, Johnston and Wake Counties to meet the needs of their growing population.

In addition, the population growth in Wake and Durham Counties will exacerbate the already lengthy travel time for Harnett County residents, 90% of who currently are not within a thirty minute drive, not accounting for traffic.

Harnett County currently is the 23rd largest county in North Carolina. By 2019 the population will have increased such that Harnett County will be the 22nd largest county in North Carolina. As shown in the following table, all counties larger than Harnett, except Davidson County, have fixed cardiac catheterization services.

**County Historical and Projected Population
with Fixed Cardiac Catheterization Services**

County	Fixed Cardiac Catheterization	2015	2019
Mecklenburg	Yes	1,032,636	1,120,405
Wake	Yes	1,005,385	1,085,700
Guilford	Yes	516,429	531,493
Forsyth	Yes	367,869	383,634
Cumberland	Yes	331,248	338,587
Durham	Yes	297,811	320,224
Buncombe	Yes	254,339	266,613
Union	Yes	220,597	239,154
New Hanover	Yes	220,098	232,684
Gaston	Yes	211,952	217,735
Cabarrus	Yes	196,033	213,147
Onslow	Yes	194,625	200,654
Johnston	Yes	183,313	197,950
Pitt	Yes	175,377	178,860
Iredell	Yes	169,286	177,784
Davidson		164,946	166,862
Alamance	Yes	157,624	165,388
Catawba	Yes	156,186	157,595
Orange	Yes	141,596	148,254
Randolph	Yes	143,666	146,020
Rowan	Yes	138,710	138,710
Harnett		127,965	136,942

Source: NC Office State Budget and Management; 2015 SMFP

Harnett Health is committed to meeting the needs of Harnett County residents in Harnett County when possible and reasonable. During the last five years the SHCC has supported the development of cardiac catheterization programs, including interventional cardiac catheterization, at the community level in large rural communities in Johnston, Carteret and Lee Counties. Harnett County is larger than two of these counties and Harnett Health is comparable to those hospitals. Harnett Health has have a vibrant medical staff and two well equipped and utilized hospitals. We have interventional cardiologists on our medical staff. They still practice at CFVMC in Fayetteville, but they also have an office and see patients in Dunn and are present at Harnett Health daily. All we need are the tools necessary to allow these physicians meet the needs of our residents in Harnett County.

Further, the proposed addition of cardiac catheterization to the Harnett County residents is consistent with other precedents included in the annual SMFP. The Linear Accelerator methodology supports the addition of services to a population base of more than 120,000. March petitions are for statewide changes to policies and/or methodologies.

C. Harnett County Health Status and Heart Disease Death Statistics

According to the Harnett Health Community Needs Assessment heart disease is the number one cause of death in Harnett County with age adjusted mortality rates 15% greater than North Carolina.

In addition to being the 23rd most populous county in North Carolina and the 4th fastest growing county in North Carolina, Harnett County is the 8th youngest North Carolina County with a median age of 34.28 in 2015. **However, the age adjusted death rate for heart disease is among the highest in the state, ranking 33rd of the 100 North Carolina counties.**

Coronary artery disease is the number two cause of death in North Carolina with age adjusted mortality rates slightly less than those for all types of cancer as shown in the following table.

North Carolina Age-adjusted Mortality Rates All Causes 2009-2013

	2009-2013
All Causes	790.9
Heart Disease	170.0
Cancer	173.3
Cerebrovascular	43.7

Source: N.C. State Center for Health Statistics

In addition to being the 25th most populous county in North Carolina and the 4th fastest growing county in North Carolina, Harnett County is the eighth youngest North Carolina County with a median age of 34.28 in 2015. However, the age adjusted death rate for heart disease is among the highest in the state, ranking 33rd of the 100 North Carolina counties. The following tables provide further detail regarding mortality rates for heart disease Harnett County, North Carolina and counties in North Carolina with similar population bases.

**Age-adjusted Mortality Rates for Heart Disease
Harnett vs. North Carolina**

Geographical Area	Diagnostic Cardiac Cath	Interventional Cardiac Cath	Death Rate* 2013	Death Rate* 2009-2013	Age-Adjusted Death Rate* 2009-2013	Population 2015	Percent Under 65 2015	Median Age
North Carolina			180.9	178.9	170	10,054,498	15.0%	38.28
Harnett	N		155.2	158.5	195.5	127,965	11.9%	34.28

Source: N.C. State Center for Health Statistics

**Age-adjusted Mortality Rates for Heart Disease
Harnett vs. Counties with Comparable Population**

Geographical Area	Diagnostic Cardiac Cath	Interventional Cardiac Cath	Death Rate* 2013	Death Rate* 2009-2013	Age-Adjusted Death Rate* 2009-2013	Population 2015	Percent Under 65 2015	Median Age
North Carolina			180.9	178.9	170	10,054,498	15.0%	38.28
Randolph	Y	Y	208.3	197	175.7	143,666	16.3%	40.85
Orange	Y	Y	91.9	100	123.2	141,596	12.2%	34.57
Rowan	Y	Y	229.2	227.4	192.6	138,710	16.2%	39.8
Robeson	Y	Y	224	201.8	219.2	133,247	13.6%	35.63
Harnett	N		155.2	158.5	195.5	127,965	11.9%	34.28
Wayne	Y	Y	187	182.4	174.8	125,924	14.8%	36.91
Brunswick	N		255	236.1	171.2	121,581	27.4%	49.61
Henderson	Y	Y	244.7	258.1	148.6	112,125	25.2%	46.69
Craven	Y	Y	207.7	192.4	164.8	105,040	16.6%	35.98

Source: N.C. State Center for Health Statistics

The eight counties in the previous table have populations that are approximately 20,000 persons more or less than Harnett County. Of these, Harnett County has the youngest population but a higher age-adjusted mortality rate than all but one county. In fact, Harnett has the 7th youngest population in North Carolina but has the 32nd highest age-adjusted mortality rate for heart disease.

In addition, the Harnett County Community Health Needs Assessment identifies heart disease as the leading cause of death in Harnett County and the leading cause of hospitalization for residents of Harnett County. Heart disease accounts for more hospitalizations than any other health condition. Consequently, the hospital charges associated with its treatment are greater than for any other disease, accounting for over \$89,153,744 in hospital charges to Harnett County residents in 2011.¹ Hospital discharge data summarized in the Harnett County CHNC in Table 89 give some indication of heart disease in Harnett County. In Harnett County, hospital discharge rates for heart disease declined 15% between 2005 and 2011. This rate is a positive trend, though slightly below 16% declines for North Carolina.

¹ NC State Center for Health Statistics, County-level Data, County Health Data book (2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; <http://www.schs.state.nc.us/schs/data/databook/CD19%20allhosps.rtf>
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**Harnett County (CHNA Table 89.) Heart Disease Hospital Discharges per 1,000 Population
(2005-2011) Discharges per 1,000 Population**

	2005	2006	2007	2008	2009	2010	2011
Harnett	14.4	14.1	13.9	13.3	13.2	13.0	12.2
NC	13.1	12.7	12.2	11.8	11.4	11.3	10.9

Source: NC State Center for Health Statistics, County-level Data, County Health Data Books (2007-2013), Morbidity, Inpatient Hospital Utilization and Charges by Principal Diagnosis and County of Residence; <http://www.schs.state.nc.us/schs/data/databook/CD19%20allhosps.rtf>

The following table also is from the Harnett County Community Health Needs Assessment, Table 90, and presents heart disease mortality data for the aggregate period 2007-2011, stratified by race and sex. In Harnett County, 930 people died from heart disease for an overall mortality rate of 208.3, a rate that is 16% higher than the rate for NC as a whole.

**Harnett County (CHNA Table 90.) Heart Disease Mortality, By Race and Sex
Five-Year Aggregate Data, 2007-2011 Deaths, Number and Rate/100,000 Population**

	White, non-Hispanic				African-American				Other, non-Hispanic				Hispanic				Total	
	Male		Female		Male		Female		Male		Female		Male		Female		Combined	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Harnett	361	258	353	166.2	106	291.6	92	182	5	N/A	2	N/A	9	N/A	2	N/A	930	208.3
NC	35,128	226.4	32,477	137.5	8,636	271.6	8,329	167.5	577	140	493	100.8	289	54.8	170	37.4	86,099	179.3

Source: NC State Center for Health Statistics, County Health Data Book (2013), Mortality, 2007-2013 2007-2011 Race-Sex-Specific Age-Adjusted Death Rates by County; <http://www.schs.state.nc.us/schs/data/databook/CD21A%20racesexspecificrates.rtf>

Cardiac catheterization volume for residents of Harnett County ranged between 1,786 and 2,212 procedures based upon Truven data for Harnett County for FFY 2013 to FFY 2015 (estimated). This volume includes both diagnostic (67%) and interventional (33%) catheterization. This reflects a diagnostic only cardiac catheterization volume between 1,197 and 1,482 diagnostic procedures for the same timeframe. Based upon a review of other North Carolina diagnostic only cardiac catheterization providers this volume should be sufficient to support fixed/shared cardiac catheterization equipment providing both cardiac catheterization and peripheral angiography procedures and a physician champion is identified for the project.

The Harnett County Health Department and Harnett Health have ongoing communication regarding cooperation and complementary services. John Rouse, Harnett County Health Director has written a letter of support for this Petition which is included as Attachment A.

In the 2013 Harnett County Community Health Needs Assessment, the Community Health Needs Assessment (CHNA) workgroup identified Hypertension and other cardiovascular disease (particularly in black males) as a Predominant Clinical Health Status Concern. While the age-adjusted mortality rate for heart disease in Harnett County has decreased in the last five years and the downward trend is expected to continue; there is still a lot of work to do. As discussed

above, compared to North Carolina, Harnett County has 15.0% higher age-adjusted mortality rates for heart disease.

All of the partners that participated in the CHNA concurred that access to appropriate health services is critical to community health. Nonetheless, there are many reasons why people in Harnett Health's service area may experience access barriers. Some of the significant reasons are believed to include low health literacy, insufficient awareness of available health services, cultural and racial barriers, language barriers, high health care costs and other financial barriers, and an absence of adequate transportation. Not only are these parameters access issues, but they are also contributing causes to poor health status.

We believe the lack of physicians, both primary care providers and cardiologists, in Harnett County is one of several reasons for the higher age-adjusted death rates. While the Health Department has initiated several educational programs and outreach to the at-risk population; assisting the community with access to primary care and specialty care providers is the most significant area of Harnett Health's investment in community health strategies. Harnett Health is working to recruit additional primary care and specialty care physicians to the community. In the last year Harnett Health has recruited additional primary care physicians and cardiologists to address the lack of access to care in our community.

Harnett Health in partnership with CFVHS has established a community cardiology practice to serve the needs of the residents of Harnett County. The community has high levels of CHF, Hypertension, and atherosclerotic cardiovascular disease. The clinic provides direct and consultative services to the inpatients of Harnett Health System, to the patients of the community and as a referral for primary care providers in the community. These physicians now need the tools necessary to provide care to Harnett County residents in Harnett County.

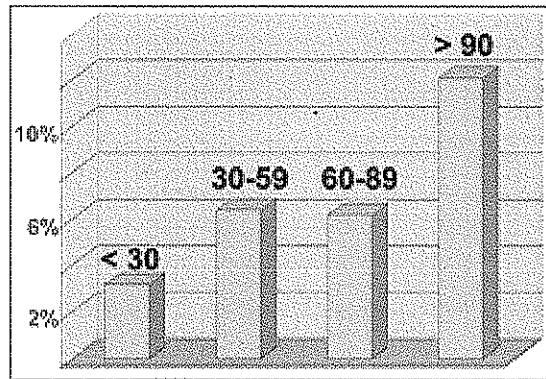
D. Community Based Interventional Cardiac Catheterization Services

Considerable controversy existed in the past over the question of how to treat heart attack patients in hospitals that have catheterization laboratories (where angioplasty and other catheter-based interventions can be performed) but do not have a cardiac surgery capability, used as a back-up where a complication (collapsed or torn coronary artery, etc.) could be surgically repaired. As stenting became more and more widespread, the safety of angioplasty increased. In the late 90's, medical personnel began discussing the feasibility of performing angioplasty on an emergency basis in hospitals without surgical backup (see our Forum topic that started in 1997 to trace this trend). The largest study of its kind on this subject was presented at the 2002 Scientific Sessions of the American Heart Association -- the conclusion: emergency angioplasty in hospitals without surgical backup is safe. Studies, such as the DANAMI-2, have strongly concluded that angioplasty is superior to thrombolytic therapy (by 60%) even if the extra time involved in transferring to an angioplasty-capable center is up to two hours.²

² Angioplasty.org http://ptca.org/ptca_ami.html

Speed to treatment (door-to-balloon-time) is critical, as demonstrated by this graph, based on data from a June 2005 study in the American Journal of Cardiology.

Time to Stenting Mortality Rates



Source: Angioplasty.org

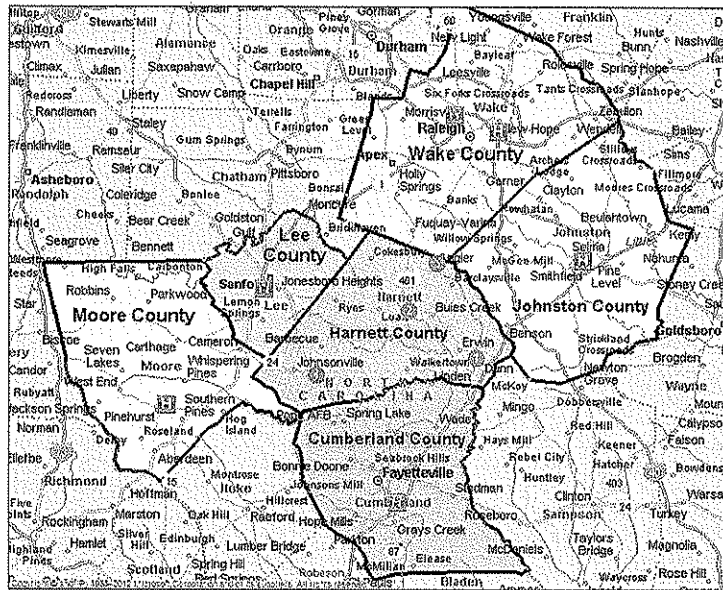
This study confirmed the fact that that longer the delay in treating STEMI (ST elevated myocardial infarction) patients with angioplasty / stenting, the worse the outcome. One-year mortality increased from 3.2% to 12.1% as the time delay due to interhospital transfer increased from less than 30 minutes to greater than 90 minutes. Moral of the story: these times need to be reduced. Patients with treatable MI should try to get to a hospital that can perform angioplasty.¹

Moreover, in those patients treated with reperfusion, fewer than 50% receive treatment with a door-to-needle time within 30 minutes, and only 40% are treated with a door-to-balloon time within 90 minutes³ as recommended by the American College of Cardiology (ACC)/American Heart Association (AHA) guidelines⁴ -- the conclusion: emergency angioplasty in hospitals without surgical backup is safe.

The following map illustrates locations in neighboring counties that have cardiac catheterization services.

³ McNamara RL, Herrin J, Bradley EH, Portnay EL, Curtis JP, Wang Y, Magid DJ, Blaney M, Krumholz HM; NRMIs Investigators. Hospital improvement in time to reperfusion in patients with acute myocardial infarction, 1999 to 2002. *J Am Coll Cardiol.* 2006;47:45–51.

⁴ Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M, Hochman JS, Krumholz HM, Kushner FG, Lamas GA, Mullany CJ, Ornato JP, Pearle DL, Sloan MA, Smith SC Jr, Alpert JS, Anderson JL, Faxon DP, Fuster V, Gibbons RJ, Gregoratos G, Halperin JL, Hiratzka LF, Hunt SA, Jacobs AK; American College of Cardiology; American Heart Association Task Force on Practice Guidelines; Canadian Cardiovascular Society. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction) [published corrections appear in *Circulation.* 2005;111:2013–2014 and 2007;115: e411]. *Circulation.* 2004;110:e82– e292.



Harnett Health mapped four locations in northern, eastern, western and central Harnett County to illustrate the driving time from these locations to Dunn vs. existing options for cardiac catheterization. As shown in the following table, drive times to Dunn are under 30 minutes for all locations except the southwestern corner of the county, which is closer to Cape Fear Valley Medical Center and facilities in Lee and Moore Counties. The Harnett Health Lillington location is within 30 minutes for all residents of Harnett County as shown in the following table.

Harnett County Drive Times to Existing and Proposed Cardiac Catheterization Locations

Harnett County Location	Travel Time to Betsy Johnson	Travel Time to Central Harnett	Travel Time to WakeMed	Travel Time to Rex	Travel Time to Johnston Health	Travel Time to FH Moore Regional	Travel Time to Central Carolina	Travel Time to Cape Fear Valley Medical Center
1 - Dunn	0	18	42	46	32	72	46	34
2 - Lillington	18	0	42	42	43	55	29	35
3 - Angier	24	11	33	33	31	65	37	47
4 - SW Harnett Cty Intersection of NC 24 and NC 87	44	26	65	55	65	33	25	25

Source: Microsoft MapPoint

100% of Harnett County residents must leave Harnett County for cardiac catheterization services. This is no longer acceptable. A cardiac catheterization location in Harnett County at Dunn or Lillington would provide better access to this critical service for residents of Harnett County.

As stenting has become more and more widespread, the safety of angioplasty has increased. In the late 90's, medical personnel began discussing the feasibility of performing angioplasty on an emergency basis in hospitals without surgical backup. The largest study of its kind on this

subject was presented at the 2002 Scientific Sessions of the American Heart Association -- the conclusion: emergency angioplasty in hospitals without surgical backup is safe.

Further, mortality rates increase dramatically if it takes longer than 30 minutes from onset to stenting based on data from a June 2005 study in the American Journal of Cardiology. Harnett County residents currently travel more than 30 minutes for cardiac catheterization. With the population growth in Wake, Durham and Johnston Counties, congestion on highways will increase resulting in increased travel time. Moral of the story: times need to be reduced. Patients with treatable MI should try to get to a hospital that can perform angioplasty and we need to have that ability in Harnett County.

E. Cardiac Catheterization Equipment Need Determination Methodology does not Recognize a Need for Shared Fixed Equipment when a Substantial Number of Patients Out-migrate from County of Residence

The *Proposed 2016 SMFP* contains 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. As a result Methodology 1 is not applicable in Harnett County as there is no existing fixed cardiac catheterization unit in Davidson County today. Methodology 2 is applicable to service areas that do not have fixed cardiac catheterization equipment.

Methodology 2 is applicable in service areas that provide cardiac catheterization via contract for mobile cardiac catheterization services and determines a need in that county for additional shared fixed cardiac catheterization equipment (equipment used to perform both cardiac catheterization and angiography procedures) when the number of mobile cardiac catheterization procedures exceeds 240 in the last reported Federal Fiscal Year.

Neither methodology recognizes the need generated when patients are forced to leave their home county for service because no service or only very limited mobile service is available locally. Harnett County is the 23rd most populous county in North Carolina and the 4th fastest growing county in North Carolina. 100% of Harnett County residents requiring cardiac catheterization procedures left the county during FFY 2014 for that care.

F. Emergency Volumes at Harnett Health’s Emergency Department Supports the Need for Cardiac Catheterization Services in Harnett County

Emergency patients seeking care in Harnett County have increased dramatically since the opening of Central Harnett Hospital; Central Harnett opened in January 2013 from 2012 to 2014 Harnett Health emergency room visits increase 40% exceeding 60,000 visits in FFY 2014. The emergency departments at Central Harnett and Betsy Johnson serve as the first responders for the residents Harnett County and cardiac patients represent the largest volume we must transfer to other facilities. **Every hospital with 50,000 plus emergency visits has a fixed cardiac catheterization service.** As shown in the following table. Harnett Health’s Emergency Department is 24th busiest emergency department in North Carolina.

North Carolina Hospital Emergency Department Utilization FFY 2014

Hospital	ED Visits
Wake Med Raleigh Hospital + North Healthplex (OP) + New Bern Ave (OP)	189,230
Cone Health (Moses Cone Memorial + Wesley Long + Women’s Hospital + MedCenter High Point)	183,754
Carolinas Med Center (Main Location + CMC Randolph)	171,859
CFVMC	131,904
Forsyth – (Winston-Salem + Kernersville + Clemmons)	131,088
New Hanover + NHRMC Orthopedic Hospital	124,455
Vidant Medical Center	115,908
Baptist	104,493
Mission Hospital	99,497
CMC University (University + CMC Huntersville)	96,319
Gaston Memorial	94,125
CMC Pineville (Pineville + Steele Creek)	92,037
CMC NorthEast (NorthEast + Kannapolis)	89,054
Presbyterian Hospital	83,454
Johnston Memorial	74,130
UNC	67,937
CarolinaEast	67,825
CMC Union	67,097
Duke University Medical Center	66,860
Cleveland Regional	66,165
Nash General	63,983
High Point	62,761
Wayne Memorial	62,148
Harnett Health	61,723
Onslow Memorial	60,725
Durham Regional	60,340
Wake Med Cary Hospital (Cary + Apex)	60,015
CMC-Blue Ridge Grace Valdese Campus	59,095
Southeastern	58,517
First Health Moore Regional	58,490
Alamance Regional	57,560
Rex Hospital	55,290
Catawba Valley Regional Medical Center	51,060
Rowan Regional Medical	50,919

Source: Annual 2015 LRA

Of the 23 emergency departments with greater volume, one is in Wake County, four are in Mecklenburg County and two are in Forsyth County. All of the above facilities, except Harnett Health have fixed cardiac catheterization equipment.

Harnett Health has an active ongoing STEMI protocol with Cape Fear Valley Medical Center and cardiac transfers are the number one reason for transfers from the emergency department. The hospital offers TPA for heart attacks, but that is not enough for complete standard of care. Harnett Health is active in the American College of Cardiology/EMS sponsored Regional Approach to Cardiovascular Emergencies Cardiac Arrest Resuscitation System (RACE CARS) network. The logical next step is the addition of cardiac catheterization to meet the needs of the population of Harnett County.

G. Harnett Health Relationship with Campbell University

Harnett Health is working with the new medical school at Campbell University in Harnett County. Campbell University, located in rural Harnett County, enrolls students from all 100 North Carolina counties in undergraduate and graduate level programs, including law, pharmacy, business, education, and divinity. Students come to Campbell from all socioeconomic backgrounds and then often return to work and serve in the communities they call home.

Campbell University began addressing health care issues in 1985 with the establishment of the nationally acclaimed School of Pharmacy, which was the first new pharmacy school founded in the United States in more than 35 years. In addition to offering the Doctor of Pharmacy program, the school offers undergraduate and graduate programs in Clinical Research and Pharmaceutical Sciences. In 2009, the name was formally changed from the School of Pharmacy to the College of Pharmacy & Health Sciences to provide additional health science programs, including the Physician Assistant program (2011), a Master of Public Health degree (2012) Doctor of Physical Therapy degree (2014), and Nursing (2014).

The Jerry M. Wallace School of Osteopathic Medicine was established in 2014 and will make a significant impact on the health and well-being of North Carolinians. Approximately 60% of practicing osteopathic physicians practice in the primary care specialties of family medicine, general internal medicine, pediatrics, and obstetrics and gynecology. Many osteopathic physicians fill a critical need for physicians by practicing in rural and other medically underserved communities. With enrollment at 150 students per year, Campbell will become the second largest medical school in the state.

The first group of medical students will be beginning medical rounds in Harnett Health facilities this year. This includes a Cardiology rotation and an Emergency rotation. Hopefully, the long term impact of Campbell's medical school will be the addition of primary care and specialty care physicians in Harnett County.

H. Harnett County Compared to Other North Carolina Counties

Of nine comparable North Carolina counties with populations similar to ours all but one (Robeson County) have lower age-adjusted cardiac mortality rates and all but one have cardiac catheterization services. Of these, Harnett County has the youngest population but a higher age-adjusted mortality rate than all but one county. Harnett County needs cardiologists and cardiologists need to have the tools to treat patients to change this statistic.

Harnett County is the 23rd largest county in North Carolina with 127,695 residents in 2015 as discussed above. The following tables illustrate the number of counties that have fixed cardiac catheterization equipment or have fixed/shared cardiac catheterization equipment and the population of those counties compared to Harnett County with no fixed or fixed/shared cardiac catheterization equipment.

North Carolina Counties with Population Greater than 120,000 Persons With/Without Fixed or Fixed/Shared Cardiac Catheterization Equipment: 2014-2019

County	Fixed/Shared Cardiac Catheterization	2014	2019
Mecklenburg	Yes	1,010,190	10,458,010
Wake	Yes	984,568	1,119,605
Guilford	Yes	512,764	1,084,006
Forsyth	Yes	362,986	539,511
Cumberland	Yes	334,432	374,129
Durham	Yes	291,278	343,791
Buncombe	Yes	251,940	317,285
New Hanover	Yes	217,696	267,270
Union	Yes	215,316	237,167
Gaston	Yes	210,822	235,084
Onslow	Yes	197,742	218,003
Cabarrus	Yes	189,447	214,484
Johnston	Yes	179,946	204,374
Pitt	Yes	175,358	193,111
Iredell	Yes	166,993	182,325
Davidson	No	164,012	177,062
Catawba	Yes	155,444	165,570
Alamance	Yes	154,166	155,603
Randolph	Yes	142,583	157,005
Orange	Yes	141,381	149,792
Rowan	Yes	139,055	142,657
Robeson	Yes	133,661	141,066
Wayne	Yes	125,620	131,888
Harnett	No	125,572	136,593
Wayne	Yes	125,620	128,069
Brunswick	No	118,640	134,156

Source: SMFP; NC OSBM

As reflected in the previous table, only three counties in North Carolina with a population base of more than 120,000 persons by 2019 do not have fixed or fixed/shared cardiac catheterization services. Those three counties, Brunswick County, Harnett County and Harnett County are located in metropolitan areas. All three counties are located between two major large metropolitan cities/counties: Brunswick is located between Wilmington and Myrtle Beach, SC; Harnett is located between Raleigh-Durham and Fayetteville; and Davidson is located between Winston-Salem and Greensboro. As a result, populations from these counties have migrated to the larger cities areas for specialty healthcare services in past years when county population could not support these medical specialties. The population base of Harnett County now has increased such that cardiology medical specialists can be supported and residents of the county should no longer be expected to travel more than 30 minutes in a crisis to receive cardiac catheterization services.

Eighteen North Carolina counties with fewer residents than Harnett County have fixed shared cardiac catheterization equipment to meet the needs of their population as shown in the following table. Harnett Health is asking for a shared fixed need determination for one cardiac catheterization unit to provide the same level of care to its residents.

**North Carolina Counties with Population Less than 120,000 Persons
With Fixed or Fixed/Shared Cardiac Catheterization Equipment: 2014**

County	Fixed/Shared Cardiac Catheterization	2014
Craven	Yes	104,251
Cleveland	Yes	97,245
Nash	Yes	94,402
Moore	Yes	93,109
Burke	Yes	89,135
Caldwell	Yes	82,354
Wilson	Yes	82,145
Carteret	Yes	70,079
Wilkes	Yes	69,765
Rutherford	Yes	67,568
Stanly	Yes	60,537
Lee	Yes	60,302
Lenoir	Yes	58,999
Halifax	Yes	53,424
Watauga	Yes	52,956
Beaufort	Yes	47,783
Pasquotank	Yes	39,119
Scotland	Yes	36,110

Source: SMFP; NC OSBM

As shown in the previous tables, cardiac catheterization services are available on a fixed or fixed/shared basis in 41 North Carolina Counties, many (20) of which have a population far less than Harnett County. Therefore, it is reasonable to assume that the population of Harnett County could support a fixed or a fixed/shared cardiac catheterization unit.

I. SHCC Precedent

The proposed addition of cardiac catheterization to the Harnett County residents is consistent with other precedents included in the annual SMFP. For example, the Linear Accelerator methodology supports the addition of radiation therapy services to a population base of more than 120,000. Heart disease and cancer are the two leading causes of death in Harnett County. Both of these diseases need to be addressed at the community level. The population of over 127,000 persons in Harnett County can justify both cardiac catheterization services and a cancer center. Currently, Harnett County is the only North Carolina County with more than 125,000 residents without cardiac catheterization.

J. Mobile Cardiac Catheterization Is Not a Solution

Another alternative is for Harnett Health to lease a mobile cardiac catheterization unit and build volume to 240 catheterizations, and then apply for a shared fixed cardiac catheterization/angiography laboratory. However, it is expensive. Such a lease must support both Harnett Health's and the mobile company's overhead and Harnett Health would not build local asset value. Moreover, the mobile unit would not give the county full time coverage.

No one can predict when a heart attack will happen so adding a mobile service is not the answer. If a heart attack happens on Tuesday but the mobile catheterization lab is not there until Thursday, access to care is not improved. In addition, Harnett Health's experience with temporary or part time services has been rarely successful. Dan Weatherly, President of Harnett Health reflects on his experience in his letter of support in Attachment A. Physicians interpret the part time equipment as a lack of commitment on the part of the hospital to a program. As a result, it is difficult to recruit physicians with mobile equipment.

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. With the number of cardiac catheterization procedures provided to Harnett 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 Harnett 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 approve this Petition to allow Harnett Health to apply for a shared fixed cardiac catheterization/angiography laboratory in the Harnett County service area in 2016. This is efficient, cost effective and will let the Harnett County cardiac care system continue to work to expand local capacity within the regional cardiac care delivery system.

There are three mobile cardiac catheterization vendors in North Carolina. All three of these vendors are owned by direct competitors of Harnett Health and a cardiac catheterization service at Harnett Health would impact their utilization.

- 1) DLP Cardiac Partners, LLC
- 2) Duke University Health System
- 3) FirstHealth of the Carolina, Inc.

A cardiac catheterization service in Harnett County would compete directly with all three mobile providers. Harnett Health is asking for an adjusted need determination to pursue fixed/share cardiac catheterization services in Harnett County.

IV. Need for Cardiac Catheterization Services in Harnett County

To calculate future need for cardiac catheterization for a cardiac catheterization unit in Harnett County, Harnett Health utilized the following methodology.

Projected Cardiac Catheterization Procedures = Harnett County Population x Harnett
County Use Rate x Assumed Market Share + In-migration

A. Calculation of Harnett County Cardiac Catheterization Use Rate

Neither Licensure nor Health Planning Section collects patient origin data for cardiac catheterization. Data are available only from proprietary databases, like Truven. 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. CPT code designations also changed in 2011, making it difficult to match year to year data.

Harnett Health utilized Truven inpatient and outpatient data as defined below to determine Harnett County cardiac catheterization utilization. This methodology is the same methodology utilized by Carteret General Hospital in their Petition in 2012. Cardiac catheterization procedures were defined using the Annual Hospital Licensure Renewal Application definitions included on page 7 and include the following ICD-9 Codes:

- Diagnostic Cardiac Catheterization ICD-9 Codes
 - 37.21
 - 37.22
 - 37.23
 - 37.25
- Interventional Cardiac Catheterization ICD-9 Codes
 - 00.66
 - 99.10

- 36.06
- 36.07
- 36.09
- 35.52
- 35.71
- 35.96

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. Harnett Health utilized a bridge methodology to match up outpatient CPT codes and inpatient ICD-9 codes. The following table shows historical cardiac catheterization utilization for residents of Harnett County for 2013, 2014 and the first quarter of 2015.

**Cardiac Catheterization Utilization
Harnett County Residents FFY 2013 – 2015**

Visit Type	2013	2014	2015 Q1
Inpatient	1,084	1,247	301
Outpatient	702	867	252
Total	1,786	2,114	553

Source: Truven Data

Utilizing the Truven data for cardiac catheterization procedures performed in North Carolina on residents of Harnett County and the population data from the North Carolina Office of State Budget and Management, a Harnett County specific cardiac catheterization use rate was calculated for 2013, 2014, and 2015 (estimated).

Harnett County Cardiac Catheterization Use Rate FFY 2013 – 2015

Harnett County	2013	2014	2015 (estimated)
Total Harnett County Cardiac Catheterization Procedures Performed in North Carolina	1,786	2,114	2,212
Population Harnett	123,432	125,717	127,965
Cardiac Catheterization Use Rate per 1,000 Population	14.47	16.82	17.29

Source: NCOSBM; Truven

While some changes to the CON Cardiac Catheterization Regulations at 10 NCAC 14C .1600 have been suggested, no changes have been formally proposed. Therefore, any new provider of fixed or fixed/shared equipment could be limited to providing only diagnostic cardiac catheterization procedures for a period of time. Based upon recent interpretation of the cardiac catheterization rules by Certificate of Need there is the potential for the “open heart” rule to be interpreted differently however no official changes have been made to the rules. However, the CON has worked with community hospitals that meet the Guidelines for Coronary

Artery Interventional Procedures published in ACCF/AHA/SCAI2013 Update of the Clinical Competence Statement on Coronary Artery Interventional Procedures published in JACC Vol 62, No 4, 2013 July 23, 2013, 357-96 (hereinafter "2013 Update") in the last year to provide these services. It will be the goal of Harnett Health, if this Petition is granted to follow the same path.

The following table reflects diagnostic and interventional data for Harnett County residents from FFY 2013 through Q1 of FFY 2015.

Diagnostic vs. Interventional Cardiac Catheterization

Facility	FY 2013		FY 2014		FY 2015 Q1	
	Diagnostic Caths	Interventional Caths	Diagnostic Caths	Interventional Caths	Diagnostic Caths	Interventional Caths
Outpatient	666	36	793	74	218	34
Inpatient	549	535	611	636	150	151
Total	1,215	571	1,404	710	368	185
Percent of Total	68.0%	32.0%	66.4%	33.6%	66.5%	33.5%

Source: Truven

In 2013 32% of all cardiac catheterization cases reported for Harnett Health residents were for interventional cardiac catheterization procedures. This has increased to 33.5% in 2015.

Cardiac catheterization volume for residents of Harnett County ranged between 1,786 and 2,212 procedures based upon Truven data for Harnett County for FFY 2013 to FFY 2015 (estimated). This volume includes both diagnostic (67%) and interventional (33%) catheterization. This reflects a diagnostic only cardiac catheterization volume between 1,215 and 1,472 diagnostic procedures for the same timeframe. Based upon a review of other North Carolina diagnostic only cardiac catheterization providers this volume should be sufficient to support fixed/shared cardiac catheterization equipment providing both cardiac catheterization and peripheral angiography procedures and a physician champion is identified for the project.

B. Determination of need for cardiac catheterization equipment in Harnett County

Using the Harnett County cardiac catheterization use rate, the diagnostic/interventional split, future utilization of cardiac catheterization services by residents of Harnett County can be estimated. The following tables show projected procedures and cases using the Harnett County procedure cardiac catheterization use rate and diagnostic/interventional split and the North Carolina State case cardiac catheterization use rate.

**Projected Cardiac Catheterization Volume Remaining in Harnett County
Harnett County Truven Use Rates**

Harnett	2013	2014	2015	2016	2017	2018	2019
Population Harnett	123,432	125,717	127,965	130,209	132,452	134,697	136,942
Use Rate - Harnett County 3 Yr Avg	14.47	16.82	17.29	16.19	16.19	16.19	16.19
Projected Catheterization Procedures		2,115	2,213	2,109	2,145	2,181	2,218
Percent Diagnostic 3 Yr Avg		67.0%	67.0%	67.0%	67.0%	67.0%	67.0%
Projected Diagnostic Catheterizations		1,417	1,482	1,413	1,437	1,461	1,486
Estimated Market Share	50%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Estimated Harnett Residents Diagnostic Only Volume Remaining in Harnett County		708	741	706	719	731	743
In-Migration	20%	177	185	177	180	183	186
Total Diagnostic Only Cardiac Catheterization Volume at Harnett Health		885	926	883	898	913	929

Source: NCOSBM; Truven data

Note: CON performance standard for fixed/shared cardiac catheterization equipment is 225 cardiac catheterization and angiography procedures during the fourth quarter of the third year

The Harnett County and State use rates and the state diagnostic percentage of total cardiac catheterization cases were utilized to calculate future diagnostic cardiac catheterization volume for Harnett County. Projected utilization for a potential cardiac catheterization unit in Harnett County is estimated to be from 929 procedures per year in 2019 assuming a 50% market share and 20% in-migration. These are reasonable assumptions as discussed below.

K. Harnett County Cardiac Catheterization Market Share

100% of Harnett County residents must travel outside of Harnett County for cardiac catheterization services and travel time for 90% of these exceeds 30 minutes as previously discussed.

Harnett Health is the only inpatient provider in Harnett County and does not provide any cardiac catheterization services. As a result, 100% of patients in need of cardiac catheterization are referred out of the county. Truven cardiac catheterization data for patients originating in Harnett County was reviewed to determine where Harnett County residents received cardiac catheterization services in FFY 2013, FFY 2014 and year to date in FFY 2015. The following table reflects this data.

Harnett County Residents Cardiac Catheterization Market Share

Facility	FY 2013	FY 2014	FY 2015 Q1
WakeMed	40.0%	41.3%	36.9%
First Health Moore Regional Hospital	14.8%	13.6%	19.0%
Cape Fear Valley Health System	16.4%	15.6%	18.8%
Rex Healthcare	12.0%	16.2%	12.7%
University of North Carolina Hospitals	5.9%	4.9%	3.8%
Central Carolina Hospital	3.0%	2.1%	2.4%
Duke University Medical Center	4.0%	3.6%	2.4%
Johnston Medical Center-Smithfield	1.6%	0.5%	1.8%
WakeMed Cary	1.1%	1.0%	0.7%
Duke Raleigh	0.6%	0.2%	0.5%
All Other	0.5%	0.9%	1.1%
Total	100%	100%	100%

Source: Truven

According to Truven data, 2,214 cardiac catheterization procedures were performed on Harnett County residents in FFY 2014, and 2015 annualized based upon Q1 data results in an estimated 2,212 cardiac catheterization procedures performed on Harnett County residents in FFY 2015. Based upon this data Cape Fear Valley performed 15.8% of total cardiac catheterization procedures done for Harnett County patients in FFY 2014 and to date in FFY 2015 CFVMC has performed nearly 19% of all cardiac catheterizations for Harnett County residents.

WakeMed has the greatest market share with 41% of total procedures in FFY 2014 but this has decreased to 37% in the first quarter of FFY 2015. This shift may be a result of the change in management to CFVHS and the efforts made by CFVHS to improve access to cardiac care in Harnett County. FirstHealth Moore provided 14% of catheterizations in FFY 2014 which has increased to 19% in the first quarter of 2015. UNC Healthcare's combined total (UNC and Rex) is slightly greater than Cape Fear Valley's market share with a combined 21.1% of the market in 2014. However, this has decreased to 16.5% in the first quarter of 2015. The above data does indicate a split within the county, with the largest portion of patients travelling north to Wake County. However, nearly 40% of the population travels to Cumberland and Moore Counties for cardiac catheterization services.

For the purposes of its projected utilization Harnett Health assumes a 50% market share. This assumption is based upon the fact that a cardiac catheterization unit in Harnett County would be closer than existing providers for 90% of the population and Harnett Health's historical market share of emergency department services for Harnett County. The following table reflects Harnett Health's market share of emergency services for 2013 and 2014 for Harnett and surrounding counties.

**Harnett Health Emergency Department Market Share
Harnett and Surrounding Counties**

County	2013	2014
Harnett	75.5%	78.9%
Sampson	9.0%	8.9%
Johnston	5.5%	5.6%
Cumberland	4.5%	5.2%
Moore	1.6%	1.6%
Wake	0.8%	1.3%
Bladen	0.2%	0.2%
Hoke	0.4%	0.2%
Robeson	0.1%	0.1%
Scotland	0.1%	0.1%

Source: 2014, 2015 LRAs

As shown in the previous table, Harnett Health provides emergency services to nearly 80% of all Harnett County residents seeking emergency care. As previously discussed, mortality rates increase dramatically if it takes longer than 30 minutes from onset to stenting based on data from a June 2005 study in the American Journal of Cardiology. From January through May of 2014 Harnett Health has had over 800 inpatient and emergency department cardiology consults. This reflects an average of 162 patients per month.

Harnett County residents currently must travel more than 30 minutes for cardiac catheterization. Therefore it is reasonable to assume that 50% or more, will remain in Harnett County for cardiac catheterization services when they are available in the county.

L. Harnett County In-Migration

Due to the location of Betsy Johnson in eastern Harnett County and Central Harnett Hospital in Lillington, in-migration to Harnett Health from surrounding counties is well over 30% for most services. The following table illustrates in-migration for emergency services, MRI, which is predominantly and outpatient service and inpatient acute services.

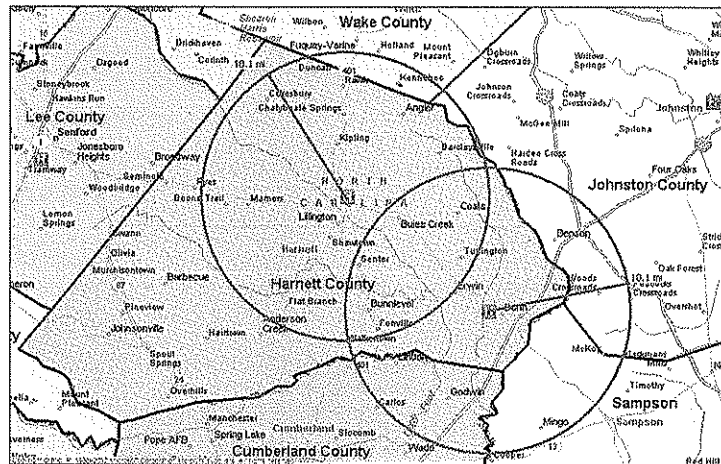
Harnett Health In-Migration Rates

	Harnett County	Total	All Other Counties	In-migration
Emergency Department	41,545	61,723	20,178	32.70%
Outpatient MRI	1,842	2,611	769	29.50%
Inpatient Acute	3,903	6,773	2,870	42.40%
Average In-Migration				34.9%

Source: 2015 LRA

The following map illustrates the overlap between counties for the two hospital locations in Harnett County.

Harnett Health Acute Care Facilities 10 Mile Radius



As illustrated in the above map, Betsy Johnson Hospital, in Dunn is very close to residents in parts of Cumberland, Sampson, and Johnston Counties. The above map illustrates a 10 mile radius from the hospitals and provides a visual explanation for the significant 30% in-migration for services at Harnett Health.

In addition, Harnett Health market share of other counties, discussed in the previous section, represented nearly 17,000 emergency patient visits in 2013 and over 20,000 patient emergency visits provided to residents of other counties. For purposes of the cardiac catheterization projections in this Petition, Harnett Health assumed a very conservative 20% in-migration rate; less than 200 patients per year, as reflected in the above projections.

IV. Peripheral Vascular Disease

Peripheral vascular disease (PVD) refers to diseases of blood vessels outside the heart and brain. It's often a narrowing of vessels that carry blood to the legs, arms, stomach or kidneys. Peripheral artery disease (PAD) is a type of organic PVD. It's caused by fatty buildups (atherosclerosis) in the inner walls of arteries. These deposits block normal blood flow⁵.

Approximately 8 million persons in the United States suffer from peripheral artery disease (PAD)⁶. New data on the epidemiology of peripheral artery disease published in *Circulation*, the journal of the American Heart Association, in 2015 states that both the prevalence and incidence of the disease increase with age, with up to 10% of individuals older than age 60

⁵ American Heart Association

⁶ CDC; Peripheral Artery Disease Fact Sheet; www.cdc.gov/DHDSP/data_statistics/fact_sheets/fs_PAD

affected with PAD⁷. Despite its prevalence, PAD is not high on people's radar. According to a report in *Circulation* of more than 2,500 people ages 50 and older surveyed, only 26 percent were familiar with PAD. By contrast nearly 74 percent were extremely familiar with stroke and 67 percent with coronary artery disease. People with PAD have a higher risk of death from stroke and heart attack due to generalized atherosclerosis (narrowing of the arteries) and, to a lesser degree, an increase risk of blood clots.

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.⁸

Patients with PAD typically suffer from exercise induced pain in the 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 is used to treat peripheral vascular disease. A peripheral angiogram^{9, 10} 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 an interventional cardiologist or an interventional radiologist 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.

⁷ Peripheral Artery Disease Compendium, *Circulation* 2015; www.circres.ahajournals.org/content/116/9/1509.abstract

⁸ Id.

⁹ Id.

¹⁰ <http://bjr.birjournals.org/cgi/content/full/74/879/219>

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.

A shared fixed laboratory means that cardiac catheterization is not the only procedure performed on the equipment. Peripheral angiography procedures represent the other primary procedure done on shared fixed equipment. For both cardiac catheterization and peripheral angiography services, Harnett Health need capture only a very small market share of the service area need to be financially successful and to justify performance-wise, a full time peripheral angiography service at CCH. Ongoing discussions with physicians capable of performing peripheral angiography services support the need for the share fixed cardiac catheterization equipment at CCH. Included in Attachment A are letters of support for this Petition from both interventional cardiology and interventional radiology physicians.

A shared/fixed cardiac catheterization laboratory can breakeven with about 800 procedures. This does not include the additional revenue realized by the hospital for other diagnostic testing and inpatient care. Peripheral angiography will complement the cardiac catheterization volume projected for Harnett Health, and would use the remaining capacity. Estimated capacity for cardiac catheterization equipment is about 2,000 procedures a year.

Harnett Health Projected Peripheral Angiography Volume

	2015	2016	2017	2018	2019
Harnett Population 60+	21,503	22,319	23,125	23,978	24,841
Peripheral Vascular Incidence 10% of population 60+ ¹¹	10%	10%	10%	10%	10%
Projected Peripheral Angiography Disease	2,150	2,232	2,313	2,398	2,484
Severe PAD - 10%* ¹²	10%	10%	10%	10%	10%
Projected Peripheral Angiography Volume	215	223	231	240	248
Estimated Market Share*	40%	40.0%	40.0%	40.0%	40.0%
Estimated Harnett Residents Peripheral Angiography Volume Remaining in Harnett County		89	93	96	99
In-Migration*	20%	22	23	24	25
Total Peripheral Angiography Volume at Harnett Health		112	116	120	124

Source: CDC; NC Office State Budget and Management

¹¹ Peripheral Artery Disease Compendium, Circulation 2015;
www.circres.ahajournals.org/content/116/9/1509.abstract

¹² Circulation; The 10% estimate for severe PAD based upon percent of patients experiencing amputations¹². No data specific to the percent of patients with severe PAD could be found. The 10% was utilized as a proxy and may result in understating actual demand. <http://circ.ahajournals.org/content/118/25/2864.full.pdf+html>

*Projected market share is less than projected for cardiac catheterization due to the non-emergent aspects of PAD. The 40% market share is consistent with existing market share for other inpatient and outpatient services at Harnett Health. In-migration assumption consistent with the cardiac catheterization projections.

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 and a pharmaceutical regimen, often difficult for such patients, could be coordinated locally.

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

V. Financial Feasibility of a Cardiac Catheterization Laboratory in Harnett County

Cardiac catheterization volume for residents of Harnett County ranged between 1,786 and 2,212 procedures for FFY 2013 to FFY 2015 (estimated) based upon Truven data for Harnett County. This volume includes both diagnostic (67%) and interventional (33%) catheterization. This reflects a diagnostic only cardiac catheterization volume between 1,215 and 1,472 diagnostic procedures for the same timeframe. Based upon a review of other North Carolina diagnostic only cardiac catheterization providers this volume should be sufficient to support fixed/shared cardiac catheterization equipment providing both cardiac catheterization and peripheral angiography procedures and a physician champion is identified for the project.

As shown in the following table, 10 North Carolina hospitals, in counties with less population than Harnett County, provided only diagnostic cardiac catheterization services utilizing a fixed cardiac catheterization unit, a fixed/shared cardiac catheterization unit or a mobile cardiac catheterization unit in FFY 2013 and FFY 2014.

Community Hospitals Providing Only Diagnostic Cardiac Catheterization FFY 2013 and FFY 2014

Hospital	County	Population	2013 Diagnostic Cardiac Catheterization Only	2014 Diagnostic Cardiac Catheterization Only	Fixed or Mobile
CMC-University	Mecklenburg	1,010,190	39	27	Mobile
Novant Health Huntersville	Mecklenburg	1,010,190	96	17	Mobile
WakeMed Cary	Wake	984,568	222	223	Fixed
Johnston Memorial	Johnston	179,946	576	579	Fixed
Lake Norman	Iredell	166,993	53	63	Mobile
Novant Health Thomasville	Davidson	164,012	108	141	Mobile
	Harnett	125,757			
Novant Health Brunswick	Brunswick	118,640	46	10	Mobile
Margaret R. Pardee	Henderson	110,246	102	82	Fixed
Cleveland Regional	Cleveland	97,245	305	375	Fixed
Wilson Medical Center	Wilson	82,145	325	349	Fixed
Rutherford Regional	Rutherford	67,568	64	63	Mobile
Central Carolina	Lee	60,302	221	209	Fixed
MedWest Haywood	Haywood	59,942	194	153	Fixed
FirstHealth Richmond	Richmond	46,014	73	73	Mobile
Albemarle Health	Pasquotank	39,119	922	817	Fixed
Scotland Memorial	Scotland	36,110	429	345	Fixed

Source: NCOSBM; 2015 SMFP

Hospitals providing only diagnostic catheterization with fixed or fixed/shared cardiac catheterization equipment have experienced volumes ranging from 82 procedures annually to 817 procedures annually in FFY 2014 and operate successful cardiac catheterization programs. Those utilizing mobile equipment have considerably less volume. The majority of these providers have fixed cardiac catheterization equipment.

The financial impact of providing cardiac catheterization is not limited to the additional income generate by cardiac catheterization. In addition to cardiac catheterization procedures providing this service in Harnett County will result in patients remaining in county for other diagnostic testing and inpatient care.

Harnett Health has not yet completed an in-depth analysis of the financial impact of adding cardiac catheterization services. This will be undertaken when this Petition is approved and Harnett Health submits a CON application to add cardiac catheterization services. However, included in Attachment B are Proformas from two recently approved CON applications, both of which reflect less projected cardiac catheterization volume than that projected in this Petition for Harnett Health. These two projects were determined to have reasonable assumptions utilizing projected volumes in this Petition and were determined to be financially viable programs. Note that both of these Proformas reflect only diagnostic cardiac catheterization.

Both programs have since received permission from CON to pursue interventional cardiac catheterization. As a result, the financial impact of adding this needed community service is expected to be even more financially viable.

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

If the proposed adjustment is not made, people seeking approximately 2,200 cardiac catheterization (non- EP) procedures a year will have no alternative but to travel 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 Harnett County will remain geographically isolated and continue to have higher out of pocket costs for travel and transportation.

Harnett Health will find it difficult to continue development and expansion of its cardiac care program if this next step is not made available in the county. Most emergency cardiac patients will be directed to leave the County for care. This does not make sense in a community the size of Harnett County, with a population of over 127,000 persons with over 44,000 over the age of 45 years. 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.

VII. Options for acquiring cardiac catheterization services in North Carolina

Cardiac Catheterization services are regulated by the CON Statute and there must be a need identified for new service in the Annual SMFP to apply for a Certification of Need for Cardiac Catheterization services. There is no need identified in the 2015 SMFP and the current need methodology for cardiac catheterization will not result in a need for cardiac catheterization in the 2016 SMFP.

There are two methodologies in the SMFP and neither methodology recognizes the need generated in a county when patients are forced to leave their home county for service because no service or only very limited mobile service is available locally. Harnett County is the 23rd most populous county in North Carolina and is the fourth fastest growing county in North Carolina. 100% of Harnett County residents requiring cardiac catheterization procedures left the county during FFY 2014 for that care.

The SHCC can alleviate this problem by approving Harnett Health's Petition to include a need for fixed/shared cardiac catheterization equipment in the 2016 SMFP in Harnett County.

Mobile services could be pursued by Harnett Health, but as discussed above, this option is not reasonable to meet the needs of the population of Harnett County and the emergency patients treated by Harnett Health.

VIII. Duplication of Health Resources

Most Harnett residents currently drive more than 30 minutes for cardiac catheterization. Hospitals in Wake, Durham, Johnston and Moore Counties may oppose this Petition and state that the drive is not a problem. However, travel times are reflected above and there is no time added to those driving times for traffic and increased congestion in Raleigh and the surrounding area. Population projections discussed above illustrate that Wake, Durham, and Johnston Counties will continue to be one of the fastest growing areas in North Carolina. This will result in increased congestion and traffic lights for residents of Harnett County to endure to receive healthcare if this Petition is not approved. Because of Harnett County's unique situation, there will not be a duplication of services. A duplication of services suggests that there would be an excess of services within the market. The data and the narrative provided demonstrates that there is need for cardiac catheterization services in Harnett County and including an adjusted need determination in the *2016 SMFP* the most reasonable health planning decision.

IX. Consistency with SMFP Basic Principles

The petition is consistent with the provisions of the Basic Principles of the State Medical Facilities Plan.

1. Safety and Quality Basic Principle

The State of North Carolina recognizes the importance of systematic and ongoing improvement in the quality of health services. Providing care in a timely manner is a key component of assuring safety and quality care to the citizens of Cumberland Service Area and western North Carolina. Emerging measures of quality address both favorable clinical outcomes and patient satisfaction, while safety measures focus on the elimination of practices that contribute to avoidable injury or death and the adoption of practices that promote and ensure safety.

The goal of Harnett Health is to provide both diagnostic and interventional procedures in Harnett County. The proposed project will meet recommended standard set forth by the American College of Cardiology (ACC)/American Heart Association (AHA) guidelines regarding access to care, and will meet the quality Guidelines for Coronary Artery Interventional Procedures published in ACCF/AHA/SCAI2013 Update of the Clinical Competence Statement on Coronary Artery Interventional Procedures published in JACC Vol 62, No 4, 2013 July 23,2013,357-96 (hereinafter "2013 Update") in the last year to provide these services.

In a planning context, this request meets the standards of safety and quality. It moves Harnett 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. 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 and expect to have the tools they need to care for patients. Harnett County has good

cardiologists, and enabling them to perform cardiac catheterization in Harnett County would help us keep them in the county.

Providing appropriate care in the appropriate setting works to assure quality care. Harnett Health participates in a variety of nationally recognized metrics addressing these criteria, including programs at both the federal and state levels. Harnett Health has participated in the North Carolina Hospital Quality Performance Report since initiation and has continually improved quality scores. The proposed adjusted need determination for Harnett County is consistent with this basic principle as it will result in continued provision of care in an appropriate setting in a timely manner.

2. Access Basic Principle

Although a need in the 2016 SMFP does not guarantee Harnett Health a Certificate of Need, the hospital has an excellent track record of serving all persons. It is the county hospital. The following table reflects the payor mix for Harnett Health for five select service lines. As shown in this table, self pay ranges from 2.5% of ambulatory surgery to 22.5% of emergency services.

Harnett Health Payor Mix FFY 2014

	Inpatient Admissions	Emergency	Outpatient Visits	Inpatient Surgery	Ambulatory Surgery
Self Pay	6.9%	22.5%	5.0%	5.1%	2.5%
Medicare	52.9%	28.5%	43.0%	36.4%	48.4%
Medicaid	23.8%	29.6%	20.0%	36.2%	18.0%
Commercial	5.7%	11.1%	21.0%	13.9%	20.2%
Managed Care	1.8%	3.6%	7.0%	4.5%	6.3%
Other	8.9%	4.7%	4.0%	3.8%	4.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

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

Equitable access to timely, clinically appropriate and high quality health care for all the people of North Carolina is a foundation principle for the formulation and application of the North Carolina State Medical Facilities Plan. The formulation and implementation of the North Carolina State Medical Facilities Plan seeks to reduce all of these types of barriers to timely and appropriate access. The first priority is to ameliorate economic barriers and the second priority is to mitigate time and distance barriers. The SMFP is developed annually as a mechanism to assure the availability of necessary health care services to a population. The proposed adjustment will improve geographic access to cardiac catheterization services for residents of Harnett County as previously discussed.

The impact of economic barriers is twofold. First, individuals without insurance, with insufficient insurance, or without sufficient funds to purchase healthcare will often require public funding to support access to regulated services. Harnett Health is the safety net for patients regardless of income or insurance in Harnett County. Harnett Health has no barriers to care for the uninsured and the underinsured.

3. Value Basic Principle

The SHCC defines health care value as maximum health care benefit per dollar expended. Disparity between demand growth and funding constraints for health care services increases the need for affordability and value in health services. Measurement of the cost component of the value equation is often easier than measurement of benefit. Cost per unit of service is an appropriate metric when comparing providers of like services for like populations. The cost basis for some providers such as Harnett Health may be inflated by disproportionate care to indigent and underfunded patients.

Measurement of benefit is more challenging. Standardized safety and quality measures, when available, can be important factors in achieving improved value in the provision of health services. Harnett Health participates in a variety of benchmark programs to compare the use of inpatient and outpatient resources to other hospitals and uses this information to improve processes and decrease costs wherever possible.

X. Conclusion

Harnett County has a rapidly growing population that has demonstrated demand for cardiac catheterization services sufficient to support a shared fixed 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 interventional cardiologists 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 letter from Dr. Suriya Jayawardena from Fern Creek Cardiology is included in Attachment A. A mobile catheterization laboratory would be an expensive and unnecessary interim step. A shared fixed cardiac catheterization laboratory in Harnett County is a conservative and reasonable special need adjustment to the *2016 State Medical Facilities Plan*.

Carteret General Hospital
Profomas
Entire Facility

Form A
Balance Sheet for Entire Facility

Carteret County General Hospital	Last Full Fiscal Year (FY) 10/1/2011 9/30/2012	Interim Full FY 10/1/2012 9/30/2013	Interim Full FY 10/1/2013 9/30/2014	First Full FY 10/1/2014 9/30/2015	Second Full FY 10/1/2015 9/30/2016	Third Full FY 10/1/2016 9/30/2017
ASSETS						
Current Assets						
Cash and Cash Equivalents	\$ 79,654,196	\$ 94,105,622	\$ 93,332,448	\$ 70,588,943	\$ 88,460,724	\$ 111,190,211
Patient Receivables	18,116,052	18,402,732	19,345,602	21,433,867	22,897,282	24,362,217
Other Accounts Receivables	3,822,262	3,975,152	4,134,159	4,299,525	4,471,506	4,650,366
Inventory	2,871,179	3,263,346	4,020,302	4,583,905	4,978,908	5,353,310
Prepaid Expenses	2,168,115	1,882,568	1,864,855	1,991,159	2,054,999	2,120,656
Total Current Assets	\$ 106,631,804	\$ 121,629,420	\$ 122,637,365	\$ 102,897,399	\$ 122,863,418	\$ 147,676,760
Assets Limited by Board						
Property, Plant and Equipment						
Land	\$ 4,778,730	\$ 4,778,730	\$ 4,778,730	\$ 4,778,730	\$ 4,778,730	\$ 4,778,730
Buildings	31,858,349	32,696,992	48,035,854	80,105,375	82,214,079	84,378,293
Fixed and Movable Equipment	64,984,810	71,351,267	80,205,226	95,087,802	104,403,399	114,631,631
Less Depreciation	(57,312,377)	(65,372,867)	(72,650,096)	(81,709,999)	(93,082,344)	(105,192,990)
Total Property, Plant & Equipment	\$ 44,309,512	\$ 43,454,122	\$ 60,369,714	\$ 98,261,907	\$ 98,313,864	\$ 98,595,665
Assets Whose Use is Limited	\$ 4,336,422	\$ 4,342,075	\$ 4,347,736	\$ 4,353,404	\$ 4,359,080	\$ 4,364,763
Other Assets Net of Amortization	\$ 1,799,150	\$ 1,799,150	\$ 1,799,150	\$ 1,799,150	\$ 1,799,150	\$ 1,799,150
Total Assets	\$ 157,076,888	\$ 171,224,768	\$ 187,414,815	\$ 205,512,710	\$ 225,536,362	\$ 250,637,188
LIABILITIES AND FUND BALANCE						
Current Liabilities						
Accounts Payable	\$ 4,066,270	\$ 4,376,044	\$ 4,815,559	\$ 5,309,945	\$ 5,632,765	\$ 5,945,315
Third Party Payer Settlements	2,647,866	2,689,767	2,827,579	3,132,802	3,346,687	3,560,814
Salaries and Benefits Payable	9,332,371	9,464,378	9,664,174	10,771,703	10,995,810	11,216,242
Other Current Liabilities	9,036	9,036	9,036	9,036	9,036	9,036
Current Portion of Capital Lease	423,121	391,339	395,553	264,703	30,145	7,674,629
Unearned Revenue	5,706,951	5,797,261	6,094,286	6,752,135	7,213,143	7,674,629
Total Current Liabilities	\$ 22,185,615	\$ 22,727,826	\$ 23,806,186	\$ 26,240,324	\$ 27,227,596	\$ 28,406,036
Capital Lease Obligations	\$ 1,081,740	\$ 690,401	\$ 294,848	\$ 30,145	\$	\$
Fund Balance						
Restricted	\$ 43,577,768	\$ 43,577,768	\$ 43,577,768	\$ 43,577,768	\$ 43,577,768	\$ 43,577,768
Unrestricted	90,231,765	104,228,772	119,796,013	135,664,474	154,730,998	178,653,384
Total Fund Balance	\$ 133,809,533	\$ 147,806,540	\$ 163,373,781	\$ 179,242,242	\$ 198,308,766	\$ 222,231,152
Total Liabilities and Fund Balance	\$ 157,076,888	\$ 171,224,768	\$ 187,414,815	\$ 205,512,710	\$ 225,536,362	\$ 250,637,188

Form B
Statement of Revenues and Expenses for Entire Facility

Carteret County General Hospital	Last Full Fiscal Year (FY)		Interim Full FY		Interim Full FY		First Full FY		Second Full FY		Third Full FY	
	10/1/2011	9/30/2012	10/1/2012	9/30/2013	10/1/2013	9/30/2014	10/1/2014	9/30/2015	10/1/2015	9/30/2016	10/1/2016	9/30/2017
REVENUE												
Gross Patient Revenue	\$ 34,974,455	\$ 33,593,910	\$ 36,085,568	\$ 39,242,277	\$ 42,505,812	\$ 45,824,870						
Self Pay	122,410,594	150,702,826	161,359,299	176,851,754	192,050,383	207,216,304						
Medicare	34,974,455	38,021,835	40,772,717	44,035,169	47,654,557	51,325,243						
Medicaid	69,862,235	70,568,115	75,743,980	82,535,587	89,543,768	96,568,463						
Commercial	24,654,124	26,054,615	27,947,215	30,230,325	32,725,602	35,254,295						
Other												
Total	\$ 286,675,863	\$ 318,941,301	\$ 341,908,779	\$ 372,396,112	\$ 404,480,122	\$ 436,187,174						
Deductions from Gross Patient Revenue												
Charity Care and Bad Debt	\$ 25,735,529	\$ 26,472,128	\$ 28,378,429	\$ 30,908,794	\$ 33,571,850	\$ 36,203,536						
Self Pay	4,432,844	20,156,346	21,651,341	22,986,084	24,900,645	26,846,203						
Medicare Contractual Adjustment	90,473,591	99,614,568	106,991,215	114,607,170	125,528,253	135,998,302						
Medicaid Contractual Adjustment	23,175,125	25,568,695	28,622,448	30,640,890	33,619,375	36,703,708						
Commercial Care/Managed Care	5,721,834	5,816,958	6,082,677	6,639,481	7,115,727	7,615,727						
Other Contractual Adjustments	9,975,493	12,219,615	13,666,188	14,719,179	16,501,080	18,114,468						
Total Deductions from Patient Revenue	\$ 159,614,216	\$ 189,767,369	\$ 206,116,879	\$ 221,944,795	\$ 243,757,664	\$ 265,181,942						
Net Patient Revenue	\$ 127,061,647	\$ 129,173,932	\$ 135,791,900	\$ 150,451,317	\$ 160,722,458	\$ 171,005,232						
Other Revenue	\$ 2,791,424	\$ 1,411,690	\$ 1,466,158	\$ 1,526,884	\$ 1,587,559	\$ 1,651,478						
Total Revenue	\$ 129,853,071	\$ 130,585,622	\$ 137,258,058	\$ 151,978,201	\$ 162,310,017	\$ 172,656,710						
EXPENSES												
Direct Expenses	\$ 35,677,790	\$ 37,434,678	\$ 38,200,205	\$ 42,626,650	\$ 45,523,421	\$ 44,396,243						
Salaries - Clinical Personnel	11,809,971	11,148,513	11,378,591	12,667,389	12,921,021	13,178,734						
Salaries - Other Personnel	47,867,761	48,583,190	49,608,796	55,294,039	56,444,442	57,575,977						
Total Salaries	12,485,815	12,340,130	12,600,634	14,044,696	14,336,888	14,624,288						
Payroll Taxes and Benefits	1,624,886	1,635,671	1,985,871	2,048,439	2,211,087	2,378,774						
Medical Supplies	1,405,070	1,414,396	1,516,249	1,777,325	1,911,870	2,056,972						
Other Supplies	51,912	48,831	50,052	55,903	57,301	58,733						
Raw Food												
Other Direct Expenses	\$ 79,998,450	\$ 81,913,704	\$ 88,088,884	\$ 98,823,169	\$ 102,806,488	\$ 108,633,688						
Total Direct Expenses	\$ 884,032	\$ 910,553	\$ 937,870	\$ 966,006	\$ 994,986	\$ 1,024,835						
Indirect Expenses	473,143	467,337	520,857	647,774	776,807	913,772						
Housekeeping and Laundry	36,140	37,224	38,341	39,491	40,675	41,896						
Equipment Maintenance	1,471,519	1,523,022	1,576,328	1,631,459	1,688,502	1,747,703						
Building & Grounds Maintenance	1,238,161	1,269,115	1,300,843	1,333,364	1,366,698	1,400,866						
Utilities	15,354,256	12,127,448	11,463,380	11,807,282	12,161,500	12,528,345						
Insurance	55,931	57,329	58,763	60,232	61,737	63,281						
Professional Fees	1,459,392	1,372,783	1,407,102	1,571,605	1,610,896	1,651,168						
Interest Expense	165,167	155,365	159,250	177,867	182,314	186,872						
Rental Expense	7,367,671	8,060,490	7,277,229	9,059,903	11,372,345	12,110,645						
Property and Other Taxes (except Income)	8,441,015	8,974,244	8,944,772	9,930,550	10,178,614	10,433,284						
Depreciation - Building & Equipment	36,846,427	34,674,910	33,684,434	37,225,872	40,437,375	42,100,666						
Other Indirect Expenses	116,944,887	116,589,615	121,753,117	136,046,741	143,643,673	148,734,324						
Total Indirect Expenses	\$ 13,008,184	\$ 13,997,007	\$ 15,507,241	\$ 16,928,460	\$ 19,086,525	\$ 23,922,395						
Total Expenses	\$ 897,040,186	\$ 924,552,629	\$ 953,377,319	\$ 1,003,975,121	\$ 1,013,866,613	\$ 1,048,586,083						
Net Income	\$ 40,142,885	\$ 41,411,918	\$ 41,460,839	\$ 41,527,034	\$ 41,503,504	\$ 41,650,627						

**Carteret General Hospital
Profomas Assumptions
Entire Facility**

Assumptions
Carteret County General Hospital
Master Facility Plan CON

Form A Balance Sheet - Entire Facility

Form A Balance Sheet - Entire Facility is identical to the Form A Balance Sheet - Entire Facility in the Carteret General Hospital Master Facility Plan Certificate of Need application filed on February 15, 2012, (CON Project ID # P-10084-13) except as noted below.

Cash and Cash Equivalents is the net of total liabilities and fund balance, and total assets. Carteret County General Hospital make no additional assumptions related to the use of cash except as noted in the following assumptions.

Patient Receivables is based on the percent of receivables to total net revenue for 2012 of 14%

Other Receivables are based on FY 2012 actuals and is increase annually by 4%

Inventory is based on the percent of inventory to total supplies for FY 2012 of 16%

Prepaid Expenses is based on the percent of prepaid expenses to indirect expenses for FY 2012 of 7%

Land is based on FY 2012 actuals and is assumed to remain constant.

Building is based on FY 2012 actuals and estimated to increase annually by 2.63% , the percent of increase from FY 2011 to FY 2012. Additionally, the capital cost for this project are included beginning in FY 2014

Fixed and Movable Equipment is based on FY 2012 actuals and estimated to increase annually by 9.80% , the percent of increase from FY 2011 to FY 2012. Additionally, the capital cost for this project are included in FY 2014.

Existing building depreciation is based on the percent of FY 2012 depreciation expense to depreciable building assets for FY 2012 of 3.72%

Existing equipment depreciation is based on the percent of FY 2012 depreciation expense to depreciable equipment assets for FY 2012 of 8.17%

Depreciation for new building, beginning in FY 2015, is straight line and is based on a estimated life of 30 years and capital costs of \$3,062,071

Depreciation for new equipment, beginning in FY 2015, is straight line and is based on a estimated life of 7 years and capital costs of \$1,863,791

Accumulated Depreciation is the total of FY 2012 accumulated depreciation plus the annual depreciation expense as calculated based on the above assumptions.

Assets Whose Use is Limited is based on FY 2012 actuals and is estimated to increase annually by 0.13% , the percent of increase from FY 2011 to FY 2012.

Intangible Assets/Other Assets are based on FY 2012 actuals and are assumed to remain constant.

Accounts Payable is based on the percent of payables to total purchases for FY 2012 of 9.51%

Third Party Payor Settlements is based on the percent of third party payor settlements to contractual allowances for FY 2012 of 2.08%

Salary and Benefits Payable is based on the percent of salaries and benefits payable to total salaries and benefits for FY 2012 of 15.53%

Other Current Liabilities are based on FY 2012 actuals and are assumed to remain constant.

Current Portion of Lease Obligations is based on CGH actuals as reported on page 29 of the 2012 Audited Financial Statements in Exhibit 40.

Unearned Revenue is based on the percent of unearned revenue to net revenue for FY 2012 of 4.49%

Capital Lease Obligations is based CGH actuals as reported on page 29 of the 2012 Audited Financial Statements in Exhibit 40.

Restricted Fund Balance (Owners Equity) is based on FY 2012 actuals and is assumed to remain constant.

Unrestricted Fund Balance (Retained Earnings) is based on FY 2012 actuals plus the results of operations from Form B.

Form B Statement of Revenues and Expenses - Entire Facility

Form B Statement of Revenues and Expenses - Entire facility is based on the Form B Statement of Revenue and Expenses - Entire Facility in the Carteret General Hospital Master Facility Plan Certificate of Need application filed on February 15, 2013 (CON Project ID # P-10084-13). Amounts are adjusted based on current FY 2013 data.

Revenue and expenses are increased beginning with start up cost, in FY 2014, by the revenue and expenses generated by the new Cardiac Cath service. (See Form C - Statement of Revenue and Expenses - Service Component)

Revenues

Payer Percentages are based on the 2013 CGH License Renewal Application - Reimbursement Source and are as follows;

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Self Pay	12.20%	12.20%	12.20%	12.20%	12.20%	12.20%
Medicare	42.70%	42.70%	42.70%	42.70%	42.70%	42.70%
Medicaid	12.20%	12.20%	12.20%	12.20%	12.20%	12.20%
Commercial	24.30%	24.30%	24.30%	24.30%	24.30%	24.30%
Other	8.60%	8.60%	8.60%	8.60%	8.60%	8.60%
Total	100%	100%	100%	100%	100%	100%

Bad Debt is based on the CGH Debt Capacity Analysis and is estimated as a percent of gross revenue equal to 7.48%

Charity Care is based on the CGH Debt Capacity Analysis and is estimated as a percent of gross revenue equal to 0.82%

Contractual Allowances are based on the CGH Debt Capacity Analysis and are as follows:

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Self Pay	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%
Medicare	65.20%	66.10%	66.30%	66.50%	66.80%	67.00%
Medicaid	69.20%	67.30%	70.20%	71.30%	72.30%	73.30%
Commercial	8.00%	8.10%	9.00%	10.00%	11.00%	12.00%
Other	47.50%	46.90%	48.90%	49.90%	51.70%	52.70%

Contractuals are adjusted to account for expected cuts in reimbursement.

Direct Expenses

- Salaries are based on FY 2013 actuals and are increased annually by 2.00%
- Employee taxes and benefits are estimated at 25.40% of salaries and wages.
- Medical Supplies are based on FY 2013 actuals increased annually by 4.00%
- Other Supplies are based on FY 2013 actuals increased annually by 4.00%
- Raw Food is based on FY 2013 actuals increased annually by 4.00%
- Other Direct Expenses are based on FY 2013 actuals and are increase annually by 2.50%

Indirect Expenses

- Housekeeping and Laundry are based on FY 2013 actuals and are increased annually by of 3.00%
- Equipment Maintenance is based on FY 2013 actuals and is increased annually by 3.00%
- Building & Grounds Maintenance is based on FY 2013 actuals and is increased annually by of 3.00%

Utilities are based on FY 201 actuals and are increased annually by 3.50%

Professional Fees are based on FY 2013 actuals and are increase annually by 3.00%

Insurance, Interest Expense, Rental Expense and Property and Other Taxes are based on FY 2013 actuals and are increased annually by 2.50%

Existing building depreciation is based on the percent of 2012 depreciation expense to depreciable building assets for FY 2012 of 3.72%

Existing equipment depreciation is based on the percent of 2012 depreciation expense to depreciable equipment assets for FY 2012 of 8.17%

Depreciation for new building beginning in FY 2015 is straight line and is based on a estimated life of 30 years and capital costs of \$3,062,071

Depreciation for new equipment beginning in FY 2015 is straight line and is based on a estimated life of 7 years and capital costs of \$1,863,791

Other Indirect Expenses are based on FY 2013 actuals and are increased annually by 2.50%

Carteret General Hospital
Profomas
Service Component

Form C
Statement of Revenue and Expenses
Service Component

Carteret County General Hospital Cardiac Cath	Interim Full FY 10/1/2013 9/30/2014	First Full FY 10/1/2014 9/30/2015	Second Full FY 10/1/2015 9/30/2016	Third Full FY 10/1/2016 9/30/2017
# of Procedures		561	822	947
REVENUE				
Gross Patient Revenue				
Self Pay		\$ 478,547	\$ 722,901	\$ 862,317
Medicare		3,565,762	5,386,495	6,425,314
Medicaid		309,305	467,241	557,351
Commercial		1,231,384	1,860,148	2,218,889
Tricare		250,946	379,082	452,191
Total Patient Revenue		\$ 5,835,944	\$ 8,815,868	\$ 10,516,063
Deductions from Gross Patient Revenue				
Charity Care and Bad Debt		\$ 484,383	\$ 731,717	\$ 872,833
Self Pay Adjustment		287,128	433,741	517,390
Medicare Contractual Adjustment		2,467,507	3,835,184	4,703,330
Medicaid Contractual Adjustment		214,039	323,331	385,687
Commercial Insurance Contractual Allowance		147,766	223,218	266,267
Tricare Contractual Adjustments		119,199	180,064	214,791
Total Deductions from Patient Revenue		\$ 3,720,024	\$ 5,727,255	\$ 6,960,298
Net Patient Revenue		\$ 2,115,921	\$ 3,088,613	\$ 3,555,765
Other Revenue				
Total Revenue		\$ 2,115,921	\$ 3,088,613	\$ 3,555,765
EXPENSES				
Direct Expenses				
Salaries - Clinical Personnel	\$ 46,833	\$ 187,334	\$ 235,319	\$ 242,378
Salaries - Other Personnel	7,108	28,432	29,285	30,164
Total Salaries	\$ 53,941	\$ 215,766	\$ 264,604	\$ 272,542
Payroll Taxes and Benefits	14,431	57,723	70,789	72,912
Medical Supplies	76,185	914,225	1,325,862	1,537,786
Other Supplies (Included in Medical Supplies)				
Raw Food				
Other Direct Expenses (Included in Medical Supplies)				
Total Direct Expenses	\$ 144,558	\$ 1,187,714	\$ 1,661,255	\$ 1,883,240
Indirect Expenses				
Housekeeping and Laundry		\$ 10,563	\$ 10,880	\$ 11,206
Equipment Maintenance		7,083	8,516	9,992
Building & Grounds Maintenance		432	445	458
Utilities		17,840	18,464	19,111
Insurance		14,580	14,944	15,318
Professional Fees				
Interest Expense		659	675	692
Rental Expense		17,185	17,615	18,055
Property and other Taxes (except Income)		1,945	1,994	2,043
Depreciation - Building		102,069	102,069	102,069
Depreciation - Equipment		266,256	266,256	266,256
Maintenance Fee Cath Lab	18,600	111,600	111,600	111,600
Other Indirect Expenses (See Assumptions)	53,671	407,049	442,169	460,356
Total Indirect Expenses	\$ 72,271	\$ 957,260	\$ 995,626	\$ 1,017,156
Total Expenses	\$ 216,829	\$ 2,144,974	\$ 2,656,881	\$ 2,900,396
Net Income	\$ (216,829)	\$ (29,053)	\$ 431,732	\$ 655,369

Form D - Gross Revenue Worksheet for Service Component
Carteret General Hospital
Angiography

First Full Year (From 10/1/2014 to 9/30/2015)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	30		\$ 9,807.07		\$ 296,662.05
Medicare	61.10%	225		\$ 9,807.07		\$ 2,210,494.09
Medicaid	5.30%	20		\$ 9,807.07		\$ 191,744.99
Commercial	21.10%	78		\$ 9,807.07		\$ 763,362.12
Tricare	4.30%	16		\$ 9,807.07		\$ 155,566.69
Total	100%	369				\$ 3,617,829.93

Second Full Year (From 10/1/2015 to 9/30/2016)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	46		\$ 10,199.36		\$ 469,202.09
Medicare	61.10%	343		\$ 10,199.36		\$ 3,496,127.78
Medicaid	5.30%	30		\$ 10,199.36		\$ 303,264.77
Commercial	21.10%	118		\$ 10,199.36		\$ 1,207,337.09
Tricare	4.30%	24		\$ 10,199.36		\$ 246,045.00
Total	100%	561				\$ 5,721,976.72

Third Full Year (From 10/1/2016 to 9/30/2017)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	54		\$ 10,607.33		\$ 568,554.33
Medicare	61.10%	399		\$ 10,607.33		\$ 4,236,423.10
Medicaid	5.30%	35		\$ 10,607.33		\$ 367,480.24
Commercial	21.10%	138		\$ 10,607.33		\$ 1,462,987.35
Tricare	4.30%	28		\$ 10,607.33		\$ 298,144.34
Total	100%	654				\$ 6,933,589.35

Form D - Gross Revenue Worksheet for Service Component
Carteret General Hospital
Cardiac Cath

First Full Year (From 10/1/2014 to 9/30/2015)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	14		\$ 10,039.41		\$ 142,623.57
Medicare	61.10%	106		\$ 10,039.41		\$ 1,062,719.54
Medicaid	5.30%	9		\$ 10,039.41		\$ 92,183.53
Commercial	21.10%	37		\$ 10,039.41		\$ 366,994.80
Tricare	4.30%	7		\$ 10,039.41		\$ 74,790.41
Total	100%	173				\$ 1,739,311.84

Second Full Year (From 10/1/2015 to 9/30/2016)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	20		\$ 10,440.99		\$ 204,021.70
Medicare	61.10%	146		\$ 10,440.99		\$ 1,520,210.49
Medicaid	5.30%	13		\$ 10,440.99		\$ 131,867.69
Commercial	21.10%	50		\$ 10,440.99		\$ 524,982.67
Tricare	4.30%	10		\$ 10,440.99		\$ 106,986.99
Total	100%	238				\$ 2,488,069.55

Third Full Year (From 10/1/2016 to 9/30/2017)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	22		\$ 10,858.63		\$ 241,090.98
Medicare	61.10%	165		\$ 10,858.63		\$ 1,796,421.82
Medicaid	5.30%	14		\$ 10,858.63		\$ 155,827.10
Commercial	21.10%	57		\$ 10,858.63		\$ 620,368.26
Tricare	4.30%	12		\$ 10,858.63		\$ 126,425.76
Total	100%	271				\$ 2,940,133.91

Form D - Gross Revenue Worksheet for Service Component
Treret General Hospital
Racemaker

First Full Year (From 10/1/2014 to 9/30/2015)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	2		\$25,958		\$ 39,261.82
Medicare	61.10%	11		\$25,958		\$ 292,548.46
Medicaid	5.30%	1		\$25,958		\$ 25,376.54
Commercial	21.10%	4		\$25,958		\$ 101,027.37
Tricare	4.30%	1		\$25,958		\$ 20,588.52
Total	100%	18				\$ 478,802.71

Second Full Year (From 10/1/2015 to 9/30/2016)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	2		\$26,997		\$ 49,677.35
Medicare	61.10%	14		\$26,997		\$ 370,156.80
Medicaid	5.30%	1		\$26,997		\$ 32,108.53
Commercial	21.10%	5		\$26,997		\$ 127,828.29
Tricare	4.30%	1		\$26,997		\$ 26,050.32
Total	100%	22				\$ 605,821.28

Third Full Year (From 10/1/2016 to 9/30/2017)						
	% of Total	# of Cases	times	Projected Average Charge	equals	Gross Revenue
Self Pay	8.20%	2		\$28,077		\$ 52,671.84
Medicare	61.10%	14		\$28,077		\$ 392,469.42
Medicaid	5.30%	1		\$28,077		\$ 34,043.99
Commercial	21.10%	5		\$28,077		\$ 135,533.63
Tricare	4.30%	1		\$28,077		\$ 27,620.80
Total	100%	23				\$ 642,339.47

Form E - Net Revenue Worksheet for Service Component
Interet General Hospital
Angiography

First Full Year (From 10/1/2014 to 9/30/2015)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	30		\$	3,922.83	\$ 118,664.82
Medicare	61.10%	225		\$	3,020.58	\$ 680,832.18
Medicaid	5.30%	20		\$	3,020.58	\$ 59,057.46
Commercial	21.10%	78		\$	8,630.23	\$ 671,758.66
Tricare	4.30%	16		\$	5,148.71	\$ 81,672.51
Total	100%	369				\$ 1,611,985.63

Second Full Year (From 10/1/2015 to 9/30/2016)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	46		\$	4,079.74	\$ 187,680.84
Medicare	61.10%	343		\$	2,937.41	\$ 1,006,884.80
Medicaid	5.30%	30		\$	3,141.40	\$ 93,405.55
Commercial	21.10%	118		\$	8,975.43	\$ 1,062,456.64
Tricare	4.30%	24		\$	5,354.66	\$ 129,173.62
Total	100%	561				\$ 2,479,601.45

Third Full Year (From 10/1/2016 to 9/30/2017)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	54		\$	4,242.93	\$ 227,421.73
Medicare	61.10%	399		\$	2,842.76	\$ 1,135,361.39
Medicaid	5.30%	35		\$	3,267.06	\$ 113,183.91
Commercial	21.10%	138		\$	9,334.45	\$ 1,287,428.87
Tricare	4.30%	28		\$	5,568.85	\$ 156,525.78
Total	100%	654				\$ 2,919,921.68

Form E - Net Revenue Worksheet for Service Component
Carteret General Hospital
Cardiac Cath

First Full Year (From 10/1/2014 to 9/30/2015)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	14		\$ 4,015.76		\$ 57,049.43
Medicare	61.10%	106		\$ 3,092.14		\$ 327,317.62
Medicaid	5.30%	9		\$ 3,092.14		\$ 28,392.53
Commercial	21.10%	37		\$ 8,834.68		\$ 322,955.42
Tricare	4.30%	7		\$ 5,270.69		\$ 39,264.96
Total	100%	173				\$ 774,979.96

Second Full Year (From 10/1/2015 to 9/30/2016)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	20		\$ 4,176.40		\$ 81,608.68
Medicare	61.10%	146		\$ 3,007.00		\$ 437,820.62
Medicaid	5.30%	13		\$ 3,215.82		\$ 40,615.25
Commercial	21.10%	50		\$ 9,188.07		\$ 461,984.75
Tricare	4.30%	10		\$ 5,481.52		\$ 56,168.17
Total	100%	238				\$ 1,078,197.47

Third Full Year (From 10/1/2016 to 9/30/2017)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	22		\$ 4,343.45		\$ 96,436.39
Medicare	61.10%	165		\$ 2,910.11		\$ 481,441.05
Medicaid	5.30%	14		\$ 3,344.46		\$ 47,994.75
Commercial	21.10%	57		\$ 9,555.59		\$ 545,924.07
Tricare	4.30%	12		\$ 5,700.78		\$ 66,373.52
Total	100%	271				\$ 1,238,169.78

Form E - Net Revenue Worksheet for Service Component
Interet General Hospital
pacemaker

First Full Year (From 10/1/2014 to 9/30/2015)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	2		\$	10,383.36	\$ 15,704.73
Medicare	61.10%	11		\$	7,995.19	\$ 90,104.92
Medicaid	5.30%	1		\$	7,995.19	\$ 7,815.98
Commercial	21.10%	4		\$	22,843.39	\$ 88,904.09
Tricare	4.30%	1		\$	13,628.16	\$ 10,808.97
Total	100%	18				\$ 213,338.69

Second Full Year (From 10/1/2015 to 9/30/2016)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	2		\$	10,798.69	\$ 19,870.94
Medicare	61.10%	14		\$	7,775.06	\$ 106,605.16
Medicaid	5.30%	1		\$	8,314.99	\$ 9,889.43
Commercial	21.10%	5		\$	23,757.13	\$ 112,488.90
Tricare	4.30%	1		\$	14,173.29	\$ 13,676.42
Total	100%	22				\$ 262,530.84

Third Full Year (From 10/1/2016 to 9/30/2017)						
	% of Total	# of Cases	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay	8.20%	2		\$	11,230.64	\$ 21,068.73
Medicare	61.10%	14		\$	7,524.53	\$ 105,181.80
Medicaid	5.30%	1		\$	8,647.59	\$ 10,485.55
Commercial	21.10%	5		\$	24,707.41	\$ 119,269.59
Tricare	4.30%	1		\$	14,740.22	\$ 14,500.81
Total	100%	23				\$ 270,506.49

**Carteret General Hospital
Profomas Assumptions
Service Component**

Form C Statement of Revenues and Expenses - Service Component

Form C Statement of Revenue and Expenses - Service Component reflects the new shared fixed cardiac catheterization laboratory. CGH does not currently have such a service. Therefore, forecasts of revenue and expense start with FY2015. Prior year expenses reflect start-up of this new service. Hence, that year shows no revenue.

Revenues

Payer Percentages are based on comparable CON applications for Cardiac Cath services:

	FY 2015	FY 2016	FY 2017
Self Pay	8.20%	8.20%	8.20%
Medicare	61.10%	61.10%	61.10%
Medicaid	5.30%	5.30%	5.30%
Commercial	21.10%	21.10%	21.10%
Other	4.30%	4.30%	4.30%
Total	100%	100%	100%

	FY 2015	FY 2016	FY 2017
Avg Charge - Cardiac Cath	\$ 10,039	\$ 10,441	\$ 10,859
Avg Charge - Angiography	\$ 9,807	\$ 10,199	\$ 10,607
Avg Charge - Pacemaker	\$ 25,958	\$ 26,997	\$ 28,077

Cardiac Cath average charge is based on BCBSNC charge report for Eastern North Carolina rural hospitals for 2013.
 Angiography average charge is based on Cooks Medical Reference for 2012 for PVD and PAD inflated to 2015 dollars by 4.00%
 Pacemaker average charge is based on CGH current data inflated to 2015 dollars by 4.00%
 All average charges are increased annually by 4.00%

Bad Debt is based on the CGH Debt Capacity Analysis and is estimated as a percent of gross revenue equal to 7.48%

Charity Care is based on the CGH Debt Capacity Analysis and is estimated as a percent of gross revenue equal to 0.82%

Contractual Allowances are based on the CGH Debt Capacity Analysis and are as follows:

	FY 2015	FY 2016	FY 2017
Self Pay	60.00%	60.00%	60.00%
Medicare	69.20%	71.20%	73.20%
Medicaid	69.20%	69.20%	69.20%
Commercial	12.00%	12.00%	12.00%
Other	47.50%	47.50%	47.50%

Contractual allowances are based on the CGH MFP CON (CON Project ID # P-10084-13) plus 2% annual increase in the Medicare Contractual for Sequestration.

Direct Expenses

Salaries are based on FY 2012 actuals and are increased annually by 3.00%
 See Staffing Table at the end of the assumptions.

Employee taxes and benefits are estimated at 26.75% of salaries and wages.

	FY 2015	FY 2016	FY 2017
Medical Supplies			
Per procedure for Cardiac Cath and Angiography	\$1,252	\$1,290	\$1,329
Per procedure for Pacemaker	\$12,755	\$13,138	\$13,532

Cardiac Cath and Angiography Supplies are based on other comparable CONs.
 Pacemaker Supplies are based on current costs inflated to 2015 dollars by a factor of 3.00%
 All Medical Supplies are increased annually by 3.00%

Other Supplies and Other Direct Expenses are including in Medical Supplies.

Indirect Expenses

Housekeeping and Laundry, Equipment Maintenance, Building and Grounds Maintenance, Utilities, Insurance, Interest Expense, Rental Expense, Other Taxes and Other Indirect Expenses are based in indirect expenses for the entire facility and are allocated to Cardiac Cath based on a percentage of square footage of 1.09%

Depreciation for new building beginning in FY 2015 is straight line and is based on a estimated life of 30 years and capital costs of \$3,062,071
Depreciation for new equipment beginning in FY 2015 is straight line and is based on a estimated life of 7 years and capital costs of \$1,863,791

Cath Lab Maintenance Fee is based on vendor quotes.

FY 2014 Start Up Costs

Three months of salaries, payroll taxes and benefits based on FY 2015 totals.

One month of medical supplies based on FY 2015 totals.

Two months of cath lab maintenance fee based on FY 2015 totals.

Other indirect expenses include:

Recruitment RN	\$23,998
Recruitment Tech	\$15,834
Marketing	\$10,000
Training Travel	\$3,840

Form D Gross Revenue Worksheet - Cardiac Cath

See Revenue assumptions under Form C - Statement of Revenue and Expenses - Service Component

Form D Gross Revenue Worksheet - Angiography

See Revenue assumptions under Form C - Statement of Revenue and Expenses - Service Component

Form D Gross Revenue Worksheet - Pacemaker

See Revenue assumptions under Form C - Statement of Revenue and Expenses - Service Component

Form E Net Revenue Worksheet - Cardiac Cath

See Revenue assumptions under Form C - Statement of Revenue and Expenses - Service Component

Form E Net Revenue Worksheet - Angiography

See Revenue assumptions under Form C - Statement of Revenue and Expenses - Service Component

Form E Net Revenue Worksheet - Pacemaker

See Revenue assumptions under Form C - Statement of Revenue and Expenses - Service Component

Staffing Expenses - Carteret General Hospital Cardiac Cath CON

Position Title	2013 Dollars	Yr 1/2014-2015		Yr 2/2015-2016		Yr 3/2016-2017	
		FTE	Expense	FTE	Expense	FTE	Expense
CLINICAL							
RN	\$60,320	1.50	\$95,990	2.00	\$131,827	2.00	\$135,781
Tech I	\$59,700	1.00	\$63,336	1.10	\$71,759	1.10	\$73,912
Tech II	\$26,400	1.00	\$28,008	1.10	\$31,733	1.10	\$32,685
Total Clinical		3.50	\$ 187,334	4.2	\$ 235,319	4.2	\$ 242,378
OTHER							
Admin	\$80,000	0.20	\$16,974	0.20	\$17,484	0.20	\$18,008
Clerical	\$27,000	0.40	\$11,458	0.40	\$11,801	0.40	\$12,155
Total Other		0.60	\$ 28,432	0.60	\$ 29,285	0.60	\$ 30,163
Grand Total		4.10	\$ 215,766	4.80	\$ 264,604	4.80	\$ 272,542

Form C
Statement of Revenues and Expenses for Each Service Component in the Proposed Project

	Central Carolina Projected Cardiac Catheterization Procedures					
	Last Full Fiscal Year (FY) From 01/01/10 To 12/31/10	Interim Full FY From 01/01/11 To 12/31/11	Interim From 01/01/12 To 03/31/12	First Full FY From 04/01/12 To 03/31/13	Second Full FY From 04/01/13 To 03/31/14	Third Full FY From 04/01/14 To 03/31/15
	269	336	99	754	844	912
REVENUE						
Gross Patient Revenue						
Self Pay/ Indigent/ Charity	61,388	76,677	22,592	154,614	172,487	184,915
Medicare / Medicare Managed Care	1,944,726	2,429,100	715,717	4,144,159	4,598,102	4,875,351
Medicaid	182,136	227,501	67,011	541,642	607,011	656,695
Commercial Insurance	58,951	73,634	21,696	88,344	96,554	99,199
Managed Care	1,791,908	2,238,220	659,475	3,154,789	3,474,249	3,627,172
Other (Specify)						
Total	\$ 4,039,109	\$ 5,045,131	\$ 1,486,511	\$ 8,083,548	\$ 8,948,403	\$ 9,448,332
Deductions from Gross Patient Revenue						
Charity Care	27,625	34,505	10,166	66,780	74,406	79,567
Bad Debt	75,531	94,344	27,798	174,324	196,751	212,280
Medicare Contractual Adjustment	1,658,036	2,071,004	610,207	3,554,653	3,937,434	4,181,611
Medicaid Contractual Adjustment	156,547	195,538	57,634	462,990	519,335	565,792
Other Contractual Adjustments	1,060,285	1,324,371	390,216	1,856,521	2,007,566	2,045,958
Total Deductions from Patient Revenue	\$ 2,978,024	\$ 3,719,762	\$ 1,096,001	\$ 6,115,269	\$ 6,735,492	\$ 7,085,208
Net Patient Revenue	\$ 1,061,085	\$ 1,325,369	\$ 390,510	\$ 1,968,279	\$ 2,212,911	\$ 2,358,124
Other Revenue						
Total Revenue	\$ 1,061,085	\$ 1,325,369	\$ 390,510	\$ 1,968,279	\$ 2,212,911	\$ 2,358,124
EXPENSES						
Direct Expenses						
Salaries - Clinical Personnel	39,597	40,785	12,017	236,581	243,678	250,988
Salaries - Other Personnel						
Total Salaries	39,597	40,785	12,017	236,581	243,678	250,988
Payroll Taxes and Benefits	4,788	4,894	1,442	50,451	51,964	53,523
Medical Supplies				170,282	192,709	208,006
Other Supplies				25,408	28,407	31,047
Raw Food						
Other Direct Expenses (Specify)						
Total Direct Expenses	\$ 44,385	\$ 45,679	\$ 13,459	\$ 482,722	\$ 516,758	\$ 543,564
Indirect Expenses						
Housekeeping/Laundry	1,345	1,680	495	4,523	5,085	5,541
Equipment Maintenance				3,377	132,435	132,957
Building & Grounds Maintenance				1,500	2,500	3,500
Utilities				15,645	16,298	16,971
Insurance	6,367	7,952	2,343	10,047	11,251	11,850
Professional Fees	386,725	483,168	172,362	1,288	1,338	1,390
Interest Expense						
Rental Expense				6,288	6,288	6,288
Property and other Taxes (except Income)				29,837	28,072	26,317
Depreciation - Buildings				22,000	22,000	22,000
Depreciation - Equipment				189,909	189,909	189,909
Other Indirect Expenses (Overhead)	338,445	422,742	124,558	645,695	678,135	714,947
Total Indirect Expenses	\$ 777,267	\$ 961,221	\$ 313,217	\$ 1,412,831	\$ 1,610,069	\$ 1,675,234
Total Expenses / Total Patient Days, Cases or Procedures	\$ 2,889	\$ 2,861	\$ 3,164	\$ 1,874	\$ 1,908	\$ 1,837
Net Income	\$ 283,818	\$ 364,148	\$ 77,293	\$ 555,448	\$ 602,842	\$ 682,890

Form D
Gross Revenue Worksheet for Each Service Component in the Proposed Project

First Full Fiscal Year (From 04/01/2012 to 03/31/2013)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Charge	equals	Gross Revenue
Self Pay/ Indigent/ Charity	2%		14	11,044		\$ 154,614
Medicare/Medicare Managed Care	51%		388	10,681		\$ 4,144,159
Medicaid	7%		51	10,620		\$ 541,642
Commercial Insurance	1%		8	11,043		\$ 88,344
Managed Care	39%		293	10,767		\$ 3,154,789
Other (Specify)	0%		0	-		\$ -
Total	100%		754	10,721		\$ 8,083,548

Second Full Fiscal Year (From 04/01/2013 to 03/31/2014)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Charge	equals	Gross Revenue
Self Pay/ Indigent/ Charity	2%		16	10,780		\$ 172,487
Medicare/Medicare Managed Care	51%		434	10,595		\$ 4,598,102
Medicaid	7%		57	10,649		\$ 607,011
Commercial Insurance	1%		9	10,728		\$ 96,554
Managed Care	39%		328	10,592		\$ 3,474,249
Other (Specify)	0%		0	-		\$ -
Total	100%		844	10,602		\$ 8,948,403

Third Full Fiscal Year (From 04/01/2014 to 03/31/15)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Charge	equals	Gross Revenue
Self Pay/ Indigent/ Charity	2%		18	10,273		\$ 184,915
Medicare/Medicare Managed Care	52%		472	10,329		\$ 4,875,351
Medicaid	7%		63	10,424		\$ 656,695
Commercial Insurance	1%		10	9,920		\$ 99,199
Managed Care	38%		349	10,393		\$ 3,627,172
Other (Specify)	0%		0	-		\$ -
Total	100%		912	10,355		\$ 9,443,332

Form E
Net Revenue Worksheet for Each Service Component in the Proposed Project

First Full Fiscal Year (From 04/01/2012 to 03/31/2013)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay/ Indigent/ Charity	2%	14		6,274		\$ 87,834
Medicare/Medicaid Managed Care	51%	388		1,514		\$ 587,498
Medicaid	7%	51		1,542		\$ 78,662
Commercial Insurance	1%	8		2,966		\$ 23,728
Managed Care	39%	293		4,658		\$ 1,364,892
Other (Specify)	0%	0		-		\$ -
Total	100%	754		2,842		\$ 2,142,603

Second Full Fiscal Year (From 04/01/2013 to 03/31/2014)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay/ Indigent/ Charity	2%	16		6,130		\$ 98,081
Medicare/Medicaid Managed Care	51%	434		1,515		\$ 657,608
Medicaid	7%	57		1,538		\$ 87,676
Commercial Insurance	1%	9		3,055		\$ 27,495
Managed Care	39%	328		4,691		\$ 1,538,802
Other (Specify)	0%	0		-		\$ -
Total	100%	844		2,855		\$ 2,409,662

Third Full Fiscal Year (From 04/01/2014 to 03/31/15)

	% of Total	# of Patient Days, Cases or Procedures	times	Projected Average Reimbursement Rate	equals	Net Revenue
Self Pay/ Indigent/ Charity	2%	18		5,853		\$ 105,348
Medicare/Medicaid Managed Care	52%	472		1,461		\$ 689,420
Medicaid	7%	63		1,443		\$ 90,903
Commercial Insurance	1%	10		3,147		\$ 31,470
Managed Care	38%	349		4,737		\$ 1,653,263
Other (Specify)	0%	0		-		\$ -
Total	100%	912		2,818		\$ 2,570,404

Novant Acute Care Beds - SMFP Planning Inventory Analysis															
Year	2010 - 2012 SMFP			2011 - 2013 SMFP			2012 - 2104 SMFP			2013 - 2015 SMFP			2014 - 2016 SMFP		
	Licensed	CON Adjmt	Total	Licensed	CON Adjmt	Total	Licensed	CON Adjmt	Total	Licensed	CON Adjmt	Total	Licensed	CON Adjmt	Total
Presbyterian Hospital	539	0	539	539	0	539	539	0	539	603	-36	567	603	-36	567
Orthopaedic	64	-50	14	64	0	64	64	0	64	0	0	0	0	0	0
Matthews	114	20	134	117	17	134	117	17	134	134	20	154	134	20	154
Huntersville	60	15	75	75	0	75	75	0	75	75	16	91	75	16	91
Mint Hill	0	50	50	0	50	50	0	50	50	0	50	50	0	50	50
Total	777	35	812	720	142	862	795	67	862	812	50	862	812	50	862
Notes:				POH Replacement with 50 new beds approved						PH and POH Merge = 603; two CONs shift 16 bed and 20 bed from PH to Huntersville and Matthews			Draft 2016 SMFP is incorrect... It reflects +28 beds for PH and it should be a -36		