

**Technology and Equipment Committee  
Agency Report  
Petition for Special Need Adjustment for Fixed Cardiac Catheterization  
Equipment in Wake County in the  
Proposed 2016 State Medical Facilities Plan**

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***Petitioner:***

Rex Healthcare  
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***Contact:***

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***Request:***

Rex Healthcare (Rex) respectfully petitions the State Health Coordinating Council (SHCC) to create an adjusted need determination for one additional unit of fixed cardiac catheterization equipment in Wake County in the *North Carolina 2016 State Medical Facilities Plan (SMFP)*.

***Background Information:***

The *Proposed 2016 SMFP* provides two standard need determination methodologies for cardiac catheterization equipment. Methodology One is the standard methodology for determining need for additional fixed cardiac catheterization equipment and Methodology Two is the need determination methodology for shared fixed cardiac catheterization equipment. Application of these methodologies to utilization data in the *Proposed 2016 SMFP* does not generate a need determination for fixed or shared fixed cardiac catheterization equipment in Wake County.

Chapter Two of the *Proposed 2016 SMFP* allows persons to petition for an adjusted need determination in consideration of “unique or special attributes of a particular geographic area or institution...,” if they believe their needs are not addressed by the standard methodology. Rex has submitted a petition to add a need determination for one unit of fixed cardiac catheterization equipment in Wake County. Rex is requesting the adjusted need determination based on “the unique utilization trends faced by Rex”.

There are several providers in Wake County that offer cardiac catheterization services. Wake County has a total of 17 cardiac catheterization machines in the *Proposed 2016 SMFP*. Of those, Rex has a total current inventory four machines. Using the standard methodology of 80% utilization, the number of machines for Wake County and Rex is 12.33 and 5.00, respectively.

Thus, in the *Proposed 2016 SMFP* Rex has a one machine deficit and Wake County has a 4.67 machine surplus as seen in Table 1 below.

<b>Table 1: Wake County Fixed Cardiac Catheterization Equipment and Weighted Procedures, 2005-2014</b>											
		<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Duke Raleigh Hospital</b>	Total Number of Procedures	1288*	202	357	262	770	967	701	366	447	393
	No of Machines in Inventory	0	1	1	2	2	2	2	3	3	3
	Machines required based on 80% Utilization	1.07	0.17	0.30	0.22	0.64	0.81	0.58	0.30	0.37	0.33
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<b>Rex Hospital</b>	Total Number of Procedures	3,897	4,015	3,646	3,616	3,489	3,002	3,132	3,875	5,029	6,006
	No of Machines in Inventory	2	3	3	3	4	4	4	4	4	4
	Machines required based on 80% Utilization	3.25	3.35	3.04	3.01	2.91	2.50	2.61	3.23	4.19	5.00
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<b>WakeMed</b>	Total Number of Procedures	11,984	11,698	11,657	12,312	12,108	12,618	12,130	10,535	8,570	8,172
	No of Machines in Inventory	7	8	9	9	9	9	9	9	9	9
	Machines required based on 80% Utilization	9.99	9.75	9.71	10.26	10.09	10.52	10.11	8.78	7.14	6.81
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<b>WakeMed-Cary</b>	Total Number of Procedures	498	405	418	393	325	382	325	282	222	223
	No of Machines in Inventory	1	1	1	1	1	1	1	1	1	1
	Machines required based on 80% Utilization	0.42	0.34	0.35	0.33	0.27	0.32	0.27	0.23	0.19	0.19
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<b>County Totals</b>	Total Number of Procedures	17,667	16,319	16,077	16,582	16,692	16,969	16,287	15,057	14,268	14,794
	No of Machines in Inventory	10	13	14	15	16	16	16	17	17	17
	Machines required based on 80% Utilization	14.72	13.60	13.40	13.82	13.91	14.14	13.57	12.55	11.89	12.33

Note: The number of machines assigned to each facility is not based on the number that were actually operated by the facility, but the number of machines listed in the inventory for each facility in each year's state medical facility plan.

\*Duke Raleigh reported 1288 procedures on the 2006 HLRA, but no fixed cardiac catheterization machine was reported in the plan as in use and procedures were not reported as mobile.

Sources: 2006-2015 SMFP's; Proposed 2016 SMFP

### ***Analysis/Implications:***

In the face of steady increases and aging of the population, in North Carolina cardiac catheterization has remained fairly stable over the last decade. Table 2 illustrates the compound annual growth rate (CAGR) and the overall change in the weighted procedures for both Wake County and North Carolina from 2005 to 2014. In Wake County, the last 10 years of data shows an average annual CAGR of -1.76%, a decline, while the NC CAGR over the same time period had an average annual decline of -1.94%. This indicates a slow and steady reduction in the number of procedures in both regions, with Wake County experiencing a slower decline than the state overall.

However, the data presented in Table 2 provides an opportunity to review these utilization trends on an annual basis. In 2014, the most recent data year, Wake County demonstrates an increase in the annual number of procedures by 3.69% while the state experienced a steeper decline of -3.37%. Thus, Wake County is experiencing recent unique growth as compared to statewide trends.

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	CAGR 2005-2014
<b>Wake</b>	<b>Total Procedures (weighted)</b>	17,667	16,319	16,077	16,582	16,692	16,969	16,287	15,057	14,268	14,794	-1.76%
	<b>Annual Change</b>		-7.63%	-1.48%	3.14%	0.66%	1.66%	-4.02%	-7.55%	-5.24%	3.69%	
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2013	CAGR 2005-2014
<b>NC</b>	<b>Total Procedures (weighted)</b>	129,104	118,892	113,643	119,910	115,865	115,017	114,567	112,060	109,885	106,185	-1.94%
	<b>Annual Change</b>		-7.91%	-4.41%	5.51%	-3.37%	-0.73%	-0.39%	-2.19%	-1.94%	-3.37%	

Sources: 2006-2015 SMFP's; Proposed 2016 SMFP

Rex's petition suggests they have had unique utilization trends in recent years. The petition cites an increase in procedure volume as a result of the professional affiliation with Wake Heart & Vascular Associates (WHV). A review of the data in Table 3 provides further support of support of this assertion.

As seen in Table 3 below, Rex Hospital is the only provider in Wake County that has shown a consistent increase in the number of procedures over the last five years of data. More notably, Rex, in the most recent two years, has demonstrated utilization greater than 80%- the utilization threshold for determining a need in the health service area. Application of the methodology does generate deficits for this facility for both years. However, the standard methodology considers procedure volume and number of machines of the entire service area. Thus, Rex's deficit is offset by a surplus of machines in Wake County as a whole. Finally, Rex's utilization has increased from 84% last year to 100% in the most current year of data, which calculates to the equivalent of one machine.

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Duke Raleigh Hospital</b>	Total weighted procedures	1,288*	202	357	262	770	967	701	366	447	393
	No of Machines	0	1	1	2	2	2	2	3	3	3
	Procedures for 100% Utilization	0	1,500	1,500	3,000	3,000	3,000	3,000	4,500	4,500	4,500
	Utilization	0%	13%	24%	9%	26%	32%	23%	8%	10%	9%
<b>Rex Hospital</b>	Total weighted procedures	3,897	4,015	3,646	3,616	3,489	3,002	3,132	3,875	5,029	6,006
	No of Machines	2	3	3	3	4	4	4	4	4	4
	Procedures for 100% Utilization	3000	4,500	4,500	4,500	6,000	6,000	6,000	6,000	6,000	6,000
	Utilization	130%	89%	81%	80%	58%	50%	52%	65%	84%	100%
<b>WakeMed</b>	Total weighted procedures	11,984	11,698	11,657	12,312	12,108	12,618	12,130	10,535	8,570	8,172
	No of Machines	7	8	9	9	9	9	9	9	9	9
	Procedures for 100% Utilization	10500	12,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
	Utilization	114%	97%	86%	91%	90%	93%	90%	78%	63%	61%
<b>WakeMed Cary</b>	Total weighted procedures	498	405	418	393	325	382	325	282	222	222
	No of Machines	1	1	1	1	1	1	1	1	1	1
	Procedures for 100% Utilization	1500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
	Utilization	33%	27%	28%	26%	22%	25%	22%	19%	15%	15%

Note: The number of machines assigned to each facility is not based on the number that were actually operated by the facility, but the number of machines listed in the inventory for each facility in each year's state medical facility plan.

\*Duke Raleigh reported 1288 procedures on the 2006 HLRA, but no fixed CC machine was reported in the plan as in use and procedures were not reported as mobile.

Sources: 2006-2015 SMFP's; Proposed 2016 SMFP

***Agency Recommendation:***

The Agency supports the standard methodology for fixed cardiac catheterization equipment. As discussed above, the deficits at Rex in the last two years have been offset by the surpluses at other facilities in Wake County. While cardiac catheterization procedures are declining statewide, Wake County showed an increase in the current data year. Wake County and Rex Healthcare are experiencing recent increases in the utilization of cardiac catheterization laboratories. Given available information and comments submitted by the August 14, 2015 deadline date for comments on petitions and comments, and in consideration of factors discussed above, the agency recommends approval of the petition.