

**Technology and Equipment Committee
Agency Report
Petition for Special Need Adjustment for Fixed Cardiac Catheterization
Equipment in Wake County in the
2017 State Medical Facilities Plan**

Petitioner:

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Request:

Rex Healthcare (Rex) petitions the State Health Coordinating Council (SHCC) to create an adjusted need determination for two additional units of fixed cardiac catheterization equipment in Wake County in the *2017 State Medical Facilities Plan (SMFP)*.

Background Information:

The *Proposed 2017 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 2017 SMFP* does not generate a need determination for fixed or shared fixed cardiac catheterization equipment in Wake County.

Chapter Two of the *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 two units of fixed cardiac catheterization equipment in Wake County. Rex is requesting the adjusted need determination based on “the unique utilization trends faced by Rex”.

In 2013, New Hanover Regional Medical Center (NHRMC) petitioned the State Health Coordinating Council (SHCC) to remove the need determination for one unit of cardiac catheterization in the New Hanover County. One of the primary reasons cited by the petitioner

was that capacity of the equipment in the service area is greater than calculated in the SMFP. Based on the data presented, the SHCC agreed the need should be removed.

In 2014, Rex petitioned the SHCC twice for changes to the Cardiac Catheterization section of the SMFP. The first Petition was to change the methodology such that the calculations should not apply the threshold to the entire service area, but to each individual hospital/health system irrespective of capacity at other facilities located in the same service area. Thus, the need in each service area would be a total of the needs generated by each facility/health system in the county. This Petition was unsuccessful because the requested changes had the potential to add additional capacity to health service areas that already had surpluses and because procedure volumes were declining. The second request was for an adjusted need determination. The SHCC voted to deny Rex's adjusted need petition because only one year of data showed a deficit.

In 2015, WakeMed petitioned in the spring for a methodology change. This Petition maintained a similar argument to New Hanover Regional Medical Center, stating that the capacity of cardiac catheterization machines is greater than the current methodology assumes. However, one of the reasons this Petition was denied by the SHCC is because each service area has capacity variation; for example, some machines may be underutilized while others are overutilized.

In the summer of 2015, Rex petitioned again for an adjusted need determination. The agency recommended approval of the Petition since the data showed increasing procedures at Rex Hospital with more than one year of data. The Petition was voted on by the SHCC and it was denied.

In 2016, Rex petitioned in the spring to request changes to steps 5 and 6 of the Cardiac Catheterization Methodology One so that "the number of units of fixed cardiac catheterization equipment needed is calculated for each hospital, and a need determination is generated irrespective of surpluses at other hospitals in the service area" with the exception of hospitals under common ownership, where the "surpluses and deficits would be totaled." The SHCC denied this Petition for two reasons: (1) limitations of the methodology as cited in the Petitioner's request and the outcome of the proposed methodology are evident only in Wake County; and (2) data shows a continued decline in cardiac catheterization procedures statewide with relatively few need determinations generated by the current methodology.

Analysis/Implications:

Wake County has a total of 17 cardiac catheterization machines. Of those, Rex has a total current inventory of four machines. Using the standard methodology of 80% utilization, the number of machines for Wake County and Rex is 12.64 and 5.78, respectively. Thus, Rex has a 1.78 machine deficit and Wake County has a 4.36 machine surplus as seen in Table 1 below. Wake County's surplus has remained relatively consistent in the last four years while Rex's deficit has increased each year.

Table 1: Wake County Fixed Cardiac Catheterization Equipment and Weighted Procedures, 2005-2015												
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Duke Raleigh Hospital	Total Number of Procedures	1288*	202	357	262	770	967	701	366	447	393	463
	No of Machines in Inventory	0	1	1	2	2	2	2	3	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	0.39
Rex Hospital	Total Number of Procedures	3,897	4,015	3,646	3,616	3,489	3,002	3,132	3,875	5,029	6,006	6,934
	No of Machines in Inventory	2	3	3	3	4	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	5.78
WakeMed	Total Number of Procedures	11,984	11,698	11,657	12,312	12,108	12,618	12,130	10,535	8,570	8,172	7,567
	No of Machines in Inventory	7	8	9	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	6.31
WakeMed-Cary	Total Number of Procedures	498	405	418	393	325	382	325	282	222	223	205
	No of Machines in Inventory	1	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	0.17
County Totals	Total Number of Procedures	17,667	16,319	16,077	16,582	16,692	16,969	16,287	15,057	14,268	14,794	15,169
	No of Machines in Inventory	10	13	14	15	16	16	16	17	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	12.64

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: 2007-2016 SMFPs; Proposed 2017 SMFP

In the face of steady increases and aging of the population in North Carolina, the number of cardiac catheterizations 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 2006 to 2015. In Wake County, the last 10 years of data shows an average annual CAGR of -0.81% (a decline) while the NC CAGR over the same time period had an average annual decline of -1.08%. This data indicates an overall decline in the number of procedures for both the County and the State, 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 2015, the most recent data year, Wake County demonstrated an increase in the annual number of procedures by 2.53% while the State experienced a smaller increase of 1.57%. Thus, Wake County is experiencing slightly greater growth compared to statewide trends.

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	CAGR 2006-2015
Wake	Total Procedures (weighted)	16,319	16,077	16,582	16,692	16,969	16,287	15,057	14,268	14,794	15,169	-0.81%
	Annual Change		-1.48%	3.14%	0.66%	1.66%	-4.02%	-7.55%	-5.24%	3.69%	2.53%	

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	CAGR 2006-2015
NC	Total Procedures (weighted)	118,892	113,643	119,910	115,865	115,017	114,567	112,060	109,885	106,185	107,853	-1.08%
	Annual Change		-4.41%	5.51%	-3.37%	-0.73%	-0.39%	-2.19%	-1.94%	-3.37%	1.57%	

Sources: 2007-2016 SMFPs; Proposed 2017 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 support for this assertion.

As seen in Table 3 below, Rex is the only provider in Wake County that has shown a consistent increase in the number of procedures over the last five years. More notably, in the most recent three years, Rex 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. However, the standard methodology considers procedure volume and number of machines in 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% two years ago to 116% in the most current year of data, which exceeds the need for one additional machine.

		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Duke Raleigh Hospital	Total weighted procedures	202	357	262	770	967	701	366	447	393	463
	No of Machines	1	1	2	2	2	2	3	3	3	3
	Procedures for 100% Utilization	1,500	1,500	3,000	3,000	3,000	3,000	4,500	4,500	4,500	4,500
	Utilization	13%	24%	9%	26%	32%	23%	8%	10%	9%	10%

Rex Hospital	Total weighted procedures	4,015	3,646	3,616	3,489	3,002	3,132	3,875	5,029	6,006	6,934
	No of Machines	3	3	3	4	4	4	4	4	4	4
	Procedures for 100% Utilization	4,500	4,500	4,500	6,000	6,000	6,000	6,000	6,000	6,000	6,000
	Utilization	89%	81%	80%	58%	50%	52%	65%	84%	100%	116%

WakeMed	Total weighted procedures	11,698	11,657	12,312	12,108	12,618	12,130	10,535	8,570	8,172	7,567
	No of Machines	8	9	9	9	9	9	9	9	9	9
	Procedures for 100% Utilization	12,000	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
	Utilization	97%	86%	91%	90%	93%	90%	78%	63%	61%	56%

WakeMed Cary	Total weighted procedures	405	418	393	325	382	325	282	222	222	205
	No of Machines	1	1	1	1	1	1	1	1	1	1
	Procedures for 100% Utilization	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
	Utilization	27%	28%	26%	22%	25%	22%	19%	15%	15%	14%

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: 2007-2016 SMFPs; Proposed 2017 SMFP

Agency Recommendation:

The Agency supports the standard methodology for fixed cardiac catheterization equipment. The current methodology calculates a 1.78 machine deficit for Rex. As discussed above, the deficits at Rex in the last three years have been offset by the surpluses at other facilities in Wake County. Wake County, and in particular Rex, are experiencing increases in the utilization of cardiac catheterization laboratories. Given available information and comments submitted by the August 12, 2016 deadline date for comments on petitions and comments, and in consideration of factors discussed above, the agency recommends approval of the Petition.