

**Technology and Equipment Committee  
Agency Report  
Adjusted Need Petition to Remove Need Determination of  
One Fixed Magnetic Resonance Imaging Equipment (MRI) in Lincoln County  
in the 2017 State Medical Facilities Plan**

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***Petitioner:***

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***Request:***

Carolinas HealthCare System (CHS) requests the need for an additional fixed MRI scanner in Lincoln County be removed from the *North Carolina 2017 State Medical Facilities Plan (SMFP)*.

***Background Information:***

The methodology in the *Proposed 2017 SMFP* for MRI scanners uses the total number of adjusted procedures in an MRI service area, equivalent values for fixed and mobile MRI scanners, and graduated need determination thresholds based on the number of fixed scanners in a service area. Procedures are weighted according to complexity and then combined to determine a total number of weighted procedures. The fixed equivalent value is 1.00 for approved and existing fixed MRI scanners, including need determinations from previous SMFPs for MRI scanners. For mobile sites, the fixed equivalent is the number of MRI adjusted procedures performed at the site divided by the threshold for the MRI service area. The fixed equivalent for a mobile site can be no greater than 1.00. The sum of the weighted MRI procedures is divided by the number of fixed equivalent scanners to get the average adjusted procedures per scanner for each service area. A need determination for additional MRI scanners occurs when the average adjusted procedures per scanner for the service area exceeds the threshold established for the service area. Similar to the past two years, the application of the methodology in the *Proposed 2017 SMFP* generated a need determination for one additional fixed MRI scanner in Lincoln 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. CHS has submitted a petition to adjust the need determination to zero in Lincoln County for several reasons including:

1) the unlikely possibility that an applicant for a second MRI scanner in Lincoln County could meet the required CON performance standards with reasonable utilization assumptions and therefore could not be approved; and 2) increased retention of Lincoln County MRI patients will not be sufficient to reasonably support a second scanner.

This is the third year that the agency has received a request that the need for an additional fixed MRI scanner in Lincoln County be removed from the SMFP. The two previous petitions were approved.

***Analysis/Implications:***

CHS-Lincoln is the only provider that offered fixed MRI services in Lincoln County as reported for the *Proposed 2017 SMFP*. There is only one fixed MRI machine in the service area. The need determination in Lincoln County is driven by CHS Lincoln’s MRI utilization of 4,952 MRI weighted procedures reported for the *Proposed 2017 SMFP*. The threshold for a service area with one fixed machine is an average of 3,775 scans per machine. Therefore, the service area surpassed the threshold for a need determination by 1,177 weighted scans.

The methodology uses a weighting system to determine the fixed MRI equivalency required (see Table 1). The base weight (1.0) represents an outpatient procedure with no contrast or sedation; it is calculated as 30 minutes. All other categories of MRI procedures require a calculated weight added to the base time. The composition of the scans performed can have a significant impact once the weighting has been applied.

**Table 1: MRI Weighting System**

<b>Procedure Type</b>	<b>Base Weight</b>	<b>Inpatient Weight</b>	<b>Contrast Weight</b>	<b>Procedure Time in Minutes</b>
Outpatient/No Contrast/Sedation	1.0	0.0	0.0	30
Outpatient/With Contrast/Sedation	1.0	0.0	.4 (Add 12 minutes)	42
Inpatient/No Contrast/Sedation	1.0	.4 (Add 12 minutes)	0.0	42
Inpatient/With Contrast/Sedation	1.0	.4 (Add 12 minutes)	.4 (Add 12 minutes)	54

There has been growth in the number of MRI procedures performed at CHS Lincoln. Table 2 demonstrates the greatest growth of 339.5% in the procedures that are inpatient and with contrast, but there has only been an overall percentage change of 55.3%. In-patient procedures with contrast/sedation have the highest weighting in the methodology. In the 2013 SMFP, these procedures were 4.9% of all unweighted MRI procedures in CHS Lincoln and 7.5% of all weighted MRI procedures. For the *Proposed 2017 SMFP*, these procedures are 14.0% of all unweighted MRI procedures at CHS Lincoln and 19.8% of all weighted MRI procedures. These procedures also approximately doubled from the 2014 to 2015 SMFPs and then doubled again from 2015 to 2016, but only increased about 9.2% in the *Proposed 2017 SMFP*. Thus, while the weighting itself is not the only contributing factor to the increase in adjusted totals, it increases the magnitude of

the upward trend of inpatient and outpatient MRI procedures with contrast in Lincoln County.

**Table 2: CHS Lincoln Unweighted MRI Procedures\* in 2013 SMFP - Proposed 2017 SMFP**

SMFP	Inpatient		Outpatient		Overall Totals
	With Contrast	Without Contrast	With Contrast	Without Contrast	
2013	124	298	613	1,479	2,514
2014	127	337	682	1,842	2,988
2015	241	411	718	1,846	3,216
2016	499	338	1,108	1,744	3,689
Proposed 2017	545	363	1,168	1,828	3,904
Percentage Change	339.5%	21.8%	90.5%	23.6%	55.3%

Sources: 2012, 2013, 2014, 2015, and 2016 Hospital License Renewal Applications.

Another consideration presented in this Petition is the ability for an existing provider located in Lincoln County to be approved for a second MRI scanner. The Petition asserts the growth rate in MRI procedures would preclude any applicant from meeting the performance requirements. Pursuant to 10A NCAC 14C .2703(b)(3)(B), an applicant (including any related entities) that does not currently own or operate a fixed MRI scanner located in Lincoln County would have to adequately demonstrate in its CON application that the proposed fixed MRI scanner would perform 3,775 weighted MRI scans during the third operating year of the proposed scanner. That applicant does not have to demonstrate that the existing MRI scanner at CHS Lincoln would also perform 3,775 weighted MRI scans. However, that applicant does have to demonstrate that its projected utilization is reasonable and adequately supported. Furthermore, that applicant would have to adequately demonstrate that its proposed fixed MRI scanner would not result in an unnecessary duplication of the existing fixed MRI scanner. On the other hand, an application from CHS Lincoln would have to demonstrate that its existing and proposed MRI scanners would perform an average of 3,775 weighted procedures per scanner during the third operating year of the proposed scanner. Thus, CHS Lincoln would have to demonstrate that the two scanners would perform at least 7,550 weighted MRI scans during the third operating year of the proposed scanner [ $3,775 \times 2 = 7,550$ ].

**Table 3: Statewide and Lincoln County Trends in MRI Procedures\* in NC SMFP, 2012-2017**

	2012 SMFP	2013 SMFP	2014 SMFP	2015 SMFP	2016 SMFP	Proposed 2017	CAGR
<b>Lincoln County</b>	3,022	3,829	3,835	3,860	4,667	4,952	10.38%
<b>Annual Change</b>		26.70%	0.16%	0.65%	20.91%	6.11%	
<b>Statewide</b>	777,609	776,852	791,443	775,159	788,584	843,768	1.65%
<b>Annual Change</b>		-0.10%	1.88%	-2.06%	1.73%	7.00%	

Sources: 2012, 2013, 2014, 2015, and 2016 Hospital License Renewal Applications.

\*Procedures are weighted.

In the last six years, Lincoln County has demonstrated a relatively quick growth rate in MRI procedures as compared to the growth statewide, as seen in Table 3. The county had a 10.38% compound annual growth rate (CAGR). If the 10.38% CAGR were used to project the number of procedures one would expect in Lincoln County after five years, the total number of projected procedures would be 8,114 (Table 4). The last row of Table 4 shows the process of development

and operation of a new MRI scanner. Hypothetically, a Certificate of Need (CON) application would be prepared and approved during 2017. If development of the approved project is completed by the end of 2018 (Year 2 of the process) then 2019 would be the first year of operation of the new scanner.

**Table 4: Anticipated Growth in MRI Procedures in Lincoln County\***

Plan Year	Proposed 2017 SMFP	Projected 2018 SMFP	Projected 2019 SMFP	Projected 2020 SMFP	Projected 2021 SMFP	Projected 2022 SMFP
Lincoln County	4,952	5,466	6,034	6,660	7,351	8,114
Process Year	1	2	3	4	5	6
	CON Application and Approval	Project Development	First Year of Operation	Second Year of Operation	Third Year of Operation	Fourth Year of Operation

Source: 2016 Hospital License Renewal Application.

\*Procedures are weighted.

Under this scenario, the anticipated procedures in the third year of operation nearly reach the 7,550 threshold (Year 5 of the process). If development requires another year, then the third year of operation would be Year 6 of the process. Unless the CAGR drops significantly next year, the anticipated growth shows this threshold being crossed during an applicant’s third operating year of a proposed scanner.

The Petitioner also notes that 5,804 Lincoln County residents received MRI scans during FY15 (the most recent year of data included in the *Proposed 2017 SMFP*), or 8.3 percent lower than the previous year. While patients receiving procedures outside of their county of residence could partially offset concerns about projected growth if this is shown to be a trend, the number of procedures per service area is still the decisive methodological factor. Furthermore, Patient Origin Reports in the License Renewal Applications sent to the agency by the providers indicates a comparable number of Mecklenburg residents came to Lincoln for MRIs, shown in Table 5.

**Table 5: MRI Patient Origin for Patients Treated in Lincoln County (Select Counties)**

	2016 SMFP	Proposed 2017 SMFP	Net Change
Lincoln County	2,548	2,087	-461
Mecklenburg County	1,156	1,825	669

Source: 2016 Hospital License Renewal Applications.

In addition to the aforementioned, the weighting required by the methodology can have a significant impact on the overall weighted total from year from year, based on the number and composition of the types of procedures. Additionally, the anticipated growth can vary based upon whether growth is calculated as a product of individual procedures or only as a total. Thus, determining anticipated utilization of MRI equipment in Lincoln County is complex.

**Agency Recommendation:**

The agency supports the standard methodology for fixed MRI equipment in the *Proposed 2017 SMFP*. In consideration of the above, the agency recognizes procedure volumes in Lincoln County could reasonably cross the threshold during an applicant’s third operating year of a proposed scanner. Given available information submitted by the August 12, 2016 deadline date for

comments on petitions and comments, and in consideration of factors discussed above, the agency recommends denial of the Petition to adjust the projected need determination for an additional unit of fixed MRI equipment to zero (0) in Lincoln County in the *2017 SMFP*.