

# Agency Report

## Carolinas Medical Center-Union

### Adjusted Need Determination Petition

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#### *AC Bed Petitioner 2:*

Michael J. Lutes

President

Carolinas Medical Center-Union

600 Hospital Drive

Monroe, North Carolina 28112

(704) 283-3100

[Michael.Lutes@carolinashealthcare.org](mailto:Michael.Lutes@carolinashealthcare.org)

#### *Request*

CMC-Union requests an adjusted need determination in the 2010 State Medical Facilities Plan (SMFP) for 25 additional acute care beds in Union County.

#### *Background Information*

The standard methodology for projecting need for acute care beds is based on the total number of acute inpatient days of care provided by each hospital, as obtained from the Thomson Reuters database by the Cecil G. Sheps Center for Health Services Research. The number of days of care is advanced by six years based on a growth rate representing the average annual historical percentage change in total inpatient days for the State over the past four years (i.e., three intervals of change). The projected midnight average daily census for the target year is then adjusted by target occupancy factors, which increase as the Average Daily Census increases. Surpluses or Deficits are determined by comparing the projected bed need to the current inventory of licensed plus pending acute care beds.

In deference to the standard methodology, Chapter 2 of the Plan 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 appropriately addressed by the standard methodology.

Analysis/Implications

For the Proposed 2010 State Medical Facilities Plan (SMFP), the statewide three year average growth rate is .02%. The growth rate data used for the Proposed 2010 SMFP is shown below.

**Total In-state Days from North Carolina Acute Care Hospitals, 1996-2008**

Year	Days	Annual Growth Rate		3-year Average Growth Rate	
1996	4,373,602				
1997	4,344,434	-0.67%		-0.52%	97-99
1998	4,342,032	-0.06%		0.61%	98-00
1999	4,305,125	-0.85%		1.01%	99-01
2000	4,423,151	2.74%		1.35%	00-02
2001	4,472,918	1.13%		1.15%	01-03
2002	4,480,926	0.18%		1.52%	02-04
2003	4,576,550	2.13%		1.58%	03-05
2004	4,679,727	2.25%		0.47%	04-06
2005	4,695,848	0.34%		0.01%	05-07
2006	4,639,819	-1.19%		0.02%	06-08
2007	4,680,021	0.87%			
2008	4,698,342	0.39%			

Source: North Carolina Hospital Discharge Database, Thomson. Fiscal Years 1996-2008

Notes: Includes all days from NC residents in NC acute care hospitals.

Excludes all days from out-of-state residents in NC acute care hospitals.

\*Excludes DRG 391 (normal newborns).

Excludes days from psychiatric, substance abuse and rehabilitation hospitals.

Excludes outliers.

\*For 2006-2008, newborns are excluded based on actual bed instead of DRG when bed data is available.

As the above table shows, annual statewide growth rates have varied from 1997-2008 between a high of 2.74% (1999-2000) and a low of -1.19% (2005 to 2006). In response to concerns raised in petitions filed last year about the low statewide growth rate, the State Health Coordinating Council convened an Acute Care Bed Need Methodology Work Group and charged the work group with the following:

1. To evaluate the present bed methodology with respect to the impact that uneven growth in days in acute care hospitals throughout the state has on the methodology.
2. To develop recommendations which can effectively and fairly address the growth disparities and which will be consistent with the present methodologies in the 2009 SMFP.

The Acute Care Bed Need Methodology Work Group met on February 23, 2009 and accomplished part One of its charge. However, the work group decided to table part Two of its charge since the consensus was that, given the state of the economy, it was not a good time to be changing the methodology such that need for 700 or 800 beds would be generated statewide. The work group will reconvene this Fall and will work on developing recommendations for the 2011 SMFP.

Review of Union County population and CMC-Union acute care days data reveals several factors that make Union County and CMC-Union unique.

*Population Data:*

First, the North Carolina Office of State Budget and Management (OSBM) estimates that Union County grew 54.4 percent from 2000 to 2008, making Union County the fastest growing county in North Carolina. This growth was 13.7 percent higher than the next fastest growing county, Brunswick County.

2008 Provisional County Population Estimates Ten Fastest Growing Counties From North Carolina Office of State Budget and Management				
County	July 2008 Estimate	April 2000 Estimate Base	Amount	Percent
<b>UNION</b>	<b>191142</b>	<b>123772</b>	<b>67370</b>	<b>54.4</b>
BRUNSWICK	102877	73143	29734	40.7
CAMDEN	9657	6885	2772	40.3
WAKE	864582	627850	236732	37.7
JOHNSTON	162776	121955	40821	33.5
HOKE	44442	33650	10792	32.1
CABARRUS	170448	131063	39385	30.1
CURRITUCK	23486	18190	5296	29.1
PENDER	51834	41082	10752	26.2
MECKLENBURG	877173	695370	181803	26.1

Additionally, the United States Census Bureau estimates Union County was the 16<sup>th</sup> fastest growing county in the United States from 2000-2008. (Source: U.S. Census Bureau, Population Division; Table 5: Housing Unit Estimates for the 100 Fastest Growing Counties With 5,000 or More Housing Units in 2008: April 1, 2000 to July 1, 2008; Release Date: August 6, 2009.)

Second, Union County includes two of North Carolina's ten fastest growing municipalities, Stallings and Marvin.

Fastest Growing Municipalities, April 2000 to July 2007					
From North Carolina Office of State Budget and Management					
Rank	Municipality	County	Population July 2007	Population April 2000	% Growth
1	Leland	Brunswick	10,306	1,938	431.79
2	Navassa	Brunswick	1,871	479	290.61
3	Belville	Brunswick	1,363	363	275.48
<b>4</b>	<b>Stallings</b>	<i>Mecklenburg,</i> <b>Union</b>	11,331	3,171	<b>257.33</b>
5	St. James	Brunswick	2,633	804	227.49
6	Brunswick	Columbus	1,044	360	190.00
7	Morrisville	<i>Durham, Wake</i>	14,308	5,208	174.73
<b>8</b>	<b>Marvin</b>	<b>Union</b>	2,639	1,039	<b>153.99</b>
9	Rolesville	Wake	2,290	907	152.48
10	Princeville	Edgecombe	2,307	940	145.43

Third, between 2010 and 2020, the North Carolina OSBM projects that Union County will be the fastest growing county in North Carolina, growing 45 percent during that period.

County Population Growth: 2010-2020				
From North Carolina Office of State Budget and Management				
County	July 2020 Projection	July 2010 Projection	Amount	Percent
<b>UNION</b>	<b>304688</b>	<b>210069</b>	<b>94619</b>	<b>45</b>
WAKE	1291832	935933	355899	38
CABARRUS	249151	183566	65585	35.7
JOHNSTON	235376	174876	60500	34.6
BRUNSWICK	147370	110293	37077	33.6
PENDER	71466	55188	16278	29.5
HARNETT	149757	116342	33415	28.7
IREDELL	204859	162619	42240	26
LINCOLN	98894	78583	20311	25.8
DURHAM	344755	274516	70239	25.6

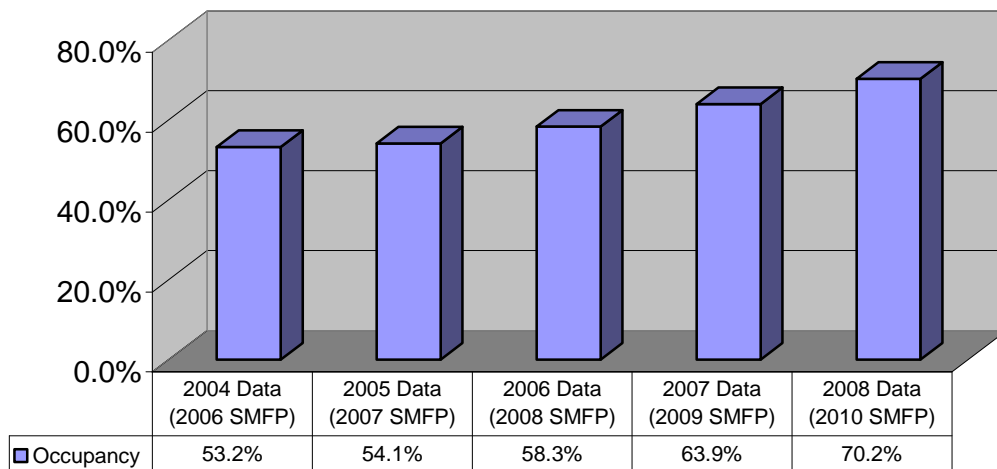
*Acute Care Days Data:*

Analysis of acute care days data shows that CMC-Union was one of six hospitals with an increasing rate of increase in acute care days **each** year from 2005-2008. CMC-Union also had the second highest three-year average increase in acute care days.

Hospital	Acute Care Days				Percent Increase in Acute Care Days			
	2007 SMFP 2005 Data	2008 SMFP 2006 Data	2009 SMFP 2007 Data	2010 SMFP 2008 Data	2005- 2006	2006- 2007	2007- 2008	3 Year Avg
Chatham Hospital	2,475	2,638	2,855	3,341	6.6%	8.2%	17.0%	10.6%
<b>Carolinas Medical Center - Union</b>	<b>31,000</b>	<b>33,398</b>	<b>36,629</b>	<b>40,362</b>	<b>7.7%</b>	<b>9.7%</b>	<b>10.2%</b>	<b>9.2%</b>
Carolinas Medical Center - NorthEast	90,833	92,686	98,475	105,542	2.0%	6.2%	7.2%	5.2%
Carolinas Medical Center - Mercy & Pineville	54,186	54,807	56,294	61,844	1.1%	2.7%	9.9%	4.6%
WakeMed Cary Hospital	34,013	35,260	36,625	38,542	3.7%	3.9%	5.2%	4.3%
Cape Fear Valley Medical Center	132,678	134,128	136,755	145,017	1.1%	2.0%	6.0%	3.0%

Additionally, analysis of CMC-Union's occupancy rates for 2004-2008 reveals increasing occupancy rates each year, with a current occupancy rate close to the target occupancy rate of 71.4%.

CMC-Union  
 Percent Occupancy



Applying CMC-Union’s three year average growth rate of 9.2% to its 40,362 acute care days for 2008 results in a need for 106 additional beds in 2014. The petitioner presents data showing that CMC-Union’s compound annual growth rate (CAGR\*) of acute care patient days from 2004 to 2008 was 7.2 percent. The petitioner then reduced the CMC-Union growth rate in patient days by half to account for the changes in the economy over the last year. Applying this growth rate of 3.59 percent to CMC-Union’s 40,362 acute care days results in need for an additional 34 beds, and the petitioner has requested 25 beds.

GROWTH RATE/REQUEST	ADDITIONAL BEDS IN 2014
2005-2008 3 Year Average: 9.2%	106
CAGR of 7.2% divided by 2 (3.59%)	34
Petitioner’s Request	25

\*(CAGR - is the year over year growth rate applied to an investment or other part of a company's activities over a multiple-year period. The formula for calculating CAGR is “(Current Value/Base Value) ^ (1/# of years) – 1”. CAGR represents smoothed annual growth.)

In addition to the above factors, CMC-Union is the only hospital in its Acute Care Bed Service Area, Union County.

Agency Recommendation

The Agency supports the standard methodology and the Acute Care Bed Need Methodology Work Group. However, in consideration of the above, the Agency has determined that CMC-Union has demonstrated its “...unique or special attributes”, which “are not appropriately addressed by the standard methodology.” The Agency recommends approval of CMC-Union’s petition for 25 additional acute care beds in Union County in the 2010 SMFP.