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HEALTH PLANNING SOURCE

MEMORANDUM

TO: LONG TERM AND BEHAVIORAL HEALTH COMMITTEE
THOMAS J. PULLIAM, MD, CHAIRMAN

FROM: DAWN CARTER, PRESIDENT, HEALTH PLANNING SOURCE

SUBJECT: ADDITION TO INPATIENT HOSPICE METHODOLOGY

DATE: JULY 31, 2009

Health Planning Source (HPS) recommends one addition to the hospice inpatient bed methodology for the *2010 State Medical Facilities Plan* (*SMFP*). HPS served as a resource for the Hospice Methodology Task Force that developed the draft hospice methodologies adopted in the *2010 Proposed SMFP*. After the publication of the draft hospice methodologies, The Carolinas Center for Hospice and End of Life Care, which also served as a resource to the Task Force, received feedback from a member noting that in some counties the inpatient bed methodology projected hospice admissions beyond what could reasonably be expected. Based on this comment and further analysis, HPS believes that an additional step should be incorporated into the inpatient bed methodology.

Specifically, HPS recommends that the projected 2013 hospice admissions, as calculated in the inpatient bed methodology, be capped at a level equivalent to a 60 percent hospice penetration rate for each county. HPS believes that this additional step will ensure that the hospice inpatient bed methodology more accurately projects inpatient bed need and also will ensure consistency between the inpatient bed and home care office methodologies. Finally, it is important to note that the proposed modification will not result in a change of the *Proposed 2010 SMFP* hospice inpatient bed need determinations; however, it may affect need determinations in future years.

The proposed step mimics the step in the hospice home care office methodology that caps projected hospice deaths at a level equivalent to a 60 percent hospice penetration rate for each county. The 60 percent penetration rate cap was added to the home care office methodology in order to ensure that projected deaths served by hospice did not reach unreasonably high levels when compared to total deaths. Without the 60 percent penetration rate cap in the home care office methodology, projected deaths served by hospice could exceed total deaths in certain counties.

Likewise, without the proposed step, the inpatient bed methodology could project admissions beyond what can reasonably be expected in certain counties. For example, Henderson County is projected to have 1,420 total deaths in 2013, based on the 2003 to 2007 death rate and the projected 2013 population. As now proposed, the home care methodology caps future growth in Henderson County hospice deaths to 825 deaths in 2011, or, if extended forward, to 852 deaths 2013. However, according to the inpatient bed methodology in the *Proposed 2010 SMFP*, Henderson County is projected to have 1,152 hospice admissions in 2013, which corresponds to 1,047 hospice deaths and a hospice penetration rate of 74 percent (in 2008, Henderson County experienced a hospice admission to death ratio of 1.1 [1.1 hospice admissions to deaths = 841 admission ÷ 764 deaths]. As

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such, without the proposed step Henderson County would be projected to have 1,047 hospice deaths in 2013 [1,047 hospice deaths = 1,152 hospice admissions ÷ 1.1 hospice admissions to deaths]), compared to 852 deaths based on an extension of the home care methodology.

Under the current methodology, nine counties, including the county of The Carolinas Center for Hospice and End of Life Care member who noted this issue, demonstrate 2013 projected hospice admission levels that would equate to hospice death penetration rates above 60 percent. HPS believes that the inpatient bed methodology should incorporate a 60 percent penetration rate cap in order to ensure that growth in projected hospice admissions does not exceed the 60 percent cap reflected in the home care methodology.

The 60 percent penetration rate cap in the home care office methodology does <u>not</u> affect need determinations as only counties that demonstrate a surplus of patients (i.e. counties that serve more patients than are served, on average, statewide) are capped. Thus, the cap is only applied in order to ensure that the methodology does not present projections that are unreasonable. The case for such a cap is even stronger for the inpatient bed methodology as it <u>may</u> affect future need determinations by capping unreasonably high growth in projected admissions and subsequently patient days and the number of inpatient beds needed.

Given the above reasons, HPS recommends that the SHCC adopt the proposed step that is outlined in detail in the attached revised Hospice Chapter narrative and Table 13C. All proposed changes to the *2010 SMFP* are highlighted in yellow.

CHAPTER 13
HOSPICE SERVICES

Summary of Hospice Services and Supply

In June 2009, there were 263 hospice facilities (including hospice home care facilities and hospice inpatient and residential facilities) listed as being separately licensed in North Carolina according to the North Carolina Division of Health Service Regulation.

According to the hospice licensure law, as passed by the N.C. General Assembly in 1984, a hospice must provide home care services to terminally ill patients with a life expectancy generally not to exceed six months and their families, with provision for inpatient care or hospice residential care, as long as hospice inpatient is provided directly or through a contractual agreement. Data reported on the 2009 Licensure Renewal Applications indicate that over 39,000 hospice patients were served in 2007-2008.

There are 29 hospice inpatient facilities (comprising 248 beds) located in North Carolina, providing acute symptom control and pain management for hospice patients. Of the 29 facilities, 27 are free-standing hospice inpatient units -- located in Alamance, Buncombe, Cabarrus, Caldwell, Catawba, Cleveland, Cumberland, Davidson, Duplin, Durham, Forsyth, Gaston, Guilford, Harnett, Henderson, Iredell, Mecklenburg, New Hanover, Orange, Pitt, Robeson, Rockingham, Rutherford, Scotland, Surry and Wayne counties. Two hospitals have hospice inpatient units as a part of the hospital, located in Mecklenburg and Wake counties. Hospice inpatient facilities located in Beaufort, Brunswick, Burke, Caldwell, Cleveland, Columbus, Gaston, Johnston, Moore, Nash, Randolph, Richmond, Robeson, Rowan, Union, and Wake counties will add a total of 111 beds. Further, additions to facilities in Alamance, Forsyth, Harnett, Robeson, Rutherford and Wayne counties will add 31 beds.

There are 21 hospice residential facilities (comprising 149 beds) currently providing residential hospice care for patients who have frail and elderly caregivers or who live alone. These facilities are located in Alamance, Buncombe, Burke, Cabarrus, Catawba, Cleveland, Davidson, Duplin, Forsyth, Gaston, Guilford, Iredell, Mecklenburg, Richmond, Rockingham, Rutherford, Scotland, Surry, Union, and Wayne counties. The hospice residential facilities being developed in Caldwell, Cleveland, Gaston, Johnston, Nash, Randolph, Rowan, Union and Wake counties will add a total of 53 beds. Further, an addition to the Wayne County facility will add six beds and the Alamance County facility will add two beds.

Changes from the Previous Plan

In 2008, based on the recommendation of it's Long-Term and Behavioral Health Committee, the State Health Coordinating Council authorized the formation of a Hospice Methodologies Task Force to make recommendations for the Proposed 2010 State Medical Facilities Plan.

An eleven member Task Force was formed and met four times. Represented on the group were members of the Council as well as hospice entities and a member of the general public. Serving as resource people were the President and Chief Executive Officer of the Carolinas Center

for Hospice and End of Life Care, the President of Health Planning Source and representatives of the Division of Medical Assistance, and the Division of Health Service Regulation Certificate of Need and Acute and Home Care Licensure and Certification Sections. The meetings were open to and attended by members of the public.

The Task Force presented its recommendations to the Long-Term and Behavioral Health Committee. The Committee accepted the recommendations which were subsequently approved by the Council for inclusion in the Proposed 2010 Plan.

Hospice Home Care Offices:

The hospice home care methodology has been modified to utilize the two year trailing average growth rate in the number of deaths served and in the percent of deaths served. No need determinations are considered for counties with three or more hospice home care offices (excludes hospice inpatient and residential only facilities) per 100,000 population, as the data showed that counties in the state with a penetration rate of 40 percent or higher had three or fewer hospice home care offices located in the county and reporting service provision. The threshold for a need determination has been changed to a deficit of 90 or greater deaths, which represented the approximate number of deaths served at three hospice offices per 100,000 and a statewide median penetration rate (8.5 deaths per 1,000 [statewide death rate] x 100 = 850 deaths per 100,000 x 29.5 percent of deaths served = 251 deaths served by hospice / 3 hospice agencies = approx. 90). The placeholder for new hospice offices has been changed to the new threshold of 90 in order to maintain consistency.

Hospice Inpatient Beds:

The hospice inpatient bed methodology has been modified to utilize projected hospice days of care calculated by multiplying projected hospice admissions by the lower of the statewide median average length of stay or the actual average length of stay for each county. This selection reduces the inclusion of days of care that may not be appropriate for an inpatient facility. Projected hospice admissions are determined by the application of the two year trailing average growth rate in the number of admissions served to current admissions. Inpatient days as a percent of total days of care are determined to be approximately six percent based on statewide inpatient days as a percent of total days of care.

For the North Carolina Proposed 2010 State Medical Facilities Plan (SMFP), references to dates have been advanced by one year. The Task Force also recommended reviewing the hospice methodologies for the 2012 SMFP in order to determine the effect of all of these changes. Further, with regard to data reporting, The Carolinas Center for Hospice and End of Life Care and the Association for Home & Hospice Care of North Carolina will follow-up with the Division of Health Service Regulation's Acute and Home Care Licensure Section.

Basic Assumptions of the Method

Hospice Home Care Offices:

1. County mortality (death) rates for the most recent years (2003-2007) are used as the basis for hospice patient need projection. The five-year death rate for 2003-2007 is used as an indicator of deaths from all sites in each county and is not affected by changes in actual deaths from year to year.

2. Because previous years' data are used as the bases for projections, the two year trailing average growth rate in statewide number of deaths served should be calculated over the previous three years and applied to the current reported number of deaths served to project changes in the capacity of existing agencies to serve deaths from each county by the target year. Hospice deaths served will not be projected to exceed 60 percent of total deaths.
3. Median projected hospice deaths is projected by applying a projected statewide median percent of deaths served by hospice to projected deaths in each county. Projected statewide median percent of deaths served should be calculated by applying the two year trailing average growth rate in the statewide median percent of deaths served over the previous three years to the current statewide median percent of deaths served.
4. An additional hospice is indicated if: 1) the county's deficit is 90 or more, and 2) the number of licensed hospice home care offices located in the county per 100,000 population is three or less.

Hospice Inpatient Beds:

1. Because previous years' data are used as the bases for projections, the two year trailing average growth rate in statewide hospice admissions should be calculated over the previous three years and applied to the current reported number of hospice admissions to project total hospice admissions. Hospice admissions served will not be projected to exceed 60 percent of total deaths.
2. Total projected admissions and the lower of the statewide median average length of stay per admission and each county's average length of stay per admission are used as the basis for projecting estimated inpatient days for each county.
3. Six percent of total estimated days of care in each county is used as a basis for estimating days of care in licensed inpatient hospice facility beds.

Hospice Residential Beds:

Rules for hospice residential beds were adopted by the Medical Care Commission in 1991. This category of beds does not have a methodology to project need and no need methodology has been recommended for the North Carolina Proposed 2010 State Medical Facilities Plan.

Sources of Data

Population:

Estimates and projections of population were obtained from the North Carolina Office of State Budget and Management.

Estimated active duty military population numbers were excluded for any county with more than 500 active duty military personnel. These estimates were obtained from the "Selected Economic Characteristics" portion of the 2000 Census, under the category of "Employment Status – Armed Forces."

Number of Deaths and Death Rates:

Deaths and death rates are from "Selected Vital Statistics for 2007 and 2003-2007, Vol. 1" published by the North Carolina Department of Health and Human Services, State Center for Health Statistics.

Utilization and Licensed Offices:

Total reported hospice patient deaths, admissions, days of care and licensed offices by county were compiled from the "2009 Annual Data Supplement to Licensure Application" as submitted to the North Carolina Department of Health and Human Services, Division of Health Service Regulation by existing licensed hospices and by home care agencies and health departments who meet the requirements of the rules for hospice licensure.

Application of the Standard Methodology

The steps in applying the projection methods are as follows:

Hospice Home Care Offices:

Step 1: The 2003-2007 death rate/1000 population is entered.

Step 2: The estimated 2011 population of each county is entered with adjustments for the counties with more than 500 active duty military personnel.

Step 3: Projected 2011 deaths for each county is calculated by multiplying the county death rate (Step 1) by the 2011 estimated population (Step 2) divided by 1000.

Step 4: The total number of reported hospice patient deaths, by county of patient residence, from annual data supplements to licensure applications is entered.

Step 5: The "Two Year Trailing Average Growth Rate in Statewide Number of Deaths Served" over the previous three years is calculated.

Year	Statewide # Deaths Served	Growth
2006	22,653	
2007	24,897	9.9%
2008	26,353	5.8%
Two Year Trailing Average Growth Rate		**7.9%**

Step 6a: 2011 number of hospice deaths served at two year trailing average growth rate is calculated by multiplying the number of reported hospice deaths (Step 4) by the statewide two year trailing average growth rate for deaths served for three years (Step 5) (# of reported deaths x 107.9% x 107.9% x 107.9%).

Step 6b: 2011 number of hospice deaths served limited to 60 percent is calculated by multiplying the projected 2011 deaths for each county (Step 2) by 60 percent.

Step 6c: Projected 2011 number of hospice deaths served is determined to be the lower of:

(a) Projected 2011 number of hospice deaths served at two year trailing average growth rate (Step 6a), or;

(b) Projected 2011 number of hospice deaths served limited to 60 percent (Step 6b).

Step 7: The "Two Year Trailing Average Growth Rate in Statewide Median Percent of Deaths Served" over the previous three years is calculated.

Year	Median Percent of Deaths Served	Growth
2006	27.02%	
2007	29.50%	9.2%
2008	29.70%	0.7%
Two Year Trailing Average Growth Rate		**4.9%**

Step 8: The projected median statewide percent of deaths served is calculated by multiplying the current statewide median percent of deaths served by the statewide two year trailing average growth rate for median percent of deaths served (Step 7) for three years (statewide median percent of deaths served x 104.9% x 104.9% x 104.9%).

Step 9: Median projected 2011 hospice deaths is calculated by multiplying projected 2011 deaths (Step 3) by the projected statewide median percent of deaths served (Step 8).

Step 10: In counties for which additional hospice home care office need determinations were made, determine the difference between 90 and the number of hospice patient deaths reported by each new office in the county for which a need determination was made. If a new office reports more than 90 hospice patient deaths in the county for which a need determination was made, the office's reported number of hospice patient deaths is not adjusted for that county. If a new office reported fewer than 90 hospice patient deaths in the county for which a need determination was made, an adjustment "placeholder" equal to the difference between the reported number of hospice patient deaths and 90 is used. The adjustment "placeholder" is made through the third annual Plan following either: a) issuance of the Certificate of Need if the approved applicant had a hospice home care office in the county prior to the issuance of the certificate; or, b) certification of the new office that received the Certificate of Need in the county for which a need determination was made if the approved applicant did not have an existing hospice home care office in the county prior to the issuance of the certificate.

Step 11: Project the number of patients in need (deficit or surplus) by subtracting the median projected 2011 hospice deaths (Step 9) for each county from the projected 2011 number of hospice deaths served (Step 6c) plus any adjustment (Step 10).

Step 12: The number of licensed hospice home care offices located in each county from annual data supplements to licensure applications is entered.

Step 13: The number of licensed hospice home care offices per 100,000 population for each county is calculated by dividing the number of licensed hospice offices (Step 12) by the 2011 estimated population (Step 2) divided by 100,000.

Step 14: A need determination would be made for a county if both of the following are true:

(a) The county's deficit (Step 11) is 90 or more, and;

(b) The county's number of licensed hospice home care offices per 100,000 population (Step 13) is three or less.

A hospice office's service area is the hospice planning area in which the hospice office is located. Each of the 100 counties in the State is a separate hospice planning area.

Hospice Inpatient Beds:

Step 1: The total number of reported hospice admissions, by county of patient residence, from annual data supplements to licensure applications is entered.

Step 2: The total number of days of care, by county of patient residence, from annual data supplements to licensure applications is entered.

Step 3: The average length of stay per admission (ALOS) is calculated by dividing total days of care (Step 2) by total admissions (Step 1).

Step 4: The "Two Year Trailing Average Growth Rate in Statewide Number of Admissions" over the previous three years is calculated.

Year	Statewide # Hospice Admissions	Growth
2006	28,666	
2007	30,907	7.8%
2008	32,509	5.2%
Two Year Trailing Average Growth Rate		**6.5%**

Step 5a: 2013 admissions served at two year trailing average growth rate is calculated for each county by multiplying the total admissions (Step 1) by the statewide two year trailing average growth rate for hospice admissions (Step 4) for five years (total admissions x 106.5% x 106.5% x 106.5% x 106.5% x 106.5%).

Step 5b: The 2003-2007 death rate/1000 population is entered.

Step 5c: The estimated 2013 population of each county is entered with adjustments for the counties with more than 500 active duty military personnel.

Step 5d: Projected 2013 deaths for each county is calculated by multiplying the county death rate (Step 5b) by the 2013 estimated population (Step 5c) divided by 1000.

Step 5e: 2013 number of hospice deaths served limited to 60 percent is calculated by multiplying the projected 2013 deaths for each county (Step 5d) by 60 percent.

Step 5f: The total number of reported hospice patient deaths, by county of patient residence, from annual data supplements to licensure applications is entered.

Step 5g: The ratio of hospice admissions to hospice deaths by county is calculated by dividing reported hospice admissions (Step 1) by reported hospice deaths (Step 5f).

Step 5h: 2013 number of hospice admissions served limited to 60 percent for each county is calculated by multiplying the county projected 2013 hospice deaths served limited to 60 percent (Step 5e) by the ratio of hospice admissions to hospice deaths for each county (Step 5g).

Step 5i: Projected 2013 number of hospice admissions served is determined to be the lower of:

(a) Projected 2013 number of hospice admissions served at two year trailing average growth rate (Step 5a), or;

(b) Projected 2013 number of hospice admissions served limited to 60 percent (Step 5h).

Step 6a: 2013 days of care at the county ALOS is calculated by multiplying the total 2013 admissions (Step 5i) by the ALOS per admission for each county (Step 3).

Step 6b: 2013 days of care at the statewide ALOS is calculated by multiplying the total 2013 admissions (Step 5i) by the statewide median ALOS per admission.

Step 6c: Projected 2013 days of care for inpatient estimates is determined to be the lower of:

(a) 2013 days of care at the county ALOS (Step 6a), or;

(b) 2013 days of care at the statewide ALOS (Step 6b).

Step 7: Projected 2013 inpatient days is calculated for each county by multiplying the projected 2013 days of care for inpatient estimates (Step 6c) by 6 percent.

Step 8: Projected inpatient hospice beds is calculated by dividing 2013 projected inpatient days (Step 7) by 365 days and then dividing by 0.85 to adjust for a targeted 85 percent occupancy.

Step 9: Adjust the projected inpatient hospice beds (Step 8) by the number of licensed hospice beds in each county, CON approved/licensure pending beds, and beds available in previous Plans.

Step 10: Calculate occupancy rates of existing hospice inpatient facilities based on 2009 annual data supplements to licensure application.

Step 11: Adjust projected beds in Step 9 for occupancy rates of existing facilities in counties (Step 10) that are not at 85 percent occupancy. Indicate for such counties either zero or the deficit indicated in Step 9, which ever is greater. Further adjustments are made for CON approved closures.

Step 12: For single counties with a projected deficit of six or more hospice inpatient beds, applications for single county Hospice Inpatient Units will be considered. The single county need equals the projected deficit. (A hospice inpatient facility bed's service area is the hospice inpatient facility bed planning area in which the bed is located. Each of the 100 counties in the State is a separate hospice inpatient facility bed planning area.)

The Long-Term and Behavioral Health Committee and the State Health Coordinating Council will consider petitions for adjusted need determinations that are filed in accordance with provisions outlined in Chapter 2 of the State Medical Facilities Plan.

Applicants for Certificate of Need are encouraged to contact the Certificate of Need Section to arrange pre-application conference prior to submission of application.

Table 13C: Year 2013 Hospice Inpatient Bed Need Projections for the Proposed 2010 Plan

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J	Column K	Column L	Column M
County	**Total Admissions (2008 data)**	**Total Days of Care (2008 Data)**	**ALOS per Admission**	**2013 # of Admissions at Two Year Trailing Average Growth Rate**	**2003-2007 Death Rate/1000 Population**	**2013 Population (excluding military)**	**Projected 2013 Deaths**	**2013 # of Hospice Deaths Served Limited to 60%**	**2008 Reported # of Hospice Patient Deaths**	**Ratio of Hospice Admissions to Hospice Deaths**	**2013 # of Hospice Admissions Served Limited to 60%**	**Projected 2013 # of Hospice Admissions Served**
Source or Formula =>	*2009 Lic. Data Supplement*	*2009 Lic. Data Supplement*	*Col. C / Col. B*	*Col.B x 5 Yrs Growth at 6.5% annually*	*Deaths - NC Vital Statistics*	*Office of State Budget and Management*	*Col. F x (Col.G/1000)*	*Col. H x 60%*	*2009 Lic. Data Supplement*	*Col. B / Col. J*	*Col. I x Col K*	*Lower # of Admissions between Col. E and Col. L*
Alamance	684	56,443	82.5	937	9.7	162,865	1,580	948	596	1.1	1,088	937
Alexander	147	11,067	75.3	201	8.7	38,424	334	201	137	1.1	215	201
Alleghany	35	3,125	89.3	48	12.2	11,493	140	84	28	1.3	105	48
Anson	60	4,273	71.2	82	11.0	25,215	277	166	48	1.3	208	82
Ashe	97	5,872	60.5	133	11.7	27,354	320	192	69	1.4	270	133
Avery	58	3,437	59.3	79	10.6	18,458	196	117	40	1.5	170	79
Beaufort	164	20,468	124.8	225	11.6	47,544	552	331	137	1.2	396	225
Bertie	49	3,759	76.7	67	12.1	20,218	245	147	45	1.1	160	67
Bladen	177	19,440	109.8	243	11.9	32,273	384	230	115	1.5	355	243
Brunswick	457	37,370	81.8	626	9.6	121,417	1,166	699	339	1.3	943	626
Buncombe	1,024	76,337	74.5	1,403	10.1	243,037	2,455	1,473	935	1.1	1,613	1,403
Burke	391	32,773	83.8	536	9.7	94,591	918	551	347	1.1	620	536
Cabarrus	556	45,181	81.3	762	8.2	203,242	1,667	1,000	551	1.0	1,009	762
Caldwell	458	37,392	81.6	628	10.0	83,756	838	503	391	1.2	589	589
Camden	12	453	37.8	16	7.9	10,174	80	48	14	0.9	41	16
Carteret	275	20,724	75.4	377	11.0	64,115	705	423	212	1.3	549	377
Caswell	79	7,679	97.2	108	10.1	22,976	232	139	69	1.1	159	108
Catawba	809	62,861	77.7	1,108	9.0	165,473	1,489	894	760	1.1	951	951
Chatham	211	18,235	86.4	289	9.1	68,775	626	376	157	1.3	505	289
Cherokee	82	3,005	36.6	112	12.1	28,637	347	208	62	1.3	275	112
Chowan	36	2,259	62.8	49	12.5	14,889	186	112	32	1.1	126	49
Clay	24	697	29.0	33	11.8	11,333	134	80	17	1.4	113	33
Cleveland	607	38,877	64.0	832	10.5	102,046	1,071	643	479	1.3	815	815
Columbus	358	42,120	117.7	491	11.8	56,491	667	400	210	1.7	682	491
Craven	363	37,962	104.6	497	9.7	94,276	914	549	228	1.6	874	497
Cumberland	1,018	76,194	74.8	1,395	6.7	295,733	1,981	1,189	713	1.4	1,697	1,395
Currituck	63	4,540	72.1	86	8.0	22,716	182	109	52	1.2	132	86
Dare	66	2,453	37.2	90	7.6	31,964	243	146	58	1.1	166	90
Davidson	491	35,325	71.9	673	9.5	171,376	1,628	977	393	1.2	1,220	673
Davie	139	11,124	80.0	190	8.9	44,507	396	238	126	1.1	262	190
Duplin	218	25,669	117.7	299	9.9	56,054	555	333	125	1.7	581	299
Durham	606	44,400	73.3	830	6.9	295,588	2,040	1,224	472	1.3	1,571	830
Edgecombe	181	16,032	88.6	248	11.2	51,438	576	346	136	1.3	460	248
Forsyth	1,225	87,840	71.7	1,678	8.6	372,699	3,205	1,923	1,088	1.1	2,165	1,678
Franklin	126	13,832	109.8	173	8.4	63,338	532	319	88	1.4	457	173
Gaston	941	62,553	66.5	1,289	10.0	227,635	2,276	1,366	844	1.1	1,523	1,289

Table 13C: Year 2013 Hospice Inpatient Bed Need Projections for the Proposed 2010 Plan

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J	Column K	Column L	Column M
County	**Total Admissions (2008 data)**	**Total Days of Care (2008 Data)**	**ALOS per Admission**	**2013 # of Admissions at Two Year Trailing Average Growth Rate**	**2003-2007 Death Rate/1000 Population**	**2013 Population (excluding military)**	**Projected 2013 Deaths**	**2013 # of Hospice Deaths Served Limited to 60%**	**2008 Reported # of Hospice Patient Deaths**	**Ratio of Hospice Admissions to Hospice Deaths**	**2013 # of Hospice Admissions Served Limited to 60%**	**Projected 2013 # of Hospice Admissions Served**
Source or Formula =>	*2009 Lic. Data Supplement*	*2009 Lic. Data Supplement*	*Col. C / Col. B*	*Col.B x 5 Yrs Growth at 6.5% annually*	*Deaths - NC Vital Statistics*	*Office of State Budget and Management*	*Col. F x (Col.G/1000)*	*Col. H x 60%*	*2009 Lic. Data Supplement*	*Col. B / Col. J*	*Col. I x Col K*	*Lower # of Admissions between Col. E and Col. L*
Gates	24	1,233	51.4	33	10.3	12,194	126	75	22	1.1	82	33
Graham	20	674	33.7	27	11.8	8,318	98	59	15	1.3	79	27
Granville	114	6,361	55.8	156	8.8	59,175	521	312	93	1.2	383	156
Greene	52	5,362	103.1	71	9.2	21,959	202	121	43	1.2	147	71
Guilford	1,442	132,055	91.6	1,976	8.1	510,395	4,134	2,481	1,229	1.2	2,910	1,976
Halifax	145	11,289	77.9	199	11.6	54,807	636	381	123	1.2	450	199
Harnett	579	44,030	76.0	793	7.7	123,950	954	573	323	1.8	1,027	793
Haywood	284	16,943	59.7	389	11.9	58,505	696	418	231	1.2	514	389
Henderson	841	72,202	85.9	1,152	12.6	112,710	1,420	852	764	1.1	938	938
Hertford	85	5,024	59.1	116	12.1	23,636	286	172	84	1.0	174	116
Hoke	108	16,223	150.2	148	6.6	48,765	322	193	78	1.4	267	148
Hyde	55	9,591	174.4	75	12.1	5,333	65	39	42	1.3	51	51
Iredell	605	38,158	63.1	829	8.6	175,291	1,508	905	556	1.1	984	829
Jackson	135	9,122	67.6	185	9.0	39,763	358	215	124	1.1	234	185
Johnston	425	36,490	85.9	582	7.1	193,025	1,370	822	271	1.6	1,290	582
Jones	49	5,302	108.2	67	10.6	10,325	109	66	31	1.6	104	67
Lee	225	22,407	99.6	308	9.2	63,500	584	351	156	1.4	506	308
Lenoir	216	17,305	80.1	296	11.9	57,272	682	409	129	1.7	685	296
Lincoln	261	21,699	83.1	358	8.8	84,676	745	447	216	1.2	540	358
McDowell	167	11,391	68.2	229	10.1	47,508	480	288	124	1.3	388	229
Macon	142	9,877	69.6	195	12.8	37,279	477	286	115	1.2	354	195
Madison	97	4,263	43.9	133	11.2	22,089	247	148	85	1.1	169	133
Martin	93	6,506	70.0	127	13.1	23,427	307	184	75	1.2	228	127
Mecklenburg	2,323	170,393	73.4	3,183	6.0	962,350	5,774	3,464	1,967	1.2	4,091	3,183
Mitchell	83	12,606	151.9	114	12.6	16,158	204	122	73	1.1	139	114
Montgomery	90	8,684	96.5	123	10.0	28,260	283	170	61	1.5	250	123
Moore	437	41,377	94.7	599	11.7	92,683	1,084	651	344	1.3	827	599
Nash	259	19,697	76.1	355	9.9	100,239	992	595	219	1.2	704	355
New Hanover	847	64,093	75.7	1,160	8.3	205,450	1,705	1,023	725	1.2	1,195	1,160
Northampton	54	4,115	76.2	74	13.3	20,953	279	167	47	1.1	192	74
Onslow	265	16,477	62.2	363	5.1	158,245	807	484	194	1.4	661	363
Orange	430	24,649	57.3	589	5.7	138,507	789	474	352	1.2	579	579
Pamlico	29	2,488	85.8	40	11.2	12,841	144	86	25	1.2	100	40
Pasquotank	107	8,124	75.9	147	9.4	41,776	393	236	99	1.1	255	147
Pender	210	15,819	75.3	288	8.7	60,087	523	314	179	1.2	368	288
Perquimans	40	1,882	47.1	55	11.8	14,267	168	101	33	1.2	122	55

Table 13C: Year 2013 Hospice Inpatient Bed Need Projections for the Proposed 2010 Plan

Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J	Column K	Column L	Column M
County	**Total Admissions (2008 data)**	**Total Days of Care (2008 Data)**	**ALOS per Admission**	**2013 # of Admissions at Two Year Trailing Average Growth Rate**	**2003-2007 Death Rate/1000 Population**	**2013 Population (excluding military)**	**Projected 2013 Deaths**	**2013 # of Hospice Deaths Served Limited to 60%**	**2008 Reported # of Hospice Patient Deaths**	**Ratio of Hospice Admissions to Hospice Deaths**	**2013 # of Hospice Admissions Served Limited to 60%**	**Projected 2013 # of Hospice Admissions Served**
Source or Formula =>	*2009 Lic. Data Supplement*	*2009 Lic. Data Supplement*	*Col. C / Col. B*	*Col.B x 5 Yrs Growth at 6.5% annually*	*Deaths - NC Vital Statistics*	*Office of State Budget and Management*	*Col. F x (Col.G/1000)*	*Col. H x 60%*	*2009 Lic. Data Supplement*	*Col. B / Col. J*	*Col. I x Col K*	*Lower # of Admissions between Col. E and Col. L*
Person	122	9,626	78.9	167	10.6	38,014	403	242	98	1.2	301	167
Pitt	397	41,234	103.9	544	7.5	174,348	1,308	785	327	1.2	953	544
Polk	208	18,054	86.8	285	14.8	19,176	284	170	189	1.1	187	187
Randolph	567	47,403	83.6	777	8.7	150,477	1,309	785	489	1.2	911	777
Richmond	229	33,280	145.3	314	11.1	47,316	525	315	158	1.4	457	314
Robeson	715	102,348	143.1	980	9.3	136,689	1,271	763	411	1.7	1,327	980
Rockingham	282	17,926	63.6	386	11.6	92,468	1,073	644	267	1.1	680	386
Rowan	490	33,622	68.6	671	9.9	150,273	1,488	893	398	1.2	1,099	671
Rutherford	475	55,092	116.0	651	12.4	67,215	833	500	419	1.1	567	567
Sampson	292	35,579	121.8	400	9.7	70,460	683	410	156	1.9	768	400
Scotland	243	21,624	89.0	333	10.2	38,860	396	238	203	1.2	285	285
Stanly	242	14,086	58.2	332	10.1	62,426	631	378	225	1.1	407	332
Stokes	196	25,519	130.2	269	9.6	48,281	463	278	178	1.1	306	269
Surry	446	51,917	116.4	611	11.0	75,475	830	498	345	1.3	644	611
Swain	54	4,370	80.9	74	13.0	14,790	192	115	45	1.2	138	74
Transylvania	164	10,894	66.4	225	12.0	32,466	390	234	130	1.3	295	225
Tyrrell	4	148	37.0	5	8.1	4,323	35	21	5	0.8	17	5
Union	398	25,461	64.0	545	5.9	238,454	1,407	844	337	1.2	997	545
Vance	102	9,553	93.7	140	10.8	43,654	471	283	78	1.3	370	140
Wake	1,970	152,008	77.2	2,699	4.9	1,042,038	5,106	3,064	1,536	1.3	3,929	2,699
Warren	21	567	27.0	29	11.5	19,834	228	137	13	1.6	221	29
Washington	23	1,777	77.3	32	11.4	12,993	148	89	23	1.0	89	32
Watauga	74	6,121	82.7	101	6.8	48,221	328	197	55	1.3	265	101
Wayne	495	31,945	64.5	678	9.3	114,062	1,061	636	374	1.3	842	678
Wilkes	166	11,086	66.8	227	10.1	68,872	696	417	138	1.2	502	227
Wilson	221	23,263	105.3	303	10.1	84,499	853	512	174	1.3	650	303
Yadkin	155	12,495	80.6	212	10.1	40,133	405	243	127	1.2	297	212
Yancey	133	16,626	125.0	182	11.2	19,381	217	130	95	1.4	182	182
Total	32,509	2,679,306	77.2	44,541	8.5	10,003,036	85,026	51,015	26,353	1.2	62,292	44,541

Column A	Column N	Column O	Column P	Column Q	Column R	Column S	Column T	Column U	Column V	Column W
County	**2013 Days of Care at County ALOS**	**2013 Days of Care at Statewide ALOS**	**Projected 2013 Days of Care for Inpatient Estimates**	**Projected Inpatient Days**	**Projected Total Inpatient Beds**	**Currently Licensed Beds**	**CON Appv'd/Lic. Pending/ Prev. Need Determ.**	**Adjusted Projected Beds**	**Existing Facility Occupancy Rate**	**Deficit/(Surplus) Adjusted for facilities not at 85% occupancy (Col. _)**
Source or Formula =>	*Col. D x Col .M*	*Col. M x Statewide Median ALOS per Admission (77.2)*	*Lower # of Days of Care between Col. N and Col. O*	*Col. P * 6%*	*(Col. Q/365) / 85%*	*Licensure Inventory*		*Col. R - (Col. S + Col. T)*	*2009 Lic. Data Supplement*	
Alamance	77,333	72,359	72,359	4,342	14	6	8	(0)	92.17%	(0)
Alexander	15,163	15,551	15,163	910	3			3		3
Alleghany	4,282	3,703	3,703	222	1			1		1
Anson	5,855	6,347	5,855	351	1			1		1
Ashe	8,045	10,261	8,045	483	2			2		2
Avery	4,709	6,136	4,709	283	1			1		1
Beaufort	28,044	17,349	17,349	1,041	3		6	(3)		(3)
Bertie	5,150	5,184	5,150	309	1			1		1
Bladen	26,635	18,725	18,725	1,123	4			4		4
Brunswick	51,201	48,345	48,345	2,901	9		7	2		2
Buncombe	104,591	108,327	104,591	6,275	20	15		5	100.00%	5
Burke	44,903	41,363	41,363	2,482	8		8	(0)		(0)
Cabarrus	61,903	58,818	58,818	3,529	11	6	8	(3)	54.50%	(3)
Caldwell	48,058	45,450	45,450	2,727	9	6	3	(0)	90.16%	(0)
Camden	621	1,269	621	37	0			0		0
Carteret	28,394	29,092	28,394	1,704	5			5		5
Caswell	10,521	8,357	8,357	501	2			2		2
Catawba	73,908	73,441	73,441	4,406	14	11	6	(3)	100.00%	(3)
Chatham	24,984	22,321	22,321	1,339	4			4		4
Cherokee	4,117	8,675	4,117	247	1			1		1
Chowan	3,095	3,808	3,095	186	1			1		1
Clay	955	2,539	955	57	0			0		0
Cleveland	52,179	62,903	52,179	3,131	10	5	4	1	99.51%	1
Columbus	57,709	37,872	37,872	2,272	7		6	1		1
Craven	52,012	38,401	38,401	2,304	7		7	0		0
Cumberland	104,395	107,692	104,395	6,264	20	8		12	57.48%	0
Currituck	6,220	6,665	6,220	373	1			1		1
Dare	3,361	6,982	3,361	202	1			1		1
Davidson	48,399	51,942	48,399	2,904	9	8		1		1
Davie	15,241	14,705	14,705	882	3			3		3
Duplin	35,170	23,062	23,062	1,384	4	3		1		1
Durham	60,833	64,108	60,833	3,650	12	12		(0)		(0)
Edgecombe	21,966	19,148	19,148	1,149	4			4		4
Forsyth	120,351	129,591	120,351	7,221	23	20	10	(7)	100.00%	(7)
Franklin	18,951	13,329	13,329	800	3			3		3
Gaston	85,705	99,547	85,705	5,142	17	6	7	4	32.66%	0

Column A	Column N	Column O	Column P	Column Q	Column R	Column S	Column T	Column U	Column V	Column W
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Source or Formula =>	*Col. D x Col .M*	*Col. M x Statewide Median ALOS per Admission (77.2)*	*Lower # of Days of Care between Col. N and Col. O*	*Col. P * 6%*	*(Col. Q/365) / 85%*	*Licensure Inventory*		*Col. R - (Col. S + Col. T)*	*2009 Lic. Data Supplement*	
Gates	1,689	2,539	1,689	101	0			0		0
Graham	923	2,116	923	55	0			0		0
Granville	8,715	12,060	8,715	523	2			2		2
Greene	7,347	5,501	5,501	330	1			1		1
Guilford	180,931	152,547	152,547	9,153	30	14		16	80.82%	0
Halifax	15,467	15,339	15,339	920	3			3		3
Harnett	60,326	61,251	60,326	3,620	12	7	1	4	58.43%	0
Haywood	23,214	30,044	23,214	1,393	4		6	(2)		(2)
Henderson	80,527	72,421	72,421	4,345	14	19		(5)	80.19%	(5)
Hertford	6,883	8,992	6,883	413	1			1		1
Hoke	22,227	11,425	11,425	686	2			2		2
Hyde	8,841	3,915	3,915	235	1			1		1
Iredell	52,281	64,002	52,281	3,137	10	9		1	92.92%	1
Jackson	12,498	14,281	12,498	750	2			2		2
Johnston	49,996	44,960	44,960	2,698	9		12	(3)		(3)
Jones	7,264	5,184	5,184	311	1			1		1
Lee	30,700	23,802	23,802	1,428	5			5		5
Lenoir	23,710	22,850	22,850	1,371	4			4		4
Lincoln	29,730	27,611	27,611	1,657	5		6	(1)		(1)
McDowell	15,607	17,667	15,607	936	3			3		3
Macon	13,533	15,022	13,533	812	3			3		3
Madison	5,841	10,261	5,841	350	1			1		1
Martin	8,914	9,838	8,914	535	2			2		2
Mecklenburg	233,458	245,746	233,458	14,007	45	19		26	69.99%	0
Mitchell	17,272	8,780	8,780	527	2			2		2
Montgomery	11,898	9,521	9,521	571	2			2		2
Moore	56,691	46,229	46,229	2,774	9		11	(2)		(2)
Nash	26,987	27,399	26,987	1,619	5		6	(1)		(1)
New Hanover	87,815	89,603	87,815	5,269	17	12		5	98.72%	5
Northampton	5,638	5,713	5,638	338	1			1		1
Onslow	22,575	28,034	22,575	1,355	4			4		4
Orange	33,171	44,679	33,171	1,990	6	6		0	100.00%	0
Pamlico	3,409	3,068	3,068	184	1			1		1
Pasquotank	11,131	11,319	11,131	668	2			2		2
Pender	21,674	22,216	21,674	1,300	4			4		4
Perquimans	2,579	4,232	2,579	155	0			0		0

Column A	Column N	Column O	Column P	Column Q	Column R	Column S	Column T	Column U	Column V	Column W
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Source or Formula =>	*Col. D x Col .M*	*Col. M x Statewide Median ALOS per Admission (77.2)*	*Lower # of Days of Care between Col. N and Col. O*	*Col. P * 6%*	*(Col. Q/365) / 85%*	*Licensure Inventory*		*Col. R - (Col. S + Col. T)*	*2009 Lic. Data Supplement*	
Person	13,189	12,906	12,906	774	2			2		2
Pitt	56,495	41,998	41,998	2,520	8	8		0	0.00%	0
Polk	16,266	14,469	14,469	868	3			3		3
Randolph	64,948	59,982	59,982	3,599	12		6	6		6
Richmond	45,597	24,226	24,226	1,454	5		6	(1)		(1)
Robeson	140,229	75,639	75,639	4,538	15	12	14	(11)	44.81%	(11)
Rockingham	24,561	29,832	24,561	1,474	5	3		2	56.41%	0
Rowan	46,066	51,836	46,066	2,764	9		7	2		2
Rutherford	65,753	43,772	43,772	2,626	8	4	6	(2)	98.29%	(2)
Sampson	48,747	30,890	30,890	1,853	6			6		6
Scotland	25,333	21,981	21,981	1,319	4	4	2	(2)		(2)
Stanly	19,299	25,601	19,299	1,158	4			4		4
Stokes	34,964	20,734	20,734	1,244	4		7	(3)		(3)
Surry	71,132	47,182	47,182	2,831	9	13		(4)		(4)
Swain	5,987	5,713	5,713	343	1			1		1
Transylvania	14,926	17,349	14,926	896	3			3		3
Tyrrell	203	423	203	12	0			0		0
Union	34,885	42,104	34,885	2,093	7		6	1		1
Vance	13,089	10,790	10,790	647	2			2		2
Wake	208,269	208,403	208,269	12,496	40	6	18	16	82.38%	0
Warren	777	2,222	777	47	0			0		0
Washington	2,435	2,433	2,433	146	0			0		0
Watauga	8,386	7,828	7,828	470	2			2		2
Wayne	43,768	52,365	43,768	2,626	8	6	6	(4)	100.00%	(4)
Wilkes	15,189	17,561	15,189	911	3			3		3
Wilson	31,873	23,379	23,379	1,403	5		8	(3)		(3)
Yadkin	17,120	16,397	16,397	984	3			3		3
Yancey	22,780	14,070	14,070	844	3			3		3
Total	3,439,070	3,439,070	3,439,070	206,344	665	248	208		84.13%	