

S. C. Critical Needs Nursing Initiative Act DISCUSSION PAPER FOR FY 2008-09

Background

The “South Carolina Critical Needs Nursing Initiative Act” was passed in the absence of careful consideration of verifiable data. In some cases, those data are simply not readily available. For example, CHE staff has solicited nurse vacancy data from the SC Hospital Association for over three years, which has never been provided. A recent television advertisement from Lexington Hospital claims that the nursing turnover rate is 22% and that Lexington’s is half that. Widely ranging vacancy rate data appear in a variety of sources, including the Nursing Initiative Act. Yet, when questioned by staff, the data were omitted from the final version of the legislation.

The purpose of this discussion paper is to provide some additional data relevant to the first priority listed in the legislation, i.e., bringing nurse faculty salaries at the public institutions offering accredited associate degree or higher nursing programs “within the average” for the geographical area in which S.C. competes, and then to share some data staff has collected on nurse supply, migration and retirement patterns as well as on student enrollments and nursing programs.

Nurse Faculty Salary Supplemental Funds

One of the challenges with the salary supplement component of the Act is that there was no salary benchmark data against which the need for salary adjustments was measured. For this reason, the first year’s distribution of funding was recommended to be based on nurse faculty FTEs. However, as noted in the analysis of this year’s recommendation to the CHE, staff has continued to collect additional data that can inform the recommendation for distribution in subsequent years.

Another challenge inherent in salary adjustments is the difficulty in obtaining information about market demand for nurses. One tool that might be used at least as an indirect measure of market demand is average faculty salary data. An economist would argue that salaries are, in fact, reflectors of market factors of supply and demand, and that they are sensitive to the particular circumstances of individual communities. For example, one community might have two educational institutions providing nurse graduates, two hospitals, and the usual assortment of nursing homes, clinics, and doctor’s offices. By contrast, another community might have no educational institutions and no hospitals. Other communities might present other unique mixes of suppliers and employers. The salaries offered in those communities migrate to the levels that are necessary to attract both nurse faculty and practicing nurses, some of whom are recruited locally. However, others are recruited regionally as well as nationally, so any salary data used should include data that extends beyond current institutional nurse salaries.

One strategy frequently used by the Commission for comparative purposes across a broad number of issues is to use data from what are called “peer institutions,” institutions that are similar to our public institutions. MGT of America, in a study conducted in June 2000, validated these “peer institutions” for each individual institution and grouped them into sectors (technical colleges; regional two-year institutions; comprehensive teaching institutions; research universities.) Over the late summer and early fall of 2007, staff has collected updated nurse faculty salary data by sector and by instructional rank from the sector peers and has calculated average salaries for each sector by instructional rank. These salary data are the same data used by the College and University Professional Association (CUPA), the national salary collection data instrument used in higher education.

Using these salary averages as benchmarks helps meet the intent of the legislation which is to consider “the geographic area in which the State of South Carolina competes for nursing faculty.” There is widespread agreement in the higher education community that nurses are recruited from local, regional, and national markets. These “peer” averages are shown in the shaded area on **Tables 1-3**, by instructional rank within each sector.

Staff has calculated the average faculty salaries (for Fall 2006 FTE nursing faculty in public institutions) by instructional rank for each public institution offering an associate’s degree or higher in nursing; these averages are displayed on **Table 1**.

The difference between the average salary at each institution and the sector “peer” average, by institutional rank, is displayed on **Table 2**. Numbers in parentheses show that the average institutional faculty salary exceeds the sector “peer” average. To illustrate, the data for Clemson show that the average of the salaries for the three full professors is \$13,361 below the peer salary average for full professors; the average of the salaries for the eight associate professors is \$8,388 below the peer average of \$75,878, and so on. By contrast, to use another example, the data for Francis Marion show that the salary for the one full professor exceeds the peer average by \$5,905, the one associate professor’s salary exceeds the peer average by \$3,920, and the average of the three assistant professors exceeds the peer average by \$294. The average salary of the three instructors is below the average peer salary by \$4,817. In summary, **Table 2** shows that among the four-year institutions, six are below the peer averages by rank but two have already invested in faculty so that the average salary by rank is at or above the peer average. For the technical colleges, the average faculty salary for seven of the colleges is below the peer average; for six (in parentheses), the average faculty salary meets or exceeds the peer average.

Table 3 provides data that compares the FY 2007-08 allocation (based simply on FTE faculty) amount against what would be needed to reach the peer average at each institution. Institutions whose amounts are shown in the “funding variance” column in parentheses still have unmet need in order to bring their average faculty salaries to the peer average. The greatest unmet need occurs in the research sector where recruiting occurs largely on a national level for doctorally-prepared nurses whose salaries are proportionately higher than master’s prepared nurses. In several instances, institutions have reached the peer faculty salary average by investing institutional resources to attract appropriate nurse faculty. Had this methodology been used for

FY 2007-08, \$877,267 would have been required to bring all average salaries of existing FTE faculty as of Fall 06 in each instructional rank to the peer average. We do not have data at this time to quantify the average salary needs for the vacant existing FTE nurse faculty positions. In addition, for FY 2008-09, it is likely that USC-Beaufort's new nursing program will qualify to be added to the distribution should the salary appropriation recur.

Because some institutions have reached their faculty salary peer averages per these data, staff inquired of Budget and Control Board and legislative staff as to whether funds allocated for FY 2007-08 could be used for new hires. Obviously, the expected benefit of increasing salaries for current nurse faculty is to reduce attrition and increase retention, but these positive benefits in and of themselves do not increase the capacity of our nurse programs to train and graduate *more* nurses. Expanding program capacity typically requires more faculty. Our inquiry confirmed that the FY 2007-08 funds could not be used for new expanded positions. However, it would be permissible to use the allocation of FY 2007-08 funds to hire replacement faculty in the event that *an already-existing FTE position* was approved and was vacant.

Table 1

	Distribution FY 08				Distribution based on Consideration of Sector Peer Average Salaries and Faculty Rank										
	Total Headcount	Total Weighted FTEs		FY 2007-08 Allocation	Research Sector					Teaching Sector					Technical College Sector
		% of Total		\$1,000,000	Prof	Assoc	Asst	Instr.		Prof	Assoc	Asst	Instr.		Instr.
					\$99,967	\$75,878	\$61,993	\$58,452	Total	\$72,568	\$63,920	\$52,706	\$48,497	Total	\$48,791
Clemson University*	24.00	18.00	6.19941%	61,994	86,606	67,490	58,860	-							
					3	8	6	-	17						
U. S. C. - Columbia	31.00	24.60	8.47253%	84,725	-	64,785	53,374	49,335							
					-	13	17	1	31						
Medical University of South Carolina**	31.00	31.00	10.67677%	106,768	87,498	67,357	60,102	59,875							
					3	7	14	5	29						
Francis Marion University	8.00	6.25	2.15257%	21,526						78,473	67,840	53,000	43,680		
										1	1	3	3	8	
Lander University*	9.00	6.75	2.32478%	23,248						67,487	52,881	48,095	45,156		
										2	2	1	3	8	
South Carolina State University	7.00	6.25	2.15257%	21,526						-	66,950	56,933	50,692		
										-	1	4	2	7	
U. S. C. - Aiken	15.00	11.25	3.87463%	38,746						63,565	-	51,345	47,220		
										3	-	4	8	15	
U. S. C. - Upstate	38.00	28.75	9.90184%	99,018						66,963	60,354	53,560	46,368		
										2	8	1	27	38	
Aiken Tech	8.00	6.00	2.06647%	20,665											52,175
															8
Central Carolina Tech	11.00	8.25	2.84140%	28,414											48,273
															11
Florence-Darlington Tech	15.00	11.25	3.87463%	38,746											48,429
															15
Greenville Tech	45.00	33.75	11.62390%	116,239											50,041
															45
Horry-Georgetown Tech	15.00	11.25	3.87463%	38,746											47,317
															15
Midlands Tech	30.00	22.50	7.74927%	77,493											47,646
															30
Orangeburg-Calhoun Tech	11.00	8.25	2.84140%	28,414											47,974
															11
Piedmont Tech	9.00	6.75	2.32478%	23,248											47,647
															9
Spartanburg Community College	9.00	6.75	2.32478%	23,248											49,778
															9
Technical College of The Lowcountry	8.00	6.00	2.06647%	20,665											50,137
															8
Tri-County Tech	13.00	9.75	3.35802%	33,580											45,728
															13
Trident Tech	24.00	18.00	6.19941%	61,994											48,921
															24
York Tech	12.00	9.00	3.09971%	30,997											52,321
															12
Grand Total	373.00	290.35	100.00%	\$1,000,000											

* See Note 4 ** See Note 5

Table 2

	Distribution FY08				Variance Analysis of Institutional Average Salary to Peer Average Salary, by Sector by Rank										
	Total Headcount	Total Weighted FTEs		FY 2007-08 Allocation	Research Sector					Teaching Sector					Technical College Sector
		% of Total		\$1,000,000	Prof	Assoc	Asst	Instr.	Total	Prof	Assoc	Asst	Instr.	Total	Instr.
					\$99,967	\$75,878	\$61,993	\$58,452		\$72,568	\$63,920	\$52,706	\$48,497		\$48,791
Clemson University*	24.00	18.00	6.19941%	61,994	13,361	8,388	3,133	-							
					3	8	6	-	17						
U. S. C. - Columbia	31.00	24.60	8.47253%	84,725	-	11,093	8,619	9,117							
					-	13	17	1	31						
Medical University of South Carolina	31.00	31.00	10.67677%	106,768	12,469	8,521	1,891	(1,423)							
					3	7	14	5	29						
Francis Marion University	8.00	6.25	2.15257%	21,526						(5,905)	(3,920)	(294)	4,817		
										1	1	3	3	8	
Lander University**	9.00	6.75	2.32478%	23,248						5,081	11,039	4,611	3,341		
										2	2	1	3	8	
South Carolina State University	7.00	6.25	2.15257%	21,526						-	(3,030)	(4,227)	(2,195)		
										-	1	4	2	7	
U. S. C. - Aiken	15.00	11.25	3.87463%	38,746						9,003	-	1,361	1,277		
										3	-	4	8	15	
U. S. C. - Upstate	38.00	28.75	9.90184%	99,018						5,605	3,566	(854)	2,129		
										2	8	1	27	38	
Aiken Tech	8.00	6.00	2.06647%	20,665											(3,384)
															8
Central Carolina Tech	11.00	8.25	2.84140%	28,414											518
															11
Florence-Darlington Tech	15.00	11.25	3.87463%	38,746											362
															15
Greenville Tech	45.00	33.75	11.62390%	116,239											(1,250)
															45
Horry-Georgetown Tech	15.00	11.25	3.87463%	38,746											1,474
															15
Midlands Tech	30.00	22.50	7.74927%	77,493											1,145
															30
Orangeburg-Calhoun Tech	11.00	8.25	2.84140%	28,414											817
															11
Piedmont Tech	9.00	6.75	2.32478%	23,248											1,144
															9
Spartanburg Community College	9.00	6.75	2.32478%	23,248											(987)
															9
Technical College of The Lowcountry	8.00	6.00	2.06647%	20,665											(1,346)
															8
Tri-County Tech	13.00	9.75	3.35802%	33,580											3,063
															13
Trident Tech	24.00	18.00	6.19941%	61,994											(130)
															24
York Tech	12.00	9.00	3.09971%	30,997											(3,530)
															12
Grand Total	373.00	286.60	100.00%	\$1,000,000											

* See Note 4 ** See Note 5

Table 3

	Distribution FY 08				Unfunded Need (Funding Variance) based on FY08 Distribution Measured Against Peer Average										Funding Variance		
	Total Headcount	Total Weighted FTEs		FY 2007-08 Allocation	Research Sector					Teaching Sector						Technical College Sector	
		% of Total		\$1,000,000	Prof	Assoc	Asst	Instr.	Total Need	Prof	Assoc	Asst	Instr.	Total		Instr.	
					\$99,967	\$75,878	\$61,993	\$58,452		\$72,568	\$63,920	\$52,706	\$48,497			\$48,791	
Clemson University*	24.00	18.00	6.19941%	61,994	40,083	67,104	18,798	-	125,985							(63,991)	
U. S. C. - Columbia	31.00	24.60	8.47253%	84,725	-	144,209	146,523	9,117	299,849							(215,124)	
Medical University of South Carolina	31.00	31.00	10.67677%	106,768	37,407	59,647	26,474	-	123,528							(16,760)	
Francis Marion University	8.00	6.25	2.15257%	21,526						-	-	-	14,451	14,451		7,075	
Lander University**	9.00	6.75	2.32478%	23,248						10,162	22,078	4,611	10,023	46,874		(23,626)	
South Carolina State University	7.00	6.25	2.15257%	21,526						-	-	-	-	-		21,526	
U. S. C. - Aiken	15.00	11.25	3.87463%	38,746						27,009	-	5,444	10,216	42,669		(3,923)	
U. S. C. - Upstate	38.00	28.75	9.90184%	99,018						11,210	28,528	-	57,483	97,221		1,797	
Aiken Tech	8.00	6.00	2.06647%	20,665											-	20,665	
Central Carolina Tech	11.00	8.25	2.84140%	28,414											5,698	22,716	
Florence-Darlington Tech	15.00	11.25	3.87463%	38,746											5,430	33,316	
Greenville Tech	45.00	33.75	11.62390%	116,239											-	116,239	
Horry-Georgetown Tech	15.00	11.25	3.87463%	38,746											22,110	16,636	
Midlands Tech	30.00	22.50	7.74927%	77,493											34,350	43,143	
Orangeburg-Calhoun Tech	11.00	8.25	2.84140%	28,414											8,987	19,427	
Piedmont Tech	9.00	6.75	2.32478%	23,248											10,296	12,952	
Spartanburg Community College	9.00	6.75	2.32478%	23,248											-	23,248	
Technical College of The Lowcountry	8.00	6.00	2.06647%	20,665											-	20,665	
Tri-County Tech	13.00	9.75	3.35802%	33,580											39,819	(6,239)	
Trident Tech	24.00	18.00	6.19941%	61,994											-	61,994	
York Tech	12.00	9.00	3.09971%	30,997											-	30,997	
Total Technical Colleges				542,449	Total Research Sector					549,362	Total Teaching Sector					201,215	
Grand Total	373.00	286.60	100.00%	\$1,000,000							Total Technical College Sector					126,690	
											Total to be Distributed					877,267	
											Balance to be Distributed					\$122,733	

Notes:

- Salaries are converted to 9 months to accommodate variances in contract periods for full-time faculty teaching in 2- or 4-year RN programs.
 - Salaries are based on validated peers by sector and rank and are consistent with those used in the MRR.
 - Additional information is pending to support the Technical College Sector peer average. Data is continuing to be received that may affect the current average. We do not anticipate that the number will be materially affected.
 - Persons currently holding positions as "Lecturers" are included in the faculty counts in the Currently Proposed Distribution. They are not included in the Sector/Peer/Rank Distribution as their salaries are not included in CUPA data.
- * Clemson University - Included in the terms of contract for 9 month are 7 faculty members that have a rank of Lecturer.
 * Lander University - Included in the terms of contract for 9 month is 1 faculty members that has a rank of Lecturer
- Persons teaching in the Nurse Anesthetist program are included in the faculty counts in the Currently Proposed Distribution. They are not included in the Sector/Peer/Rank Distribution as their salaries as this is not an RN program.

Nurse Supply, Migration, and Retirement Data

Data recently released from the Office of Research and Statistics of the Budget and Control Board shows that between 2003 and 2005 (see **Table 4**) there has been considerable growth in the general net supply of Registered Nurses in South Carolina. After accounting for all the losses in the nursing population of Registered Nurses, there was a new gain for the state of 1,551 new nurses in 2005 over the nursing population in 2003. Similarly, the total number of nursing faculty in 2005 showed a net gain (total after accounting for all gains and all losses) of 68 over 2003's nursing faculty population.

Table 4
Gains, Losses, Net Gains for Selected Settings of Nurses in South Carolina

Nursing Settings	ACTIVE in '03	ACTIVE in '05	Total Losses in the Setting from 2003-05	Total Gains in the Setting from 2003-05	Net Gains in the Setting from 2003-05
All RNs	32,294	33,845	-4,469	6,020	1,551
All Hospital RNs	20,313	21,455	-4,415	5,557	1,142
School of Nursing RNs	563	631	-161	229	68

Source: based on data from ORS, September 2007

Another important data set from the biennial licensure process for Registered Nurses from the S.C. Department of Labor, Licensing, and Regulation, as reported to the Office of Research and Statistics, pertains to the ability of academic institutions to retain nursing faculty, owing to competition from hospitals and other employers. **Table 5** shows that, indeed, there was a significant group (N=41) of nursing faculty who left colleges and universities in the state to enter hospitals as their principal setting of employment between 2003 and 2005. However, it should also be noted that this migration is a two-way street: an even larger number of hospital nurses left hospital employment to become nursing faculty members between 2003-2005 (N=77) for *a net gain to academe from hospital employment of 36*. These data suggest some level of competitiveness by colleges and universities in the marketplace.

Table 5
Migration of Nurses between Hospital and Schools of Nursing: 2003 - 2005

	To All Hospital Settings in 2005	To Schools of Nursing in 2005
From All Hospital Settings in 2003	N/A	77
From Schools of Nursing in 2003	41	N/A

Source: based on data from ORS, September 2007

Finally, S.C. Nurse Licensure Data from November 2005 provides information concerning Advanced Practice Nurses (APN), shown in **Table 6**. Advanced Practice Nurses is the group which provides patient care, management experts, health care “physician extenders,” nursing research and – of special importance to higher education – the recruitment pool for nurse educators in colleges and universities.

The November 2005 data are encouraging since they demonstrate a significant percentage (46.2%) of Advanced Practice nurses in South Carolina are under the age of 46. This fact belies a widely held view that most of the state’s APNs are very near to retirement. Whites account for the largest percentage of all APNs. It is clear that among white APNs, more than half of the population is over 45 years of age; but more than half of the populations of African American and “other” APNs are under 46. In addition, the numbers of all Advanced Practice Nurses have grown in 2005 (N=1957) over 2003 (N=1658) by 298 (compare Table 13 of ORS “S.C. Registered Nurses” reports 2003 and 2005).

Table 6
Active Advanced Practice Nurses by Type of Practice and All RNs

Nurse Type	Type of Practice	Total	White		Black		Other	
			<= 45	46 +	<= 45	46 +	<= 45	46 +
Individual types of APNs	Nurse Anesthetist	730	280	390	11	8	26	15
	Certified Nurse Midwife	66	21	41		2	2	
	Adult Care Practitioner	132	47	75	5	1	3	1
	Family Nurse	646	299	281	31	19	11	5
	Family Planning Nurse	4	1	3				
	Pediatric Nurse	91	43	35	4	4	4	1
	Ob/Gyn	19	4	12		2	1	
	Acute Care	76	38	34	3			1
	Neonatal	46	23	21		1	1	
	Psych	20	8	11				1
	Clinical Nurse Spec	50	13	34		3		
	Womens Health	48	15	28	1	4		
	Other	29	7	20	1		1	
Total APNs		1957	799	985	56	44	49	24
Total other RNs		31888	14518	12735	2088	1333	847	367
Total ALL RNs (APNs and other RNs)		33845	15317	13720	2144	1377	896	391

Source: South Carolina Nurse Licensure Data, November 2005

Enrollments and Graduates in Associate Degree and Generic Baccalaureate Degree Programs

Since 2001, when the *Colleagues in Caring* report was accepted by the Commission on Higher Education, the numbers of students enrolled in and graduating from associate and generic BSN programs of study in the state has increased considerably. Enrollment figures, however, are not good barometers of the numbers of students who are likely to graduate from these programs, since each institution tracks a “nursing student” differently. Some count only students officially accepted by the nursing education unit as a “major.” Others count any student who is being advised by a nursing faculty member and who has expressed an interest in becoming a nurse.

Thus, the graduation numbers—and especially the trend over several years in those numbers—is especially useful to review, since these are the persons who are eligible to take the NCLEX, the official examination which will determine whether they can practice as RNs. As **Table 7** shows, South Carolina’s undergraduate nursing programs have increased the numbers of their graduates considerably between 2000-2001 and 2005-2006, the last year for which official data are currently available. Among baccalaureate programs, the graduates rose 28.9% in the six-year period; and among associate degree programs, the graduates rose 21.3% for the same time period.

Table 7
Undergraduate Nursing Graduates in South Carolina: 2000-01 through 2005-06

Degree	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
BSN	536	542	506	533	613	691
ADN	845	817	880	1050	1070	1025

Source: CHEMIS files

The undergraduate nursing programs could not have increased in graduates if new faculty were not available. Also, while the increase of numbers and percentages in new nurse graduates for the six-year time period is impressive, we can anticipate higher increases in the near future because of the addition of several new programs of study in the state, some of which are still going through the program approval process and others of which, albeit approved, have not yet graduated their first class of students.

New Undergraduate Nursing Programs in South Carolina, post-Colleagues in Caring

Finally, the institutions of higher education in South Carolina—public, private, and proprietary—have been actively developing new undergraduate programs of nursing education since the Colleagues in Caring report was presented in 2001. As **Table 8** shows, six new programs leading to Registered Nurse have been approved by the Commission since 2001. Three of these are at the associate level and three at the baccalaureate level. In addition, two private colleges (Newberry, an independent not-for-profit institution; and South University, a for-profit institution) are planning to introduce new baccalaureate (generic) programs for 2008-2009.

This list does not include a new site at the University Center in Greenville for the USC-Upstate BSN-generic program which increased its enrollment by approximately double or increased numbers of students at virtually all existing-in-2001 ADN and BSN-generic programs in the state.

Table 8
Approved or Planned New South Carolina Programs in Nursing Leading to RN
2000-01 to 2005-06

Associate Degree:

Spartanburg Community College
Aiken Technical College
Northeastern Technical College*

Baccalaureate Degree:

USC-Beaufort*
USC-Aiken
Francis Marion University
Newberry College**
South University**

*No graduates yet

**In approval process with State Board of Nursing

Summary:

While the challenge to produce more nurses and to retain more nurses will remain with us in South Carolina for some number of years, the strides that the state's institutions of higher education—and especially public higher education—have made in recent years to meet a burgeoning demand for nurses is impressive. What we possess are very good, reliable supply statistics; what we lack are significant amounts and types of demand statistics. We know that we are netting more Registered Nurses than in the past, but—in the absence of demand data—we cannot know how many nurse graduates will be sufficient or too many. This type of data is crucial to assure good use of public dollars invested in nursing education.

The state's ability to attract and retain nursing faculty members appears promising at this point. But, we need to know with more clarity what kinds of Advanced Practice Nurses the nursing faculties in the state need and will need to remain competitive with other states so that we can produce enough new Registered Nurses to meet demand.

Recommendations

Staff suggests that for FY 2008-09,

- the methodology described on pages 2-3 (rather than the FTE methodology) be used for allocating nurse faculty salary enhancements so we have an appropriate objective benchmark to be used and an appropriate objective measure of achievement;
- that once "unmet need" as reflected in the peer average salaries is fulfilled, then any remaining funds be allocated to other priorities identified in the S.C. Critical Needs Nursing Initiative Act;
- that staff collect from the institutions information related to vacant FTE positions and projected needs for new faculty to meet expanded program needs; and
- that the need for and/or the wording of the FY 2007-08 Proviso directing money to salary enhancements be revisited to clarify any desired changes for FY 2008-09, with attention to having salary funds go into the institutional base funding as well as allowing appropriate flexibility to direct funds to the other priorities identified in the legislation once salary benchmarks are achieved.