

Monitoring the Progress of North Carolina Graduates Entering Primary Care Careers

November 2000

Submitted by the University of North Carolina Board of Governors in response to
General Statute 143-613 as amended by Chapter 507 of the 1995 Session Laws
(House Bill 230) of the North Carolina General Assembly

Monitoring the Progress of Graduates Entering Primary Care

General Statute 143-613 requires the UNC Board of Governors to monitor the progress of the private and state-operated medical schools and state-operated health professional schools towards increasing the number and proportion of graduates entering primary care. This annual report was prepared in accordance with this statute. The charts contain data for 2000 and also comparative data from the report "Monitoring the Progress of North Carolina Graduates Entering Primary Care Careers" that the Board submitted to the North Carolina General Assembly in November, 1999.

The Data

Section I of this report provides information from the Wake Forest University School of Medicine, East Carolina University School of Medicine, Duke University Medical Center and The University of North Carolina at Chapel Hill School of Medicine. Each of the four schools of medicine has committed to developing a common database to track medical students. At the request of the four schools, the AHEC Program has assumed responsibility for developing and managing the common database in association with the Sheps Center for Health Services Research at UNC-CH. The development of a common database to track medical students has required a complex process of merging two national data sets, a state data set, and files in alumni and student affairs offices of the four medical schools. The national data sets include the graduate medical education tracking file of the Association of American Medical Colleges and the physician master file maintained by the American Medical Association. The state data set used is the North Carolina Medical Board's file for physicians licensed in North Carolina. The format for Section I on the medical students is consistent with and comparable to the baseline information provided in the May 1994 report "Expanding the Pool of Generalist Physicians for North Carolina." The term "primary care" includes family medicine, general pediatric medicine, general internal medicine, internal medicine/pediatrics, and obstetrics/gynecology.

There is no comparable national database that can be used to longitudinally monitor the specialty practice and location of physician assistants, nurse practitioners, and nurse midwives. For the present report, information on

graduates and current enrollment have been provided by the state-operated schools that train nurse practitioners, nurse midwives, and physician assistants. UNC has eight mid-level provider programs: six masters-level nurse practitioner programs at East Carolina University, The University of North Carolina at Chapel Hill, The University of North Carolina at Charlotte, The University of North Carolina at Greensboro, The University of North Carolina at Wilmington, and Western Carolina University; one nurse midwifery program at East Carolina University and one baccalaureate physician assistant program at East Carolina University. The information on these graduates and students is included in this report as "Section II: Nurse Practitioners, Nurse Midwives, and Physician Assistants."

Section I: Medical Students

Section I provides comparative data for medical students graduating in the Classes of 1993 and 1994 in tables numbered I-1, I-2, and I-3. Table I-4 presents information about graduates of the classes of 1999 and 2000 whose initial choice for residency training was in a primary care area. The tables are organized as follows:

Table I-1 contains information on *the initial choice of primary care* for medical students graduating in 1993 and 1994.

Table I-2 contains information on *the retention in primary care* for medical students graduating in 1993 and 1994.

Table I-3 shows *the initial choice and retention in primary care* specialties for those state-supported North Carolina residents who graduated in the Wake Forest and Duke Classes of 1993 and 1994.

Table I-4 presents information about *the initial choice of primary care* for 1998 and 2000 graduates of the four medical schools in North Carolina.

The data in Table I-1 show that 207, or 48% of the 427 medical school graduates in 1994 chose an initial residency in primary care. The percentages were:, Duke 37%, ECU 56%, UNC-CH 49%, and Wake Forest 54%. Overall, when the total results for the graduates of 1994 are compared to the class of 1993, there was a slight decline in the initial choice of primary care specialties.

Table I-2 shows the percentage of those same 1993 and 1994 graduates who were in primary care patient practice as of 1998 and 1999. In 1998, the percentages for the classes of 1993 were:, Duke 32%, ECU 59%, UNC-CH 48%,

and Wake Forest 43%. In 1999, the percentages for the classes of 1994 were: Duke 28%, ECU 51%, UNC-CH 51%, and Wake Forest 44%.

Table I-3 shows that the percentage of state supported graduates from Duke and Wake Forest who were in primary care patient practice as of 1998 was 26% and 35% respectively and for 1999, 26% for Duke and 50% for Wake Forest.

Table I-4 focuses on the initial choice of primary care for the 1999 and 2000 graduates of North Carolina medical schools who entered residency training. In 1999, 221 out of 408 graduates or 54% entered primary care residency training. In 2000, 222 out of 431 graduates or 52% entered primary care residency training. The number and percentage of the class of 2000 who choose primary care residencies were: Duke 39 graduates or 41%; ECU 51 graduates or 71%, UNC-CH 76 graduates or 48% and Wake Forest 55 graduates or 54%.

Section II: Nurse Practitioners, Nurse Midwives, and Physician Assistants

Section II presents information provided by state-operated health professional schools that train physician assistants, nurse practitioners, and nurse midwives concerning choice of and retention in primary care.

Table II-1 presents *the retention of nurse practitioner students in primary care*.

Table II-2 presents *the initial practice choice* of the 1998-1999 and 1999-2000 graduates of nurse practitioner programs.

Tables II-3, II-4, and II-5 present *enrollment* in state-operated nurse practitioner and nurse midwifery programs.

Table II-6 presents the 1998, 1999, and 2000 *enrollment* for the ECU Physician Assistant Program.

Table II-7 shows *the initial practice choice* of the 1998-1999 and 1999-2000 ECU nurse midwifery graduates.

Table II-8 shows *the initial practice choice* of the 1999-2000 ECU physician assistant students.

The UNC-Chapel Hill Family Nurse Practitioner program is the only program that has been established long enough to have five-year retention data.

Table II-1 presents the retention in primary care for UNC-CH graduates completing training in 1992-1993 and 1993-1994. The number of graduates in this program doubled during this time period. In addition, 88% of the 1992-1993 graduates and 56% of the 1993-94 graduates were still in primary care five years later in 1998 and 1999.

Table II-2 shows the number of graduates in state-operated master's level and post master's level programs in 1998-1999 and 1999-2000 and the initial practice choice of these graduates. These programs are located at UNC-Chapel Hill, UNC-Greensboro, UNC-Charlotte, East Carolina University, and UNC-Wilmington. During the period 1998 through 2000 the number of graduates from these programs actually declined. In 1998-99, 77% of the graduates chose primary care practice while in 1999-2000, 71% chose primary care practice.

Table II-3 and II-4 shows on-campus and off-campus enrollment in state-operated nurse practitioner programs over the last five years which includes new programs at UNC-Wilmington and Western Carolina University. In the year 2000 on-campus and total enrollment in nurse practitioner programs actually declined.

Table II-5 and II-6 show the enrollment pattern in state operated nurse midwifery and physician assistant programs located at East Carolina University.

Table II-7 shows the initial practice choice of the 1997-98 and 1999-2000 graduates of the ECU nurse midwifery program. All the graduates of this program have chosen primary care practice.

Table II-8 shows the initial practice choice of the first graduates of the ECU physician assistant program. Twelve of eighteen graduates (67%) had an initial practice choice of primary care.

Section I: Medical Students

Table I-1
North Carolina Medical Students-Initial Choice of Primary Care
for 1993 and 1994 Graduates in Training or Practice in 1998 and 1999

School	Total Number of Graduates		Number of 1993 and 1994 Graduates not in Training or Practice as of		Number of 1993 & 1994 Graduates in Training or Practice with an Initial Residency Choice of Primary Care		Percent of 1993 & 1994 Graduates in Training or Practice with an Initial Residency Choice of Primary Care			
	1993	1994	1998	1999	1998	1999	1993	1994	1993	1994
Duke	115	110	12	3	103	107	56	40	54%	37%
ECU	73	72	4	4	69	68	41	38	59%	56%
UNC-CH	149	159	4	2	145	157	85	77	59%	49%
Wake Forest	107	94	8	0	99	94	43	51	43%	54%
Meharry	1	1	0	0	1	1	0	1	0%	100%
TOTAL	445	436	28	9	417	427	225	207	54%	48%

*Primary Care = Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology.

Sources:

Wake Forest Office of Student Affairs
UNC-CH Office of Student Affairs
Duke Office of Medical Education
American Medical Association
ECU Office of Medical Education
Association of American Medical Colleges
N. C. Medical Board
Meharry Medical College

Compiled by:
N. C. AHEC Program
Cecil G. Sheps Center for Health Services Research

Section I: Medical Students (continued)

Table I-2
North Carolina Medical Students-Retention in Primary Care*
1993 and 1994 Graduates

School	Number of 1993 and 1994 Graduates in Training or Practice with an Initial Residency Choice as of 1998	Number of 1993 and 1994 Graduates in Training or Practice with an Initial Residency Choice of Primary Care 1993 1994		Percent of 1993 and 1994 Graduates in Training or Practice with an Initial Residency Choice of Primary Care 1993 1994	Number of 1993 and 1994 Graduates in Training or Practice in Primary Care Patient Practice as of 1998	Percent of 1993 and 1994 Graduates in Training or Practice in Primary Care Patient Practice as of 1998	Percent of 1993 and 1994 Graduates in Training or Practice in Primary Care as of 1999
		1993	1994				
Duke	103	107	37	40	54%	37%	33
ECU	69	68	40	38	59%	56%	41
UNC-CH	145	157	93	77	59%	49%	70
Wake Forest	99	94	50	51	43%	54%	43
Meharry	1	1	0	1	0%	100%	0
TOTAL	417	427	220	207	54%	48%	187
							45%
							44%

*Primary Care = Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology.

Sources:

Wake Forest Office of Student Affairs
UNC-CH Office of Student Affairs
Duke Office of Medical Education
American Medical Association

ECU Office of Medical Education
Association of American Medical Colleges
N. C. Medical Board
Meharry Medical College

Compiled by:

N. C. AHEC Program
Cecil G. Sheps Center for Health Services Research

Section I: Medical Students (continued)

Table I-3
State-Supported North Carolinians Attending
The Wake Forest and Duke Schools of Medicine - Choice and Retention in Primary Care Specialties*
1993 and 1994 Graduates and Training or Practice in 1998 and 1999

School	Number of 1993 and 1994 State-supported Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Number of 1993 and 1994 state-supported Graduates in Training or Practice with an Initial Residency Choice of Primary Care		Percent of 1993 and 1994 state-supported Graduates in Training or Practice in Primary Care	Number of 1993 and 1994 state-supported Graduates in Training or Practice in Primary Care	Percent of 1993, 1994 state-supported Graduates in Training or Practice in Primary Care	
		1993	1994		1993		
Duke	27	19	15	7	56%	37%	7
Wake Forest	52	48	19	28	37%	58%	18
TOTAL	79	67	34	35	43%	52%	25
					1998	1999	1998
							42%

*Primary Care = Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology.

Sources:

Wake Forest Office of Student Affairs
Duke Office of Medical Education
American Medical Association

UNC-CH General Administration
Association of American Medical Colleges
N. C. Medical Board

Compiled by:

N. C. AHEC Program
Cecil G. Sheps Center for Health Services Research

Section I: Med Students (continued)

Table I-4
North Carolina Medical Students-Initial Choice of Primary Care*
for 1999 and 2000 Graduates

School	Total # of Graduates 1999 2000	Number of Graduates not Entering Residency Training 1999 2000	Number of 1999 and 2000 Graduates Entering Residency Training 1999 2000	Number of 1999 & 2000 Graduates Entering Residency Training Who Chose A Primary Care Residency		% of 1999 and 2000 Graduates Entering Residency Training Who Chose A Primary Care Residency 1999 2000
				1999	2000	
Duke	95	95	0	95	95	36
ECU	69	72	0	69	72	48
UNC-CH	152	166	15	6	137	160
Wake Forest	107	105	1	3	106	102
Meharry	2	2	1	0	1	2
TOTAL	425	440	17	9	408	431
						39
						38%
						41%

*Primary Care = Family Medicine, General Pediatric Medicine, General Internal Medicine, Internal Medicine/Pediatrics, and Obstetrics/Gynecology.

Sources:

Wake Forest Office of Student Affairs
UNC-CH Office of Student Affairs
Duke Office of Medical Education
American Medical Association
Meharry

ECU Office of Medical Education

Association of American Medical Colleges

N. C. Medical Board

Meharry

Compiled by:

N. C. AHEC Program

Cecil G. Sheps Center for Health Services Research

Section II: Nurse Practitioners, Nurse Midwives, and Physician Assistants

Table II-1
North Carolina Nurse Practitioner Students: Retention in Primary Care
1992-1993 and 1993-1994 Graduates

School of Nursing/Programs	Number of Graduates		Number of 92-93 and 93-94 Graduates Primary Care as of		% of 92-93 and 93-94 Graduates in Primary Care as of	
	92-93	93-94	1998	1999	1998	1999
University of NC-Chapel Hill						
Family Nurse Practitioner (Degree)	8	16	7	9	88%	56%

Source: UNC-CH School of Nursing

**Section II: Nurse Practitioners, Nurse Midwives,
and Physician Assistants (continued)**

Table II-2
N. C. Nurse Practitioner Students: Initial Practice Choice:
Graduates of 1998-99 and 1999-2000

Schools of Nursing/Programs	Number of Graduates		Number of Graduates With Initial Practice Choice of Primary Care		Percent of Graduates With Initial Practice Choice of Primary Care	
			98-99	99-00	1998-99	1999-00
University of NC-Chapel Hill						
Family Nurse Practitioner (Degree)	35	19	30	10	86%	53%
Family Nurse Practitioner (Post MSN)	2	3	2	2	100%	67%
Pediatric Nurse Practitioner (Degree)	5	6	2	4	40%	67%
Pediatric Nurse Practitioner (Post MSN)	4	0	2	0	50%	NA
OB-GYN Nurse Practitioner (Degree)	1	2	1	1	100%	50%
OB-GYN Nurse Practitioner (Post MSN)	1	1	1	1	100%	100%
Adult Nurse Practitioner (Degree)	16	9	12	5	75%	56%
Adult Nurse Practitioner (Post MSN)	0	1	NA	1	NA	100%
UNC-CH Sub-Total	64	41	50	24	78%	59%
University of NC-Greensboro						
Gerontological Nurse Practitioner (Degree)	18	0*	15	0	83%	0
Gerontological Nurse Practitioner (Post MSN)	2	0*	0	0	0%	0
University of NC-Charlotte						
Family Nurse Practitioner	22	19	19	15	86%	79%
East Carolina University						
Family Nurse Practitioner (Degree)	9	11	9	11	100%	100%
Family Nurse Practitioner (Post MSN)	9	0	2	0	22%	NA
University of NC - Wilmington						
Family Nurse Practitioner		9		7		78%
Total Nurse Practitioner Graduates	124	80	95	57	77%	71%

*Program changed to Adult/Gerontological NP Program - 35 graduates expected in December, 2000.

Source: UNC Schools of Nursing

Section II: Nurse Practitioners, Nurse Midwives, and Physician Assistants (continued)

Table II-3
Enrollment in State Operated Nurse Practitioner Programs: On-Campus
1996 to 2000

Schools of Nursing/Programs		# Enrolled				
		1996	1997	1998	1999	2000
On Campus Enrollment						
University of NC-Chapel Hill						
Family Nurse Practitioner (Degree and Post MSN)		54	55	65	64	39
Pediatric Nurse Practitioner (Degree and Post MSN)		29	19	18	14	15
OB-GYN Nurse Practitioner (Degree and Post MSN)		17	9	9	9	12
Adult Nurse Practitioner (Degree and Post MSN)		21	24	37	31	29
UNC-CH Sub-Total		121	107	129	118	95
University of NC-Greensboro						
Adult/Gerontological Nurse Practitioner (Degree & Post MSN)		74	60	74	75	77
University of NC-Charlotte						
Family Nurse Practitioner		30	48	60	60	42
Adult Nurse Practitioner						22
East Carolina University						
Family Nurse Practitioner		31	32	56	42	31
University of NC - Wilmington						
Family Nurse Practitioner		0	0	20	29	29
Western Carolina University						
Family Nursing Practitioner (Degree and Post MSN)		0	0	0	34	29
Total On Campus Enrollment		256	247	339	358	325

Source: UNC Schools of Nursing

Section II: Nurse Practitioners, Nurse Midwives, and Physician Assistants (continued)

Table II-4
Enrollment in State Operated Nurse Practitioner Programs: Off-Campus
1996 to 2000

Schools of Nursing/Programs	# Enrolled				
	1996	1997	1998	1999	2000
Off-Campus Enrollment					
University of NC - Chapel Hill: Family Nurse Practitioner	25	24	22	14	4
University of NC - Charlotte: Adult Nurse Practitioner					7
East Carolina University: Family Nurse Practitioner	0	0	15	13	24
Total Off-Campus Enrollment	25	24	37	27	35

Source: UNC Schools of Nursing

**Section II: Nurse Practitioners, Nurse Midwives,
and Physician Assistants (continued)**

Table II-5
Enrollment in State Operated Nurse Midwifery Programs:
1996-2000

Nurse Midwifery Programs	Enrollment				
	1996	1997	1998	1999	2000
East Carolina University					
On-Campus Enrollment	24	25	18	10	12
Off-Campus Enrollment	0	0	1	0	4
Total Nurse Midwifery Enrollment	24	25	19	10	16

Source: ECU School of Nursing

Table II-6
1998-99 Enrollment in State Operated Physician Assistant Programs
1998-2000

Physician Assistant Programs	Enrollment	Enrollment	Enrollment
	1998	1999	2000
East Carolina University			
On-Campus Enrollment	41	46	58
Off-Campus Enrollment	8	8	12
Total Physician Assistant Enrollment	49	54	70

Source: ECU Department of PA Studies

**Section II: Nurse Practitioners, Nurse Midwives,
and Physician Assistants (continued)**

Table II-7
ECU Nurse Midwifery Students: Initial Practice Choice
1998-2000 Graduates

School of Nursing	Total Number of Graduates		Number of Graduates Who Have Not entered Practice		Number of Graduates who have entered practice		Number of Graduates with Initial practice choice of primary care		Percent of Graduates with initial practice choice of primary care	
	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00
East Carolina University	9	8	1	0	8	8	8	8	8	100%

Source: ECU School of Nursing

**Section II: Nurse Practitioners, Nurse Midwives,
and Physician Assistants (continued)**

Table II-8
ECU Physician Assistant Students: Initial Practice Choice
1998-2000 Graduates

	Total Number of Graduates 1998-99 1999-00	Number of Graduates Who Have Not entered Practice 1998-99 1999-00		Number of Graduates who have entered practice 1998-99 1999-00		Number of Graduates with Initial practice choice of primary care 1998-99 1999-00		Percent of Graduates with initial practice choice of primary care 1998-99 1999-00	
		1998-99	1999-00	1998-99	1999-00	1998-99	1999-00	1998-99	1999-00
East Carolina University	0	18	0	0	0	18	0	12	NA 67%

Source: ECU Department of PA Studies