

# **Monitoring the Progress of North Carolina Graduates Entering Primary Care Careers**

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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**

## **Introduction**

This report, which is submitted by the University of North Carolina Board of Governors to the General Assembly, presents information on the ongoing progress of entry into primary care careers by graduates of the four schools of medicine in the state.

## **Background**

During its 1993 session, the North Carolina General Assembly expressed its interest in expanding the pool of generalist physicians for the state. In Senate Bill 27, as amended by House Bill 729, the General Assembly required that each of the state's four schools of medicine develop a plan with the goal for an expanded percentage of medical school graduates choosing residency positions in primary care. Primary care was defined as family practice, internal medicine, pediatrics, and obstetrics-gynecology. It set the goal for the East Carolina University (ECU) and UNC Schools of Medicine at 60 percent of graduates entering primary care. For the Wake Forest University and Duke University Schools of Medicine, it set the goal at 50 percent.

## **The Data**

This report provides information from the Wake Forest University School of Medicine, the Brody School of Medicine at East Carolina University, Duke University School of Medicine 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 the information on 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.

## **The Entry of Medical School Graduates into Careers in Primary Care**

The General Assembly established goals for each of the four schools of medicine for entry of their graduates into primary care careers. For the UNC School of Medicine and the Brody School of Medicine at East Carolina University, the General Assembly established a target of 60 percent of the graduates to enter careers in primary care. For the Duke and Wake Forest University Schools of Medicine, the target set was 50 percent of graduates in primary care.

### **Retention of Graduates in Primary Care: Class of 2005**

Although initial choice of residency is important, a more important indication of practice in primary care is reflected in data on graduates five years after graduation. Table I-1 shows the percentage of 2005 graduates of each of the four schools who made an initial choice of primary care. Table I-2 shows the same graduates and the percentage that remained in primary care five years (in 2010) after graduation.

The total number of medical graduates in 2005 was 422. Of the 408 graduates in 2005 who are still in training or practice as of 2010, 155 (or 38 percent) remained in one of the four primary care specialties. This is up from a year ago where the comparable number was 31 percent.

Figure 1 shows the trend in the percentage of physicians who graduated from NC medical schools practicing in primary care five years after graduation from 1990 - 2005. While the percentage of graduates who remained in primary care gradually increased for all NC medical schools during the 1990's, only ECU continues to show high percentages since 2000. ECU also showed an increase for 2005 graduates (59 percent, up from 43 percent the year before). The other three schools are more reflective of the national trend away from primary care, with UNC at 38 percent, WFU at 35 percent, and Duke at 23 percent.

Table I-3 shows comparable data for state-supported graduates from Duke and Wake Forest who were in primary care training or practice five years after graduation.

### **Retention of Graduates in North Carolina**

Beginning last year the report included a new Table (I-4) which reflects medical school graduates remaining in North Carolina. While NC retained 39 percent of its 2005 medical student graduates five years after graduation (160 students out of 408), only 21 percent (86 students) of all graduates were training or practicing in primary care in NC in 2010. ECU's Brody School of Medicine graduates showed the highest rate of retention in North Carolina overall (53 percent) and in primary care in the state (41 percent).

### **Initial Choice of Residency in Primary Care: Classes of 2011**

The percentage of most recent graduates entering primary care is also reported for the four schools in order to give an early indication of primary care career trends. Table I-5 shows the percentage of the graduates of the class of 2011 for each of the four schools of medicine who chose residency programs in one of the four primary care specialties of family medicine, pediatrics, internal medicine, and obstetrics and gynecology. In 2011, 209 out of the 427 total graduates (49 percent) entered primary care residency training, slightly higher than last year. ECU and UNC had the highest percentages at 57 percent and 54 percent, respectively.

Figure 2 shows the trends in initial residency choice of primary care. Although the percentage of graduates entering primary care residencies increased slightly during the 1990s, there has been a general decrease since 2000. BSOM at ECU continues to maintain a higher percentage of graduates who enter primary care residencies. Interestingly, all four medical schools had increases in primary care residency choices in 2011.

Although the four schools continue to offer a variety of curricular and community experiences to interest students in a primary care career, there is a strong national trend away from primary care that is also influencing the medical students in North Carolina. Factors recently pointed to that deter choices of primary care careers include the high levels of debt being incurred by many students, particularly in private schools; lower salary levels associated with primary care careers; and lifestyle choices being made by the current generation of medical students. Students are increasingly gravitating to specialties that allow them to control their hours and have less call on nights and weekends. As a result, there has been a clear trend away from choosing primary care, particularly family medicine. These national trends are reflected in the choices being made by students at the schools of medicine in North Carolina as well. The modest increase in primary care for the class of 2011 may indicate a renewed interest in primary care due to health reform, or may simply be an anomaly.

An additional trend that further exacerbates the loss of primary care physicians is the declining percentages of internists and pediatricians remaining in primary care careers. Ten years ago over 50 percent of residents choosing internal medicine and pediatrics practiced as generalists. Today only 10 percent of internists and less than 20 percent of pediatricians remain as generalists, with the remainder going on for fellowship training as sub-specialists. This trend further depletes the pool of generalists physicians needed to serve North Carolina's growing population.

## **Conclusion**

This report responds to the mandate of the 1993 and 1995 sessions of the General Assembly to monitor the progress of graduates of the schools of medicine into primary care. With the exception of East Carolina University medical graduates, the interest in primary care has declined among medical school graduates in the state. This decline matches a national trend, but needs to be monitored since a number of counties, particularly in rural and economically depressed areas of the state, are reporting increasing shortages of primary care physicians over the last several years. Combined with the loss of generalists in internal medicine and pediatrics, these trends do not bode well for meeting future primary care physician needs for the state. Because of the work of the medical and other health science schools, the North Carolina AHEC Program, the State Office of Rural Health, and related programs, North Carolina's rural areas continue to have a higher supply of physicians than comparable rural areas elsewhere in the country. Nevertheless, it will be important to monitor these trends in the coming years to assure that there still remains a steady supply of primary care providers to meet the needs of North Carolina communities.

Table I-1  
North Carolina Medical School Graduates: Initial Choice of Primary Care\*  
2005 Graduates

School	Total Number of 2005 Graduates	Number of 2005 Graduates not in Training or Practice as of 2010	Number of 2005 Graduates in Training or Practice as of 2010	Number of 2005 Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Percent of 2005 Graduates in Training or Practice with an Initial Residency Choice of Primary Care
Duke	81	3	78	47	60%
ECU	75	2	73	60	82%
UNC-CH	159	7	152	91	60%
Wake Forest	107	2	107	63	60%
Totals	422	14	408	261	64%

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

Sources:

Duke Office of Medical Education  
UNC-CH Office of Student Affairs  
ECU Office of Medical Education

Wake Forest University SOM Office of Student Affairs  
Association of American Medical Colleges  
N.C. Medical Board

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

Table I-2  
North Carolina Medical School Graduates - Retention in Primary Care After Five Years  
2005 Graduates

School	Total Number of 2005 Graduates in Training or Practice as of 2010	Number of 2005 Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Percent of 2005 Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Number of 2005 Graduates in Training or Practice in Primary Care Patient Practice as of 2010	Percent of 2005 Graduates in Training or Practice in Primary Care Patient Practice as of 2010
Duke	78	47	60%	18	23%
ECU	73	60	82%	43	59%
UNC-CH	152	91	60%	57	38%
Wake Forest	105	63	60%	37	38%
Totals	408	261	64%	155	38%

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

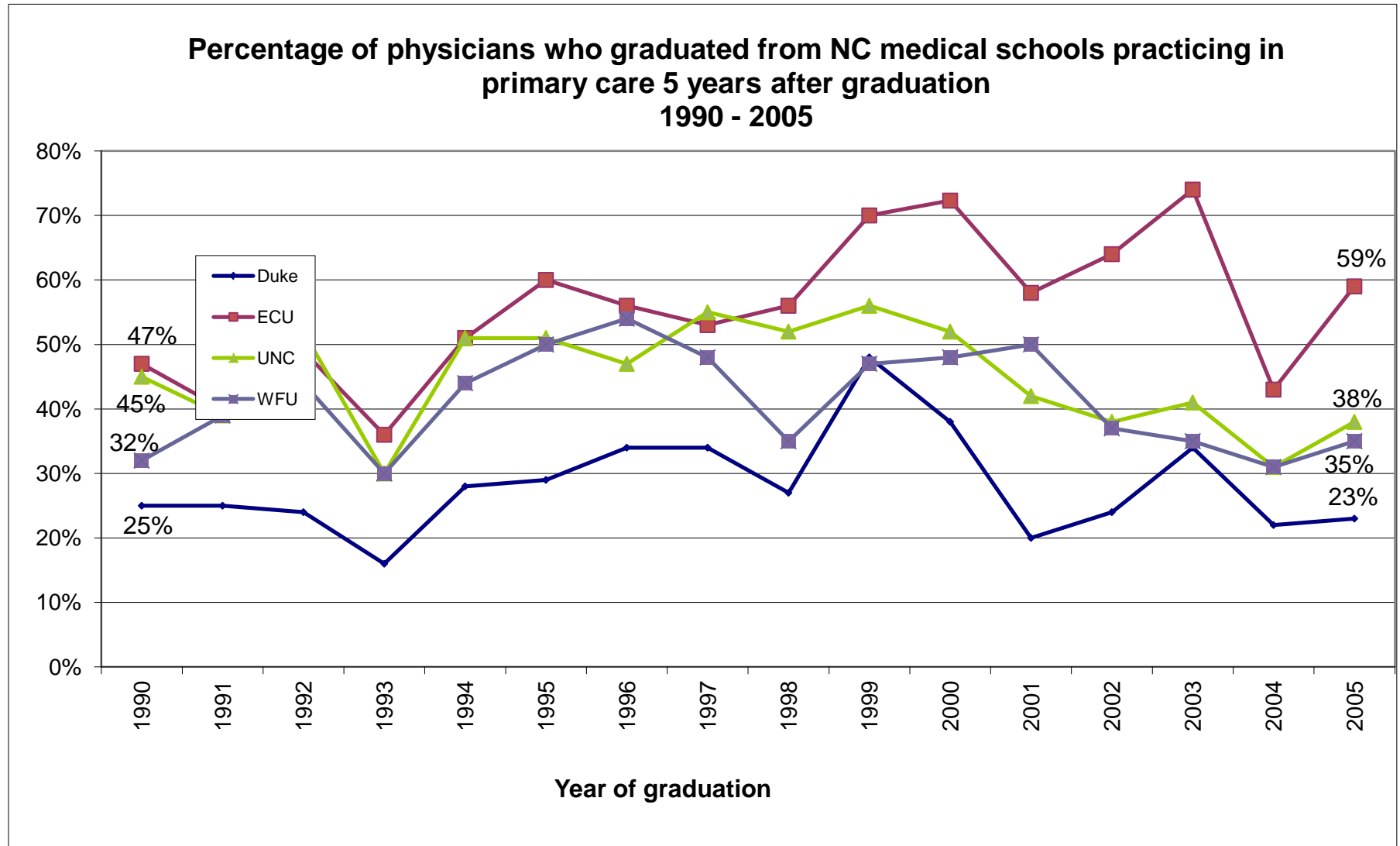
Sources:

Duke Office of Medical Education  
UNC-CH Office of Student Affairs  
ECU Office of Medical Education

Wake Forest University SOM Office of Student Affairs  
Association of American Medical Colleges  
N.C. Medical Board

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

Figure 1



**Table I-3**  
**State Supported North Carolinians Attending**  
**the Duke and Wake Forest Schools of Medicine - Choice and Retention in Primary Care Specialties\***  
**2005 Graduates**

School	Number of 2005 Graduates in Training or Practice as of 2010		Number of 2005 Graduates in Training or Practice in Primary Care* as of 2010		Number of 2005 <i>State-Supported</i> Graduates in Training or Practice as of 2010		Number of 2005 <i>State-Supported</i> Graduates in Training or Practice in Primary Care* as of 2010	
	<i>Total</i>	<i>in NC</i>	<i>Total</i>	<i>in NC</i>	<i>Total</i>	<i>in NC</i>	<i>Total</i>	<i>in NC</i>
Duke	78	18 (23%)	18 (23%)	6 (8%)	9 (12%)	<b>4 (44%)</b>	5 (56%)	<b>2 (22%)</b>
Wake Forest	105	34 (32%)	37 (35%)	18 (17%)	48 (46%)	<b>22 (46%)</b>	17 (35%)	<b>11 (23%)</b>
<b>Total</b>	<b>183</b>	<b>52 (28%)</b>	<b>55 (30%)</b>	<b>24 (13%)</b>	<b>57 (31%)</b>	<b>26 (46%)</b>	<b>22 (39%)</b>	<b>13 (23%)</b>
(% of total grads)					(% of total state-supported grads)			

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

Sources:

Duke Office of Medical Education

N.C. Medical Board

Wake Forest University SOM Office of Student Affairs

Association of American Medical Colleges

NC State Education Assistance

Authority

Compiled by:

N.C. AHEC Program

Cecil G. Sheps Center for Health Services Research

Table I-4  
North Carolina Medical Students-Retention in the State\*  
2005 Graduates

School	Total Number of 2005 Graduates in Training or Practice as of 2010	Number of 2005 Graduates in Training or Practice in North Carolina as of 2010	Percent of 2005 Graduates in Training or Practice in North Carolina as of 2010	Number of 2005 Graduates in Training or Practice in Primary Care in North Carolina as of 2010	Percent of 2005 Graduates in Training or Practice in Primary Care in North Carolina as of 2010
Duke	78	18	23%	6	8%
ECU	73	39	53%	30	41%
UNC-CH	152	69	45%	32	21%
Wake Forest	105	34	32%	18	17%
<b>Total</b>	<b>408</b>	<b>160</b>	<b>39%</b>	<b>86</b>	<b>21%</b>

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

Sources:

Duke Office of Medical Education  
UNC-CH Office of Student Affairs  
ECU Office of Medical Education

Wake Forest University SOM Office of Student Affairs  
Association of American Medical Colleges  
N.C. Medical Board

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

Table I-5  
North Carolina Medical Students-Initial Choice of Primary Care\*  
2011 Graduates

School	Total Number of 2011 Graduates	Number of 2011 Graduates not Entering Residency Training	Number of 2011 Graduates Entering Residency Training	Number of 2011 Graduates Entering Residency Training Who Chose A Primary Care Residency	Percent of 2011 Graduates Entering Residency Training Who Chose A Primary Care Residency
Duke	99	5	94	33	35%
ECU	69	1	68	39	57%
UNC-CH	153	6	147	79	54%
Wake Forest	118	0	118	58	49%
<b>Total</b>	<b>439</b>	<b>12</b>	<b>427</b>	<b>209</b>	<b>49%</b>

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

\*\*Source: Residency match lists from the individual medical schools. Students indicating a choice of "medicine - preliminary" are not included as primary care.

Sources:

Duke Office of Medical Education

UNC-CH Office of Student Affairs

ECU Office of Medical Education

Barzansky B, Etzel SI. 2010. Medical Schools in the United States, 2010-2011. *JAMA*. 2011;306(9):1007-1014.

Wake Forest University SOM Office of Student Affairs

Association of American Medical Colleges

N.C. Medical Board

Compiled by:

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

Figure 2

