

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

**October 2010**

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 2004**

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 2004 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 2009) after graduation.

Total number of graduates is significantly higher in 2004 (476 as compared to 378 in 2003). This is partially due to discrepancies in data collection (\* see note on UNC below). Of the 470 graduates in 2004 who are still in training or practice as of 2009, 145 (or 31 percent) remained in one of the four primary care specialties.

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 - 2004. 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 an increase beyond 2000. It is worth noting, however, that ECU showed a significant decrease for 2004 graduates (from 74% for 2003 graduates to 43% for 2004). The other three schools are more reflective of the national trend away from primary care, with UNC and WFU at 31 percent, and Duke at 22 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**

This year's report includes a new Table (I-4) which reflects medical school graduates remaining in North Carolina. While NC retained 33 percent of its 2004 medical student graduates 5 years after graduation (157 students out of 470), only 14 percent (67 students) of all graduates were training or practicing in primary care in NC in 2009. ECU's Brody School of Medicine graduates showed the highest rate of retention in North Carolina overall (52%) and in primary care (26%).

## **Initial Choice of Residency in Primary Care: Classes of 2010**

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 2010 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 2010, 177 out of the 432 total graduates (41 percent) entered primary care residency training, the same as last year.

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. Both UNC & ECU had slight increases in primary care residency choices in 2010, while Duke and WFU percentages continued to decline.

\* UNC estimates the number of 2004 medical graduates should be approximately 153, but the data pulled from the AAMC indicate a total of 177 graduates. This discrepancy is thought to be caused by individuals who graduated in December 2004. These December graduates would not be contained on the match or class list (as they would participate in the May 2005 graduation); however, they would have still completed their medical degree in 2004.

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.

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\*  
2004 Graduates

School	Total Number of 2004 Graduates	Number of 2004 Graduates not in Training or Practice as of 2009	Number of 2004 Graduates in Training or Practice as of 2009	Number of 2004 Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Percent of 2004 Graduates in Training or Practice with an Initial Residency Choice of Primary Care
Duke	109	3	106	63	59%
ECU	83	2	81	47	58%
UNC-CH	177	1	176	113	64%
Wake Forest	107	0	107	61	57%
Totals	476	6	470	284	

\*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  
2004 Graduates

School	Total Number of 2004 Graduates in Training or Practice as of 2009	Number of 2004 Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Percent of 2004 Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Number of 2004 Graduates in Training or Practice in Primary Care Patient Practice as of 2009	Percent of 2004 Graduates in Training or Practice in Primary Care Patient Practice as of 2009
Duke	106	63	59%	23	22%
ECU	81	47	58%	35	43%
UNC-CH	176	113	64%	54	31%
Wake Forest	107	61	57%	33	31%
Totals	470	284		145	

\*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:  
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Cecil G. Sheps Center for Health Services Research

Figure 1

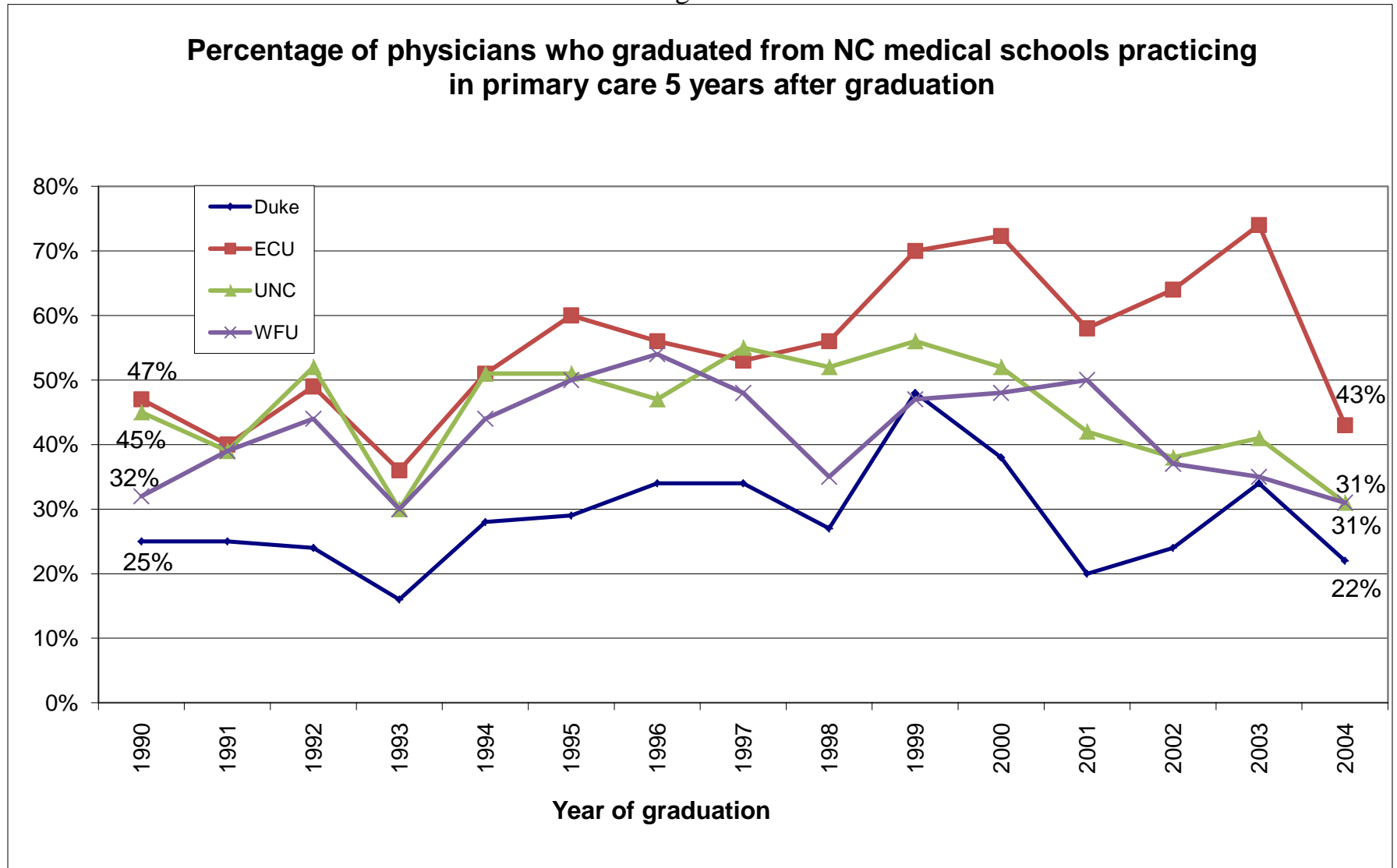


Table I-3  
State Supported North Carolinians Attending  
The Duke and Wake Forest Schools of Medicine - Choice and Retention in Primary Care Specialties\*  
2004 Graduates

School	Total Number of 2004 State Supported Graduates in Training or Practice as of 2009	Number of 2004 State Supported Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Percent of 2004 State Supported Graduates in Training or Practice with an Initial Residency Choice of Primary Care	Number of 2004 State Supported Graduates in Training or Practice in Primary Care Patient Practice as of 2009	Percent of 2004 State Supported Graduates in Training or Practice in Primary Care Patient Practice as of 2009
Duke	20	12	60%	5	25%
Wake Forest	48	24	50%	13	27%

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

Sources:

Duke Office of Medical Education  
Wake Forest University SOM Office of Student Affairs

N.C. Medical Board  
Association of American Medical Colleges

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\*  
2004 Graduates

School	Total Number of 2004 Graduates in Training or Practice as of 2009	Number of 2004 Graduates in Training or Practice in North Carolina as of 2009	Percent of 2004 Graduates in Training or Practice in North Carolina as of 2009	Number of 2004 Graduates in Training or Practice in Primary Care in North Carolina as of 2009	Percent of 2004 Graduates in Training or Practice in Primary Care in North Carolina as of 2009
Duke	106	21	20%	4	4%
ECU	81	42	52%	21	26%
UNC-CH	176	54	31%	26	15%
Wake Forest	107	40	37%	16	15%
Totals	470	157	33%	67	14%

\*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\*  
2010 Graduates

School	Total Number of 2010 Graduates	Number of 2010 Graduates not Entering Residency Training	Number of 2010 Graduates Entering Residency Training	Number of 2010 Graduates Entering Residency Training Who Chose A Primary Care Residency	Percent of 2010 Graduates Entering Residency Training Who Chose A Primary Care Residency
Duke	107	7	100	27	27%
ECU	68	2	66	37	56%
UNC-CH	141	6	135	67	50%
Wake Forest	116	1	115	46	40%
Totals	432	16	416	177	

\*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  
Barzansky B, Etzel SI. 2010. Medical Schools in the United States, 2009-2010. JAMA

Wake Forest University SOM Office of Student Affairs  
Association of American Medical Colleges  
N.C. Medical Board  
2010;304(11):1247-1254.

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

Figure 2

